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GM JOURNAL

Courtesy, Jeannine Maxwell Cross

NewBay Media

THE BIG PICTURE

Meet Your Next Interface: USB 3.0

A Leap in Speed Is Coming to World Of PC Peripherals

by Skip Pizzi

Announced but nearly unnoticed at CES 2009 was what will almost certainly be the future of peripheral-device interfacing for PCs: the third generation of the Universal Serial Bus, USB 3.0.

As the computer continues to define the center of the digital universe for consumers and businesses, and portable personal devices proliferate, the physical interface standard that allows these products to interconnect easily becomes increasingly important.

While there has been much recent buzz over *wireless* interconnections, spectrum needs necessarily limit those connections' bandwidth in ways that wired interfaces need not be concerned with. So there's still plenty to be said for old

See USB 3.0, page 12 ▶

What Is 'The Multicast Sound?'

Dickey Predicts HD2 Channels Viable, Competitive Within 18 Months

by Randy J. Stine

NEW YORK FM radio broadcasters contacted by Radio World believe their programming strategies for companion independent HD2 and HD3 formats and platforms will prove successful and, eventually, profitable.

FM multicasting, the capability to

See MULITCAST, page 6 ▶

Photo © 2009 NPR, by Nicole Beemsterboer

NPR Technical Director Chris Nelson tests the board before the swearing-in.

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THE POWER OF THE SQUARE

AUDIO-OVER-IP ROUTING. SOME TECHNICAL STUFF.

WHEATSTONE and E²...

Wheatstone is world-famous for consoles and networked audio routing – tried-and-true technology that has become broadcast's de facto standard. With the emergence of Audio-over-IP as a viable transmission medium, and knowing that existing solutions are cumbersome at best, Wheatstone has turned its attention and resources to developing a superior set of tools that are as efficient as they are effective.

GIGABIT ETHERNET

Wheatstone chose Gigabit Ethernet (1000BASE-T) because quite frankly, 100BASE-T just can't simultaneously handle the large number of audio channels prevalent today in large broadcast plants without the very real risk of audio not being available when you need it.

E² SQUARES

Three SQUAREs are access points in and out of the network, the fourth is a digital mix engine.

EASE OF SETUP

E-SQUARE setup is easy, intuitive, and takes only a few minutes until you're on the air. The front panel setup wizard in each SQUARE gets you up and running in moments. Extensive front panel metering and status indicators provide quick confirmation that all is well. E-SQUARE's web interface and E² Navigator GUI let you further customize your system, locally or remotely, with input and output names, logic associations, routing and much more.

88e E² MIX ENGINE SQUARE

Every nerve center needs a brain. The 88e is it, handling all of the mixes from Wheatstone Evolution Series Console Control Surfaces and the Wheatstone Glass-E Virtual Console Control Surface, a PC-based GUI. The 88e SQUARE houses all DSP power for an individual control surface and distributes the four stereo PGM, four stereo AUX SEND, per-channel MIX-MINUS, monitor outputs and other bus signals to the network. Once on the network, they are available as sources and outputs anywhere. This creates an extremely flexible system, where program outputs from one surface can be a source on any other surface; for example a news mixer's program bus as a source on the air studio surface. While the MIX ENGINE SQUARE doesn't house audio I/O, it does include 12 universal logic ports.

HIGHLIGHTS

- **SQUAREs are linkable units that communicate via a single CAT5E/6 over Gigabit/1000BASE-T protocol — Gigabit protocol means all audio everywhere with extremely low latency**
- **SQUAREs interface seamlessly with Wheatstone's Evolution Series Console Control Surfaces, the Glass-E Virtual Console Control Surface, most of the popular automation systems, and streaming audio**
- **Install the WHEAT-IP driver on automation system computers to eliminate the expensive sound card and replace tons of audio and control wiring with a single CAT5E/6 cable**
- **Each SQUARE includes two 8x2 virtual utility mixers that can be used for a wide range of applications**
- **Front panel headphone jack with source select and level control to monitor any system source**
- **Silent — no fans — can safely be located in a studio with live mics**
- **Flexible GPI logic — 12 universal logic ports, programmable as inputs or outputs**
- **SNMP messaging for alerts**
- **Silence detection on each output that can trigger alarms or make a routing change**

Introducing E-SQUARE Audio-over-IP routing and mixing. Wheatstone's goal was to design a system that is extraordinarily easy to implement without the need for super-complicated network engineering, and where the user doesn't need to be concerned about setting network parameters and priorities to assure that those signals that are most critical are available.

Here we give a brief overview of E-SQUARE, and a few considerations that went into Wheatstone's design of a second-generation AoIP system for broadcasters.

Each of the I/O SQUAREs handles 16 audio channels in and out, plus logic (GPIO). One model is all analog, one all digital, and one is half of each. The relatively small channel count of each I/O SQUARE allows you to conveniently locate them close to your equipment: in your TOC racks and in the control room or studio furniture.

Each of the SQUAREs and each Wheatstone console control surface connects to the network with a single CAT5E/6 cable.

There's also WHEAT-IP, a software "SQUARE" that you install on a Windows® machine — automation computer, news workstation, or a PD/GM's desk computer — to control, play and record audio on and off the network without a sound card, also with just one CAT5E/6 cable.

RELIABILITY

Keeping you on the air is foremost in the design of E-SQUARE. It's completely self-contained — no PC is required to perform any of the system functions, including routing, mixing, salvos, and logic control. The PC is needed only for configuration changes.

Each SQUARE carries a complete map of the entire connected network in its onboard CPU flash RAM — this allows SQUAREs to be quickly and easily replaced in a network. Assign an ID # to a SQUARE and connect it to the network — it will query the other connected SQUAREs and import all the necessary configuration settings.

E² I/O SQUARES

Each 88 I/O SQUARE provides connectivity for 16 input channels, 16 output channels (switchable 8 stereo, 16 mono, or any combination), and 12 universal logic (GPIO) ports programmable as inputs or outputs, routable throughout the system.

88a ANALOG I/O SQUARE
16 analog in/out

88d AES DIGITAL I/O SQUARE
8 AES in/out

88ad ANALOG & DIGITAL I/O SQUARE
8 analog in/out, 4 AES in/out

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Inaugural Challenges Radio Networks

The Cold, Extra-Tight Security, Crowds and Long Hours Test Engineers

by Randy J. Stine

WASHINGTON Amid extraordinary security restrictions that presented technical challenges, major radio news networks covered the Jan. 20 swearing-in of President Barack Obama. Coverage of the historic presidential inauguration included reports from the West Front steps of the U.S. Capitol and from along the parade route to the White House.

Historians say the first presidential inauguration broadcast on radio was that of Calvin Coolidge in 1925. More than 80 years later, despite so many more available media options, radio seems to still play an important role.

Radio broadcasters say there were plenty of technical challenges involved. In some cases, recent technology allowed the radio nets to cover more events at less cost, such as using IP codecs and mobile broadband, thus eliminating the need for tapping copper phone lines. Some coverage highlights:

Photo by Paul McLane

By some estimates, 2 million people squeezed onto and around the National Mall to see the swearing-in.

American Urban Radio Networks (AURN): The radio network, comprising the Sheridan Broadcasting Network and American Urban Network, has covered presidential inaugurations before. However, inauguration of the first black president was especially exciting for the network's core listeners, said Tene` Croom, news director for AURN.

AURN launched long-form programming an hour before the swearing-in, with Croom co-hosting from the network's Pittsburgh operations center with Joe Mistick, a Duquesne University law professor. Washington Bureau Chief April Ryan roamed the two-mile long National Mall filing reports recorded on a Marantz PMD560 flash drive recorder and edited on her laptop.

"Cell service was very sketchy throughout the day, but April did use her cell phone for live reports," Croom said.

Croom and Mistick watched the ceremony on TV in their Pittsburgh radio studio, which allowed them to call the "play-by-play" of the inauguration. AURN also used AP Radio audio for pool coverage of the opening ceremonies and the actual swearing-in.

"We also supplemented our coverage with a number of interviews with members of the Congressional Black Caucus, which represents African-American members of the United States Congress and others from the civil rights arena," Croom said.

See INAUGURAL, page 5 ▶

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ABC Radio

iStockphoto/Serdar Yagci

World Radio History

Facebook Lessons for a Radio World

From the Editor

Paul J. McLane

I am not what you'd call an early adopter in personal use of technology. It's not that I'm afraid of new things, technological or otherwise; it's that I need to be convinced of the utility of a product or service before I invest my precious time in it.

Some consumers, presented with the latest portable device or social trend, will jump into an entire cycle of trial, adoption and disposal. I typically am content to watch with interest, deciding only after awhile whether the offering is likely to improve the quality of my life. Call me a careful adopter.

This approach fits my personality; I like things with staying power. I drive a car with 200,000 miles on it. It works and still gives me 39 mpg on the highway; why replace it? Nor can I be bothered with new media gizmos, late-model cars or TV celebrities just because someone is going gaga about them today; most are fads and likely to be consigned to the "Out" column tomorrow.

(Further, I am annoyed when I adopt but then see my product or service discontinued or replaced within a year. You know the drill: "As a service to you, Quicken is discontinuing support of the online features of your 2006 version of our personal finance software, which you need to track your investments. We're happy to offer you the latest version for $45 to $75 even though it does nothing important that the old version doesn't do.")

In touch

All of this to say that I took my time before joining Facebook last year.

The social networking Web site, which was created by a Harvard student and initially aimed at college-age users, just turned five years old and now has 175 million active users, according to the New York Times.

I was one of the first adults in my personal circle on it; when I signed up, my teenage godchildren thought it was remarkable to have an adult "friend" them, which they thought was "so cool, Uncle Paul!" But FB has evolved quickly into a pool for all ages to swim in.

This topic has little to do with radio, directly. But as a user I find myself musing about how consumer media habits evolve; and I monitor my own.

My first impression after signing up was a feeling of intimidation, akin to standing just inside the door of a big party at which everyone seems to know everyone else. I'd locate someone I knew, see on her page that she had 100 friends (such data are important in Facebook world) and wonder if others would chuckle at my measly five or six pals.

Well, that didn't last; with 120 connections at present, I have more friends than I could keep track of outside of FB — though my total likely would make a teenager simply feel sorry for me (family friend Megan, a college freshman, has 839). I have no intention of pushing aggressively for more, but I like it when an unexpected old friend turns up.

I'm not afraid of new things, technological or otherwise; but I need to be convinced of the utility of a product or service before I invest my precious time in it.

My professional situation is unusual in that I know a lot of people through Radio World; and I would leap to much higher numbers of "friends" if I were to use FB as a professional tool rather than a social one; but I made a conscious decision to separate those worlds, and I more recently began using LinkedIn as my professional networking tool (if you're there, feel free to reach out to me).

So I don't feel like a lonely outsider on Facebook. But even with a lot of friends, you can feel overwhelmed by the constant exchange of information. The experience also can leave you with a false sense that other people's lives are more exciting than your own, what with so many status reports to follow, so many conversations happening between Chris and Lauren, Scott and Yasmin, Michael and David and Rachel — forgetting that each discussion is going on in its own smaller circle and that each tends to consist more of something like a raw feed of consciousness than an in-depth conversation.

Taken in aggregate, though, it can seem overwhelming to a shy person, if exciting to a gregarious one.

Also of concern is the sharing of personal information and the long-term ownership of that data. When I signed up, I immediately had to confront the question of how much information I wanted to provide to the system and how much I wanted to have visible to others. Thanks to FB, I can tell you right now the exact birth dates of a lot of people who chose to show that info, along with a lot of other personal information about them. Let's face it, even relatively innocuous data can be used to ill purposes these days.

Some friends (typically nearer in age to me than younger) say they don't want to get on Facebook because they believe it will become "yet another thing I have to do each day." Yup. In fact I do find myself thinking, "I *need* to get on there" — to clean out my In Box, see if I have any new friend requests, to make sure I haven't missed anything important — rather than "I *want* to get on there."

But I've come to realize that most of the information I collect from FB is not critical anyway. True, I learned recently of the death of a theater acquaintance in a motorcycle wreck; but that is unusual. Most of the time, the news I find is light, fleeting and fun, and I could visit Facebook less often and not feel much out of touch. (Committed users will have a different view about that.)

Sense of community

Facebook has done an exceptional job putting me in touch with people who were once part of my life but from whom I might never have heard again. This has been one of its most gratifying aspects. It's true that I already was in touch with people about whom I care deepest; but Facebook also makes it easier to stay up with them.

I like being able to post photos, videos and files, to tell a lot of people at once about the experiences I'm having *today*. There's a spotlight quality to it as well that appeals to my stage actor side: "Hey, everybody, look at me!"

My initial feelings — intimidation at the scope, awe at the social model — have subsided. I'm reconfirmed in my belief that any tool is what we make out of it.

For me, Facebook is social but not often meaningful. The experience is broad, not deep. FB works; but I'll probably spend less time with it in the future than I did at first. Most relevant to radio, FB hasn't otherwise seemed to change my media habits. It hasn't caused me to use radio differently, as far as I can tell.

This careful adopter still has a place in his life for his favorite radio stations.

Facebook seems likely to be with us for awhile. From a radio industry strategic standpoint, the lessons I take away are that interaction and personalization sell; that people enjoy experiences that make them the center of attention; and that even when we think consumers have absorbed enough platforms in their lives to fill up the hours, there's always room for more. Most of all, people even in the new millennium still hunger for a sense of community.

Is that good or bad news for radio? It depends on what you make of it.

What new platforms have made the greatest impression on you as a radio consumer and industry professional? Tell me at *radioworld@nbmedia.com*.

World Radio History

Inaugural

▶ Continued from page 3

ABC News Radio: Pretty much a full day of long-form coverage led by anchors Aaron Katersky and Vic Ratner highlighted ABC News Radio's inauguration day coverage. The network embraced new technology to extend coverage into areas where POTS phone terminals were unavailable, including the use of IP codecs and satellite phones.

"We used a mix of IP codecs and traditional wired codecs throughout the day. We utilized Comrex, Telos and Tieline units with ISDN positions at the Capitol. We were worried about using wireless technology around the Capitol," said Jeff Fitzgerald, executive director operations for ABC News Radio. "The key to our planning was to use some land-based phone technology where available, but supplement with IP codecs depending on the situation.

"We had multiple telco paths set up at the Capitol, from ISDN to POTS phone lines. We also had access to some permanent telco loops extended from our facilities inside the Capitol."

On the parade route along Pennsylvania Avenue, some ABC radio correspondents used Comrex Access IP codecs, which can access wide-area wireless Internet connections via a cell phone company's wireless air card or data card, Fitzgerald said.

ABC News Radio had seven operations people on hand to help with the day's coverage, Fitzgerald said, including one engineer on a flatbed truck directly in front of the president's limo in the parade.

But adding to the list of broadcast options for ABC News Radio was an older form of channel: its Marti capability. The radio network has receiver locations strategically placed across the city, Fitzgerald said.

"It's a nice luxury to have. It makes us a bit more mobile," Fitzgerald said.

Thrane & Thrane Explorer satellite phones, capable of placing calls of up to 64 kpbs, which are ISDN quality, rounded out ABC's arsenal of audio sources.

"We anticipate production costs for these types of events to go down, outside of the initial capital costs, with the use of IP codecs. As the wireless infrastructure in this country gets to G4, whether is it's WiMax or whatever, and it becomes much more widespread, there will be no need for ISDN copper wire connections," Fitzgerald said.

Fitzgerald said ABC News Radio preset all of its equipment before the Secret Service security sweep in the early morning hours of Inauguration Day.

National Public Radio: Covering a presidential inaugural is a "technical feat" that compares to nothing else, said Charlie Mayer, operations manager for NPR.

"Not even the political conventions stack up against all of the inauguration hoopla. At least at the conventions, everything is confined to a single venue. Inaugural coverage is spread out over so many locations that it starts to spread your resources thin. It was probably the most complicated day of broadcasting NPR has ever done."

NPR worked closely with Verizon to find copper wiring already in place along the mall for several ISDN locations, Mayer said. In fact, NPR tapped some copper phone pairs left over from a Britney Spears concert in 2003 that was part of a kick-off event for the National Football League season that year.

Mayer said a lack of power at several remote locations prompted NPR engineers to use 12V battery operated Tieline Commander G3 ISDN units. To measure what the battery life would be in the biting cold, engineers concocted a test in which they placed the batteries in a freezer to determine how long their ISDN units would remain powered (see sidebar).

Redundancy is important for any live broadcast application and NPR took every precaution to ensure a smooth on-air presentation, Mayer said.

"We had two ISDN lines and two codecs at our four most important locations. And we had POTS lines at all locations. We mitigate the risks of equipment failure by assigning excellent technicians," Mayer said.

It was probably the most complicated day of broadcasting NPR has ever done.

— Charlie Mayer, NPR

NPR had six field engineers on the ground Inauguration Day; they began setting at 4 a.m.

Producers and engineers on the ground often used peer-to-peer or PIN messaging between Blackberries for two-way communication, Mayer said.

"It was much more reliable than texting and certainly regular cell phone service."

NPR News, which drove vans equipped with Secret Service vehicle permits to access remote locations in the early morning of Inauguration Day, offered six hours of special broadcast and Webcast coverage. The Public Broadcasting Service had reporters positioned at dozens of locations along the parade route, including the Canadian Embassy and Freedom Plaza. Steve Inskeep and Michele Norris anchored coverage from the West Front of the Capitol.

CBS Radio News: Planning for live anchored coverage of Obama's inauguration began immediately after the election, said Craig Swagler, executive producer of special events for CBS Radio News.

"We started with a footprint of what we wanted to do and then built the technical part to fit it. This was certainly historic. We wanted to bring the highest quality audio we could do for this event."

Covering the inaugural is like planning a "multitude of mini-remotes all over town" at the same time, Swagler said.

CBS Radio News, which four tech staffers on the ground the day of the inauguration, focused this year on using as many Web-based IP codecs as possible; the codecs were connected to terrestrial Internet connections, mostly DSL lines, Swagler said.

"We did use a hodgepodge of things — everything from POTS line Comrex, regular ISDN and the new IP codecs. No cell phones though. We figured those wouldn't work with so many people tax-

See INAUGURAL, page 6 ▶

Techies Freeze Battery, Chill Codec to Replicate Conditions

Photo by Chris Nelson, NPR

Curious about the affects of cold weather on battery packs that would power their Tieline Commander G3 ISDN units, NPR technicians simulated the expected cold of Inauguration Day by taking a Panasonic Lead Acid LC-R127R2P battery and freezing it in a GE Refrigerator/Freezer combo in the break room at NPR's Washington headquarters.

After several hours at 11 degrees Fahrenheit, NPR engineers connected the frozen battery to a Tieline codec that had been chilled to 38 degrees in the combo's refrigerator.

"We purposely connected two microphones and two pairs of headphones with the volume all the way up to accurately simulate the power consumption we expected on Inauguration Day," said Chris Nelson, NPR technical director.

In the test conditions, the Tieline remained powered for approximately 4.5 hours, Nelson said.

"Other than one of our Tielines smelling a bit like tuna fish after emerging from the fridge, it was a good result for us," Nelson said with a chuckle.

NPR then used Keeper Thermal Bags to insulate their equipment from bitter January temperatures. By placing batteries and ISDN codecs inside the bags, engineers figured their own self-generated heat would keep the gear reasonably warm. Hand-warmers were kept at the ready if needed, Nelson said.

"The thermal bags were a big success. And it turned out they served dual purposes," Nelson said. "Shortly after the conclusion of the swearing-in at the Capitol, there was a mad scramble by hundreds of thousands of people along the National Mall who were headed for the parade route, for their busses, or just some place to warm up.

"This caused a huge dust cloud to erupt along the pathways on the mall, quite close to our ISDN stations. Our reporters, headphones and microphones were covered in sandy, dusty filth, but the Tieline codecs inside were protected from the unexpected storm."

— *Randy J. Stine*

World Radio History

Multicast

▶ Continued from page 1

broadcast multiple streams over a single FM frequency, is expected by proponents to allow terrestrial broadcasters to dabble in unique formats not previously available from analog radio. An HD Radio receiver is required to receive the additional multicast channels.

Critics say existing broadcasters have not in the last 10 or 20 years been populating radio channels with creative new programming, and that early experience with multicasting isn't encouraging because of the number of automated simulcasts or "brand extensions" vs. new ideas.

Tom Owens, executive vice president of programming development, said, "There is no question broadcasters have been unable to invest at terrestrial levels in digital sidechannel programming. Despite that, I think many creative applications have been demonstrated."

In discussions with broadcasters for this story, it is evident that the lack of advertising revenue generated by HD2 and HD3 stations and the current economic climate necessitates the need for automation and voice-tracking.

The HD Radio Alliance, an initiative formed by several broadcasters to accelerate HD Radio adoption, said in January that there were 1,865 licensed stations reported on the air in HD Radio, the majority of them FMs. The alliance counts a total of 994 multicast streams aired by those stations, some of which have more than one.

There are 9,346 FMs in the country, not counting LPFMs, translators and boosters, according to FCC data.

Multicast programmers are experimenting with concepts like the Irish Channel, Urban Gospel and Tween Radio, the HD Radio Alliance said.

Terrestrial radio's sideband channels present obvious programming opportunities, programmers said, whether it is by extending an established brand and creating a flanker position, or filling a niche within a specific market.

Filling a niche

Industry analysts say broadcasters generally have avoided format duplication within markets.

The HD Radio Alliance, which includes Clear Channel Radio, Bonneville International, Greater Media, CBS Radio, Emmis Communications, Cumulus, Entercom, Citadel Broadcasting, Beasley Broadcast and others, originally helped steer broadcasters to specific formats to avoid format conflicts that could have resulted in competitive advantages for early HD Radio adopters.

Industry observers said those early agreements among broadcasters have expired, allowing broadcasters more freedom to program their HD2 and HD3 channels as they see fit.

Not so clear are the business models that will make those multicast channels a profit center for broadcasters, industry experts said. Many sideband channels remain commercial-free, despite relaxation of HD Radio Alliance rules that at one time prohibited commercial material on multicast channels.

At least one broadcaster, Clear Channel, specifies a maximum four-minute commercial inventory for its digital side channels, Owens said. Yet other broadcasters are selling underwriting-like mentions, similar to a non-commercial model, and sponsorship agreements to generate revenue.

La Maquina is the HD2 channel for Regent Communications' WLHT(FM), Grand Rapids, Mich. while Beasley programs Pirate Radio WPOW(HD2) in Miami.

"We are not yet in a position where we are being forced to make a return on investment. However, the curve is shortening and in 12 to 18 months we will have a much more viable business," said John Dickey, executive vice president of Cumulus Media. "That, in turn, will mean we will become far more competitive in how we program our multicast channels."

Cumulus has approximately 60 stations broadcasting in HD Radio and the majority of those have multicast capability, Dickey said.

"As we program these side channels, our philosophy is to either program the sideband with some sort of derivative of an established brand we have in the market or look at unmet needs and program a station that has viability within a reasonable scale," Dickey said.

Dickey said HD Radio is still "gaining traction" as more HD Radio radios reach the hands of potential listeners.

Cumulus, Beasley

"We'll see a tipping point in the next 12 to 18 months with penetration as more cell phones and other portable devices come equipped with HD capable radios. I expect consumer demand will catch up with our deployment of HD," Dickey said.

Cumulus will continue HD Radio conversions this year and expects to keep its rollout commitment with iBiquity Digital on track, Dickey said.

Other groups have launched some unique multicast channels, including Beasley Broadcasting. Beasley launched Gretchen 99.9, a multicast channel of WKIS(FM) in Miami. The channel is inspired by and named after country music star Gretchen Wilson.

Beasley also boasts Pirate Radio WPOW(HD2) in Miami, a channel suitably named for an area considered by many to be the illegal pirate broadcaster capital of the country.

"Perhaps the most obvious programming opportunity is the ability to fill a niche or to reach out to our existing listeners in a new and complimentary way," said Beasley Broadcast Group President/COO Bruce Beasley.

Programming the multicast channels often falls to local program directors "who determine what they think will be best received in their particular community," Beasley said.

Beasley said all of the side channels are voice-tracked. The company has not hired any additional staff for the multicast channels. It does re-broadcast WQAM(AM) in Miami on WPOW(FM) HD3.

With 356 active digital side channels, Clear Channel is the most entrenched multicast programmer. Typically the company's sideband stations take a lower profile of imaging elements and contesting, said Owens.

The company has taken two approaches to date to programming multicast channels. Either line extensions of established terrestrial brands, or programming a diverse, narrowly targeted channel, Owens said.

"We have also taken advantage of event opportunities, such as continuous inauguration coverage or artist-specific channels parallel to new releases or tours," Owens said.

Clear Channel's multicast formats include The Pride Network, which targets alternative gay lifestyles, and an Americana Newgrass format in Appalachian communities. The broadcaster is also using FM sidebands to rebroadcast AM programming in some markets where they operate dominant news/talk properties, Owens said.

"It's important to balance existing realities of HD Radio consumption with the need to grow the penetration of less immediately adoptive consumers," Owens said.

Owens said the company has used other resources, such as the group's Broadcast Architecture's Pure Jazz format, to program sidebands. It is also looking at content suppliers external to Clear Channel, he said.

Ethnic programming

Greater Media, which has 12 multicast HD Radio channels company-wide, has targeted several audiences with its radio properties in Boston, said Buzz Knight, vice president of program development for the company.

"We worked hard to make unique programming that fits a market's needs. For example, in Boston we have an Irish channel in a market with a heavy Irish population," Knight said. That station is WTKK(HD2).

In addition, the company is targeting a younger Beantown demo with its Radio You, Boston on WBOS(HD2), aimed at high school, college and university students, Knight said. The station broadcasts a mix of alternative and indie rock.

"We look at [Radio You, Boston] as a means to not only target a younger demo but also get this population interested in radio," Knight said.

Knight defends his group against critics who claim terrestrial radio broadcasters in general have been very conservative in launching creative programming on multicast channels.

"Speaking for our group, I think we are doing some very unique things right now. Particularly in Boston," he said.

Regent Communications has several HD2 channels, including Q-2, a classic rocker that compliments active rock KLAQ (FM) in El Paso, Texas, said Courtney Nelson, program director of KLAQ.

The HD2 station's programming direction was the result of market research, which asked the question, "If a new station were to come to El Paso, would you prefer this or this?" said Nelson.

The sideband channel of KLAQ lacks any promotions or commercials at this point, but it does re-broadcast segments of the KLAQ morning show each noon hour, she said.

"There is an element of cross promotion between the two."

Bonneville International recently supplanted music on most of its multicast channels with brokered ethnic programming from WorldBand Media, a producer of South Asian programming.

Emmis Communications last fall announced a similar deal with WorldBand Media to broadcast to South Asian communities in New York, Los Angles and Chicago using Emmis' HD Radio multicast channels.

Inaugural

▶ Continued from page 5

ing the cellular spectrum."

Setup began five days prior, Swagler said, with special site access thanks to Capitol Police.

Swagler said his technical staff always brings extra gear, including ISDN and Comrex Hotlines, in case of equipment failure.

"We also order extra ISDN circuits from the phone company in the event one goes bad during the event," Swagler added.

Dan Raviv hosted CBS Radio News' inaugural long-form programming. Correspondents Peter Maer, Bob Fuss, Mark Knoller and Tom Foty were among those who contributed from locations around the city. Most carried Marantz PMD620 recorders for audio gathering.

CBS Radio News made the special reports available to affiliate stations for Webcasting and podcasting.

Radio One: This radio broadcast group, which owns 53 radio stations in 16 urban markets and is based in nearby Maryland, made its presence known.

"This was huge for us. We had five of our syndicated morning shows doing their shows live from the JW Marriott hotel on Pennsylvania Avenue, which is of course right along the parade route," said Scott Tanner, engineering manager for Radio One's Washington cluster.

Radio One partnered with The Stafford Foundation, a faith-based non-profit group, to convert open space to radio studios on the 12th floor terrace overlooking Pennsylvania Avenue. Onsite broadcasts included the "Rickey Smiley Show," "The Russ Parr Show," "The Yolanda Adams Morning Show" and Sybil Wilkes from the "Tom Joyner Show."

"This was major complicated from start to finish. The key was that no one listening knew it was complicated," Tanner said.

Radio One used POTS ISDN lines at the JW Marriott with JK Audio boxes for basic mic and headset hookups, Tanner said.

Preparations included organizing every piece of remote equipment in a conference room at Radio One's Lanham headquarters. Tanner said he labeled the gear and pre-wired everything he could and packed the gear into cases and labeled them.

"Pre-planning, pre-testing and pre-set up was key for us," Tanner said.

In addition to the morning broadcasts, Radio One positioned two reporters at the Capitol building for updates. It also made audio of the swearing-in ceremony available to its stations.

World Radio History

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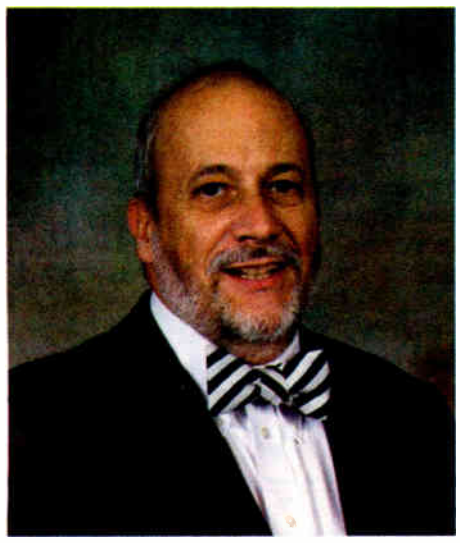
World Radio History

GUEST COMMENTARY

CAP and the EAN: A Good Fit?

Questions About How a CAP Messaging System Would Support the EAN Requirements for EAS

by Roland Lussier



Roland Lussier

Broadcasters are concerned with the Federal Communications Commission Report and Order, issued in EB Docket 04-296, regarding the Common Alerting Protocol and the Emergency Alert System. Although there has been much discussion, many unsolved mysteries remain.

CAP by nature is a file-based protocol that was presented to allow a standardization of both the structuring and sending of alert and warning messages between systems and users. If you examine the CAP file itself, you will find that it is an XML file, which is really nothing more than a readable text document.

What CAP does for the emergency management community is to define many of the fields that are required to present an individual with the information he or she needs to make an informed decision for protective action.

The file structure and protocol was worked out mostly by Art Botterell, manager of a community warning system for the Sheriff's Department of Contra Costa County in California, and others who were involved with the Partnership for Public Warning.

The protocol is now accepted by the Organization for the Advancement of Structured Information Standards (OASIS), and as such, it holds considerable promise for defining data exchange formats in emergency messaging.

The EAS system as we know it is essentially an audio store and forward system, with minimum additional information and data capability. The FCC has indicated in its R&O that all broadcasters must be able to receive a CAP file within 180 days of the adoption of CAP as a standard by the Department of Homeland Security.

Most broadcasters and experts in the field are at a loss to define what this really means, and the commission is not providing guidance as to its actual intention in providing this ruling.

On the surface, one could presume that the commission simply wanted the next generation of EAS to be able to benefit from the additional information that a CAP-based alert could provide.

However upon closer examination, the problems associated with the R&O become many and complex.

For example if the CAP file is a text document — and by definition it is — how then would a CAP-compliant decoder process an Emergency Activation Notification?

If the CAP alert is really an XML document in file form, how will it be transported, and from where would a broadcaster actually receive it? How would authentication be performed on CAP alerts to assure their authenticity?

Who will be responsible for establishing and maintaining a network of CAP exchange servers? Would there need to be a central CAP aggregator, with redundant communications paths and geographic redundancy? These are, at the least, interesting questions.

No audio

From the federal perspective, at least historically, the EAS system has really had only one purpose: to carry an Emergency Activation Notification.

An EAN is composed of an initial burst of Specific Area Message Encoding (SAME) code data followed by the required attention signal, and then the live streaming presidential audio is present for an undetermined duration.

If the CAP alert is really an XML document in file form, how will it be transported, and from where would a broadcaster actually receive it?

At this point, the president has complete control of the airways, and broadcasters must either yield their airtime or go off the air. No one really knows how long a president might need to address the nation during such an emergency, but when he or she is finished the Endecs at FEMA's operations centers will send an "End of Message" notice and normal programming can resume.

I mentioned earlier that the CAP alert is actually a text document. As such it has no capability for distributing live audio.

CAP is a file, not a stream, and it was never intended to support live audio. In fact, there is no method possible that would allow a CAP file to include live audio.

A CAP file could reference an attached file that is a recorded audio file, or a CAP file can be constructed to contain an audio file that is embedded using base 64 encoding within the text body of the CAP message; but a file is still a file; it cannot be used to stream live audio of undetermined duration.

How then would a CAP-based messaging system support the requirements of the EAN?

One method to achieve this would be to use a parameter within the CAP file to point to or reference an outside resource on the Web that broadcaster equipment would connect to and initiate a streaming live audio download.

A CAP alert file would be sent both at the beginning — and at the end — of the message to alert the decoder that live audio is available at a specified URL. This is the method that the EAS CAP Industry Group (*eas-cap.org*) has suggested in its proposed EAS-CAP Profile Recommendation document.

There are a lot of problems with using a method in which the CAP-compliant Endec makes a separate connection to an outside resource URL to receive the live stream; particularly when we consider using it to support an EAN, which by definition is intended to include more than 20,000 broadcast outlets.

One area of concern is the bandwidth required to support these connections. The industry group has suggested that two protocols be supported: the standard (read "bandwidth-hogging") WAV format and the MP3 format, which greatly reduces the required bandwidth.

The EAS CAP Industry Group suggests in its document that both be supported since the WAV format is free while the MP3 format has a cost associated with it. I see no reason for this accommodation, since the license cost for an MP3 decoder typically is only 75 cents per license.

Weak links?

For purposes of discussion, we will assume that the MP3 format is chosen; we now need to support delivering live presidential audio to our state, which has 100 broadcast sites. The bandwidth required to support steaming MP3 audio to these 100 sites would be 2.5 megabits per second.

If we use the WAV format proposed, the bandwidth would grow to 6.4 Mbps. This bandwidth needs to be continuously allocated, and remain available until the end of the presidential address.

In order to deliver this type of bandwidth, it will be necessary to use a distributed model for the CAP servers. This would most likely result in at least one server per state that is receiving the CAP message from another server or source, somewhat in the same manner that an LP1 station monitors a PEP station.

I wonder if anyone has really given

See CAP, page 14 ▶

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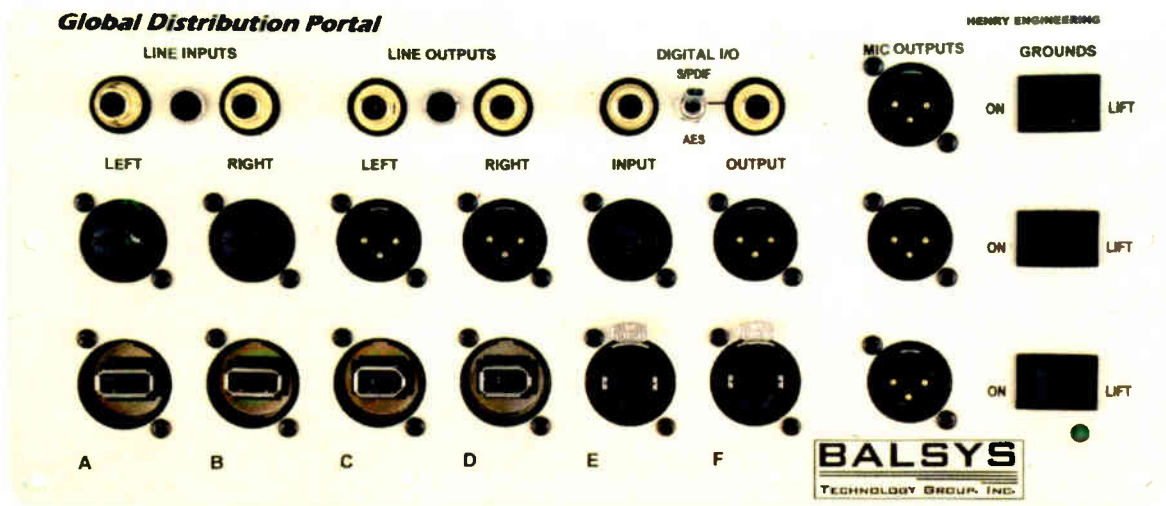

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World Radio History

Workbench

Radio World, March 1, 2009

Past columns are archived at *radioworld.com*

An Alternative to Carpet on the Walls

by John Bisset

Chuck Bullett is director of engineering for the Cumulus Media cluster in San Francisco. He says he has noticed that the newer generation of digital Max and XDS satellite receivers are much more susceptible to intermod and interference from radar and other 2/5/7 GHz users.

Fig. 1 displays his new radar filter, manufactured by Microwave Filter Co. of Syracuse, N.Y. (*www.microwavefilter.com*). Chuck's receivers were getting nailed by tons of dropouts during the World Series this year. The group's own Jon Miller, the Giants play-by-play announcer, was assigned by ESPN to do the whole World Series. Listeners in San Francisco were *very* upset about the dropouts during the games, and those complaints hit Chuck's desk.

Microwave Filter delivered this filter overnight, and installation was a breeze on the new 3.1 meter dish that had been recently installed atop the 14-story studio building in downtown San Francisco. Being so high up, the rooftop is susceptible to radar hits from the Navy and Coast Guard down on the S.F. waterfront as it looks right down upon it.

Problem solved!

Chuck can be reached at *chuck.bullett@cumulus.com*.

★ ★ ★

Kim and Bill Sacks have found a niche business in restoring Optimods. Got an old 8100? Talk with Kim or Bill about upgrading it. Even 30-year-old Optimod 8000s can be restored. See more at their Web site: *www.optimod.fm*. Service inquiries can be sent to *service@optimod.fm*.

★ ★ ★

Fig. 1: A radar filter from Microwave Filter of Syracuse reduces interference.

Joe Stack is another engineer who frequently contributes to *Workbench* and commented on the "What is it?" relay from the Nov. 6 column.

In keeping with safety and good engineering practice, Joe suggests some heat shrink on the contacts, and in cases where you are using a relay with a 120 VAC coil, adding a 100 ohm, 1 W resistor in series with a 1 MFD, 250 V film capacitor across the coil. This will reduce noise when the relay drops out and the coil de-energizes. This suppressor makes the world a happier place for things like any micro controllers that may be nearby.

Joe is at *williamjstack@comcast.net*.

★ ★ ★

Speaking of figures, Fred Hopengarten (*www.antennazoning.com*) brings up a couple of good points regarding our recent "What's wrong with this tower site?" picture.

Fred writes if you look closely at the tower, you will see two more unidentified cables. The larger of the two does not seem to be attached to the tower (and bad things will happen in a high wind). That cable seems to head straight toward the ground.

Another cable appears to be a smaller coax that heads for the back side of the equipment shed.

Obviously, the cables do not enter the building at the same place as the main feedlines. This being the case, it is likely there is no single point ground as the cables enter the building.

Thanks, Fred, for the eagle eye. Fred Hopengarten, Esq., can be reached at *hopengarten@post.harvard.edu*.

★ ★ ★

Terry Cowan of KNLR(FM)/KNLX (FM) in Bend, Ore., writes that carpet is not a particularly "broad-band" attenua-

See TECTUM, page 12 ▶

Fig. 2: Tectum is used as a wall treatment at KNLR. Routed grooves improve the aesthetics of the panels.

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World Radio History

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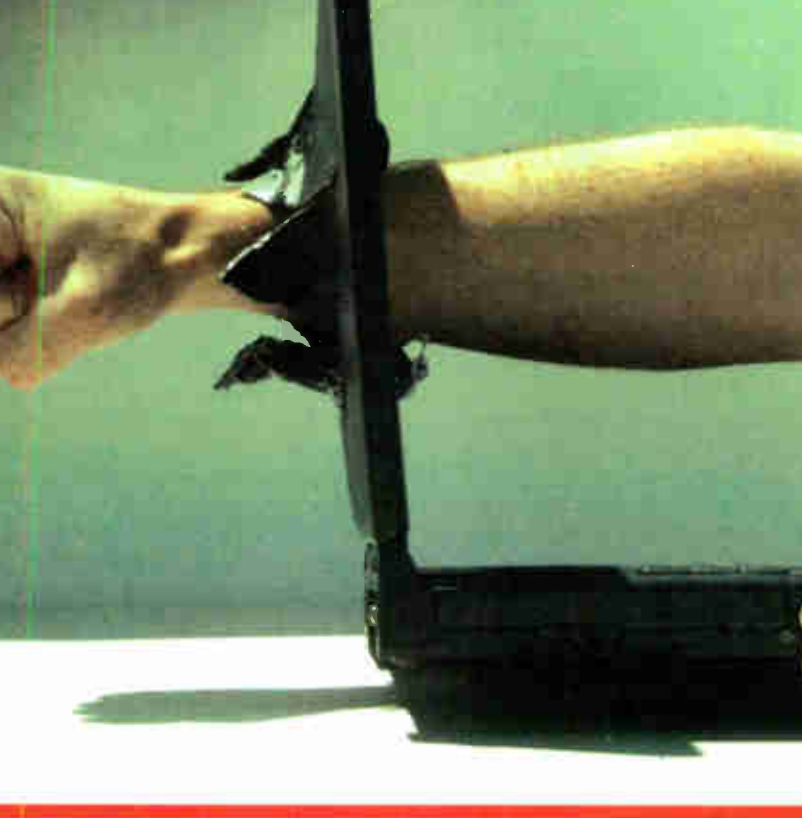

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World Radio History

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USB 3.0

▶ Continued from page 1

school, where wired connections (whenever practical) make quick work of ever larger file-transfer and device-sync requirements.

It's about time

USB 3.0 is expected to begin showing up in computers and peripheral devices by about this time next year (the holiday season of 2009 is the initial release target), which — although it may be hard to believe — will make it just about a full decade after USB 2.0's introduction. So it's due, especially considering by that time it's likely that 3+ GHz quad-core CPUs and terabyte hard drives also will be commonplace among PCs.

Some other contextual changes have occurred in the meanwhile, which may lead to a faster uptake for USB 3.0 than its 2.0 version experienced.

You may recall that when USB 2.0 debuted, a highly competitive battle raged with the FireWire interface. FireWire, standardized as IEEE 1394, already had provided higher maximum speeds than USB 1.0, and soon after the USB 2.0 introduction, the FireWire camp brought forth its own next-gen format, FireWire 800 (IEEE 1394b-2002).

In their respective beginnings, the two formats had not actually competed head to head, since USB was focused on lower-end requirements like mice and keyboards, and FireWire went for the higher-bandwidth items such as cameras, scanners, external storage drives and printers. Apple — the originator of the FireWire format — had designed it to replace the SCSI interface, which was an established standard used for the latter class of devices.

Keyboards and mice had used other dedicated interfaces at that time, specific to Macs or PCs, so USB 1.0 was a major change, providing significant new uniformity even though it was limited to those lower-end devices. Later, Sony also pushed the FireWire format hard, under the trade name "iLink," mostly for digital still and video camera interfacing. (FireWire was also proposed as the basis for a secure video interface between set-top boxes and TV display screens, but for a number of political and technical reasons, this never gained traction.)

As USB 2.0 closed in on bandwidth parity with FireWire 400, however, the overlap between potential applications of the two formats expanded, and USB's lower cost of implementation began to put strong competitive pressure on 1394. The scope and penetration of USB soon grew quickly, reaching an estimated 6 billion devices today. Although a 1394c standard has also been published recently, the decision by Apple to drop FireWire interfacing in favor of USB only on future computers speaks volumes on how this story is likely to proceed in its next chapter.

Another competing format that has emerged in the interim is eSATA (External Serial AT Attachment), which has begun to appear on some of the increasingly popular and inexpensive external hard drives. It provides the same speed for external connections as its widely used cousin, the SATA internal hard-disk bus. But unlike USB or FireWire, eSATA cannot provide power, so it has not enjoyed broader deployment in the peripheral interface market.

Given this environment, and the maximum speeds that USB 3.0 will attain (see below), USB appears poised to assert even more dominance in the wired peripheral interface space going forward.

Characters by Billy Alexander/istock_xchng

USB 3.0 will eclipse all competing formats with a theoretical maximum speed of 5 Gbps.

Tech specs

USB 2.0's theoretical maximum speed is 480 Mbps, although in many implementations it was lucky to attain half of that. FireWire's maximum was 400 Mbps in its original release, increasing to 800 Mbps in 1394b, and now moving up to a top end of 3.2 Gbps in the proposed FireWire S3200 format (expected to also be launched later this year).

In all its forms, FireWire's actual performance often made it closer to its theoretical maximum due to its intrinsic duplex capability (USB 1.0 and 2.0 are simplex), and its more rigid adherence to hardware and software specifications than USB (which allowed implementers greater latitude), but this came at some premium in hardware cost for 1394-equipped devices. Meanwhile, eSATA has a theoretical maximum throughput of 3 Gbps.

USB 3.0 will eclipse all competing formats with a theoretical maximum speed of 5 Gbps, and it will likely reach closer to this value in typical implementations due to its move to duplex interconnection. The latter is achieved by changing the USB cable from the two conductors used in previous versions to a six-wire format in USB 3.0. The cables therefore will appear thicker than their predecessors, but the connectors will remain similar to earlier versions, so USB 3.0 ports will maintain backward compatibility to USB 1.0 and 2.0 devices. Of course, maximum interconnection speeds will only be achieved if both devices implement USB 3.0, and a USB 3.0 cable is used.

USB 3.0 also adds advanced power management, allowing improved battery life on portable host devices, and generally "greener" operation through reduced power consumption in the devices that supply or receive power across its connections.

Radio applications

Probably the most valuable impact of USB 3.0 for radio broadcasters will be the faster uploading of field recordings (of both audio and visual content) from portable devices to editing and production environments. This implies that higher-quality capture will not necessarily increase broadcasters' cost or time.

Consider that today many devices record to removable media (e.g., Compact Flash or SD cards), which can then be ejected from the field recorder and plugged directly into a PC slot. However, this requires a large number of these cards to be retained by the broadcaster, and they are expensive. They can also be misplaced or damaged easily, and they generally add some cost per unit of storage to the products that use them (compared to non-removable RAM-based devices). The proliferation of removable media formats also creates additional complexity and confusion, and limits broadcasters' choice of devices to those that support a favored storage format.

Note also that radio operations are not just bringing back *audio* from the field anymore, but capturing still images and video, as well, for distribution on their Web sites or other future multimedia delivery systems.

Thus while most consumers will enjoy super-fast syncing of their personal media players, cameras and phones to their PCs from USB 3.0, broadcasters can use the format to save time and money, while increasing the quality and quantity of material gathered from the outside world for presentation to their audiences. Faster interface to external storage devices will also help maintain libraries and backups in radio production environments.

So look for USB 3.0 — coming to a PC and peripheral near you soon.

Skip Pizzi is contributing editor of Radio World.

Tectum

▶ Continued from page 10

tor. Terry's favorite product is Tectum, not only a great sound treatment but also more aesthetically appealing than carpet or foam. It does require insulation behind it to function correctly.

A good method is first to install "z-bar" on the wall studs, then a layer of sheetrock followed by a layer of sound board.

Strip the soundboard with 2x2 or 2x4 studs. Install insulation between the studs. Also install conduits and electric wiring between the studs. Then place the sheets of Tectum, which come in 4 foot widths and varying lengths. Run the Tectum vertically for the best look (Fig. 2).

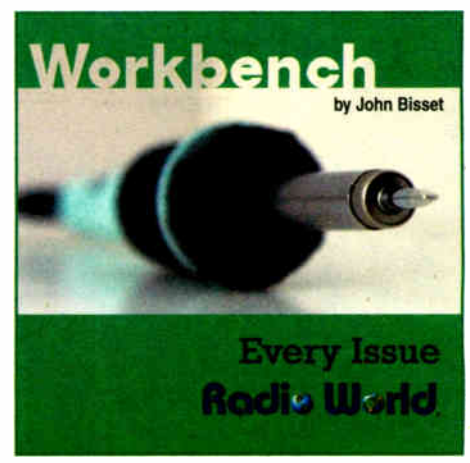
Terry had the carpenters "rout" a shallow groove in the center of each sheet. This way, the Tectum appears to be in panels that are 2 feet wide, instead of 4 feet. This little change seems to improve the looks.

Tectum also comes in 2-by-4-foot ceiling tiles for dropped ceilings. Find out more at *www.tectum.com*.

Terry Cowan can be reached at *knlr@coinet.com*.

John Bisset has worked as a chief engineer and contract engineer for 40 years. He recently joined Nautel as regional sales manager for Europe and Southern Africa . He was SBE's Educator of the Year for 2006. Reach him at johnbisset@verizon.net. *Faxed submissions can be sent to (603) 472-4944.*

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



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World Radio History

◆ NEWSWATCH ◆

GEAR PURCHASES: A consulting firm predicted a 16 percent decline in global broadcast radio equipment purchasing in 2009 but said the drop seems moderate compared to TV gear trends. DIS Consulting Corp., a research partner of the NAB Show, issued the survey, gathering results primarily from chief engineers last fall. Overall, among 11 categories studied, a 16 percent decline was seen between dollars spent on equipment purchases in 2008 and those purchases planned in 2009. The genres included portable recording systems, studio recording systems, audio recording media, large studio mixers and consoles, on-air mixers and consoles, microphones, speakers/monitors, amplifiers, digital audio workstations, and radio transmitters. Only portable recording systems were expected to see a modest increase.

NEW RFE/RL HQ: The new broadcast center for Radio Free Europe/Radio Liberty is a five-story, 236,000 square foot facility with multimedia recording studios, interlinking offices and a modern newsroom. RFE/RL said the HQ is energy-efficient and one of the most secure buildings in Europe. French company Orco Property Group built the structure, designed by architectural firm Cigler Marani. RFE/RL had for 15 years occupied the former Czechoslovak communist parliament building, which is being turned over to a museum. Radio Free Iraq began broadcasting from the new HQ February, the first step in relocating 500 Prague-based employees to the facility in Hagibor, 10 minutes from the city center.

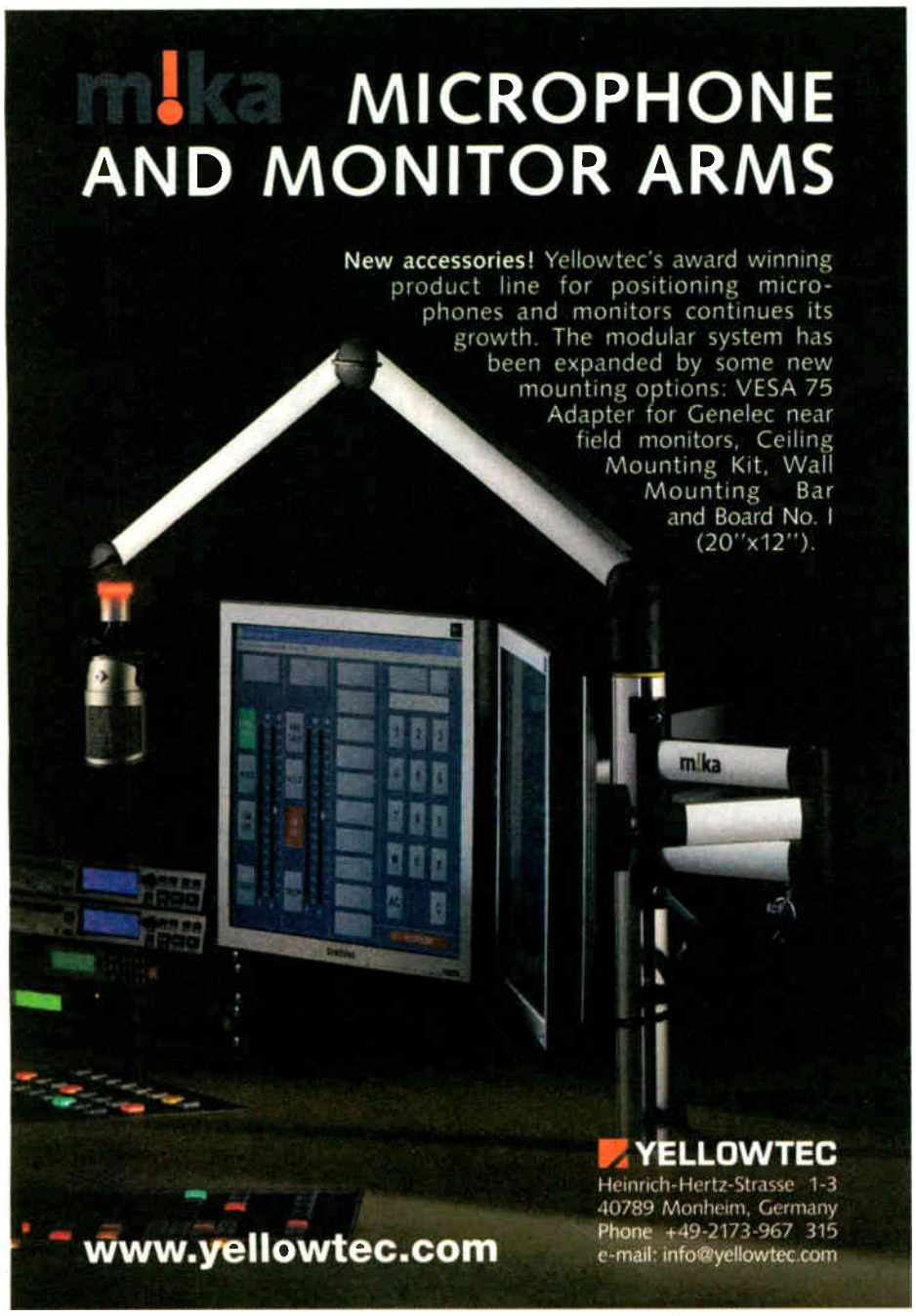
DOCTRINE TALK: Democratic Sen. Debbie Stabenow, D-Mich, told progressive talker Bill Press that she and Senate colleagues are considering hearings into "accountability and standards" in political talk radio in 2009. "There needs to be accountability and standards put in place. When we hear the right-wing conservative talk show hosts who are out there, just trying to make people angry and saying all kinds of things that aren't true and so on ... there has to be voices on the other side," said Stabenow, whose husband is an executive for liberal talk organization Air America. "I think it's absolutely time to pass a standard. Now, whether it's called the Fairness Standard, whether it's called something else — I absolutely think it's time to be bringing accountability to the airwaves."

PERFORMANCE 'TAX': A bill to charge radio stations a copyright fee for music airplay has been reintroduced in Congress. Record labels support the "Performance Rights Act," saying it will close a loophole in U.S. copyright law that exempts terrestrial radio from paying the fees. Supporters, including major record labels and AFTRA, say the money generated would pay musicians and artists. NAB disputes this, saying billions of dollars in fees would go to the labels instead. NAB President/CEO David Rehr has urged lawmakers to oppose the bills, writing to House Speaker Nancy Pelosi, D-Calif., "Although the big record labels have seen their revenues decline over the last decade, local radio broadcasters are not the reason the recording industry is losing money, and it should not be the industry to fix it." Broadcasters argue that record labels and performers benefit financially from free airplay over terrestrial radio.

KDKA: KDKA(AM), Pittsburgh has awarded naming rights for its historic studios to a car dealer — Lexus of North Hills. A spokesman said the arrangement includes ads on NewsRadio at 1020 kHz, as well as its HD Radio signal, plus the HD3 channels of co-owned WDSY(FM), WZPT(FM) and WBZW(FM), and online at *KDKAradio.com*. Starting March 1, the dealership will be mentioned hourly as part of the station ID.

PPM: Arbitron has settled with the Attorney General of a third state over its Portable People Meter methodology — Maryland. The agreement is similar to deals reached with the Attorney Generals in New York and New Jersey. The settlement concerns PPM ratings in two markets, Baltimore and Washington; Maryland counties are in both markets. PPM ratings became currency in Washington in December; Baltimore is due to go PPM in September of this year. Under the agreement, Arbitron has agreed to various ways to boost the number of minorities and cell-phone-only users in its samples, as well as continue to seek PPM accreditation from the Media Rating Council.

RDS: The RDS Subcommittee of the National Radio Systems Committee is being taken out of mothballs and has a new chairman, Barry Thomas of Lincoln Financial, who's also president of the SBE. The RDS subcom was placed on hiatus after chairman Allen Hartle stepped down. The group is becoming active again because it's likely the U.S. RDS standard will need to be re-done, following Europe's enhancements, namely "RT +," which enables the receiver to display text in a more logical fashion. Thomas says the subcom will evaluate new standards to be included in the NRSC RDS standard.



CAP

▶ Continued from page 8

that any thought? It would seem that the system as conceived would become dependent on the integrity of the links between CAP servers and sources through the Internet, quite similar to the existing daisy chain.

This seems somewhat shortsighted when we consider that the requirements document (a presidential order) for an EAN specifically indicates that the system must be in place to allow the president to address the nation when all other means of normal communications are no longer available. My bet is that the old Primary Entry Point to LP1/LP2 daisy chain would have a better chance of success than a network of Internet-based servers.

How would authentication be performed on CAP alerts to assure their authenticity?

This begs another question: Who is going to supply and *maintain* the infrastructure of CAP servers? It seems that the supporters of Web-based solutions are envisioning multiple CAP servers, all pretty much doing their own thing.

As a broadcaster, the CAP server to which you connect for presidential messages might not be the same box to which you connect for a message from your state emergency management agency, or for an Amber alert. They certainly could be, they certainly should be; but nothing says that they *must* be because there really isn't anyone in charge of coordination.

How then will broadcasters know what to monitor, and if that particular server is even accessible through the Internet at any given time? If a link or a server were to fail, how much of the delivery infrastructure would be affected?

Trust but validate

Another area that has not been addressed has to do with security. This is of particular interest when it applies to the transmission of an EAN. The CAP protocol supports digital signatures based upon digital certificates.

If we receive a CAP message, how do we know that it is validated and actionable? Presumably if the message has the proper digital credentials it would be authenticated, but bear in mind that this message probably came to us via the Internet. If we are going to use digital certificates, who will act as the issuing authority for those certificates, and who will manage that effort?

The proposed deployment of CAP involves many mysteries. Perhaps one of the greatest is why the federal agencies believe that they can design this system without engaging and including stakeholders in the emergency management and broadcast communities.

The development of effective alert and warning capabilities has never been about technology; the technological solutions have been at hand for years. The challenges that must be overcome lie more in the realm of policy.

The author is president and chief executive officer of Communications Laboratories of Melbourne, Fla., a government contractor with responsibility for the national EAS capability, the National Warning System and the Emergency Management Network.

Radio World welcomes other points of view.

World Radio History

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World Radio History

WIRED FOR SOUND

So, How Much Air Would You Like?

by Steve Lampen

You know the old joke about radio and television stations. They sell you "time." Ha, ha. They sell you something that they can't ever own. They can't box it, change it. But they can sell it!

And pretty much the same way, cable manufacturers sell you air. Perhaps I should say, the highest quality manufacturers sell you air. Because, in fact, they do. Why? It all comes down to speed.

Of course we cable guys don't call it speed, we give it a $5 term. We call it velocity. And since it moves, or propagates down the cable, we actually call it Velocity of Propagation, or Vp. Now you may think that signals travel down wires at the speed of light (a Vp of 100 percent). But you would be wrong.

Material	Dielectric Constant	Velocity of Propagation
Vacuum	1	100%
Air/Nitrogen	1.00059	99.97%
PVC	~4	~50%
Polypropylene	2.37	65%
Polyethylene	2.3	66%
Teflon	2.04	70%
Foamed PE	1.64	78%
Foamed PE	1.49	82%
Foamed PE	1.35	86%

Table 1

How do we put air or nitrogen into a cable? The old way was to put space inside a cable that will fill up with air.

Vp	% Air
78%	43.75
80%	49.80
83%	58.39
86%	66.51

Table 2

First of all, Vp=100 percent occurs only in one material, in a vacuum. Now if you figure out how to put a vacuum inside a cable, and keep everything in place and stable at the same time, you would be very famous and possibly very rich. Instead, we use air. Well, sometimes we use air. These days we probably use nitrogen. And you transmitter jockeys would understand that. You pressurize your lines with either (1) dry air or (2) nitrogen. Air is mostly nitrogen and using nitrogen, especially inside cables, allows very precise control.

Now a cousin to Vp is the dielectric constant, or DC. This is a number that describes how good a particular material is, electrically speaking. All non-conductors have a dielectric constant. Table 1 is a short list of common plastics and their DC and Vp.

You can see a vacuum is the *definition* of dielectric constant. Air (or nitrogen) is just slightly worse. How do we put air or nitrogen into a cable? The old way was to put some space inside a cable. That space will fill up with air. There are two problems with this design.

The first problem is that the conductor is supported by the helix of plastic only every so often, so the center conductor can have subtle changes in position, a wobble, that repeats over and over again. This shows up at high frequencies as "periodic" losses at a specific frequency (the "fundamental"), and all the harmonics of that frequency. Still, cables of this design are reasonably good up to 4 GHz or so. In small cables, such as RG-8, manufacturers could get up to 84 percent Vp. That was the highest velocity for small coaxial cables for more than 20 years.

The second problem is that even a slight flaw in the jacket can let in moisture. Water is different than air, so this can change the impedance of the cable, which again affects high frequencies. If you've gotten water inside a transmission line, you know what I'm talking about. Serious impedance problem with huge reflections. [*Ed. Note: We point out another quality of water: It's a semi-conductor. A radical reduction in voltage peak breakdown characteristics results. Arcing and burning can start a fire that destroys the cable.*]

A better way is to add air to plastic, to *foam* the plastic, to improve performance. Water can't get through foam as easily as an open space, so a foam version is better outside than a "tube" transmission line. The problem is that it is hard to put enough air in a foam to approach the kind of velocity you can get from that open tube style.

In big 50 ohm hard line, you can get past 90 percent Vp. That's with spacers at the ends of each section, everything else is copper pipe and air (or nitrogen). If you put that much air in a foam, it becomes very soft. (Duh, it's mostly air!) That would allow the center conductor to move around ("migrate") and the impedance of such a cable would be all over the place. What you really need is a foam that is very hard despite being mostly air.

You may think that signals travel down wires at the speed of light, a Velocity of Propagation of 100 percent. But you would be wrong.

The first version of foam in cables was made using a foaming compound, a chemical added to the plastic as it is melted and squeezed onto the wire. It's like that stuff you use in the shipping room. Pour the two compounds in and close the box *very fast* (or you never will). The problem with this compound in cable is that you end up with three things inside the cable: plastic, air and the foaming chemicals themselves. Those left-over chemicals affect the velocity. So the best these cables could do was 78 percent Vp. Of course, that's a lot better than solid polyethylene at 66 percent (Table 1).

So, for the last 30 years, one of the major technological innovations was the perfection of hard-cell high-density foam. It consists of tiny bubbles, so small you need a microscope to see them. Tiny bubbles have much more surface area than big bubbles. They are also harder to deform or change their shape. And as manufacturers got better and better, the velocity went up and up. Table 2 shows the percentage of air (or nitrogen) in different velocities.

Eighty-six percent is now the cutting edge of this technique, currently available in 50 ohm cable of various sizes. It's truly giving hard line a run for its money.

So, the horrible truth is that high-quality cable manufacturers not only sell you air, but the more air they put in a cable, the more they charge you.

How much air would you like?

Steve Lampen has worked for Belden for 16 years and is multimedia technology manager. His latest book, "The Audio-Video Cable Installer's Pocket Guide" is published by McGraw-Hill.

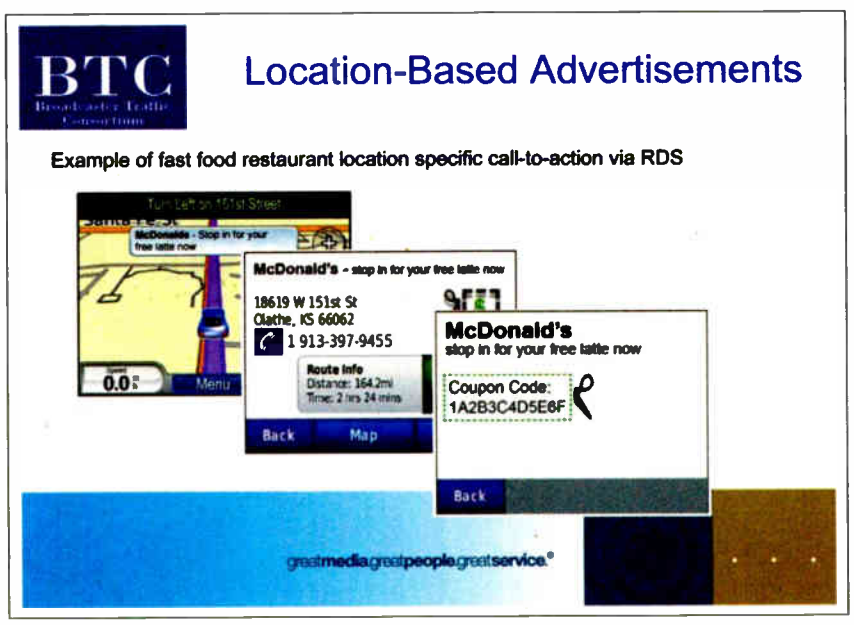
Brenner, BTC Look Ahead

The station members of the Broadcast Traffic Consortium have contributed enough spectrum for the service to cover 54 U.S. markets with Navteq traffic data delivered by FM analog RDS and HD Radio signals.

It plans to expand in the United States and Canada in 2009, with a goal of doubling its markets. Mercedes, Magellan, Garmin and others use the BTC service as part of their navigation systems.

Of the activated markets, 20 are using HD Radio signals to deliver the data. "We continue to activate those markets as software and process improvements are made," said BTC President Paul Brenner, who's also vice president of integrated technologies for Emmis Communications.

Aside from creating compelling content for multicast channels, the purpose of the BTC is to accelerate consumer HD Radio receiver penetration and create new revenue for member stations. The group wants to supplement traffic data with weather information as well, according to Brenner.



"We think we've found a medium that will tolerate ads," he told Radio World.

However, Brenner said an HD Radio digital power increase is important and that manufacturers are watching the issue closely.

A station's digital coverage has to match that of its analog, he said, noting that the BTC competes against navigation information delivered by satellite radio and Microsoft's MSN Direct service, which uses FM radio as its delivery platform, in addition to Clear Channel's Total Traffic Network, which uses RDS-TMC (Radio Data System Traffic Message Channel) and HD Radio as its delivery platform. All of those services have good coverage, he said.

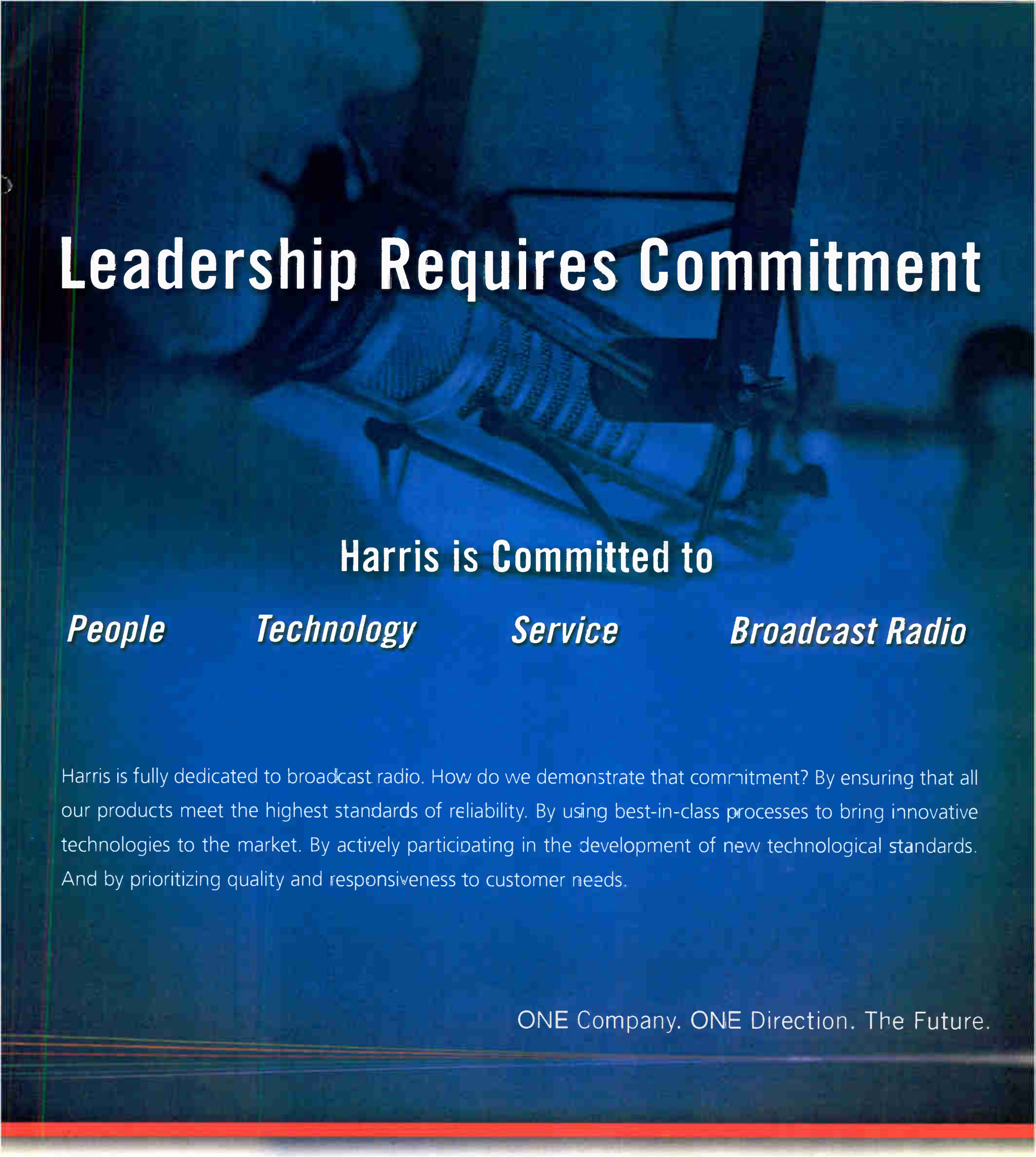
Asked what the BTC's challenges are for 2009, Brenner said, without going into specifics that he believes the original timeline for success needs to be pushed out because consumer purchases have dropped due to the poor economy. Another challenge is to make sure broadcasters continue to find value in the service, participate and "fund the right things to make it a good service."

The BTC has eight founding members: Beasley Broadcast Group, Bonneville International Corp., Cox Radio Inc., Emmis Communications, Entercom Communications Corp., Greater Media, NPR and Radio One.

Four additional broadcast members have joined the consortium since its April inception: Cumulus, Hubbard, Cobalt and Lincoln Financial. The BTC continues to seek more broadcast partners.

— Leslie Stimson

World Radio History



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Studio Sessions

Product Guide Inside

Radio World — Resource for Radio On-Air, Production and Recording — March 1, 2009

PRODUCT EVALUATION

AEQ Enters the Arena

A New Digital Console/Router System From Spain Brings Numerous Capabilities and Large Scope

by Rich Rarey
Master Control Supervisor
National Public Radio

"Oooooh" squealed a young National Public Radio technician. "It looks just like a vintage '90s digital mixer!"

The tech could be forgiven for confusing the outer appearance of AEQ's Arena DM console with an early digital product, but the Arena DM-series console is certainly for the '00s and beyond. It's a broadcast-quality console that offers flexibility and extensibility to meet the needs of small to large radio, TV and professional studio sound installations. The Arena combines the tools of a complex mixing console with the flexibility of an audio router/matrix.

Product Capsule:
AEQ Arena Digital Console

Thumbs Up

- ✓ Simple control surfaces and configuring software
- ✓ Scalable, for small or big facilities
- ✓ Modular configuration and I/O choices
- ✓ Plenty of processing tools

Thumbs Down

- ✓ Scrolling between "pages" could be confusing

PRICE: Base cost $25,995 list, though this varies widely based on configuration

CONTACT: *AEQ at (954) 581-7999 or visit* www.aeq.eu.

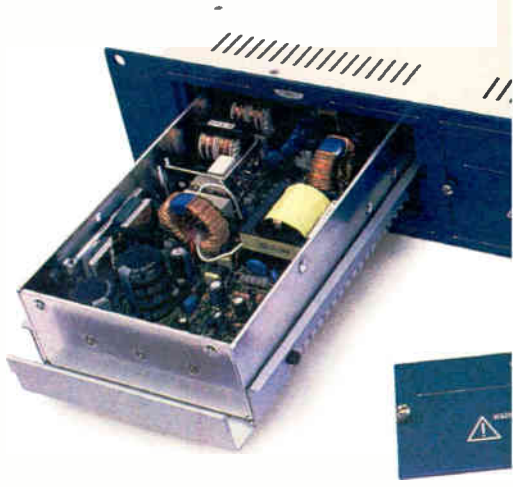
DM10 Control Surface

Core values

As the Arena is a "core"-type console, it is worthwhile to explore its core architecture first, contained separately from its control surfaces.

A BC 2000 DF frame, 19 inches deep and 4 RU high, holds a combination of input/output modules and DSP modules, the maximum of which is 21 I/O cards and 20 DSP cards. Also in the frame is a control module that establishes synchronization and communications between the frame's modules and the control surfaces, other frames and other system components. The DSP cards slide into the frame's front slots — the Arena requires a minimum of three DSP cards, while the I/O cards slide into the frame's rear-panel slots. The frame is populated with only the number and type of cards ordered by the user, giving the user the future flexibility to grow the DSP capability and type of I/O needed.

The basic I/O cards for the Arena are the BC2201 analog card containing four mono inputs, four mono outputs, four GPI inputs and four GPI outputs; the BC2202 digital card with four stereo digital AES/EBU I/O and four GPI I/O — each digital I/O has independent sample rate converters; the BC2203M mic/line input card with transformer-balanced mic inputs and control-surface-selectable phantom power for each mic input, and four GPI I/O; and the BC2211 (BC2212 is the redundant version) MADI interconnection module for connecting 56 or 64 channels to the AEQ BC 2000 DF router or interfacing to another frame, and consequently additional control surfaces. An Arena configuration easily can join pairs of analog inputs into a stereo pair.



Powe

AEQ has derivations of these basic I/O cards. One can buy cards with only four analog inputs (model BC2204), or four analog outputs (BC2205), or four digital inputs (BC2206), or four digital outputs (BC2207), or the BC2203MH mic/line card, similar to the BC2203M card described above, but with two stereo headphone outputs.

To cope with the density of inputs and outputs, each Arena module exposes its audio on eight-pin RJ-45 connectors, so each connector has four balanced audio pairs on it. The GPI I/O is likewise exposed on RJ-45 connectors. Since the I/O cards are on the frame's rear slots, tidy cabling is easy. AEQ offers a BC2000 Cab Rack Chassis, essentially a convenient breakout for all audio and GPI connec-

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tions, where RJ-45 jacks are broken out to Euro-style WAGO or XLR connectors (ordered as needed in the number of connections needed). Premade Cat5 cables can then be run from the frame to a conveniently located Cab Rack Chassis, and broken out to standard connectors.

It's worth noting that each module uses its own Programmable Intelligent Computer (PIC) controller to manage board communications and startup, and a field-programmable gate array (FPGA) to manage converters and the TDM bus. Each card has a visible red LED to indicate fault and a flickering green LED indicates board activity.

Master control

To complete the core, a BC2230 master controller module is installed in the frame. A second BC2230 may be installed for redundancy when using the BC 2000 frame as an audio router. The module comprises a front-installed card with keyboard, mouse, VGA monitor, with USB and Ethernet ports, and a rear-installed PC board with an embedded QNX embedded operating system in a 128 MB CompactFlash memory that also holds the configuration data. A replaceable lithium-ion battery powers the nonvolatile RAM when AC power is off. An external power supply (redundant PS is an option) powers the frame.

Supply

The Arena control surfaces, at the minimum of which a model DM is required, connect to the frame with an XLR cable and two Cat-5 cables (available from AEQ upon request). While the actual mixing and routing is done in the frame, the control surface must receive the cue speaker audio and some other signals by one Cat-5 cable, and send its talkback mic audio to the frame. The DM control surface uses the second Cat5 cable to connect to the frame's BC2230 master controller (over an Ethernet network). Thereafter, any model D10 expansion control surfaces connect to the back of the DM surface using a Cat-5 cable. Up to seven D10 surfaces can be connected to the DM.

The DM primary control surface has five motorized faders and a comprehensive monitoring and GPI triggering control section, and uses its own AC power. Each fader has an associated column of five soft buttons (bright blue when illuminated) and two soft knobs (rotary with push-to-accept), the function of which changes with the console's modes.

In addition, the Arena uses the concept of "pages" whereby each of the five DM and ten D10 physical faders are associated with a particular input and its routing on a particular page. AEQ says the DM and D10 surfaces each have nine pages. Up to seven D10 control surfaces may be connected to the DM, for a total of 75 physical faders on one Arena system. Using all nine pages on each surface yields control of up to 675 individual signals. Pressing the console's Up or Down button moves between the pages.

The motorized faders automatically slide up or down to the level for that fader's setting on that page. This sets up an interesting application: Establishing a "hands-off" mix on, say, "page" 2, then pressing Down to actively mix different sources assigned to "page" 1. If a level adjust from a "page 2" source is needed, press the Up button to move to "page" 2, watch the faders glide to their positions, make the level adjustment, press Down to return to "page 1" and continue mixing. Any of these channels can have dynamic processing and EQ applied, and the output of that fader can be rerouted as needed. As if this wasn't a flexible scheme already, faders can also be assigned to control an output level or even a subgroup.

The monitor section gives the studio and control room five different sources at the press of a button. By pressing the monitor knob, any available source can be routed to the control room or studio. Interestingly, the Arena can be configured to allow the user to make these sources to be combined together in the monitors, or to be one-source-per-monitor. Three push-to-talk buttons route the console's talkback mic to different headphones and studio speakers. Each fader has a Cue button, the level of which is controlled in the monitor section, and a useful button, Cue Reset, takes all faders out of cue.

Thirty-two programmable buttons, arranged in four banks and separated by LCD scribble strips, comprise the "soft" control and are programmable to do amazing things beyond controlling and sensing GPI triggers.

The Arena DM meter bridge has internal cue speakers, LED metering, a multifunction monochromatic (blue/white) data display, and associated cursor buttons. The display shows fader configuration, allowing the user to browse and change a fader's input source, control dynamic processing (compressor/noise gate/delay/reverb), configure EQ (equal-

See ARENA, page 20 ▶

EVENT 5800
HIGH CAPACITY BIDIRECTIONAL STUDIO TRANSMITTER LINK

TRANSPORTS UP TO 9 RADIO STATIONS, UNCOMPRESSED, OVER A SINGLE LINK


EVENT 5800 IDU


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The Moseley Event 5800 — is a carrier class T1/E1/IP Ethernet radio link. Combined with the Starlink SL9003T1, the Event 5800 creates a high capacity bidirectional STL/TSL.

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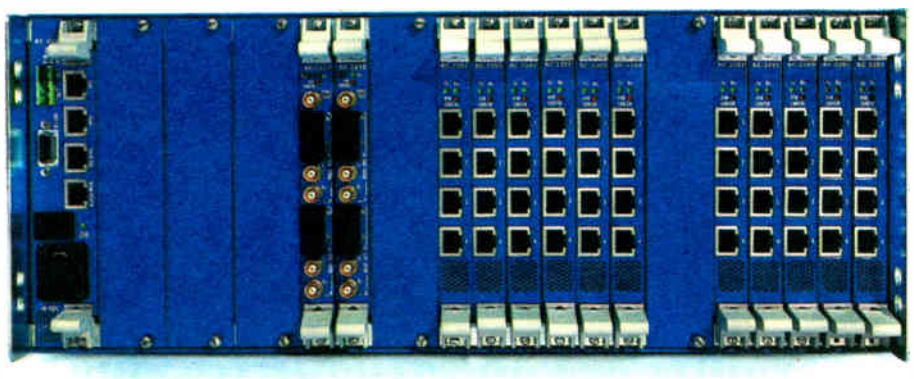
Arena

▶ Continued from page 19

izer/filter/de-esser/antihiss), adjust input gain, and control L/R/sum/phase relationships. Once a fader channel is selected, navigation is by the adjacent cursor buttons. Dynamic and EQ processes allow for saving and recalling presets, and show a graphical and numeric display of the parameters in action.

The Arena system is monitored by a monochromatic display on the console's sloped front, and displays IP addresses, the name of the loaded configuration, user name and operator level using the system, and labels for five soft keys below the display. An entire control surface can be re-programmed from a saved configuration in seconds. Note though, this display is hard to read unless you are within a few lateral degrees of it; only important if you'll be relying on its integral clock display.

BC2000DF Rack Front



BC2000DF Rack Rear

In use

For evaluation, we used an Arena frame populated with several DSP cards, some digital and analog I/O, a Master Controller card, a redundant power supply, Cat-5 cables and an Ethernet switch, and DM and D10 control surfaces. The D10 control surface contains 10 motorized faders, associated soft controls and data display and works exactly like the DM faders. It connected to the DM surface with a single Cat-5 cable and uses its own AC power. AEQ Service Engineer Gabriel Casco configured my demo configuration so that the D10 was the input mixing console and the DM the submaster and monitoring surface.

The Arena was connected to an external monitor amp, microphone, and CD player with AES output. Any audio professional or serious enthusiast will immediately understand the signal flow of the Arena. It is a deceptively simplistic-looking console, with extreme amounts of open space between faders and between groups of five faders, giving the user the impression that there is "nothing much" going on. But even with the few inputs we applied, it took hours to explore all the features and playfully put the console through its paces.

In exploring the Arena's "pages" we found we could assign a source to more than one input channel on different pages, but could not make each instance of that physical source "independent," so that page 1 would have CD1 clean, and page 2 would have CD1 heavily processed. This is prevented by design to prevent loss of "situational awareness" where a user could have forgotten settings that would confuse or confound.

The monitor section has exclusive (single) or summable (multiple, up to five) signal inputs. This is a great feature when the user wants to confirm continuity on a different source and keep listening to an important monitor source. This feature was not as confusing as I feared as the monitor indicators are illuminated as each monitor source is added.

In processing with delay or reverb, the clean/processed ratio of signal must be adjusted in the menu — you cannot send the reverb output to a different fader (without configuration change to re-introduce it) and you cannot quickly adjust the ratio of the clean signal with the processed signal, suggesting that it is best done at the sub-master itself. At times I had wished for an insert point to insert an external reverb, but in reviewing the configuration, decided that the console's flexibility could allow me to create another input/output for such an external device and could simulate the insert point. Also with the reverb, I was surprised, but shouldn't have been, that pressing the fader's Off button killed the reverb decay — another reason to add processing to the sub-master, and not to the individual faders.

Perhaps the finest feature of the Arena is the thoughtful design of the configuration software. After all, how useful is a high-end console if its operation cannot be understood by using its configuration software? This marvelous Windows application running on a laptop or desktop is a graphical delight, popping up an image of the part of the console under configuration.

Perhaps the finest feature of the Arena is the thoughtful design of the configuration software.

For example, to configure the 32 soft keys, a clickable image of all 32 keys and their displays is shown. Clicking on the desired key brings up a graphical drop down menu with 11 selections for that key to control. The keys can be "interlocked," control a GPI input, sense a GPI output, execute a number of commands as a "salvo," integrate into phoner units and more.

To control a fader's input selection, one need only pop up the edit console pane, and the DM and any D10 extensions are displayed. A clickable image of the DM/D10 lets the user click upon which fader on which page to control, and then assign the physical sources to it.

Even the fundamental configurations of IP, physical input name assignments, the complete routing table, Dynamic and EQ preset creation are simplicity itself.

The EQ preset display shows frequency, Q and gain virtual knobs and shows the familiar log plot of the resultant slope. The routing table shows a dense X-Y table with extensive control over pre and post fader audio, balance, pan and level. This is one excellent application, and didn't require reading the manual to use and enjoy.

Overall, the AEQ Arena is a powerful audio tool, with powerful configuration tools, capable of expanding as its user's needs increase, and saving the owner money by doing the job of a number of external processing tools.

Rich Rarey has been in public radio for more than three decades. He has created memorable sound recordings for National Public Radio programs, presented the first over-the-air Dolby surround sound broadcast, been technical director for a number of NPR programs and was its master control supervisor until being named recently as manager of strategic Technology applications for NPR Labs.

PRODUCT GUIDE

Audio-Technica ATH-M50 Gets Straightened Out

Audio-Technica's ATH-M50 headphones are now available in a straight cable version along with the coiled cable original flavor, shown at left. The new ATH-M50s has an 11-foot straight cable with a 3.5mm (1/8-inch) connector at the end. The package ships with a 1/4-inch adapter for the connector. The cable features oxygen-free copper.

The ATH-M50 family use a collapsible design for portability, and feature 45mm drivers. The circumaural earcups swivel 180 degrees.

The company also is out with a pair of new X/Y microphones. Designed for high-quality stereo field recording, the AT8022 and BP4025 both offer dual capsules set in an X/Y configuration (shown far right) and operate with 11–52 V phantom power. Each has an 80 Hz high-pass filter

The AT8022 is also battery-operable. It ships with cables for professional-level (XLR) and consumer-level (3.5 mm) applications.

The BP4025, shown middle, uses a five-pin XLR connector for microphone output and a cable with dual three-pin XLR connectors for cable output. It offers a 10 dB pad.

Both mics ship with a stand clamp, windscreen and a protective pouch.

For information, contact Audio-Technica at (330) 686-2600 or visit www.audio-technica.com.

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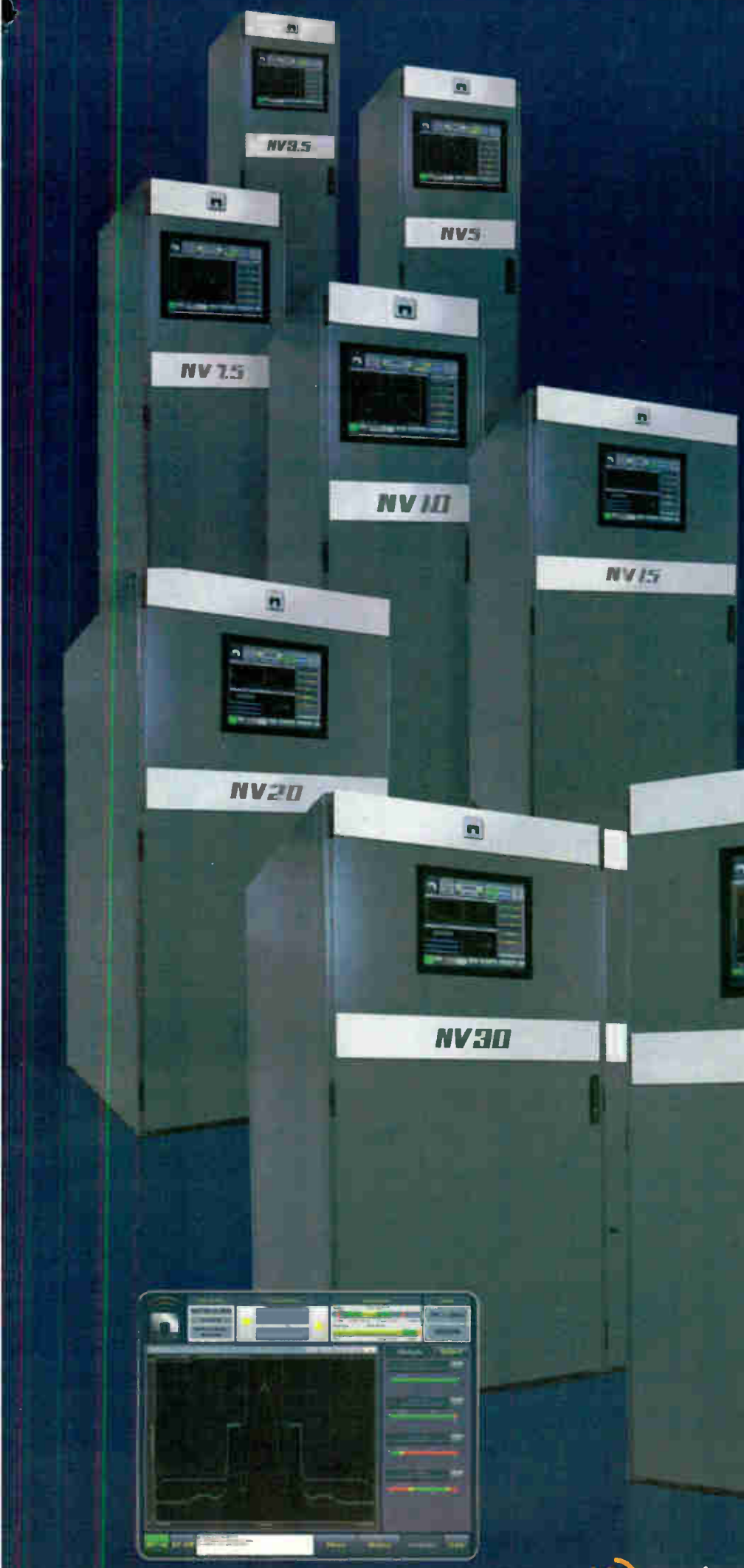

5 year warranty*

Advanced User Interface

HD Radio Making Digital Radio Work.

nautel

*Its Nautel's 40th anniversary: all NV and NX Series transmitters purchased in 2009 will receive a 5 year warranty

World Radio History

FIRST PERSON

A New Home for KPCW(FM)

Utah Station Gets a New Facility That Is Spectacular in More Ways Than One

by Mario Hieb

PARK CITY, Utah KPCW(FM) is a community, nonprofit radio station in Park City, Utah, broadcasting at 91.9 MHz on the dial. Famous for its world-class ski areas and the annual Sundance Film Festival, Park City is a resort community on the east side of the Wasatch Mountain range.

The station has been on the air for about 30 years, most of it in the historic Marsac Building in downtown Park City. Housing KPCW as well as city hall, the Marsac Building was slated for remodeling and seismic upgrade beginning in the summer of 2008.

As for many 30-year-old children, it was time for KPCW to leave the nest and find its way in the world.

KPCW host Randy Barton, right, interviews a guest in the on-air studio. Swede Alley can be seen through the window.

Racks are seen

Host Randy Barton works at the finished racks.

New nest

KPCW can be described as a "full-service" station, with NPR programming, local news, music and an eclectic variety of other programming. The staff ranges from radio professionals with more than 20 years of experience to "green" volunteer DJs. The facility needed to be sophisticated enough so that it could support NPR coverage of the Sundance Film Festival and simple enough for the local high-school radio show.

I was hired by KPCW to design and project manage the buildout. First, I met with Eric Thompson of FFKR Architects in Salt Lake City. Eric was designing a new two-story building for the city just down the hill from Marsac. The first floor was reserved for a state-owned liquor store, but the second floor was available, so the building was "condo-minimized" and the second floor became the new home for KPCW.

I gave Eric and his consulting engineers a crash course in radio studio design, including noise ratings, console layouts, window placement, power/grounding peculiarities, on-air signs, wall and floor treatments, etc. The new space was about 30 percent larger than the existing studios, but the old space didn't have restrooms, a kitchenette, an engineering shop, a mechanical room, and it was pre-ADA. The extra space went quickly!

The new facility comprises mirror-image air and production rooms, a news/edit room and a multipurpose pledge/underwriting space used for production, conferences and as a green room. A combination engineering shop/equipment room rounded out the facility.

The prominent feature of the air studio is floor-to-ceiling windows on two walls of the cantilevered room; the studio seems to float over Swede Alley, the street out front. The windows provide a spectacular view of the mountains.

Eric gave me his building design in AutoCAD LT, a design software suite. I added a few layers and designed my racks, cabinets and cable trays to his walls. The racks and many other accessories are from Middle Atlantic Products.

Electrical and mechanical systems

EQUIPMENT LIST

MAKE	MODEL	ITEM
Adobe	Audition 3.0	Editing software
APC	Back-UPS ES 500	UPS
Aphex	230	Microphone processor
Aphex	320A	Audio processor
AudioScience	ASI5111	AES sound card, play/record
AudioScience	ASI6520	AES sound card, play/record/MP3
Belden	8723	2-pair, analog audio cable
Belden	9451	1-pair, analog audio cable
Belden	1309A	Speaker cable
Belden	1800A	Digital audio cable
Belkin	228227	KVM patch cords
Broadcast Tools	ACS 8.2	Automation switcher
CBT Systems	ON-AIR	On-air light, 120 V
CBT Systems	RECORDING	Recording light, 120 V
Cisco Systems	Catalyst 2960-24TT	24-port switch
Comrex	STAC6	Phone hybrid system
Crown	D-75A	Power amp
Denon	DN-C550R	CD recorder
Denon	DN-C640	CD player
Electro-Voice	RE20	Microphone
ESE	ES-102U	GPS master clock
Fluke	CableIQ	Cat-5 cable tester
Fostex	6301BEAV	Fostex audio monitor
Fostex	RM-1	Fostex audio monitor
Harris	NetWave-8	Audio console
Harris	PRE99-1400-20	Audio console
Harris	PRE99-1340-1A	Audio router, w/16 analog
Harris	PRE99-1374	Source/destination selector
Harris	PRE99-1340-1DIG	VistaMax Envoy frame w/ digital
Innovative	7500-WING	Dual LCD arm
Inovonics	531	Mod monitor
Intl. Datacasting	SFX 2100	Storage receiver
Intl. Datacasting	SR2000 pro	Streaming decoders
JBL	4408	Studio monitors
JBL	Control 1	Studio monitor
JBL	MTC-51	Wall-mount bracket
Mackie	Onyx 800R	Microphone preamps
Marti Electronics	CR-10	RPU receiver
Marti Electronics	R-10	STL receiver
Middle Atlantic Prod.	MRK-4036	Equipment racks
Minicom	0DT23008A	KVM remotes
Mod. Sciences	FMMM2	FM modulation monitor
Musicam USA	Prima LT plus	ISDN
Musicam USA	TEAM	T1 codec
OC White	51900BLK	Microphone stand
OC White	61900BG	Microphone stand
OmniMount	30.0 WA	Speaker mount, wall
Orban	Optimod 8100A	Audio processor
Panasonic	SV-3700	DAT recorder
Plink USA		Rackmounted PC cases
Radio Systems		Audio distribution amp
Rolls	RA235	Power amp
Sage Alerting Systems	Endec	EAS receiver
Scala	GPS-C	GPS antenna
Sony	MDS-JE440	MiniDisc recorder
Tannoy	Reveal R6	Speakers
Tektronix	760	Audio phase monitor
TFT		STL transmitter
Tripp Lite	B007-008	8-channel KVM switch
Tripp Lite	SMART2600RM2U	UPS
WIT	easi-8	Remote monitor

World Radio History

under assembly.

The facility needed to be sophisticated enough so that it could support NPR coverage of the Sundance Film Festival and simple enough for the local high-school radio show.

were added to accommodate the design. Studio power was hospital-grade, isolated ground with ground and neutral home-runs to the power panel. The facility has three separate HVAC units: one for the office area, one for the studios and the third for the equipment room. Inner-wall conduits ran from the studio cabinets to the cable trays. I like to give the on-air person control of their environment, so they have their own light dimmers, thermostat and adjustable LCD monitor arms.

Over the years I've grown weary of ripped carpeting and broken carpet protectors (you know those plastic things your office chair rolls around on), so for this studio, the floor under the "air-chairs" was a rugged rubber tile.

I also used AutoCAD LT to create "one-line" drawings. Every cable in the plant was shown on one of these drawings, and each had a unique cable number. Documentation also included wire run spreadsheets that specified cable type, sources, destinations and connectors for each cable.

One advantage of planning a system this way was that I "built" the system twice, the first build being on paper. Another was that I hired Adam Stoddart, a talented systems installer, who could build from my design documentation with little supervision. Then the same drawings were used systematically to test every wire in the facility.

Timing

Because of a tight timeline, we only had about a month to install and test everything. This was a nearly impossible timeline; we did manage though by doing as much prewiring as we could off-site. A friend of KPCW owned an abandoned lumber yard where we assembled the Middle Atlantic racks, shelves, drawers, etc. A large amount of intrarack wiring was done. We also assembled from scratch 14 identical PCs, with AudioScience audio cards, for use as audio servers. Once the building was ready, professional movers moved the racks to the new location.

The old studio had PC tower cases sitting on the studio floors where they were often kicked or tripped over; I was determined to avoid this, so I built the new PCs in 4 RU rackmount cases on sliders, mounted in the engineering racks. Keyboards, monitors and mice reside in the studios, so KVM remotes were used. Because they use Cat-5 cable, the KVM remotes were routed through RJ-45 patch bays that were hard-normalled using short RJ-45 jumpers. This patch bay has come in handy for configuration and troubleshooting of the individual PCs.

The NPR satellite dish was left in its existing location, so about 600 feet of fiber-optic cable was buried underground from the dish to the new studios. ATCi (Antenna Technology Communications Inc.) fiber transmitters and receivers are used to convert the RF to light. In addition, KPCW sends multichannel satellite audio feeds to former sister-station KCPW in Salt Lake City via a Musicam USA TEAM T1-E1 multiplex unit.

The air and production room were designed around a Harris RMX console; the news/edit and "pledge+" room around an eight-channel NetWave board. The engineering racks housed dual Harris Envoy frames; one for AES/EBU digital audio, the other for balanced analog audio. The Harris system was chosen because the consoles could operate in both standalone or networked modes. The standalone mode is useful if the networked mode should fail; analog audio from the console could still be routed. In the networked mode, any source from any frame or console in the network can be routed to any other. The RMX consoles have a one router per fader configuration which makes for infinite flexibility. The NetWave consoles in the smaller studios have two routers as options. Each console feeds an Aphex 230 Compellor for gain riding before router re-entry.

See KPCW, page 25 ▶

Your Hosts

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U.S. Editor in Chief
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Contributing Editor
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Director, Advanced Engineering
NAB Science &
Technology Department

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Mike Starling
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NPR & Executive Director of
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World Radio History

Battery Choices for Field News, Production

The Warrior Considers His Power and All of Its Possibilities

by Paul Kaminski

When experienced radio news reporters are asked to give advice to rookies, invariably those veteran reporters will say something about carrying enough fresh batteries to make sure the news can be gathered. If one does not, the veterans will advise, there is a chance that batteries could deplete too quickly and fail in the middle of a recording.

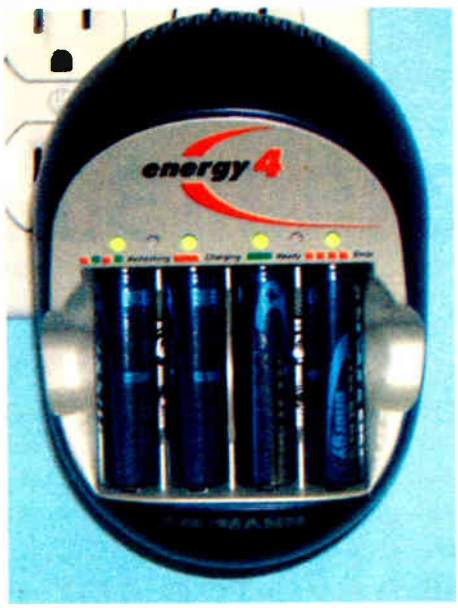
Believe that; it's certainly happened to me more than a few times. It will happen. Back in the day of big cassette recorders, the backup power meant carrying a brick of C or D batteries (which also meant the person carrying the batteries would get extra exercise — those batteries were heavy!).

As the size of recorders shrunk, so did the size of the batteries required for power. One still had to carry a pocket full of those lighter AA cells. As the recorders became more sophisticated, they tended to deplete batteries faster. Some reporters and producers would and still do change out partially used batteries for new batteries, for every use of a field recorder to compensate. That practice, however, gets expensive.

Campaign trial

Reporters in the field have more sophisticated battery-powered equipment than when I entered the business 40 years ago. If an assignment involves coverage of a leading presidential candidate, all of that equipment likely gets used at some point during the assignment. Battery failure is not an option.

That was the experience of Fox News Radio reporter Todd Starnes when he covered the presidential campaign of Sen. Barack Obama in 2008.



Ansmann Energy 4 Battery Charger

The Radio Road Warrior's Battery Collection

Todd usually carries some 35 pounds of equipment in the field. This includes a Comrex codec, HP laptop, cell phone, BlackBerry and a Marantz PMD660 large digital handheld recorder.

He says the Marantz "goes through about a dozen batteries during an extremely busy news day." He uses Duracell ProCell alkaline batteries because they can be bought in bulk and work well in this particular application.

As for the rest of his kit, Starnes keeps equipment ready for use with a 25-foot extension cord and power strip, along with an inverter that plugs into a car's 12-volt power outlet and a universal cell phone and BlackBerry charger.

"With the advent of laptops, cell phones and BlackBerrys, it's become really important to make sure I keep them charged 24-7. And it's easy to lose so many chargers so I purchased a universal cellphone and BlackBerry charger at RadioShack."

From my observations, it appears that most reporters use alkaline batteries primarily. A few reporters use rechargeables. I keep one set of 4 AA alkaline cells, and one set of two AA lithium-ion batteries on standby plus a 9 V alkaline battery with my Active Media Cellphone IFB audio interface.

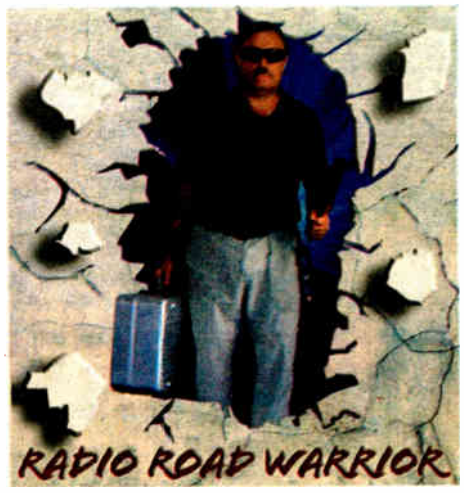
For my audio recorders, I have used Rayovac AA nickel metal hydride (NiMH) rechargeable batteries since 2002 when I tested them for a Radio World product evaluation. One year, I spent just $5 for a pack of AA alkaline batteries, and still managed to spend 26 weeks in the field covering racing and news events. For my Audio-Technica AT897 shotgun mike, I use an Eveready Energizer AA lithium-ion battery. For my Cellphone IFB cellphone interface, I use a 9 V alkaline battery. For my Fuji FinePix A500 digital blog camera I also use rechargeable batteries.

When rechargeables are a primary source of power for equipment, a best practice is to have a backup set of batteries on charge while the primary set is being used. In the case of a Marantz PMD660, that means four in the machine and four on the charger. For a PMD620, a smaller handheld digital recorder, and many other audio recorders, that means two in the machine and two on charge. The 620 can go a little further on batteries. When the cost of two full sets of AA NiMH rechargeables and a charger is compared to the cost of replacing AA batteries over time, the rechargeable battery system will save more money.

Battery 101

All batteries have what's called a "self-discharge rate," which means that, over time, the battery will lose enough voltage and go "dead," even if it is not being used. Lithium batteries (Energizer, for instance) have a very low rate, and perform to their rated capacity longer. Alkaline batteries have a slightly higher self-discharge rate. Rechargeable batteries self-discharge, too. This tendency can be mitigated by keeping the batteries charged up. However, in most cases, one cannot safely recharge an alkaline cell or lithium cell.

There are two major kinds of rechargeable batteries, the nickel cadmium (NiCd/NiCad) and NiMH batteries. NiCd batteries can be recharged many times, but must be fully discharged before being recharged or else subsequent recharges will diminish the capacity — the so-called "memory effect." NiHM batteries don't suffer from this "memory effect," which means users can recharge the batteries back to rated capacity even if only partially discharged. Higher-capacity NiMH batteries take longer to get to a full charge, so users should look for a battery charger that can charge batteries relatively quickly. Rechargeable batteries will not last forever, and anything with nickel or cadmium needs to be disposed of properly. Those batteries will take much longer to reach the end of their life cycle. In my personal experience, a set of four NiMH rechargeables lasted me five years before they failed to take a charge.



Battery recharge options range from the AC-only models to 12-volt car charger and USB-powered models. Ansmann Energy markets a line of rechargeable batteries and chargers that not only charge batteries quickly, they also condition the battery for longer life by using "float charge" technology. Float charging uses a sensor to monitor the cell so that when they are up to capacity they won't be overcharged — which can damage the electrolytes in the battery.

Ansmann 9 V batteries are used by audio engineers who need to change out batteries in wireless microphone systems before each performance. Nine-volt alkaline and lithium batteries are not inexpensive, so this saves money over time in that application, as well.

The Energy 4 charges four AA or AAA or two 9 V NiMH cells. The company has a 2800 milliamp AA cell that lasts a long time. This observation stems from using a set of two rechargeables in a Marantz PMD620 that were topped off on Nov. 16, 2008. The recorder was used to record a full-blown 90-minute news conference and one-on-one newsmaker event with six newsmakers on Dec. 4, before the 620 showed a low battery indicator.

There is no one-size-fits-all solution to the question, "What battery option is right for me?" For someone who takes a recorder into the field once or twice a year, that person could likely get by on one set of alkaline batteries. When one brings a full load of sophisticated equipment and uses most or all of that equipment in a day's work, that deployment calls for a little planning by engineering and management before the reporter rolls out the door.

Our next column takes a look at solving some of the little problems that plague us road warriors, like power sources, keeping our equipment dry in inclement weather, and lightening our loads without giving up flexibility. Your suggestions for this and other future columns are always appreciated.

Paul Kaminski is the news director for the Motor Sports Radio Network, a contributor for CBS News Radio, and a Radio World contributor and columnist since 1997. His e-mail address is motorsportsradio@ msrpk.com.

PRODUCT GUIDE

Pro Tools Gets Major Upgrade

Digidesign's Pro Tools DAW platform has a major new upgrade, Pro Tools 8.

As with any whole number edition, Pro Tools 8 has a number of significant changes and additions.

The most obvious change most users will notice is a revamped GUI. Major enhancements will also be seen on the "creation" side with more plug-ins and virtual instruments shipping along with improved MIDI functions.

For example, moving beyond its traditional editing functions, PT8 ships with several new guitar amp emulators, a mini grand piano and tonewheel organ simulator. Over 8 GB of loops are also included in the package.

Suffice to say, considering its Avid corporate ownership, that Pro Tools 8 has strong functionality in film, video and post production applications as well.

Pro Tools 8 is compatible with updated Windows XP, Vista and Mac OS X platforms. Upgrade packages are available for current users at a variety of prices.

For information, contact Digidesign at (650) 731-6688 or visit www.digidesign.com.

World Radio History

KPCW

▶ Continued from page 23

The resulting audio quality is quite good; in fact many signal paths are AES/EBU exclusive. As a result, station audio has more detail which has revealed that some music dubbed to hard drive at the old studio contains noise and distortion never detected before.

The studios are rounded out with Denon DN-C640 and DN-S550R CD players. Microphones are standardized to EV RE20s with the announcer mic fed through an Aphex 320 mic processor. Monitor speakers are Tannoy Reveal R6 speakers fed by Crown D-75A amplifiers, a very nice pairing. Each studio has a Comrex STAC telephone system with dual hybrids. Fostex RM-1 monitors are used at announcer and guest positions. All console clocks are synchronized with an ESE ES-102U GPS master clock. A WIT easi-8 remote control is configured as a silence sensor that sends text messages, and also as an outdoor thermometer that puts the temperature at Swede Alley on the KPCW Web site.

Mario Hieb, P.E. is a Salt Lake City based Consulting Engineer. He is a frequent contributor to Radio World and has also been recently published in The New Yorker Cartoon Caption Contest Book.

RW welcomes first-person accounts of technical installations. Write to radioworld@nbmedia.com *with your idea.*

This is the exterior of the nearly completed facility; the air studio windows are visible upper floor center.

How to Outfit a Radio Production Room

Building a studio facility from scratch or completely renovating one is a lot of fun … and work. It also requires considerable forethought. Here are some details to keep in mind for the planning stages.

SIZE: Is the room large enough for people and equipment? Is it ADA-compliant?

DOORS: Do the doors have adequate sound isolation? Do they have sweeps on the bottoms?

WINDOWS: Do the windows have good sound isolation? Are they tinted? Do they have blinds?

FLOOR: Will the floor treatment hold up to constant use?

ACOUSTIC TREATMENT: How will the room "sound"? What sort of wall, ceiling, and floor acoustic treatment will be used?

EXTERNAL NOISE: What is the noise rating goal?

LIGHTING: What sort of light fixtures will be used? Will they be on dimmers? Could they cause audio problems?

HVAC: Is it sufficient to cool the equipment and room occupants? Does it meet the noise rating?

CABLING: Can cable be run to other parts of the plant? Will it be run through air plenums?

POWER: Is the electrical power isolated from other circuits? Are grounds and neutrals home-run to the panel? Is there an uninterruptible power supply (UPS) available? How is grounding achieved?

OTHER: On-air lights, TV monitor, phones, network, security, etc.

CONSOLE: What type of audio console is used? Analog, digital, networked? Does it have microphone preamps?

ROUTER: Is there an audio routing system? Are there control panels?

CABINETRY: Is it prefabricated or is it being custom built?

RACKMOUNTING: Is it deep enough? Is there enough for gear and any future add-ins? Is the equipment adequately ventilated?

MONITOR SPEAKERS: What type are they, powered or passive? Where will they be placed? What are the cabling requirements?

MISC: Telco monitors, headphone amps, etc.

MICROPHONES: How many microphones and microphone stands are there? Where are they located?

MICROPHONE PROCESSING: Are microphone processors needed? Do you have them?

TELCO: Where is the hybrid? Are there audio monitors for it?

OTHER AUDIO: Are there CD players, DAT, etc. to be considered?

I/O: Is there an input/output interface to the room? Is it balanced, unbalanced, AES/EBU, etc?

EQUIPMENT CABLING: How are cables managed in the room? To other rooms if necessary?

COMPUTER MONITORS: Where are they located? Are they remoted to the servers? How are they mounted?

POWER: How is power distributed within the cabinets. Are there light fixtures inside of the cabinets?

MISC HARDWARE: Shelves, drawers, panels, blanks, etc.

— Mario Hieb

World Radio History

GM Journal

Radio World | Resource for Business, Programming & Sales | March 1, 2009

Mr. Bell, Your Time Is Up

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RCS Lets PDs See Changes in Ratings ASAP

'Audience Reaction' Charts Minute-By-Minute Behavior of Listeners in the Arbitron PPM Panel

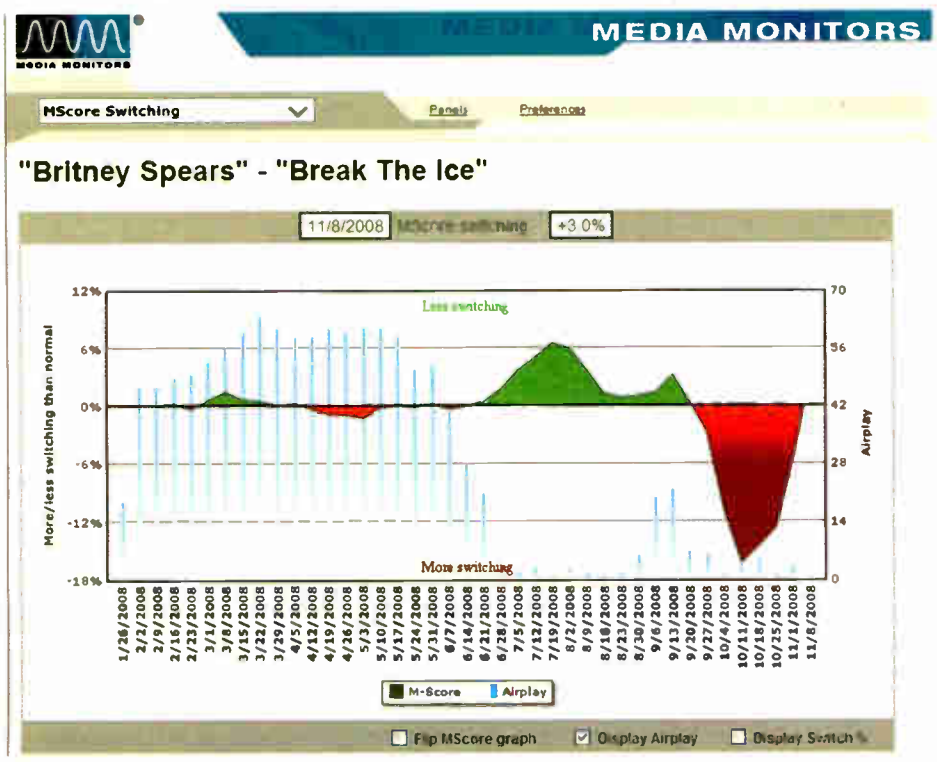
by Tom Vernon

Two emerging technologies, used together, promise to add new dimensions to audience research and change the ways radio stations are programmed. That's the belief of broadcast software company RCS.

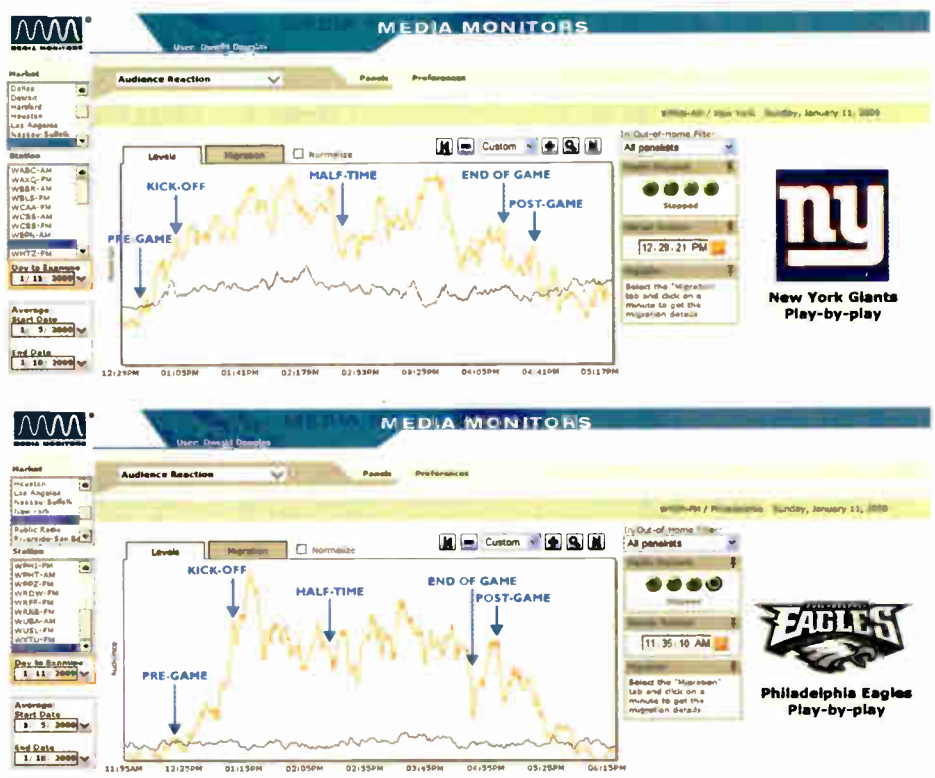
Arbitron's Portable People Meter provides more accurate tracking of panelist listening habits in a fraction of the time taken by the traditional diaries. At the same time, GSelector from RCS introduced "goal-based" music scheduling.

The recent move by RCS to link Arbitron PPM data with GSelector creates a service called Audience Reaction. RCS believes it is a revolutionary programming and audience research tool with far-reaching implications. Media Monitors has signed agreements with broadcasters including Citadel, Emmis and its own parent, Clear Channel.

Radio World talked to Philippe Generali, CEO/president of RCS and Media Monitors, and Steve Borneman, president and general manager of WABC(AM) in New York, an early adopter of Audience Reaction, about hopes and expectations for the service.



MScore for Britney Spears' 'Break the Ice.' Note initial audience uncertainty, followed by acceptance, and finally the audience tiring of the song.



Audience Reaction tracks minute-to-minute listenership of football coverage on New York's WFAN(AM) (top) and Philadelphia's WYSP-FM (bottom). The grey lines are the normal listening average for the week.

Feedback loop

"GSelector enabled program directors to do goal-based music scheduling, but that left the question of how to inject the right information," Generali said.

"We realized that the PPM carriers can make or break your radio station, so that data from Arbitron is vital in shortening the feedback loop from audience to programmer."

Data collected by the PPM is uploaded to Arbitron once every 24 hours. Arbitron crunches the numbers into meaningful statistics, which are forwarded to Media Monitors. Currently the process takes about a week, but Generali wants to improve on that.

"We're working with Arbitron to shorten the turnaround time for digested PPM data. Ideally, we'd like to get it overnight."

The result is a process in which Audience Reaction users can listen to a recording of the station's programming that is synced with PPM data. Program directors can see when listeners tune in and out, allowing them to gauge which songs are working and which aren't, as well as the success or failure of other programming elements.

Generali listed the type of questions that can be answered: "Do contests work? Are talk show hosts boring? What types of commercials work? Do commercial

See REACTION, page 29 ▶

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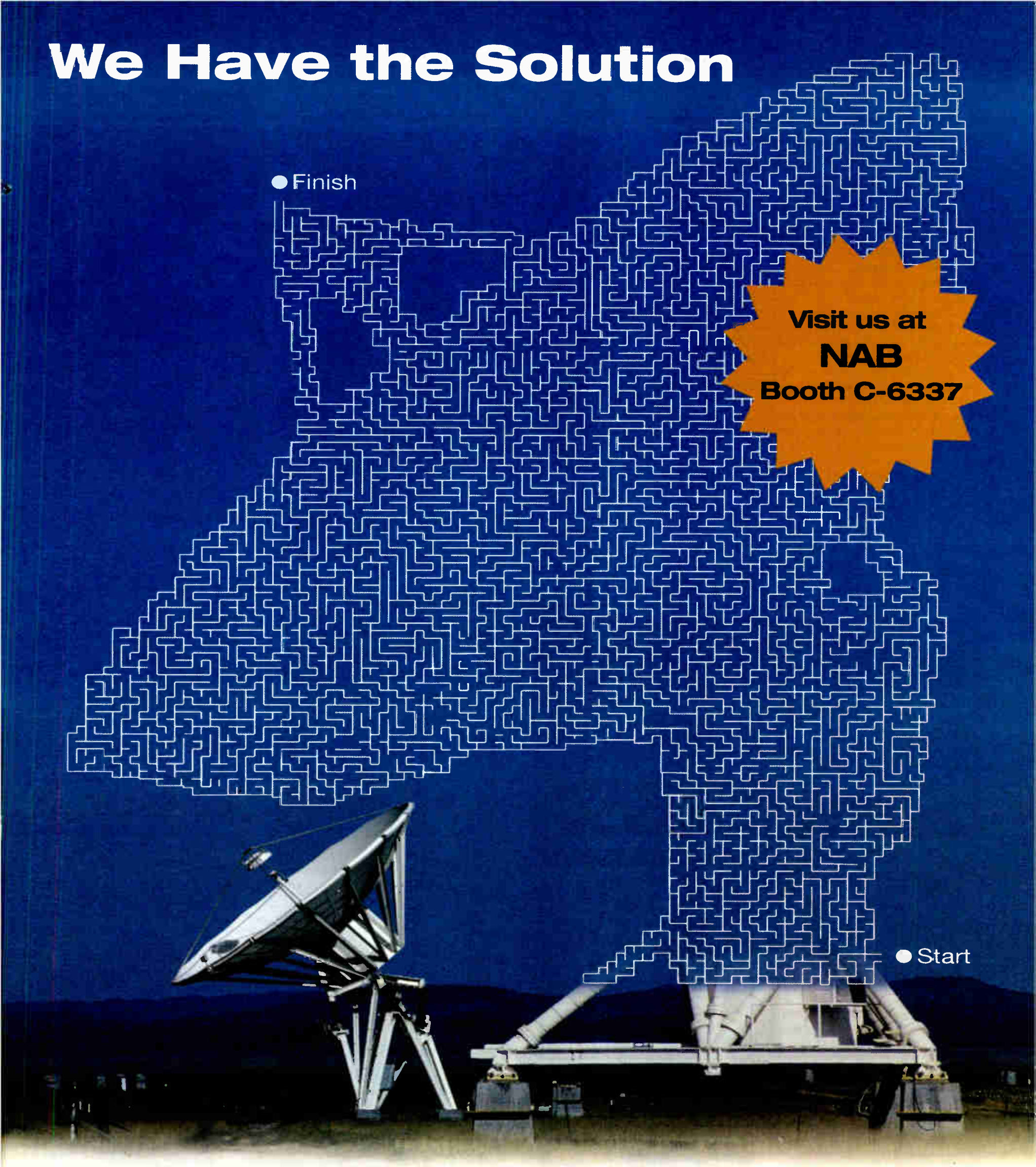

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World Radio History

A Pioneer Among Black Sportscasters

Before Stuart Scott, JB, the Gumbels or Bill White, There Was Jocko Maxwell

by Peter King

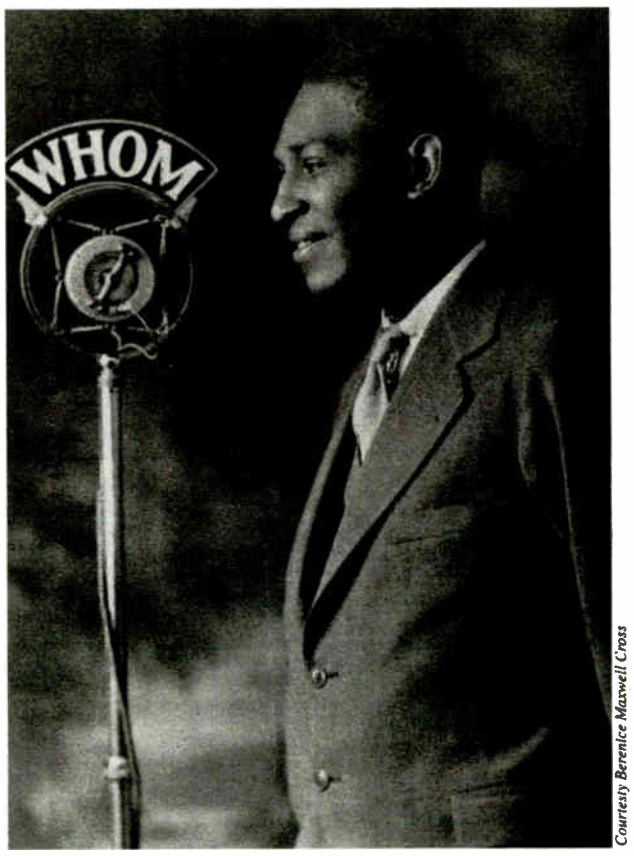
Most of today's sports fans and broadcasters likely have never heard of him, but they should have. Perhaps, as one sportscaster puts it, this was sports broadcasting's Jackie Robinson. Certainly he was there before Stuart Scott, Fred Hickman, Nick Charles, James Brown, Art Rust Jr., Robin Roberts, Greg and Bryant Gumbel, Bill White or Dave Sims.

Sherman "Jocko" Maxwell died in the summer of 2008 at age 100. Believed by many to be the first black sports broadcaster, he also was known as an unofficial historian of baseball's Negro Leagues, from his days as a sportswriter *and* sportscaster in Newark, N.J.

His records are said to have been meticulous, his broadcasts captivating. Hall of Famer and former Negro Leaguer Monte Irvin called Maxwell "unique." Irvin told the Star-Ledger newspaper that Maxwell's broadcasts of Newark Eagles games were "just a great thing." He also became public address announcer at Ruppert Stadium for the Eagles.

When Maxwell's radio career began in 1929 there were no African-Americans broadcasting sports. He started out with a weekly five-minute show during which he reported results and stories on WNJ. The station, known at the time as "the voice of Newark," was owned by Herman Lubinsky, later a co-founder of jazz and gospel label Savoy Records, according to the New York Times.

For nearly four decades, he worked in radio, including at WHOM in Jersey City and WRNY in Coytesville, while keeping his full-time job as a postal clerk. He was heard until 1967.



Courtesy Berenice Maxwell Cross

National Baseball Hall of Fame

Jocko Maxwell visits with Ernie Harwell in 2001 at the National Baseball Hall of Fame in Cooperstown.

Amazingly, he once said he'd never asked for a dime from any radio station — "I like a thing, I do it" he told a reporter — and that the only money he received was from his sponsor, Ballantine Beer.

ball and someone yelled, "Hey, look at Jocko," a reference to a monkey seen in films of the era. He graduated from Central High School in Newark and served in the Army in Europe during World War II.

Maxwell visited Cooperstown once, in 2001, to see the bronze likenesses of some of the men whose careers he'd covered, and, especially, the names of his fellow broadcasters. He'd known and dined with many of them "back in the day" as the first African-American member of the New York Sportscasters Club (think Mel Allen, Red Barber and others of that stature).

Believed by many to be the first black sports broadcaster, he also was known as an unofficial historian of baseball's Negro Leagues, from his days as a sportswriter and sportscaster in Newark.

Maxwell wrote for various publications, including the Newark Afro-American and the Star-Ledger's predecessor, the Newark Ledger. At that time, no local paper covered the Negro Leagues.

Star-Ledger columnist emeritus Jerry Izenberg has said that without Maxwell, there might be no record of the Negro Leagues. Izenberg told the paper that Maxwell somehow sensed that what he was doing might, someday, be important.

Maxwell also wrote for Baseball Digest and authored a 1940 book of sports interviews.

In a column composed on the night of Maxwell's death, Izenberg wrote that there were 32 broadcasters in the National Baseball Hall of Fame in Cooperstown; Maxwell wasn't part of that group and likely never would be.

To Maxwell, perhaps it didn't matter. "Jocko was on his own mission. He let the world know what was going on in places like Ruppert Stadium and Forbes Field and Comiskey Park when the 'other' teams (which meant blacks) took over from the regular tenants. And in his way, he made the part of America that would listen know all about these black knights of the open road."

Maxwell was born in 1907 in Newark. The New York Times reported that he took his nickname as a teenager when he climbed a tree to catch a fly

Peter King is a lifelong baseball fan and an Orlando-based staff correspondent for CBS News Radio. He can be reached at pkingnews@aol.com.

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Wired for Sound
by Steve Lampen
in
Radio World
and archived at radioworld.com

World Radio History

Reaction

▶ Continued from page 26

breaks work where they are, or should they be moved?"

Local trends

All of this newfound data being dumped so quickly onto a program director's PC comes with a danger of jumping to make changes too quickly. Data is no substitute for good judgment.

"It's important to give new ideas a chance to succeed before reacting too quickly," said Generali. "On the other hand, careful application of information from Media Monitors with PPM can allow a station to quickly improve its standing over a ratings sweep."

It gives you a minute-by-minute measure of what's effective and what's not, so you can find out what you're doing right, and do more of it.

— Steve Borneman

Generali said program directors don't need special skills in statistical analysis to use these tools. "A great deal of work has gone into the user interface so that this vast amount of data is presented in an easy-to-understand and pleasing manner."

Audience Reaction generates some entirely new types of data that seem likely to excite a PD. "We're able to track the life cycle of a song in terms of audience response," he said.

A metric known as MScore tracks the initial uncertain reaction to a new song, followed by acceptance, and finally, tune out when the audience tires of it.

For many songs, this data graphs into a standard bell curve, but not always.

"Sometimes it's too difficult to get the audience to like a song, and it's never accepted," Generali said. "Other songs hold their popularity far longer than the average. This type of information allows program directors to pull songs which will never succeed early on, and hold on to those which are still listened to for a bit longer."

He adds that spending time with this type of data may be one of the best ways to really know a radio station's audience.

Might this tool also herald a return to more locally-driven music programming? Perhaps program and music directors may see a song with strong local interest even though it does not fare as well nationally.

Generali recalls, "In the early '80s, songs by The Ramones got a lot of airplay on New York City stations but less elsewhere. MScore may enable programmers to better understand these types of local trends." He adds that the same data would be useful to record companies; the company is working on ways to present it to labels.

Minute by minute

WABC(AM) in New York is one of the early adopters of Audience Reaction; it has been using it for about a year.

"It gives you a minute-by-minute measure of what's effective and what's not, so you can find out what you're doing right, and do more of it," said Steve Borneman, president & general manager.

"It validates what your gut is telling you about programming decisions. Instead of saying, 'Here's what I think isn't working,' I can say, 'Here's what I know isn't working,' and that's a huge weapon to have at your disposal."

Borneman's wish for future releases of Audience Reaction is to shorten the turnaround time from PPM monitors to his desktop.

"I wish the data was more current. If I could have it quicker, then I could make key decisions sooner."

While there are other audience research tools available, Borneman is enthusiastic about the value of Audience Reaction.

"Other than having a one-on-one session with a focus group, this is the best weapon you can have at your disposal. The data that it provides takes programming to a different level."

Information about the service is at *www.mediamonitors.com/audiencereaction.asp*

About Mscore

Media Monitors, the sister company to RCS, said its new Mscore Series will be a way for programmers to understand how listeners use radio.

The first in the series, Mscore Switching, calculates an index of switching when radio panelists react to songs on the radio. The Mscore is derived from looking at what happened during spins of the song on a specific station and then displayed on the Media Monitors Web service.

The company said Mscore also can be downloaded into RCS GSelector to enhance music scheduling.

"Understanding the interplay of listeners, ratings and switching delivers a clear, strategic advantage to programmers, allowing them to respond to the preferences of their audience," the company said in its announcement.

The company's Philippe Generali said, "Radio programmers will be able to see how their audience reacted to every song on the air. They will know which songs hold listeners, and what songs cause switching to another station."

Your passion for creating great radio got you where you are today. Now it's time to take advantage of the techniques and technologies at the NAB Show to ensure your programming will be heard everywhere your listeners are tomorrow. This is the ultimate venue for exchanging strategies and identifying sound solutions at the global level. And the smartest way to guarantee the programming you create reaches more consumers — at home, at work and at play.

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World Radio History

I'm Sorry Mr. Bell, Your Time Is Up

Let's Develop New Tactics to Take Advantage Of a Much Larger Universe of Participants

PROMO POWER
BY MARK LAPIDUS

"You're caller No. 9 ... You win!!!!! (Insert listener reaction here.) Where you calling from? (Insert listener town). How do you feel? (Insert either hyperactive response or dud here.) Aren't we the best for giving you a prize?" (Insert listener telling us she loves us.)

Reading those lines aloud probably makes you feel a little silly. Yet now, in 2009, you can hear this same bit across the dial in America.

Since the dawn of radio, the telephone has been an integral part of the medium. For more than 70 years, the phone was the primary vehicle for listeners to interact with radio stations. The flaw has been that while radio is a mass communication medium, the telephone enabled only a small persistent few to contact the station.

Inevitably, just the effort required to get through to someone who will answer the phone in the studio breeds a small universe of listeners who interact with any given station. If you've been live on the air at any station for more than a week or two, you get to know the voices and many of the names of those who call.

When you're on the air, you may have hundreds or tens of thousands of people listening, but you have only a tiny population calling in to participate actively in on-air dialogue, contesting or just conversation with a friendly voice. There isn't a station alive that gives away prizes and doesn't have "contest pigs," the same dozen people who win many of the prizes the station gives away.

New tactics

Now that listeners can interact with radio stations by using new media, my suggestion is that we develop new tactics to deal with — and take advantage of — a much larger universe of active participants.

It doesn't make sense anymore to prompt listeners to use only the telephone to enter a contest verbally, or to call us only during a talk show.

I recently ran a contest for a pair of tickets to a sporting event and received more than 10,000 entries in two days. Each of these contestants got an auto-response to tell them their message had been received and prompting them to listen at a specific time for their name in order to win. This is certainly better than answering the phone eight times, telling the ninth caller he was a winner and then putting the phone lines on hold for 20 minutes.

How did we accept that enormous volume? Text messaging. Don't want to invest in that technology? Use e-mail. You won't get as many entries as you will with texting, but you'll still involve hundreds, if not thousands of people instead of 10. Remember: You are the mass communication business and you want as many people as possible to respond to you.

How do we use new media for shows that require conversations, like talk shows?

Use any of the methods that permit mass return communication: E-mail, text messaging, instant messaging and social networking pages like Facebook.

You've never read comments on-air from someone who posted on their Facebook page? What are you waiting for?

As I indicated, some of this requires a new approach. It may be that the main host doesn't read all the e-mails or text messages aloud. You may want extra voices to do that to add greater flavor to the show. You may want to try using a text reader (computer generated). Of course, I'm not suggesting you shouldn't use a phone anymore for a talk show; just don't limit the interaction to Mr. Bell's invention.

Let your listeners know that they really can reach you with their view. Maybe you'll want to save everything you receive and post it to your Web site either during or after the show.

A word of caution: On-air talent may react negatively to utilizing text messaging, instant messaging and e-mail rather than the phone. This is serious change and it's typical to want the status quo.

The telephone encourages the lonely, disenfranchised and hyper fan to get to know the talent — often by first name. This misleads talent into believing they're vital to the lives of most of their listeners. The truth is, most of their listeners don't even know their names and will never contact them via phone. But by opening the floodgate of return communication, talent can finally allow mass numbers of people to respond.

We need a new interactive approach that helps radio evolve into a true interactive medium. Still don't agree? Think of your own behavior now when communicating at work. Do you communicate with more people on the phone or by using e-mail, social networks and text messaging? Hello? Anyone ready for a new approach?

The author is president of Lapidus Media. Contact him at marklapidus@verizon.net.

iStockphoto/JJMaree

Is your station using the same old call-in tactics in the era of e-mail, text and instant messaging?

Remember, you are a mass communication business. You want as many people as possible to respond to you.

STATION SERVICES

Impact Radio Celebrates Motown's 50th

Taking advantage of Motown's 50th anniversary, Black History Month and the election of President Barack Obama, Impact Radio Networks is offering "Motown 50: The Radio Special."

Produced by Scott Paton and McVay Media, and created and developed by Universal Music Group, the eight-hour special covers the history and influence of the famous label.

Famous Motowners such as Smokey Robinson, members of the Supremes, the Temptations and the Four Tops are interviewed.

Affiliates airing the series will have access to promotional materials such as CDs, a national contest and Internet marketing tools.

President and CEO of Impact Radio Networks Steve Ludwig said: "Motown is such an iconic name in American music history, and to be able to honor its 50th anniversary with remembrances of the artists, songs and personalities that built the legend is a rare pleasure for us ... We're confident that this is going to be compelling programming listeners will thoroughly enjoy."

New York's WRKS(FM), an Emmis Communications property, is the most recent sign-up for the program.

For information, contact Impact Radio Networks at (877) 306-0001 or visit www.impactradionetworks.com.

World Radio History

PUBLIC RADIO

Fund-Raising Lessons From a TV Success

What 'Idol Gives Back' Can Teach Us About Broadcast Fund Raising

by Todd Isberner

The author is president of ShareMedia Services Inc., a broadcast fund raising consultancy.

Test yourself in something. Pull out some of the recorded segments from your last on-air fund-raiser. Play it in the background while you're jamming through your e-mails.

Did any of it get your attention? Did you find yourself occasionally leaning in to listen? Or did you find yourself just hearing "blah-blah" in the background, perhaps getting mildly irritated from the distraction?

When you and your staff set aside planning time for your next broadcast fund-raiser, review what worked so well for "American Idol" during their "Idol Gives Back" fund-raiser last spring.

As I watched their show I started taking notes on what I think worked for them and what we might be able to apply to non-commercial radio:

1. "Idol" uses celebrities who really care about the cause and give it credibility. So use artists and programmers more often with more heartfelt endorsements.

2. "Idol" focuses on the specific needs of non-profit "partners" to create a "bigger" cause for donors to become part of. Donors will respond much more earnestly when they can buy a piece of something "real."

3. "Idol" uses a great Web site that gives a *full* explanation of where the money goes in a simple layout. Use theirs as a model for yours. See *www.americanidol.com/idolgivesback.*

4. "Idol" incorporates powerful, dramatic, well-told stories of real people with real needs told *about* and *by* the individual. So create docudramas of individual listeners who have powerful stories (listener testimonials). Segment the stories so they can be used over several breaks with appeals in between segments.

5. "Idol Gives Back" broadcast a clear explanation of *how* their individual needs are met and how their lives improve as a result of the support. Besides doing this for your listeners, also give case stories of individuals helped through your ministry partners.

6. "Idol Gives Back" was a well-produced event, using the right song at the right time. Songs performed were matched to the story. Create a log that selects a powerful song to match the content of the story.

7. "Idol" gathered sponsors that contribute and also tell us why they care. Get your business underwriters and other "sponsors" to provide match challenge money. Have them record a "Why I support the station" spot for broadcast.

8. "Idol" used celebrities to answer the phones. Use artists and local celebrities to take a few turns on the phones.

9. "Idol" used phone center interaction and provided regular updates on their pledge drive. Give pledge reports and progress updates from the phone center while interacting with the operators and the callers.

10. And finally, the overall "Idol Gives Back" presentation contained a perfect balance of the following elements:

- recorded story vignettes
- clearly articulated need
- results of the donor's help, shared clearly
- appealed from the celebrity field person reporting
- emotionally moving songs that matched the stories
- appeal by the artist after their song
- sweepers with an endorsement/appeal by a celebrity
- lots of heart messages and appeals to the emotions of the viewer/listener
- humor

You don't raise a pile of money from a bunch of younger folks making small one-time gifts without knowing something about what you're doing. Take action on a few of these suggestions and amaze yourself with the results.

Contact ShareMedia Services via its Web site at www.sharemdiaservices.com.

People News

Orban/CRL named a new chief financial officer. **Roger Sales** has been working with the company as a consultant and independent member of its board. He replaces **Rebecca Nation**, who was performing the CFO role on a temporary basis in addition to her duties as vice president of human resources. In January she was appointed vice president of U.S. operations.

RadioTime Inc. hired **Dan Halyburton** as its president. He will report to CEO Bill Moore. Halyburton was with Susquehanna Radio Corp. for 25 years, becoming senior VP/GM of group operations. More recently he was SVP/market manager for Emmis Communications in New York.


John George

Dielectric Communications rehired **John George** as regional sales manager for the southeastern U.S. George has worked for Harris and LBA Technology in addition to a previous stint with Dielectric. **Matt Leland** will assume responsibility for West Coast sales, New England and Canada.


Matt Leland

Lynn Turner has joined **PTEK**. The RF equipment manufacturer named her as business development manager; she will run the company's new office in North Carolina. Turner, a former a station owner and general manager, also represented Broadcast Electronics as eastern region sales manager and is a former district sales manager for Harris Broadcast.


Lynn Turner

Also, **Jennifer Brown** has been appointed marketing IT manager for PTEK.

World Radio History

How Do You Sing That in Arabic?

In Dubai, a New Set of Jingles Sang the Praises of the Holy Month of Ramadan

by Ken Deutsch

We've all heard those catchy little jingles that sing the names of our favorite radio stations. They usually appear after we have been treated to four minutes of car dealer spots and pitches for erectile dysfunction nostrums. Just before we finally get to hear some music, out pops a cheery vocal group singing "One-Oh-Five-Point-Seven, Star-FM."

These eight-second wonders have been around since the 1950s and usually showcase the station call letters or slogan. But not always.

In the United Arab Emirates, a new set of jingles hit the airwaves last September singing the praises of the Muslim holy month of Ramadan. Commissioned by and heard only on Channel 4 FM, the jingles were sung partly in Arabic and partly in English.

"The Arabic lyrics say, 'Ramadan Kareem,' which is kind of like 'Happy Ramadan,'" said Program Director Neal Bowden. "The frequency and call letters, 104.8 Channel 4 FM, were sung in English. These jingles aired during the month-long celebration of Ramadan this past September."

The sung IDs were created by Dallas-based production house TM Studios for the station, which is based in Dubai. The jingle singers in Texas vocalized the Arabic portions phonetically under the supervision of Bowden. This was done by use of a verbal pronunciation guide delivered to TM Studios via MP3.

Chris Stevens represents TM in the United Kingdom as vice president and creative director, and he was the sales account rep involved in this transaction.

"TM was already producing jingles in multiple languages each month," he said. "As an example, 'Kissville,' another of their ID packages, is on the air in Portugal, Germany and on a whole load of Spanish stations."

The instructions we gave to TM were simple: hot adult contemporary meets Arabic.

— Neil Bowden

Start here, get there

Bowden is no stranger to international radio, having arrived at Channel 4 FM via a global route.

Neil Bowden

He started working for the BBC in Worcester, England when he was 16.

"I answered the competitions lines, mailed out prizes and did research for the morning show," he said. "From there I moved to a small AM station, Sunshine 855, in Shropshire, then went overseas in 2003. I was hired to launch a contemporary station in Cairo, Egypt and host the morning show. From Egypt I got the call to go to Dubai, so I moved there in 2004."

In June, 2005, Bowden was promoted to music director and changed the station's format from contemporary hit radio to hot adult contemporary. He also handles the morning show on Channel 4 FM. The station targets an audience of Western expatriates aged 25–44. Thus, the broadcast day is presented entirely in English.

Using jingles is one way to help a radio station relate to its audience. If Ramadan is important to its listeners, it is important to Channel 4 FM.

"We wanted to do something different," Bowden said. "We wanted to acknowledge this holy month with more than just [announcer] sweepers. The instructions we gave to TM were simple: hot adult contemporary meets Arabic."

Getting an Arabic sound involved some musical instruments not well known in the United States.

iStockphoto/Serdar Yağcı

Getting an Arabic sound involved some musical instruments not often found in Texas — notably, an oud like this one.

"One of our concerns was how to find an oud [a Arabic lute] in Texas," he said. "Luckily the guys at TM were able to locate one, and a few ideas were sent back and forth until all five instrumental tracks were approved. We opted for the singers heard on TM's 'Kissville' package designed for WXKS(FM), Boston."

Stevens noted that even with the inclusion of the oud, the musical tuning of the instrumentals was similar to Western scales.

Bowden's general manager thought his program director was a little crazy when the idea was first broached.

"But listener response was amazing," said Bowden. "This the first time anyone has used jingles in Dubai to celebrate the holy month of Ramadan."

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World Radio History

STATION SERVICES

Survey Says...

According to a survey of top 25 market news and talk radio stations, podcasts are a useful tool.

The survey, conducted by radio consultancy and PR firm News Generation, found that major-market stations were making a majority of their programming available as podcasts and that podcasts had become a major source of revenue through commercials added to the content.

A respondee from a station in Portland, Ore., said: "Because it doesn't cost much to do, the ROI is great when it comes to what we can sell the podcasts for. Being able to show advertisers downloads and subscriptions is a great way to give them tangible stats."

Podcasts, according to survey respondents, also breed listener loyalty by providing programs in a convenient and accessible manner. According to a Houston station, podcasting is "an excellent way for listeners to time-shift and it offers them an opportunity to share special segments with friends who might have missed something they deem worthy of attention. Those are values to the listener, and a value to the listener is always a value to the station."

For information, contact News Generation at (404) 846-6850 or visit www.newsgeneration.com/newsletters/issue_f_08.html.

It's in the Stars

Adding to its Spanish language offerings, Envision Radio Networks has announced the availability of "Diosa del Destino" (Goddess of Destiny).

Created by Lisa Osborne, a radio show producer and developer of the Leading Edge Talk radio program network, each daily 60-second show is in Spanish. The show's concept follows Osborne's "card" approach which combines astrology, numerology and a deck of playing cards.

Danno Wolkoff, CEO/president of Envision Radio Networks said: "Affiliates can use the program as a benchmark feature where listeners will be entertained each day with compelling readings and advice."

Osborne said of her unique approach, "'Diosa del Destino' is more personalized than traditional horoscopes because the cards change daily, unlike horoscope signs which only change once a month."

For information, contact Envision Radio Networks at (216) 831-3761 or visit www.envisionradio.com.

Westwood One Adds R Dub!

KHHT(FM) Program Director R Dub! has joined program syndicator Westwood One and spun his "Slow Jams" weeknight program of contemporary urban and romantic music into a Sunday night gig as well.

"Sunday Nite Slow Jams" is an 8 p.m. to midnight national program that accepts listener requests. Westwood One has also picked up the KHHT "Slow Jams" weeknight program from 10 p.m. to midnight during the week.

Senior VP, Entertainment Division Max Krasny said, "We are excited to add 'Slow Jams' to Westwood One. Not only are we gaining a great program but an equally talented programmer."

R Dub! said, "I can't begin to tell you how happy I am to become part of the Westwood One family. It's an honor to have 'Sunday Nite Slow Jams' and our new weeknight 'Slow Jams' show as part of Westwood One's first class lineup."

For information, contact Westwood One at (212) 641-2183 visit www.westwoodone.com.

Dial Global Reformats

Dial Global has digested its purchase of fellow programmer Jones Radio Networks (June, 2008).

Called Dial Global Total, the 15 new formats were created out of combining old Dial Global and Jones offerings or developing from scratch.

The full-time formats include numerous rock and country offerings; often segmented into classic, hits or mainstream subcategories.

Executive Vice President for Programming Beau Phillips said: "After Dial Global acquired JRN, we had an abundance of strong program directors and air personalities. So we've blended the best from both companies. As a result, our programming team is top-shelf, and our formats are loaded with talent around the clock."

DIAL GLOBAL

President Kirk Stirland said, "At a time when broadcasters are looking for quality programming at low cost, our 24/7 formats are a terrific option."

For information, contact Dial Global at (212) 419-2926 or visit www.dialglobaltotal.com/index.php.

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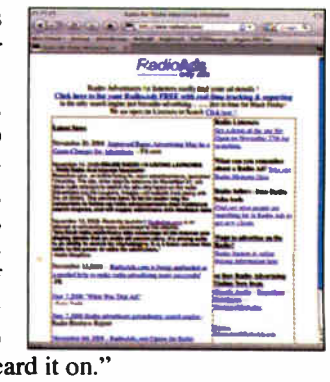

RadioAds.com allows advertisers to list their radio ads.

The free search engine, an offering of Radio Channel Networks, is dedicated to radio advertisers, with tracking capabilities for ad campaigns. Listeners can find the details of an ad, "with what little information they recall, no matter what station they heard it on."

To be listed, advertisers must visit the Web site to input their information. They can input ad details, coupons, images, links to a Web site and direct links to the product or service being advertising.

The founders said they had the idea when they heard an ad they were interested in and could not remember any of the details. They hope the site will help radio clients "stand out from the glut of advertising and easily be found. Radio advertisers will no longer have to worry about their search engine listings, adwords placement, yellow page ads or listeners remembering cumbersome phone numbers and Web site addresses."

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Collector wants to buy old vintage speaker & amplifier, McIntosh, Marantz, Electro Voice, Jensen, Altec, Tannoy, Fisher, Dynaco, Cash- pick up 773-339-9035.

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214 738-7873 or sixtiesradio@yahoo.com.

MISCELLANEOUS

WANT TO SELL

Denon TU-1500RD AM/FM rcvr, $!50; DBX 286A mic processor, $100; Broadcast Tools CD-8A dial up remote, $75; Radio Systems 1x8 audio dist amp, $75; Sentry Systems Air Sentry silence alarm, $25; Circuit Werkes Sub3 subaudiable detector, $100; Broadcast Tools AVR 8 alarm voice response unit, $100; Broadcast Tools 12.4 12-input, 4-output audio router, (2) $150/ea; Broadcast Tools DSC-20 dual satellite cntrlr, $50. M Brockmeyer, 712-246-5270 x.107 or kmaengineering@kmaland.com.

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World Radio History

◆READER'S FORUM◆

Yank Out The Car Radio

My family just had a bad experience involving radio. In fact it may be time to yank out the car radio.

A decade ago, Radio World mentioned how diversified radio was in San Francisco. That appears to have changed. In fact, if you're over 45, you apparently are no longer a citizen, no longer part of the "public" who own the airwaves.

After this fiasco, my family has concluded that there's really no reason to keep a car radio anymore.

— 'Bro' Duke Evans

On a recent Sunday ride, the one (1) FM station that normally plays "classic rock" (bean counters will tell you never to again utter the word "oldies") had a ball game on. Tuning across the dial, we ran into dozens of stations with wall-to-wall commercials and at least three playing the same boring '80s slow-paced soft rock songs, run by a computer.

Nothing older that 1980, period. And nothing live.

Ask yourself: Why is the Internet popular? Why is everybody going to the iPod? One word: Variety.

Imagine a hundred stores that only sell milk vs. a supermarket that stocks corn, milk, steak and cheese. Where are you gonna go?

Hide behind the bean counters and old media reports of Eddie Fritts telling everybody how great radio had become, but the result is the same: Once people throw out their radio, it's over.

Our horror story came upon our departure. That's when we remembered: "Hey! There's an AM station that plays some pretty interesting stuff." Sure enough, on our way back to Santa Rosa, we found one (1) station. In among 10 or so stations carrying the same damn talk show about "shadow people" was a music station. It did not, however, carry weather, news or traffic.

Little did we know, but some 20 miles up the freeway a fire had erupted and the Highway Patrol was blocking the road intermittently to escort fire trucks through. Result: What would normally be a one-hour commute lasted a monumental three hours, with bumper-to-bumper traffic for 20 miles — and no warning on the radio whatsoever.

So I figure: If half of the people in their cars were upset that none of their computerized music stations bothered to tell them about the traffic problem, that's about 50,000 people who are going to consider getting an iPod. Maybe one that works in their car. Even in a bad economy.

After this fiasco, my family has concluded that there's no reason to keep a car radio. Why suffer through marginal programming that none of us really cares about? More important: Why keep a radio if it doesn't keep you informed of potential disasters?

I grew up with most music stations providing news, sports, traffic and weather. Usually this meant four to five minutes at the top of the hour and two minutes at the bottom. Nowadays, most stations have replaced this with four to five minutes of commercials every 15 minutes or so, none of which are alerting me of traffic dangers.

There are plenty of pimply-faced teenagers who would work for minimum wage. There are plenty of frustrated or former broadcasters who feel forced to broadcast without a license because no one will let them on. And there are plenty of young adults who would *pay* a station for access to their airwaves. Call it a broadcasting school.

We would have cheered if any one of these above-mentioned guys had been in a position to announce: "Hey, the freeway's blocked for 20 miles. Use alternate routes."

"Bro" Duke Evans
KBBF(FM)
Santa Rosa, Calif.

Expand FM Band

With the economy in disarray, this isn't the best of times to propose an expansion of anything, let alone FM radio. But with changes in government and the broadcast industry, the time to act is now. There's a new FCC chairman, and Congress as I write was in the process of extending the date for implementing digital TV signals.

Predictably, the biggest disappointment for those wanting this change rests squarely on the shoulders of existing broadcasters, both commercial and noncommercial, who (with lip service to the contrary) don't want the extra competition. Such foot-dragging should not slow efforts by the rest of us to contact congressional offices and the FCC with e-mail, letters and phone calls.

At the very least, you would think the FCC would expand the FM band from 88.1 down to 87.7 MHz, where the left side of most FM tuners ends. Just by adding those two channels, many noncommercial broadcasters across the country could see a dramatic improvement in signal coverage and/or the creation of new FM stations. It's time to move ahead, and let long-overdue fresh programming ideas come forth for both aging baby boomers and the emerging iPod generation. It may be the only hope for an industry that has struggled mightily in recent years.

Pete Simon
Denver

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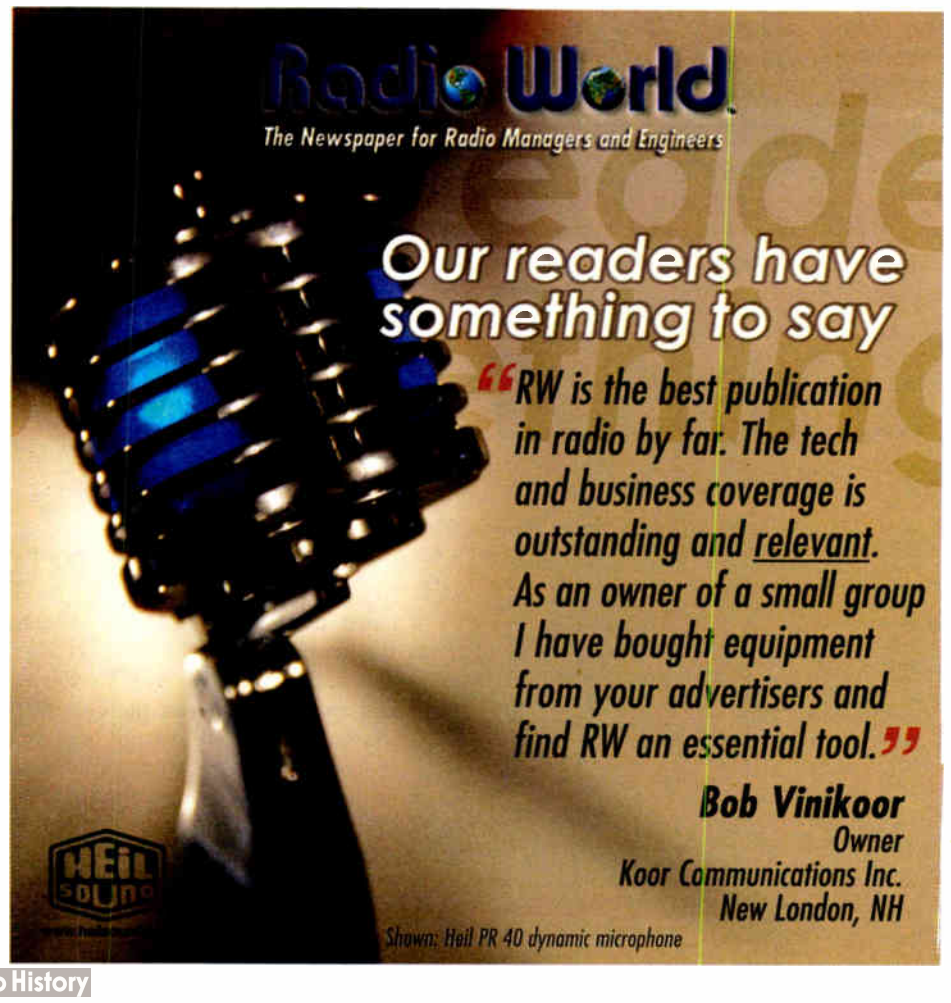

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NewBay Media

A Poor Choice of Words

The Ad Industry Should Stop Saying 'Digital' When It Means 'Online'

Like any mass medium, radio broadcasting is a confluence of business and technology; it includes specialists in both fields working toward common goals. With any such team, a common language steeped in the jargon of the industry is essential for optimum communication.

So it concerns us when we see terminology with conflicting definitions being used by various parties within a single enterprise. The nomenclature we refer to is no less common or influential to our current business than the word "digital."

Broadcast technologists understand what the word means, in various contexts. Yet the advertising business — the very engine that drives our industry — generally uses the term "digital" to refer specifically to the online advertising sector.

When engineers say "digital," they mean anything that uses bits; when they use the word in a radio broadcasting context, it refers to audio production, storage and transmission systems that utilize digital technology.

But when advertising, audience research and media sales professionals say "digital," they typically mean "the Internet," and when they discuss this in the context of radio advertising, they are referring to ads on a Web site or in streaming online media.

While knowing the context often provides clarity in such situations, we've witnessed discussions where the same data was interpreted quite differently by various staff within a single operation. In one example, engineers and others understood the numbers cited as a station's "digital audience" to mean those listening via HD Radio (which is now possible to measure separately given the coming of the PPM), but the numbers — which came from the sales department — turned out to actually be a measure of the station's *online* radio listeners. Other similar cases abound.

This is a particular problem for radio, where digital and analog broadcasting — plus an online presence — will likely co-exist for some time. Moreover, soon all media will be largely digital, so using such an overly broad term to connote a single component within a multi-platform distribution entity will only become more imprecise and confusing.

It is more than mere semantics — it can affect how a business makes decisions. In these pivotal times of multiple transitions, crystal clear presentation of timely information among all parties is critically important. And the word in question isn't going to fade from usage anytime soon; in fact, the opposite is far more likely.

Yet this is not so difficult to fix. There are commonly understood terms in widespread use that more precisely identify what is intended by ad folks when they currently say "digital," and we implore this sector — and the entire industry — to begin using such alternate terminology in standardized fashion. Now's a good to time institute this change, too, with the coming of the wireless Internet, which will also benefit from its own differentiated designation.

Thus we propose the following labels: Let's all use "Online" to refer to content and services delivered via the Internet, and "Mobile" to refer to its wireless subset. These terms are clear to all, and cover just the constituencies intended, with no overlap or confusion with other distribution technologies.

There are challenges enough facing our medium today. Let's not add to them with confused communication.

— Radio World

◆READER'S FORUM◆

Off by a Few Orders of Magnitude

While I am not an astrophysicist and thus will ignore the remaining welter of bizarre statements in Steve Lampen's article "Touch a Supernova" (Dec. 3), one "fact" is off by roughly 19 decimal orders of magnitude.

According to accepted Big Bang cosmology, hydrogen ("and bits of a few other elements") did not form in "the first few microseconds" but rather in about 300,000 years. Before this epoch, all matter was ionized (i.e., no atoms) and radiation was coupled to the ions.

It was only after the universe cooled sufficiently that hydrogen and other light elements could form, and radiation could escape. This radiation, "the microwave background," is one reason we are able to study the Big Bang. Tiny differences in the polarization, intensity, frequency distribution, etc., of the microwaves are the main clues as to what the Big Bang was all about. If atomic matter formed in microseconds, we'd know a lot less than we think we know.

Also, in the table on page 18, element 110, given as Uun, was named Ds, Darmstadtium, by the International Union of Pure and Applied Chemistry in 2003.

Richard Factor
Chairman
Eventide
Little Ferry, N.J.

License Mortgaging

I just stumbled over Frank Montero's article regarding the collateralization of FCC licenses (RW Nov. 5, or *radioworld.com*, keyword Montero). I applaud this. I have ranted and railed against the current policy for years until my friends and clients are tired of hearing about it.

It seems that every time the FCC has a chance to do something positive toward (a) moving the industry forward and/or (b) creating true opportunities for minorities, females and entrepreneurs, it goes 180 degrees the wrong way.

This goes all the way back to the 80-90 docket, pioneer preference points, comparative hearings, tax certificates, consolidation of ownership, "unjust enrichment" penalties and, underlying all this, the inability to mortgage licenses.

I've been brokering, owning and consulting for nearly 20 years and have worked in the industry since 1966. I've seen the total evolution from one perspective or another.

In that time I've seen only two small companies get SBA loans. I've tried unsuccessfully to create a private, unsecured incubator program for entrepreneurs. Without the ability to collateralize the license it just doesn't fly. Until this past year I have never experienced a payee having to foreclose on a license. This year alone I have four cases. Unfortunately, due to the inability to take a trust deed in the license, my clients have had a horrible time recovering their stations even after obtaining judgments of default and orders to compel the debtor to cooperate in filing a reversionary assignment application. I have one client who had a perfected Stock Pledge and he didn't want to try to enforce it. Security Agreements are somewhat useful as a blunt instrument. Personal Guaranties are somewhat useful, but the ability to seize the license is the best and strongest security available.

If we could simply collateralize the license, bankers would free up capital, and sellers would feel safer in carrying paper.

— Brett Miller

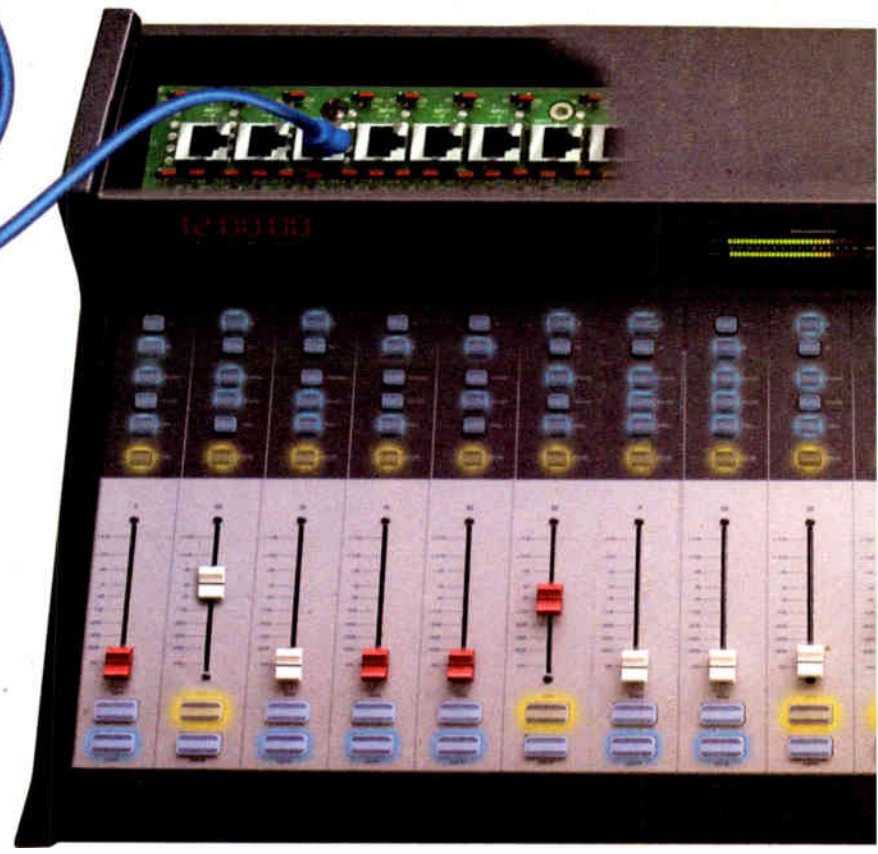
I don't know why we always cite a bankruptcy as an event of default when it just helps prolong the inevitable and forces the creditor to suffer even greater indignities. If we could simply collateralize the license, bankers would free up capital, and sellers would feel safer in carrying paper. I've even offered to guarantee a buyer's performance provided I had a way of obtaining the license. Until that happens there's no compelling reason for me to do that. If our goal is to make deals happen and protect the creditors at the same time, it's truly time for the rules to be changed.

Frank, count me in when you're ready to start a taskforce.

Brett Miller
MCH Enterprises Inc.
Paso Robles, Calif.

World Radio History

StudioHub+ Inside



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ANALOG is good. There are over 4000 analog Millenium consoles in service today and we continue to manufacture and ship analog consoles every day. That's because these boards are inexpensive, sound great (with specifications that rival and exceed many digital designs) and have enough features for many small and medium market applications. For more demanding applications, our analog consoles optionally can be equipped with additional mix-minus outputs, distributed output busses and redundant supplies making them even more capable and still a great value.

Going DIGITAL is a process. Radio Systems eliminates some of the stress with our NO CHARGE Digital upgrade program. For the life of your console we will swap any analog plug-in card for a digital one (or vice-versa) allowing you to gradually transition your studio to digital. You can even start out all analog and convert one channel at a time as digital arrives in your facility. But from day one your Millenium Digital console will out-put pristine digital audio to feed your air-chain processor and produce up to ten fully configurable mix-minus feeds.

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Livewire is a registered trademark of TLS Corp.
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A SIMPLE CIRCLE GOT THE WHOLE WORLD ROLLING.

NOW SEE WHAT A SQUARE CAN DO.

E^2

Usually, the best inventions are those that are the most simple. There's currently a crop of Audio-over-IP studio hardware out there that just doesn't get it. It's complicated, it relies on PCs for mission-critical functionality and is, seemingly, in need of 24/7 support. Hmmm.

Wheatstone, known the world over for the highest quality networked audio and consoles, has a better idea. What about a system that does it all without complicating your life? Interconnect control room, studio and TOC audio seamlessly, all audio available everywhere without having to set network parameters and priorities. The sky's the limit.

Connect Wheatstone console control surfaces with a single cable. Interface your audio automation computers via Ethernet for audio and control, saving the cost of an expensive sound card. Sound good? It is.

E-SQUARE is an attractively priced system that's designed to be as easy to use as it is powerful. The only decision you'll have to make is whether you are interfacing analog, digital gear or both.

Every SQUARE knows its place in the network just by being plugged in and quickly set with the front-panel wizard. When it comes time to fine tune, plug a PC into your network and, using the highly intuitive E^2 Navigator GUI, do a little bit of naming and customization. Once set up, unplug your PC and put it away. No need for an IT degree or 24/7 service. Don't get us wrong — we're here for you when you need us. But like the Maytag repair man, we don't hear from panic-stricken people very often.

Make your audio networking decision the easiest decision of the day. Or make it a complete studio network, routing and console decision. Or a digital snake decision. Whatever. We just want it to be easy.

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