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**The Modern Remote**

Radio engineers use a growing arsenal to do remotes and help stave off localism critics.

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**One More Recap**

The late Bob Murphy, center, for many years was the voice of summer for New Yorkers.

Page 28

# Radio World



\$2.50

The Newspaper for Radio Managers and Engineers

December 15, 2004

**INSIDE**

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▼ Digital radio supporters turn their attention to real-world issues.

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▼ It's hunting season and bullets are flying. Monitor line pressure frequently.

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**GM JOURNAL**

▼ Promotions ideas for 2005; the cross-border strategy of Martz Communications; and radio managers on free speech.



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**ON THE TOWER**

▼ Buyer's Guide squints up at antennas, STLs and transmission support.

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## Emergency Signaling Hits a Bump

*ADiCorp to Test Redesigned Emergency Vehicle Signal Service Unit in Canada*

by Randy J. Stine

**WASHINGTON** It's back to the test facility for one of the companies developing Emergency Vehicle Signaling Services.

Citing a need for further tests of its Radio Alert Transmitter unit, Alert Devices International Corp. this fall withdrew its Petition for Rulemaking before the FCC and said it is moving forward with plans to further evaluate its redesigned equipment in Canada.

An Emergency Vehicle Signaling Service, or EVSS, involves the installation of low-power transmitters in emergency vehicles. The alert service uses the AM and FM bands to transmit warnings directly to car radios that are already in use, overriding the audio of broadcasters. The messages would alert drivers that public safety and emergency vehicles are engaged in an emergency response situation in their proximity.

Supporters of the technology argue that

See EVSS, page 10 ▶

## NPR Tries Surround In New Year's Broadcast

by Leslie Stimson

**WASHINGTON** NPR intends to take a big step into the radio surround sound arena with a New Year's Eve broadcast.

Network and station engineers as well as suppliers involved have been scrambling in recent weeks to prepare for the Dec. 31 hookup.

Participants believe this is the first U.S. attempt to create a distributed network feed of surround sound and the first U.S. broadcast of surround material on a national scale. The network believes that, along with analog with HD Radio and supplemental audio, surround sound is part of the future of terrestrial radio. It

See SURROUND, page 7 ▶



During training of NPR and station staff for the Dec. 31 surround broadcast, Neural Audio's Robert Reams gets ready to unveil an aftermarket surround sound decoder the company will introduce at CES 2005.

Photo by Leslie Stimson



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# Vandals Shut Off Florida Stations

by Randy J. Stine

**ORLANDO, Fla.** Radio broadcasters here are re-examining tower site security measures and asking Orange County officials to reconsider an ordinance that the stations say allows trespassers to knock stations off the air with relative ease.

The concern follows an October incident at the tower site serving Cox Broadcasting's WPYO(FM) and WMMO(FM) and ABC's WDYZ(AM). The three stations were knocked off the air when someone shut down power to the transmitter facility by pulling an electricity shutoff switch on the outside of the building.



Cox Broadcasting stations WPYO(FM) and WMMO(FM), and ABC's WDYZ(AM), transmit out of this building. There are five towers on the property, one serving the FMs, the other four for the directional ABC station.

"They hit the shunt trip device to kill power to the building and then returned to the site when they realized we were on generator power and disabled the generator," said Steve Fluker, director of engineering for Cox Radio in Orlando.

No other damage was done to the building and nothing was taken, Fluker said. The stations were off the air approximately one hour.

## Power control clearly marked

A shunt trip device disconnects power to a building from a readily accessible location either outside a structure or inside near the point of entrance.

The electricity shutoff switch is a requirement by Orange County building codes and is intended to aid firefighters responding to electrical fires. The glass-enclosed case is marked with bright red letters on the exterior of all buildings built since 1995.

"You might as well have a sign out there that says 'Here, knock us off the air,'" Fluker said.

Orange County broadcasters are hoping to have the local building codes changed so that they are exempt from the rule, Fluker said.

He said broadcasters are beefing up security at tower sites as a result of the October incident and amid reports of tower site break-ins in the Houston area this fall that raised concern about homeland security (Radio World, Nov. 17).

"This is something we are all taking very seriously. Some (broadcasters) have even hired 24-hour security guards" to watch an antenna farm near Orlando where nearly half of Orlando's radio and television stations are located, Fluker said.

Meanwhile, FBI officials in Houston said their investigation into that area's break-ins continues. 

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# Digital Radio in the Real World

*AES Topics Include NRSC-5 Standard, Copy Protection and the 'Low Bitrate Last Mile'*

by Daniel Mansergh

**SAN FRANCISCO** Radio interests were well represented at this fall's Audio Engineering Society convention, with much of the buzz revolving around the potential for new services and technology to enhance the listening experience.

A panel session on the state of digital radio, a special event open to all attendees, highlighted how far the industry has come since the AES first presented a session on the topic 14 years ago.

The panelists tailored their remarks to a diverse audience of audio professionals, many of whom were learning about digital radio for the first time. Even so, the breadth of the presenters assembled by session organizer and moderator David Bialik, a systems engineering consultant, ensured that even broadcast engineering junkies came away with insights.

David Layer, director of advanced engineering for NAB Science and Technology, led off with an overview of the state of digital radio rules and standards.

At the FCC, Layer reported, attention is still focused on reviewing the comments and reply comments in response to the Further Notice of Proposed Rulemaking and Notice of Inquiry in MB Docket 99-325, issued in April.

This proceeding, as summarized by Layer, is intended to develop rules regarding conversion policy, audio quality requirements, datacasting, the multi-channel service known as Tomorrow Radio, subscription services, local programming requirements and AM operations.

In its own review of the comments and reply comments, Layer said, NAB detected a consensus on most of the big items being considered:

- The adoption of IBOC needs to be a market-driven transition;
- There needs to be flexibility for main channel audio quality;
- There needs to be flexibility for new services (Tomorrow Radio and others); and
- Dual-antenna implementations of FM IBOC should be allowed without STAs.

Some controversy remains, however, on nighttime AM IBOC operation and copy protection requirements, which may delay a final decision in the proceeding, according to Layer. Until the final rules are adopted, the FCC is continuing to allow IBOC operation upon receipt of a notification letter.

(At the NAB Radio Show just prior to AES, Jim Bradshaw, an associate division chief of the Audio Division of the FCC's Media Bureau, said there would likely be an interim IBOC order released in early 2005 that could discuss AM IBOC nighttime procedures and Tomorrow Radio. See Radio World Nov. 3, page 14.)

Layer also discussed progress of the National Radio Systems Committee in developing a technical standard for digital radio, dubbed NRSC-5. Driven in large part by the desire of the FCC, consumer electronics manufacturers and

broadcasters to have a single clearly defined industry-developed standard for IBOC, the NRSC effort is expected "to form the basis for the FCC's technical rules," Layer said.

**A**CEA official noted that consumers have long been able to record radio broadcasts, and the organization doesn't want that to change.

The current plan for the IBOC standard, according to Layer, is to detail only the modulation characteristics of IBOC, leaving specifications about the audio codec out of the standard. This addresses concerns of Ibiqity Digital regarding intellectual property and contractual agreements with other partner companies involved in the development of the HDC codec.

#### Reaching 'critical mass'

Michael Lyons, vice president for aftermarket business development at Ibiqity, gave a snapshot of the HD Radio rollout as seen by the company behind the IBOC technology.

Much of his discussion was familiar territory for broadcasters in the audience, but Lyons reported on several recent developments that show continuing progress in the effort to expand the amount of programming available on HD Radio and ensure that receivers are available to consumers.

Lyons reports that Ibiqity now has more than 400 licensees, with an estimated 150 stations now broadcasting an HD Radio signal. Lyons cited recent commitments by the large broadcast groups Clear Channel, Cox and Entercom to deploy HD Radio as a milestone in the movement towards achieving a "critical mass" of digital broadcast stations nationwide.

Lyons also was bullish on the outlook for HD Radio receivers over the coming year.

Admitting that current aftermarket automotive receivers with street prices ranging from about \$500 to \$1,000 are "too expensive," Lyons advised the audience to look for more manufacturers to release receivers at a variety of price points throughout the next year. Lyons expects HD Radio receivers to become optional equipment in several automakers' luxury offerings in model year 2006.

Lyons also expects home receivers will become available in the next year in a variety of forms. In particular, he noted the recent announcement of the Boston Acoustics Receptor HD tabletop radio as a sign that more equipment would be announced soon.

Jan Andrews, senior engineer at National Public Radio, reviewed the development and testing progress of the Tomorrow Radio project, an initiative to allow multi-channel operation within the HD Radio bitstream. Andrews summarized the results of field tests conducted

on four stations in 2003, which concluded that coverage of the supplementary audio channel would "fall within the 60 to 70 dBu service area of a typical FM station," according to the field test report prepared by the consulting engineering firm Hammett & Edison.

The encouraging test results led NPR to file comments to the FCC, requesting

material, with an eye to deriving a reasonable bitrate allocation between the primary and supplementary audio channels in a Tomorrow Radio system.

According to listener testing, conducted by Sheffield Audio Consulting, most listeners could perceive only very small or no difference between audio encoded with HDC at 96 kbps down to 48 kbps. As has been seen in previous digital codec testing, differences were most noticeable in samples of human speech, while music samples tended to survive lower bitrates with less perceptible degradation.

Interestingly, Andrews said, classical music and jazz samples were comparable to 96 kbps quality down to 36 kbps, while voice and rock music samples tended to do poorly at that bitrate. The results suggest that two 48 kbps channels or in some cases a 64/32 kbps split between primary and supplementary audio channels would be appropriate bitrate allocations for a station broadcasting two audio channels.

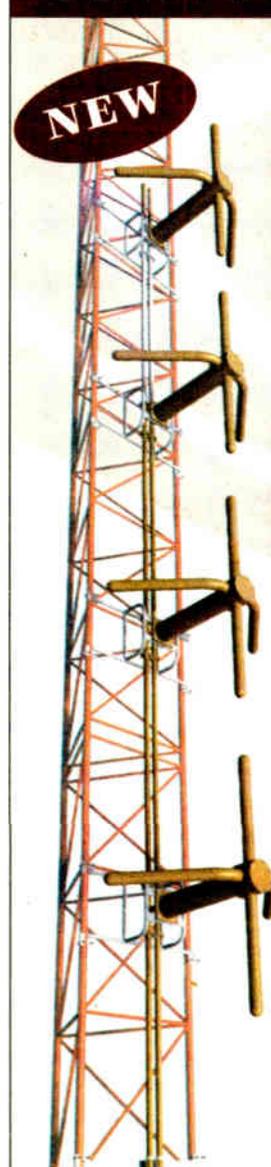
that the Tomorrow Radio system be incorporated as a permissible use under the new rules for digital radio broadcasting. NPR's assessment of the comments filed in the IBOC proceeding indicated that the commenters "overwhelmingly support the Supplementary Audio Channel," according to Andrews. He said NPR anticipates FCC action on the supplementary audio channel proposal in early 2005.

Andrews also presented results of listening tests conducted earlier this year to determine the suitability of different bitrates for various types of program

Andrews concluded with a review of another study conducted by Sheffield Audio Consulting to determine whether the extended hybrid portion of the HD Radio signal could support one or two low-bitrate informational audio channels with a variety of audio codecs, such as one channel of 12 kbps to 25 kbps, or two of less than 12 kbps each. NPR was trying to determine if radio reading services, many of which are carried on FM subcarriers, could be improved by incorporating them into the HD Radio system.

See AES, page 5 ▶

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# WCCO's Yearbook Is a Treasure

How badly we need good neighbors.

This sentiment seems so dated in our jaded modern times that I find it hard even to type. But as I flip through a 225-page hardcover book about the history of 830 WCCO in Minneapolis, I am reminded of the importance of good neighbors.

In truth I have conflicting emotions. I'm grateful for the years of service given to us by heritage stations like Infinity's WCCO. Yet I feel saddened because so few stations appreciate their past or are willing to celebrate it.

The very existence of a book produced by a station on the topic of its own history is unusual in 2004. Most stations would surrender ratings points or cut down a tower before admitting they had been around for 80 years or reminding people what they had looked and sounded like 20, 30 or 50 years ago.

Let's face it: These days, it's all about being new and fresh and edgy, not about history, tradition and stability.

The nature of radio format changes is partly to blame; yet this really is not a problem unique to radio. It's cultural. But it's also a shame.

## 'Information utility'

One reason I find the WCCO book bittersweet is that it was sent to me by Dick Carlson, senior VP and market manager of the station, a man fond of describing the station as an "information utility."

A few days after the book landed on my desk, we learned that Carlson had passed away. The station's 80th anniversary in October was among his final contributions; sending me the book was one of his last tasks.

I never met Carlson, but I suspect we'd have had a lot to talk about. The same for his predecessor, former GM Brian Whittemore. I cannot help but admire these radio executives — modern-day, bottom-line managers, working for Infinity, one of the biggest of the big groups, who were nonetheless willing to devote time and staff resources to publishing a celebration of the station not only as it exists today, but in all its glori-

ous black-and-white history.

WCCO published histories in 1964, '74 and '84. The 2004 book is by Paul Bergly, who worked in marketing for the station for 11 years. He writes in the forward that he grew up listening to WCCO and later encountered the station's 60th anniversary book, by Larry Haeg Jr., just as Bergly was starting his college internship at WCCO.

"It had beautiful pictures and Haeg's text was poetic," he wrote. "But in the back of my mind I always wanted to write 'the next' WCCO history book. And so throughout my tenure at WCCO I took some 15,000 pictures, documenting most notable guests and most station functions."

It was Bergly who pitched the idea of a book to Whittemore and later to Carlson. Both were supportive. The final

Here we find evidence of the real and intimate connection between a great local station and its listeners. The former employees in these pictures — not just hosts but news assistants, meteorologists, sound effects men, musicians — won't be familiar to many of us outside the Twin Cities. But those radio professionals have provided the soundtrack for the lives of millions of Minnesotans.

The book includes six audio CDs with more than 35 hours of programming, selected, dubbed and cleaned up by Mark Durenberger, who first brought the project to my attention (and who only used about 1 percent of the material he had available). Durenberger was able to include some unusually long audio selections as well as short clips. The "News and Weather" disc alone is like a time



Dinner With the Adams' aired on WCCO in the 1950s.

product is much like a college yearbook, with most of the space given over to photos and scrapbook items from the station's many years — remotes, famous guests, state fairs, politicians, sports coverage, morning teams, the news staff at work — right up to 2004.

"Listeners won't want to see all that stuff," I can hear the modern marketing manager saying. I disagree.

machine, taking us from coverage of the war in Iraq to the Armistice Day blizzard of 1941 and beyond.

The book is an excellent marketing piece, the kind of thing that listeners would buy; the WCCO Web site reports that the limited quantities it shipped to local Borders Bookstores were in demand, and recommended that listeners call the stores to check on stock.

## From the Editor



Paul J. McLane

It's also a super giveaway, something a listener would treasure if he or she received a signed copy at a station event.

Well done, WCCO. In 2004, looking back takes courage. You really are a Good Neighbor to the Northwest.

★ ★ ★

Another labor of love is Scott Fybush's Tower Site Calendar. Many people first heard about this project in Radio World, when we reported on its launch four years ago.

The 2005 edition is available, and I'm giving away calendars to the first five readers who e-mail me.

The new calendar includes tower photos Scott has taken during his travels. They include my former employer, WDEL(AM)/WSTW(FM) in Wilmington, Del.; WBBR(AM) in New York, the former WNEW and now flagship station of Bloomberg Radio; a "flat-top" wire antenna at KYPA(AM) in Los Angeles, which dates to 1924; Poor Mountain in Roanoke, Va.; KXNT(AM) in Las Vegas; and Gibraltar Peak above Santa Barbara, Calif.

Calendars cost \$16. Orders can be placed at [www.fybush.com](http://www.fybush.com).

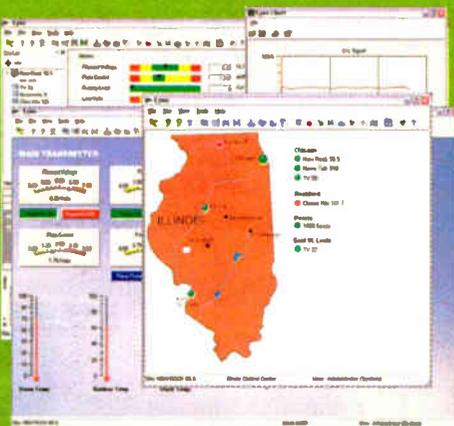
You can have a calendar for free, courtesy of Radio World and Scott Fybush, if you are one of the first five readers to e-mail and tell me why you enjoy reading RW. (Our regular contributors may not participate.)

Send e-mail to [radioworld@imaspub.com](mailto:radioworld@imaspub.com). And happy holidays from everyone at Radio World. 🌍

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# AES

► Continued from page 3

The results indicate that a single low bitrate digital channel outperforms analog SCA reception for all the codecs tested, including HD Radio's HDC codec, according to Andrews. For two very low bitrate channels, only a voice-optimized codec from VoiceAge outperformed SCA reception, particularly with speech samples.

Fred von Lohmann is a senior staff attorney specializing in intellectual property matters with the Electronic Frontier Foundation, a nonprofit group that seeks to protect the rights of Web users. He reviewed the issues surrounding the Recording Industry Association of

He noted that 98 percent of U.S. vehicles have an AM/FM radio, while only 2 percent have satellite radio. In addition, 17 percent of U.S. households plan to buy a new model year 2005 vehicle, which bodes well for widespread adoption of HD Radio receivers once they become widely available as OEM equipment.

The research indicated that 73 percent of the U.S. population is aware of satellite radio, while 42 percent are aware of HD Radio. "This is impressive," Wilson said, considering how little mainstream marketing and promotion of HD Radio has been done to date.

The CEA also is concerned about the potential problems of driver distraction due to mobile displays, Wilson said. The display of scrolling PS data on RDS receivers to provide artist and title infor-

## Von Lohmann found fault with the RIAA's reasons for treating digital radio broadcasts differently than analog.

America's petition to the FCC to include copy protection regulations in the new digital radio rules being considered in Docket 99-325.

From the EFF's perspective, the RIAA proposes "a restrictive set of conditions" that would make it difficult for everyday listeners to make convenient fair use recordings of digital radio broadcasts, as they are able to do with analog broadcasts today.

Von Lohmann found fault with the RIAA's reasons for treating digital radio broadcasts differently than analog broadcasts, claiming that for most listeners, there is "no appreciable difference" between HD Radio and good-quality FM reception.

The focus of FCC Docket 99-325 is now squarely on copy protection, von Lohmann concluded. As a result, he cautioned audio content producers, consumers and broadcasters in the audience not to let their future use of digital radio be dictated by the RIAA today.

David Wilson, director of engineering for the Consumer Electronics Association, rounded out the panel with a review of the CEA's recent digital radio-related projects.

Wilson discussed research conducted this summer by the CEA on consumer demand for both satellite and IBOC digital radio products, which found a desire for improved radio experiences.

mation is an application that the manufacturers had not anticipated, and receiver manufacturers encourage broadcasters to work with them to ensure that any changes to RDS are consistent with the HD Radio displays.

This would lead to a more consistent user experience, Wilson said, whether a listener was tuned to an HD Radio station or to an analog station with RDS.

Wilson reinforced von Lohmann's comments about copy protection, noting specifically the "Inducing Infringements of Copyrights Act of 2004," a bill introduced by Senate Judiciary Chairman Orrin Hatch, R-Utah, and the committee's ranking Democrat, Patrick Leahy, D-Vt. Opponents, including CEA, claim S. 2560 would make equipment manufacturers liable in copyright infringement cases.

"There is a long history of recording capability for AM/FM broadcasts," Wilson said, and the CEA would like to see that capability continue.

Finally, Wilson discussed the issue of limiting AM bandwidth for compatibility with IBOC, and the fact that some broadcasters have noted improved analog performance with the narrower bandwidth. Most receivers are already narrowly filtering AM signals to reduce interference, Wilson said, using this as an example to encourage broadcasters and equipment manufacturers to work together to ensure the best experience for listeners. 

## 'We Want Clean Audio'

Geir Skaaden, chief operating officer for Neural Audio, discussed the need to focus on providing a high-quality audio experience to digital radio listeners, even as additional services may whittle away at the number of bits available to audio within the HD Radio bitstream. He made the remarks at the recent AES show.

Achieving high-quality HD Radio audio requires special attention to the audio distribution chain before the signal gets to the exciter, ensuring that the audio material reaching the HDC codec is as clean as possible, Skaaden said at a panel on digital radio.

This is particularly true when several other codecs are used upstream of the exciter. "The low-bitrate 'last mile' makes all the artifacts from earlier in the chain show up," said Skaaden.

Pre-processing and optimizing audio before it reaches the codec is a key step, Skaaden said, improving efficiency of the codec by ensuring that the limited number of bits available are used where they are most needed to provide a good quality result.

— Dan Mansergh

## Satellite Radio Outlook 'Rosy'

Tony Masiello, XM Satellite Radio's vice president for broadcast operations, painted a rosy picture of the state of that industry and XM in particular during the AES panel on digital radio.

"There is now a viable satellite industry," Masiello said, estimating that XM and Sirius combined will have 4 million subscribers by the end of the year.

XM2go MyFi, a portable receiver with a built-in antenna and 5-hour recorder. As he spoke, Masiello pulled one of the new devices from his pocket and held it up for the audience to see.

Masiello discussed the efforts XM has made to expand into new, somewhat non-traditional markets to broaden its appeal and build sustainable revenue streams to complement its subscription-based business model.

**T**here is now a viable satellite industry.

— XM's Tony Masiello

The bulk of these subscribers have signed on after purchasing a GM or Honda vehicle with a pre-installed XM receiver, according to Masiello, and XM radios will soon be available through other automakers.

The choices for aftermarket XM receivers are expanding as well, from the Delphi SkyFi, "the most popular aftermarket satellite receiver," according to Masiello, to the new Delphi

Supplying weather information to marine and aviation users, partnering with JetBlue, AirTran and Starbucks to provide music programming to those companies' customers, and bundling the XM online music service with Dell Inc. indicate how XM is aggressively looking for new ways to market its information and content delivery services, he said.

## Coverage, Reliability and Experience

When Millcreek Broadcasting set out to build a master panel antenna and combiner facility to accommodate multiple stations, they chose

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photo by Kevin Terry

# ◆ NEWS WATCH ◆

## Radio One/Joyner Deal Creates 'One-Stop Shop'

**WASHINGTON** Seeking to create a "one stop shop" for advertisers trying to reach African Americans, Radio One Inc., the seventh-largest radio group by revenue, plans to buy a controlling interest in Tom Joyner's media company with a cash and stock offer worth about \$56 million, according to the principals.

If it closes as expected in January, the deal gives Radio One a 51 percent con-

trolling percentage in Reach Media, parent company of the "Tom Joyner Morning Show," which is carried on 115 stations and the Web portal BlackAmericaWeb.com.

Radio One owns or operates 69 stations and bills itself as the largest radio group that targets African-Americans. Chief executive Al Liggins characterized the purchase as "probably one of the most significant acquisitions in Radio One's 25-year history."

"The combination of our nationwide distribution platform and the content machine of Tom Joyner will create a one-stop-shop for advertisers looking to reach the African-American marketplace."

Radio One also becomes the new syndicator for the Joyner show, originally syndicated by the ABC Radio Networks. Radio One hopes to syndicate Joyner's show on stations it owns in major markets, in addition to the 15 stations it owns that air the show now.

Joyner and CEO David Kantor created Reach Media about two years ago to operate and syndicate the show and run other Joyner businesses including "The Tom Joyner Sky Show," "The Tom Joyner Family Reunion" and other special-event units. Reach also developed a Joyner TV show with TV One Cable network. Radio One owns about 40 percent of the African-

American targeted cable network with Comcast.

Joyner and Kantor will receive roughly half of their share of the purchase price as Radio One stock and will continue to own "significant" stakes in Reach. Joyner and Kantor will sign a 10-year employment agreement with Reach.

Reach expects to report 2005 fiscal year revenue of about \$50 million and EBITDA of about \$12.5 million.

## Adelstein to Remain at FCC

**WASHINGTON** Jonathan Adelstein may remain at the FCC as a commissioner through June 2008. The Senate has confirmed his re-nomination. The Democrat originally was named to the commission to fill out the remainder of Gloria Tristani's term when she left the agency to run for Congress.

Adelstein's term expired a year ago but he was to stay at least until this session of Congress adjourned. Leaders of the Senate Commerce Committee backed an effort earlier this year to attain a recess appointment but the White House hadn't move on the re-nomination until recently.

## NAB Pulls Satellite Localism Petition

**WASHINGTON** NAB described as temporary its withdrawal of a request concerning satellite radio localism. It had asked the FCC to clarify that satellite is to be a national service and to assess its effect on terrestrial broadcasters.

But XM called the original petition "a waste of the commission's resources" and said NAB's subsequent action is "a complete vindication of our position that XM has complied and continues to comply with FCC rules. NAB's action validates that there are no content restrictions on XM."

The satcaster stated it believed the commission was about to vote against the petition.

NAB told the FCC it needs more time to develop a complete record in its bid to demonstrate why XM Satellite Radio and Sirius Satellite Radio are transforming from "what was intended to be a national radio service complementary to local broadcasting into one that will have a highly detrimental impact on local broadcasters' ability to serve the needs of their listeners."

NAB cites satellite radio's development of addressable receivers, and XM NavTraffic in particular, as technology that enables local content to be stored and later delivered to subscribers, "mimicking a local broadcast service."

The trade association said it intends to re-file its Petition for Declaratory Ruling at a later date.

The Consumer Electronics Association, the U.S. Department of Transportation and the Satellite Broadcast and Communications Association opposed NAB on the issue.

XM mobilized 25,000 customers to file responses against the petition, although a survey of filings by Radio World found that many did not understand the issue, believing erroneously that NAB had wanted to take away their service.

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# Surround

► Continued from page 1  
wants a toehold in that technology to broadcast its high-end content.

In an exclusive behind-the-scenes look at preparation for the broadcast, Radio World observed the first training sessions for engineers taking part in the event, which were held at National Public Radio headquarters.

NPR has been keeping an eye on surround sound developments for a while. In fact, the network conducted early recordings during experiments in Virginia's Luray Caverns in the Shenandoah Valley in the early 1990s, said Mike Starling, vice president of engineering for NPR. The concept has received new momentum in recent months with experiments at local stations like KUVU(FM) in Denver and WGUC(FM) in Cincinnati.

Now, with surround sound enjoying 30 percent penetration into America's homes and four technologies vying for market leadership in HD Radio surround sound, NPR intends to record, produce and air most of its New Year's Eve live jazz broadcast in surround sound.

"It's going to be a straight vertical climb," said Jan Andrews, NPR senior engineer, remarking on the network's need for hardware and training for its audio engineers and for those at its participating member stations to pull off the broadcast, which also is celebrating its 25th anniversary.

The project will involve four stations recording source programming in 5.1 audio, and sending it via bonded ISDN lines secured for this event to NPR, where the feed is uplinked to the Public Radio Satellite System. NPR plans to intersperse that material with its own pre-recorded 5.1 concerts for a total of seven 5.1 concerts broadcast on New Year's Eve.

## DIGITAL NEWS

### Karmazin Seeks to 'Reshape Landscape' With Sirius

**NEW YORK** Shock jock Howard Stern and Mel Karmazin will be working together again. Karmazin is the new chief executive officer of Sirius Satellite Radio. The Sirius board appointed Karmazin to Joe Clayton's former job, and bumped up Clayton to chairman of the board.

Karmazin will help Sirius gain advertisers and reassure Wall Street about the satcaster as a viable business, experts predict, looking at XM's subscriber total of approaching 3 million, roughly three times that of Sirius.

Clayton's three-year contract ends this month. He had told the board he was willing to stay through a transition period.

"When Mel left Viacom, we all felt we had a unique opportunity," stated Clayton, who credits the hire of Karmazin as the capstone to his turnaround of the company. When Clayton assumed control, the company had satellite launched and studios built, but no receivers in the market due to chipset delays from Agere, a Lucent spin off.

Karmazin served as president/CEO of Viacom until earlier this year.

"This is a perfect opportunity for me because I want to lead a growth company that can reshape the landscape of the radio business," stated Karmazin. "I took Infinity Broadcasting and Westwood One to leadership positions in the industry and am confident that Sirius will become a market leader."

Most listeners will hear a stereo broadcast. But NPR executives see this as a notable experiment with surround. Project managers want to see how such a surround distribution project might work and how it will sound, both in the few surround receivers that can decode it, and equally important, in non-surround analog stereo and HD Radio digital receivers that will pick up a stereo signal.

The impact on existing analog or HD Radio stereo is an important part of the experiment, they say.

### Toast of the Nation'

The broadcast, "Toast of the Nation Welcomes 2005," is to include 13 hours of jazz and blues from various U.S. venues as well as Paris, although the French portion of the broadcast won't be in surround.

NPR and WBGO(FM) in Newark, N.J., are presenting the event, which is set to include live performances recorded in 5.1 and transmitted to NPR from WGBH(FM) in Boston; KUVU in Denver; KCSM(FM) in San Mateo, Calif. with technical support from NPR West; and several pre-recorded 5.1 concerts from the Apollo Theatre in New York; the Ground Zero Blues Club in Clarksdale, Miss.; New York's Lincoln Center and other venues. The overnight broadcast is set to begin at 5 p.m. Eastern and conclude at 6 a.m.

If all goes according to plan, seven venues will uplink surround-encoded material.

Providing such a broadcast in surround sound is a huge undertaking, according to those involved. The network, vendors and participants were figuring out costs, equipment needs and staffing in late November.

Even without the surround element, this annual broadcast requires 30 to 40 people, said Ben Roe, NPR director of music. That's counting NPR employees and those of other stations and venues, he said.

"At NPR, we have a director, a studio host, producers, master control folks sending it (the broadcast) out, other folks dialing ISDN lines and pulling them in and a telecom manager," said Roe. "We order the ISDN lines a couple of months in advance. I've got to make sure the satellites are working and we've got redundancy."

### Consumer expectations

NPR wants to be first radio network in the surround sound broadcast arena.

"NPR, for a long time, has felt that surround sound would be part of the future audio environment," said Starling. "At

See SURROUND, page 8 ►



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# Surround

► Continued from page 7

some point in the future it may be a de facto consumer expectation," given the rate at which surround has crept into homes and now automobiles.

He and other NPR executives characterize the New Year's Eve event as an experiment, "but it looks like one that that has imminent prospects for a broad deployment. We're early in the HD Radio transition, but this one fits nicely with its technology platform and its topology to work well in existing broadcasting plants."

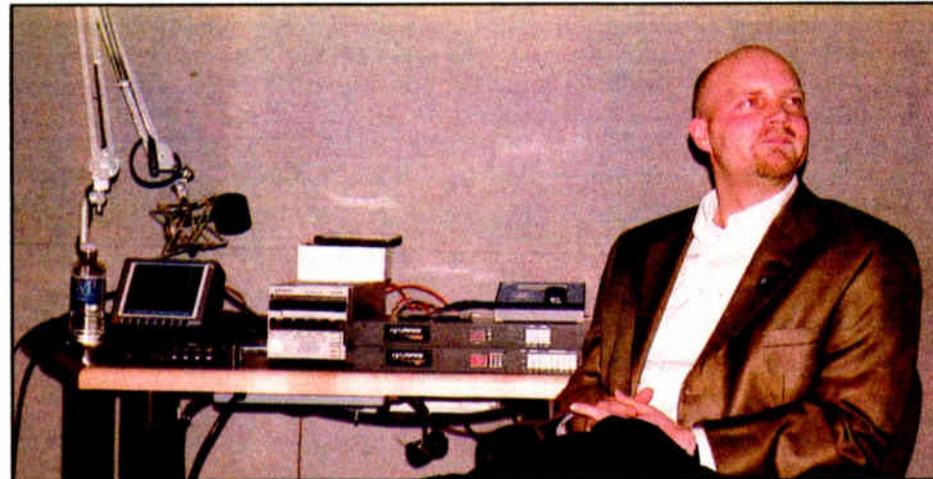
NPR is working with vendors Neural Audio, Harris Broadcast, DK-Technologies America and Blue Sky for the broadcast. NPR and participating stations will use Neural's watermarked surround sound technology with the Harris NeuStar 5225 5.1 surround sound mix-edit transcoder and the NeuStar UltraLink digital radio audio conditioner.

A 5225 encoder/decoder is required at each station that seeks to uplink surround-encoded audio, as well as at the receive module at NPR. The audio codec conditioner would be used to reparse the audio and reduce noise to minimize codec artifacts before it is sent over the ISDN lines for this broadcast.

A surround project also requires corresponding support gear; and Harris hoped to provide DK-Technologies America MSD600++ 5.1 test and measurement meters as well as BlueSky ProDesk 5.1

and SkyOne 5.1 monitoring systems for use in the stations' on-air monitoring and in their production facilities.

Roe said NPR expected to put together an equipment kit for each station and remote site. Still to be worked out in the weeks before the event was whether



Neural's Dave Casey with equipment that could be used to monitor, mix and broadcast audio in surround, including audio monitor from DK-Technology America, Harris NeuStar 5225 and Harris NeuStar UltraLink.

equipment would be loaned or purchased by the network and stations.

Of four surround technologies on the market adapting their systems for digital radio, Neural Audio's system was chosen for this event. Starling credited Chief Engineer Mike Pappas of KUVU with "having an efficient, smart approach in how to do it," referring to that station's recent recording and broadcast of a Dianne Reeves concert in surround sound (Radio World, Nov. 17, page 4).

"This is a case where the network is paying attention to the leadership of a member station in pushing the envelope on something that has large implications for the system as a whole," said Starling. The network has been impressed with the Neural product's ability to "faithfully

reproduce, and more important, that broadcasters can use it to record, mix and air surround sound audio with their plants as they exist today.

"The real advantage of the 5225 system is that it generates conventional stereo," said Pappas. "So the only thing that changes is the guys out in the field doing the music mix will do it either in a quad setting, where you do two rear channels and a left and right (front channel), or you do a 5-1 mix with a left-center-right plus two rear channels. You run it through a 5225 box, which makes it watermarked stereo."

This means the encoded surround audio can be edited, said Pappas and Robert Reams, Neural's CTO and co-founder. Reams said that Neural's is not a matrix — or what is sometimes called "pseudo" — 5.1 system.

Pappas gave an example of what can happen to the audio with a matrix system: "Violins, for example, based on what note they're playing, change where they're located in the sound field and can do things like start in the front and end up in the rear channels — which may make an effective parlor trick but for music, aren't really very appropriate."

"The watermarking we use, we describe the content spatially, and use an upmix system, is similar to other spatial-style encoders," said Reams. "But instead

See SURROUND, page 10 ►

## WGUC Tests Surround Sound

**CINCINNATI** Another pubcaster has begun experimenting with surround sound.

Non-commercial classical WGUC(FM) in Cincinnati conducted a series of surround sound test broadcasts featuring recorded programs from the Cincinnati May Festival's 2004 season. Station executives said WGUC was the first station in the state to broadcast locally produced surround sound programming.

The station, so far, is testing two types of surround systems for broadcast use: Circle Surround from SRS Labs and the Audio Spatial Environment Engine from Neural Audio. The station tested each system over two weekends in November.

Chief Engineer Don Danko said the staff at the station's Corbett Studio recording and production facility has been recording the Cincinnati Symphony Orchestra, the Cincinnati Opera and more local groups in surround sound for two years. Personnel position multiple microphones in Cincinnati's Music Hall and, after slight editing to eliminate coughs and long pauses between movements, they downmix the 5.1 audio to stereo for hard drive storage and upmix it for 5.1 monitoring and receiver playback.

That audio can be processed through the surround encoder and burned to a CD that can be broadcast on both the analog FM signal and the HD Radio signal.

"If a listener doesn't have compatible surround sound equipment they will continue to hear the superb sounding stereo mix, but if they have the surround capabilities the end result will be an unbelievable listening experience," Danko said.

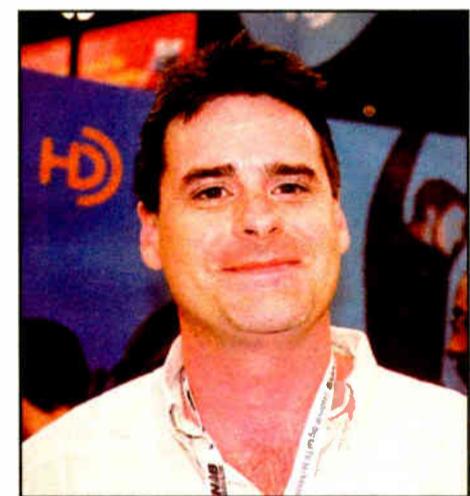
The technology for SRS Circle Surround and Neural Audio produces 5.1 discrete surround sound.

"We're trying to capitalize on our localism. These are local recordings of the symphony or the opera. There are not a lot of studios that specialize in recording classical music. We are well-versed

in recording, mixing, editing and mastering classical music."

The station went IBOC in July 2003 and uses Harris equipment. It's sending RDS text messages to receivers on its analog stream and gearing up to do the same with program-associated data from the digital stream.

As for the surround tests, Danko says he's still in a beta-testing stage using



Don Danko after he signed his iBiquity license at NAB2003.

equipment on loan from the companies, such as the Harris NeuStar 5225 5.1 mix/edit tool. His station is not on a strict timetable to make a decision as to whether to incorporate surround into its audio and has not publicized its surround tests on-air nor to local press.

"We want to make the right decision, not just for the audio quality, but for the listeners. If I want to implement this now, it's going to have to be readily available and benefit listeners immediately."

Denver's KUVU(FM), also broadcasting in digital like WGUC, recently aired a concert in surround sound.

— Leslie Stimson

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# Surround

► Continued from page 8

of multiplexing the spatial information into the digital bitstream, we embed it in the form of a watermark in the waveform of the audio. That's why you can edit it."

Pappas and Starling said the Neural system produces an image with excellent stability.

Another concern Reams sought to dispel is that the watermark is not robust. He said NPR ran tests in which it sent the watermark through several codecs in tandem and began dropping the data rates to see where the watermark would fail.

"Their discovery is, you can get to where the sound is awful and the watermark is 100-percent intact," said Reams.

He said the NeuStar 5225 enables the broadcaster to receive 5.1 content, down-mix it to 2.0 stereo for file storage and distribution, and upmix it for 5.1 monitoring in the studio or playback in the receiver. The NeuStar UltraLink makes the codec work more efficiently, said Mark Seigle, Neural vice president of business development. "It cleans the audio, which includes noise reduction and image packing."

The UltraLinks likely will be used to help reduce MPEG encoding artifacts by conditioning the audio at each station before it is sent via ISDN lines to NPR's Washington headquarters, Pappas said.

NPR needs to decide what type of audio mix to use for this event. For example, Pappas said, KUVO likes to give the listener the effect of being in the

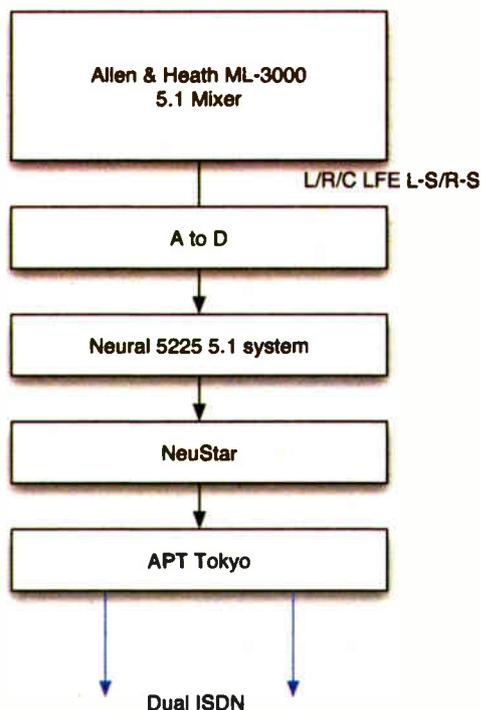


Diagram shows how a participating station could mix its audio in surround, clean it up and send it to the ISDN lines to be uplinked for the NPR broadcast. The APT Tokyo at bottom is a codec.

center of the first row of an audience, facing the stage.

"The nice thing about the Neural 5225 is that if you decide to do a conventional left-right mix for the front, it will phantom automatically a center channel for you on the receive side, so you don't need to worry about doing a center channel if you don't want to. For our application, we tend to use

the center channel because we put vocalists in it," Pappas said.

Part of the point of the recent KUVO broadcast was to prove that broadcasting in surround doesn't distort the original sound, that the event can be broadcast and yet remain faithful to what the artists intended, he said.

For producers, Roe said, the challenge is to choose the standard for mixing in surround, such as whether to put listeners on the stage or farther back.

## Decoders

Pappas said that for the recent event at his station, listeners were not told the broadcast was in surround, as there are no decoders in the consumer marketplace. KUVO listeners heard the broadcast in stereo; some who called or e-mailed thought there was improvement in the stereo broadcast, he said.

Neural is providing test decoders for the NPR event so participating stations can hear the surround sound.

Pappas said his station has done 40 to 50 live 5.1 recording sessions over two years, although the Dianne Reeves concert was its largest effort, he said.

Starling said using the Neural equipment for the event also means the stations involved don't need to rewire.

"You don't have to add channels for a

center speaker or for surround. You don't have to go out and add three more channels to every control room in order to do this."

Each site will transmit its audio to NPR via bonded ISDN lines with a total capacity of 256 kbps per stereo feed. The network will mix that audio with continuity and uplink the complete broadcast to member stations through the Public Radio Satellite System. All of its stations will receive the surround feed, although only stations with surround decoders could hear the surround; those without decoders hear stereo.

NPR hoped to conduct several dry runs of the broadcast before Dec. 31 to iron out problems. Listening rooms are planned at participating stations, in which VIPs, including major donors, would be invited to hear the broadcast.

More than 100 stations have carried the event in the past, and NPR has a carriage agreement with the European Broadcast Union, said Starling. In Europe, broadcasters also have been experimenting with surround projects.

At CES, Neural planned to introduce an aftermarket surround sound decoder. The 12-volt automotive Spatial Environment Engine interfaces with stereo consumer head units and 5.1 amplification. Neural said the decoder will be available to consumers late in Q1 '05.

# EVSS

► Continued from page 1

vehicles have become more soundproof and that louder sound systems make it less likely a driver can hear the siren of an approaching emergency vehicle.

Opponents of EVSS, including the NAB and SBE, claim the proposed services jam and interfere with existing broadcast signals.

## Concerns

The latest development follows months of claims by three EVSS developers — Alert Devices International Corp., Safety Cast Corp. and AlertCast Communications LLC — that the FCC has been slow to allow testing of the technology in the United States.

ADiCorp in 2003 petitioned the FCC to make changes to Parts 2 and 90 of the commission rules to allow emergency vehicle warnings be transmitted over AM and FM broadcast signals, claiming their devices would make roads safer by alerting motorists of approaching emergency vehicles. This March, ADI asked the FCC to suspend or dismiss its petition.

"We requested the extra time to address the concerns of the FCC and radio broadcasters," said Tom Macone, president of ADiCorp's emergency alerting division.

Chief among those concerns is avoiding interference with EAS messages and eliminating interference due to multiple EVSS signals.

In ADiCorp's latest letter to the FCC requesting dismissal of its petition, the company mentions several features to be included in the redesign.

"The redesigned EVSS unit transmits only on those channels with the strongest broadcast signals. This minimizes the likelihood of disturbing listeners turned to distant stations that are more vulnerable to interference," ADiCorp wrote the FCC.

The letter stated that the redesigned unit "will continuously monitor broadcast frequencies for the EAS attention

signal æ even during EVSS transmissions æ and silence the unit when the signal is detected."

"There are concerns, and we know that," Macone said. "That is what the testing will prove. We know we have a good product here that will save lives."

Macone said ADiCorp's redesigned unit also will address broadcaster worries over interference the alert service would cause fixed radios in residences or businesses.

"The most anyone will here is just a short blip of interference on desktop radios as vehicles pass by. The unit will not be engaged when a vehicle stops, thus eliminating any concerns about prolonged interference," Macone said.

"The transmitter power will be a function of speed. How fast an emergency vehicle travels will dictate the power level."

In ADiCorp's original filing to the FCC, the company said its Radio Alert Transmitter unit transmits a tone and then verbal warning over the entire standard AM and FM bands at a range of approximately 600 feet. Transmitter power levels would fluctuate between 15 mW and 45 mW, depending on the speed of the emergency vehicle.

## Saving lives

Macone would not specify a time frame for ADiCorp to complete testing on its redesigned EVSS unit in Canada. The company plans to refile its petition with the FCC at a later date.

Macone said ADiCorp made a decision to push the application for EVSS technology with the belief that common sense, not the concern of the corporate bottom line of broadcasters, would prevail.

"We chose not to fill the application with statements of widows and families of emergency personnel devastated by these accidents. To pit emergency personnel across this country against broadcasters would not be right.

"Broadcasters are concerned with air time, but there are people dying across the country from these accidents that could be avoided," Macone said.

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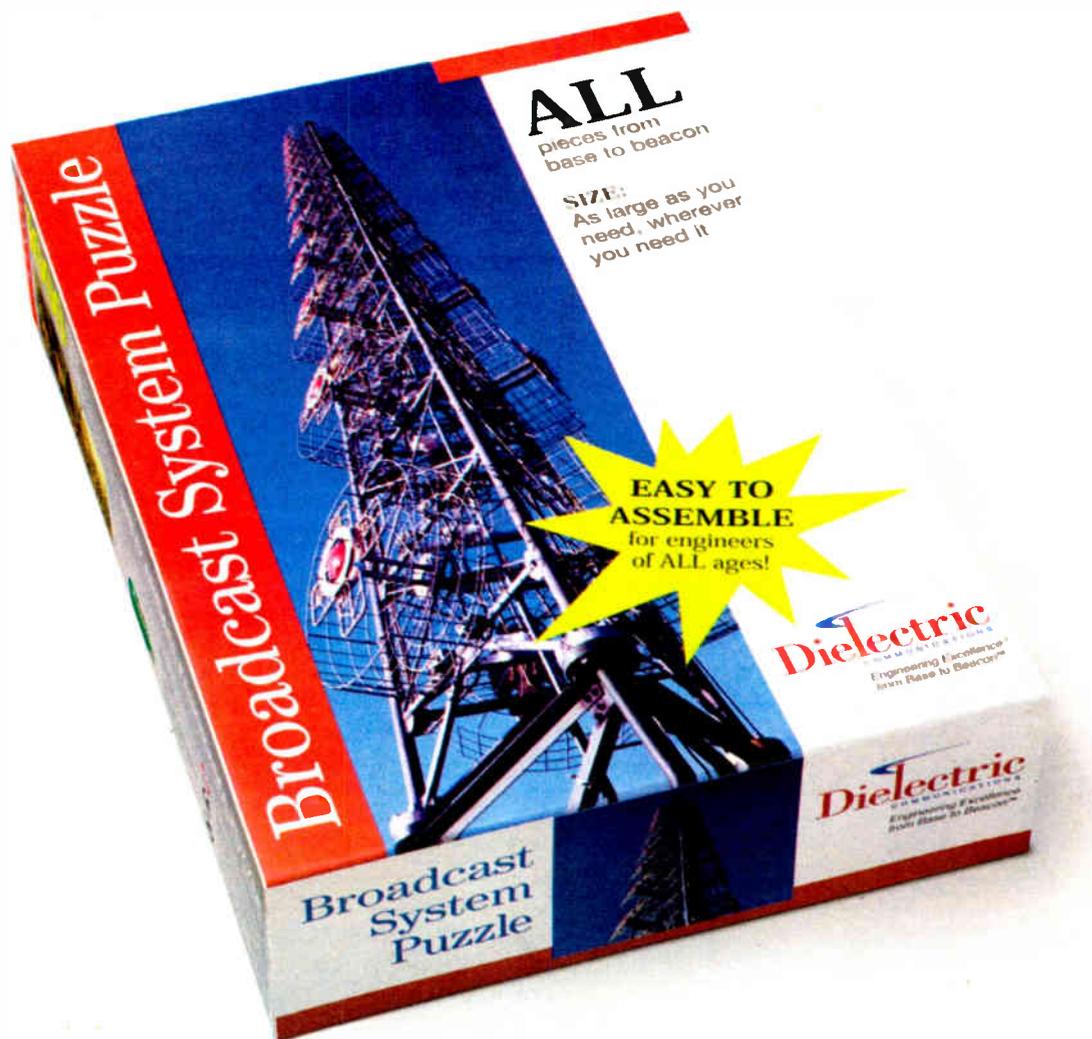
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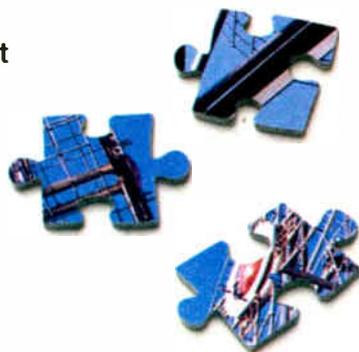


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# Is There a Flag in Radio's Future?

*New Rules Will Add Content Protection Measures to DTV; Is Digital Radio Next?*

Starting in July 2005, all terrestrial digital television equipment sold to consumers in the United States will have to recognize and honor the so-called Broadcast Flag. The regulations enforcing this represent a substantial departure from past practice, and they could act as a model for other subsequent action in this country and elsewhere, including digital radio rules.

In fact, in its voluminous comments on last summer's NOI on the subject, the RIAA suggested that just such a similar regime should be added to FCC rules for digital radio. It therefore behooves radio broadcasters to understand the generalized regulatory policy implications of DTV's Broadcast Flag.

## BF 101

The Broadcast Flag's primary function is to prevent the "indiscriminate redistribution" of content received over terrestrial digital television broadcasts by consumers. What this euphemistic terminology really intends is the prohibition of consumers' recording DTV broadcasts and posting the content to the Internet, via a Web site for downloads, or by using peer-to-peer (P2P) distribution.

Consider that most broadcast television content is exclusive to a particular channel, or market-exclusive to a network affiliated station; and the broad availability of the same content at similar quality levels on the Internet could have significantly negative impact on the broadcast TV business model.

A simple method of constraining such improper usage of content by consumers would be via addition of content protection (i.e., encryption) to the content before it is broadcast, then setting policies in receiver equipment to limit permissions for the content's appropriate usage. But political exigencies make it difficult if not impossible to encrypt free-to-air (i.e., non-subscription or non-"premium") terrestrial broadcast TV channels, so an alternative solution had to be identified.

This alternative had to allow digital broadcasts to be made "in the clear" (i.e., non-encrypted), yet still permit broadcasters selectively to constrain the subsequent usage of received content. Thus the industry settled on a method of simply "marking" (but not encrypting) content that

should be protected, and mandating the behavior of receiver equipment upon reception (or local storage) of such content. Hence the nomenclature of the Broadcast Flag, by which content intended for protected status downstream is marked during broadcast.

The most significant precedent set by this approach is that the enforcement of protection (via application of encryption) is done at the receiver rather than the transmitter. Any DTV receiver sold after July 1, 2005 must apply such content protection to any program marked by the Broadcast Flag, and any downstream

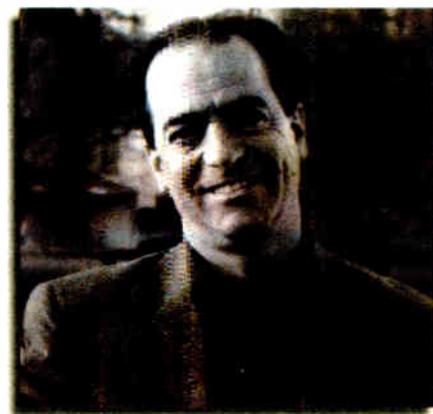
This spec only sets out how the flag is to be transmitted, however, not how receiver equipment should behave when the flag is detected. The latter is set out in separate FCC rules.

## Running it up the pole

A convergence of opinion from multiple industry sectors had to occur for the Broadcast Flag to become a reality. Consider that the content being protected is largely the property of Hollywood studios, yet broadcasters and consumer electronics manufacturers have to carry the bulk of the water required to realize such protection.

It is generally held that TV broadcasters accepted the flag because they were worried that without it, all high-value DTV

## The Big Picture



by Skip Pizzi

HBO's "The Sopranos" and Bravo's "Queer Eye for the Straight Guy," along with the growth in PPV/subscription sports. If OTA broadcasters couldn't keep "Friends" episodes off of Web and P2P file-sharing sites, for example, they felt that the creators of such content would find a transmission environment that could do so.

Remember also that all the major broadcast TV networks are owned by companies that have significant interests in content creation, as well (ABC/Disney, CBS/Viacom, NBC/Universal, Fox/20th Century Fox and WB/Time Warner). In fact, Fox Broadcast generally is cited as the prime mover of the flag's conception.

The consumer electronics community has to bear even more of the load for making the flag work, however, and this group was not quite so ready to stand up and salute. Nevertheless, pragmatism prevailed among the committee that drafted the flag's original specification — a subgroup of the influential, L.A.-based Content Protection Technical Working Group, or CPTWG, pronounced "See-Pea-Twig" — and most of its CE manufacturers ultimately went along. Discussion in this space implied that DTV would not move forward without such regulation, and among all the players, the CE industry had the most potential revenue to lose if HDTV content did not proliferate to drive further sales of big-screen TVs.

Some observers have also cited this ruling as yet another example of the far stronger and more effective lobbying of Hollywood (via the MPAA) and broadcasters (via the NAB) over similar efforts from the consumer electronics manufacturers. Consider that NAB has far more experience and funds in its war chest than does the Consumer Electronics Association, which

See FLAG, page 14 ►

Public Knowledge is one of several organizations seeking to block the FCC's 'broadcast flag' rules.

DTV device — such as recorders, computers or displays — must behave according to prescribed rules in their treatment of such content.

In general, these rules are intended to allow consumers to make home recordings and provide multiple displays within the home — as they would in the analog or unprotected digital environment — but to disallow Internet redistribution of flagged content.

Note that the official ATSC standard nomenclature for the Broadcast Flag is the Internet Redistribution Descriptor, as defined in the ATSC A/65B specification.

content would eventually go to digital cable and satellite TV, which Hollywood considers inherently more secure than over-the-air (OTA) broadcasts. This doesn't just mean movies, but also includes episodic and reality series — the bread and butter of broadcast TV — since they are also largely products of the same Hollywood-centric family of content creators.

OTA broadcasters feared that just as movies have almost completely migrated from broadcast to cable/sat TV, the beginnings of a similar process were already in evidence for other mainstays of broadcast TV content, given the success of shows like

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CRYSTAL BALL

# Radio's Year of Decision: 2009

*One Observer Weighs In on the Future  
And Timetable for Digital Radio*

by Charles S. Fitch

My learned judgment is that a critical mass year for radio is going to be 2009.

If digital IBOC is going to happen and if Sirius and XM are to survive, that will be the year things come into focus and congeal for both.

The sagas of IBOC and satellite digital radio are not so much interrelated as they are concurrent and collateral. Many of the same market forces, much of the same money, much of the same audience, many of the same emotions will affect both.

## Practical questions

Closer to our hearts is digital IBOC, so let's start there.

Many radio groups (particularly those that have a financial oar in the IBOC water) are now "committed" to the IBOC future. This assures us something will happen in this arena, at least on the transmission side; but will it be a watershed paradigm-changing catharsis for radio? Methinks the equation is a little more complicated than that.

The primary factors are:

- ✓ Transmitters in use (percent of nation covered)
- ✓ Receivers in use
- ✓ Time spent listening
- ✓ Something worth listening to

*Transmitters in use (percent of nation covered):* Undoubtedly, with few exceptions, IBOC is building out from the major markets, and like a spider web will continue into the bergs and the outback of America if early technical success is positive. Major markets have no trouble with equipment and licensing fees; but the medium and below markets have to fit IBOC into their business plan and make it work. Studio

changes (no fees) will happen in capital budget 2008, and the RF side will be concentrated in 2009.

With new technology, first-generation equipment is always more expensive. With DSP, nearly all the functions of the IBOC exciter can be done in software; and by

**By 2009, the IBOC card for your PC should be available, bringing down the cost of at least the exciter to something more affordable for small-town USA.**

2009, the IBOC card for your PC should be available, bringing down the cost of at least the exciter to something more affordable for small-town USA. Hopefully the fees will come down as well.

*Receivers in use:* Radio's strong suit is its mobility, and a preponderance of listening is done in cars — which mitigates for and against IBOC.

The average American car is on the road for nine years, typically with its factory original equipment radio sound system. For IBOC to take hold big time, we've got to get those cars replaced, and we have to get them replaced with IBOC radios.

One strange upshot of the oil crisis is that we may all need to replace our main cars with more fuel-efficient vehicles, accelerating that changeover somewhat. Also, people will need accurate traffic information (to reduce time on the road and hence gas consumption) for where they are, when they are — a function easily integrated into IBOC radio.

Still, the critical receiver total won't be

here any earlier than 2009; and it won't get here on time if the receiver manufacturers don't make the receivers available or the vendors don't push it. Emotionally, at the moment, consumer America is being asked to buy (and digest) HDTV, IPODs, cellular cameras and recordable DVD technology. With oil going through the roof, taking discretionary money with it, how high a priority will IBOC be in the near term?

*Time spent listening:* If anything, total time spent listening to radio by the general population is going down. A large part of this is young people turning to other entertainment forms and delivery systems. IBOC will need to be nearly ubiquitous (sort of like cellular performance) before it will become trendy and taken up by the young futurist cognoscenti.

*Something worth listening to:* A Model T with different paint is still a Model T.

If we want IBOC to make a difference (or radio overall, for that matter) we've got to give our audience something, some reason to use the new technology. The strong suit of IBOC on AM is stereo with improved fidelity; on FM, it is freedom from multipathing.

AM has the most to gain on the audience side, and hopefully there will be new programming to use this technical advantage to create a new audience or entice the audience to stay longer.

IBOC is a technocrat's delight; but no one listens to radio with an oscilloscope.

They listen for what's on.

New programming and adjustments to the new IBOC universe will need until 2009 to take hold.

## Where's the money?

Now for what's happening to Sirius and XM.

From my disinterested perspective — I have no stock in either, nor in Ibiqity — I believe the intercept point for long-term investment to cover operations and eventual continuous profit doesn't exist under the present business model. One or both eventually will fail, unless certain key events take place:

One, the FCC decides that the competition between the two is essentially above the line in customer service, unique programming, cost packaging, etc. Below the line is the delivery system itself such that the two services can share *one* high-density, high-data-volume satellite system, allotting the bandwidth between them. This economy would cut their operational cost and the extremely expensive cost of satellite maintenance and replacement in half. Now real profit becomes a possibility.

Two, the major car manufacturers essentially take over marketing (if not ownership), such that sat services become a standard car item like air bags, built into the price of the car. A sat receiver comes integrated into the car with standard programming available for the life of the vehicle. With the receiver in the car, it becomes for marketing purposes somewhat like TV cable on demand. The programmable, mappable receiver is there. The customer just buys what he/she wants extra, a la carte, through the car dealer or via the Web site.

Now does this fantasy scenario bode good or bad for IBOC? I do not see your local car dealer getting excited about pushing IBOC into cars if the money for them is on satellite.

2009 is the year of decision.

*Charles S. Fitch, W2IPI, is a registered professional consultant engineer, a member of the AFCCE, a senior member of the SBE, lifetime CPBE, licensed electrical contractor, former station owner and former director of engineering of WTIC(TV) in Hartford, Conn., and WHSH(TV) in Marlborough, Mass.*

*RW welcomes other points of view.*

## Flag

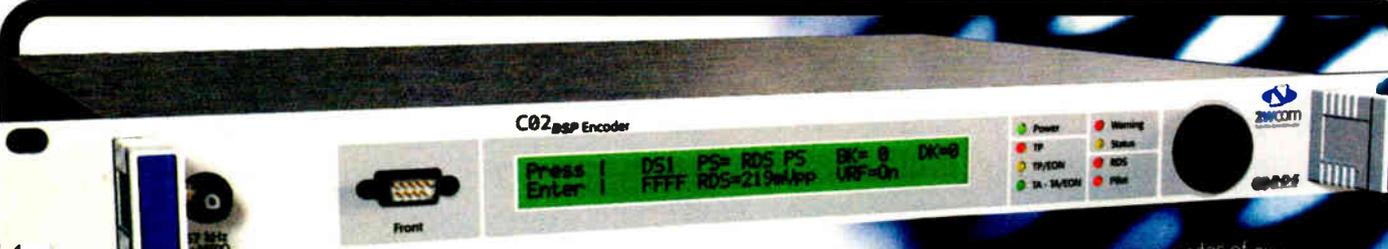
► Continued from page 12

represents the major consumer equipment makers. Perhaps more important, however, note that government officials — especially those holding elective offices — are far more likely to turn a friendly eye to the envoys of hometown broadcasters and content creators than they are to an organization like CEA, which is seen as representing largely off-shore interests, i.e., mostly Japanese- and Korean-owned electronics companies.

So the DTV industry now is standing by for the raising of the flag next July. Meanwhile, at least one lawsuit remains in litigation, brought by consumer advocate Public Knowledge, which challenges the FCC's jurisdiction in this area, and questions the fairness of rules that seem to unilaterally protect one industry's rights at the expense of others.

Next time we'll consider the U.S. digital radio industry's emergence in the shadow of a soon-to-be-unfurled flag.

*Skip Pizzi is contributing editor of Radio World.*



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ScheduAll said it is providing NPR's Distribution division with an interface linking its existing ScheduLink system to NPR's new ContentDepot digital content storage and delivery system.

"This is an enhancement to the solution that ScheduAll implemented last year at NPR to manage the Public Radio Satellite System," the supplier stated. It said additional software allows NPR to increase its level of business automation and streamline management of outbound communications.

ContentDepot will distribute public radio programming content and other materials. Instead of a one-way delivery system, it is described as an interactive transmission, storage and communications matrix that will let PDs research and audition programs online, and producers manage and market their own programs.

Separately, ScheduAll said it would supply Sirius Radio with a software package to manage operational resources and distribution of content at its Rockefeller Center headquarters. ...

Harris Broadcast won a contract for FM radio transmission systems from the International Broadcasting Bureau, which oversees U.S. overseas broadcasters including Voice of America, Radio Sawa and Radio and TV Marti. The contract to Harris also incorporates antennas from Shively Labs and Orban products from CRL Systems Inc.

The company said it would ship "numerous" radio transmission systems, including Harris Quest 1kW, Z2CD 2kW, Z5CD 5kW and Z10CD 10kW FM transmitters with accessories. Sites where the equipment will be installed are yet to be named. ...

Focus on the Family updated its main studio in Colorado. The engineering staff replaced an earlier PR&E AMX analog mixer and installed a Klotz Digital Vadis II system. Custom cabinetry is by Harris.

The main control and studio suite are home to a daily show serving 1.5 million listeners. ...

Premiere Radio Networks said its "Bob & Tom Show" signed its 150th affiliate. The morning show was nationally syndicated in 1995. ...

Clear Channel Communications ordered a Wheatstone Bridge and Generation system for 1801 Grand Ave. in Des Moines. The supplier said six Generation 4 surfaces and the Bridge will provide audio routing for AM stations WHO and KASI, as well

as FMs KKDM, KLYF, KMxD and KCCQ.

Separately, Susquehanna Radio Corp. ordered a Wheatstone Generation control system for 55 Hawthorne St. in San Francisco. The G9 surface and four Bridge

digital routers will serve KFOG(FM), KNBR(AM), KSAN(FM) and KTCT(AM).

And Radio One chose the Generation 4 and Bridge Router system for a new facility in downtown Atlanta. Four on-air and one backup air/production studio will use 16-fader G4 Control Surfaces with Bridge Router Satellite Frames; four production rooms will be equipped with eight-fader G4/ Satellite Frame combos. STL links on the 34th floor of Radio One's new high rise are fed from a Bridge Satellite frame connected via fiber-optic cable. This provides lightning protection for



Focus on the Family Studio

the main system and studios on the 12th floor.



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TECHNOLOGY FOR MANAGERS

# The Modern-Day Remote Broadcast

*A Presence at Events Through Remotes Can Help Stave Off the Localism Critics*

by Tom Vernon

Whether it's the Thanksgiving Day parade, local sports, a car dealer promotion or a call-in show from the other side of the globe, remote broadcasts are an essential part of radio and an important component of localism.

While the days of using a portable mixer and leased telco line are pretty much over, broadcasters rely on a mixture of cutting-edge and traditional technologies to bring live events to listeners.

Ashoestring budget need not curtail a remote broadcast schedule, or the quality of programming.

WMSS, a 1350-watt high-school station in Middletown, Pa., does more remotes than many commercial stations. It devotes considerable time to high school sports and covers some college teams.

"We broadcast about 100 games per year, sometimes as many as three in a 24 hour period," said General Manager John Wilsbach. The sports operation has a staff of 12, including students and adults.

**Simple**

While its remote schedule is heavy, the equipment is simple. WMSS uses two systems for sports remotes. A Tieline Technology i-Mix POTS codec provides great sound on dialup lines, and a Motorola cell phone is employed when no lines are available. An older Zercom POTS mixer is available for backup. WMSS has no station vehicle; travel to and from games is with personal transportation.

Wilsbach said students receive extensive training in the right way to set up remote gear.

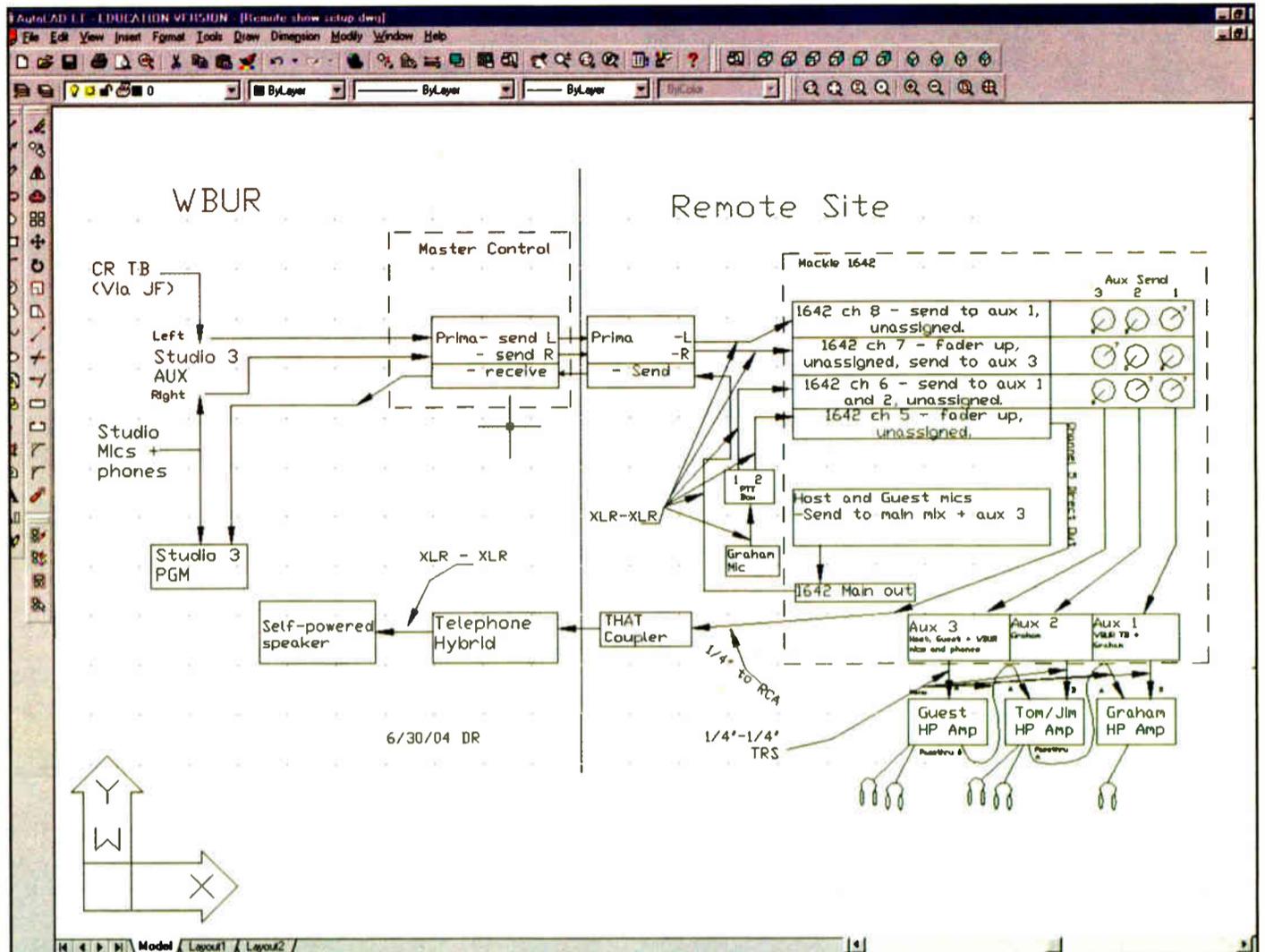
"Sloppy installations with cables strung everywhere are simply not acceptable," he

said. Students are involved in all aspects of the broadcasts, although adults are more likely to do announcing for playoffs and

college games.

Most of the funding for the sports program comes from underwriting, and Wilsbach divides his time between fundraising and general manager duties at WMSS, and work at area radio stations.

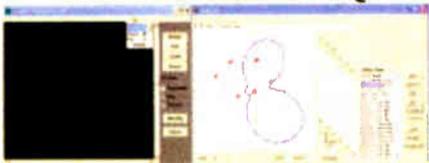
"I'm extremely proud of the fact that WMSS is the 2002 and 2004 winner of the



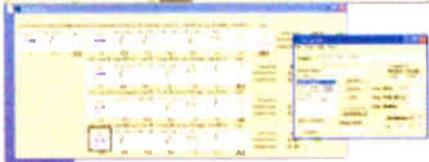
Screen-capture CAD drawing of WBUR's setup for the political conventions. Components include a Musicam USA Prima ISDN codec in dual-mono send, with program elements on one channel and talkback from the studio on the other; return was a mono 128 kbps MPEG Layer 2 send. A JK Audio THAT-1 phone hybrid sent talkback from the remote director back to a powered speaker in the studio. The 'Graham mic' is an EV RE-20 sent through a two-channel custom PTT switch. Symetrix headphone amps gave talkback to the host, engineer and director; guests received a mix of local mics and studio elements. That's usually standard for us, so that the director can say nasty things about the guests without insulting them,' Rose joked.

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Pennsylvania Association of Broadcasters award for Best Sportscast in Pennsylvania."

In Harrisburg, Clear Channel uses a mix of old and new technologies for its four stations, which are actively involved in remotes.

Tim Portzline, director of engineering, said, "For local remotes, we rely on the older Marti RPT series 450 MHz gear with good results. For broadcasts outside the metro Harrisburg area, such as Hershey Bears hockey games and suburban nightclub remotes, we use ISDN with Zephyr Xstream on Layer 3. The sound is phenomenal."

A Comrex HotLine is used for some AM remotes. For all broadcasts, cell phones are available as a last-ditch backup.

Each of the Clear Channel stations has its own vans and trucks with logos, along with tents and banners. Remote gear such as mixers, CD players and processors are housed in portable rack cases.

Portzline said each of the stations does about 15 remotes per month, bringing the total for the group to 60.

Keeping remote operations running smoothly are a staff of two full-time promotions directors, a full-time road crew chief and 8 to 10 part-time road crew members, who do the equipment set-up and tear-down.

See REMOTES, page 17

# Remotes

► Continued from page 16

Greater Media's five Boston stations are involved heavily in remotes. Director of Technical Operations Paul Shulins uses a combination of home-grown and off-the-shelf gear to make operations as efficient as possible.

For indoor remotes, Shulins and his staff have designed what they call the "Gig-rig," a rolling portable rack with all the necessary equipment. On the top of the rack is a Mackie mixer, which is hard wired to wireless mic receivers and headsets, reducing cable clutter and setup/teardown time. A POTS codec and ISDN gear are included, as well as a power amp for PA feeds.

"We use a combination of older Marti 450 MHz gear and ISDN to get audio back to the studio."

Shulins said getting a non-delayed signal back to the remote site can be a challenge. "With the delay from digital systems, using an off-air signal isn't possible any more. Ironically, this places more of a demand on the older 450 MHz technology." Another option for monitoring is to put the return audio on one of the station's subcarriers.



Greater Media engineers in Boston use a self-contained 'Gig-Rig,' a portable rack with mixer, wireless receivers, headsets, POTS gear, ISDN gear and power amp.

Shulins has devised several home-brew devices to simplify remote setup. An engineer at the remote site can dial a cell phone and use a custom menu program to access the station's router remotely to switch program audio to any of the station's subcarrier generators so it can be used for return audio. The user can also dial a number for any of the three 450 MHz receive sites around Boston, and get a readout of receiver signal strength, making antenna alignment a one-man operation.

Greater Media has a black van with an assortment of magnetic signs for each of the five stations. An army of interns is available to haul gear to the sites; one of the engineering staff does the equipment setup and checkout.

Shulins said a successful remote broadcast takes a lot of planning.

"You need to give the phone company plenty of advance notice, particularly for ISDN remotes. Station engineers need to make a preliminary visit to check out the RF path or phone lines well in advance of

the broadcast date."

Finally, the total cost of a remote needs to be understood.

"Some remotes are clearly money-makers, others that are done so the station can have a 'presence' can end up costing money and engineering overtime."

### Complex, not costly

Non-commercial broadcasters often face the challenge of doing more elaborate remotes with a tight budget.

With a news and public affairs format, WBUR in Boston has provided coverage of both Republican and Democratic national conventions, as well as primaries and election night. The station also broadcasts special events related to fund drives, such as a dinner with NPR's "Fresh Air" host Terry Gross, and other awards ceremonies. Assistant Chief

Engineer Dan Rose said a part of quality sound on remotes that often is overlooked is the microphone.

"We use EV RE-20s along with Shure M 367 mixers for most of our audio."

The station uses a combination of ISDN and POTS gear for many of its remotes. For best on-air quality, program feed to the studios is typically full 128 k. A Musicam USA Prima ISDN codec often provides a stereo feed back to the remote site, with one channel feeding mix-minus for the host, and the other sending talk-back.

Headphone feeds also can be involved. Often there is a local feed for guests, in addition to a mix-minus feed from the studio, as well as talk-back.

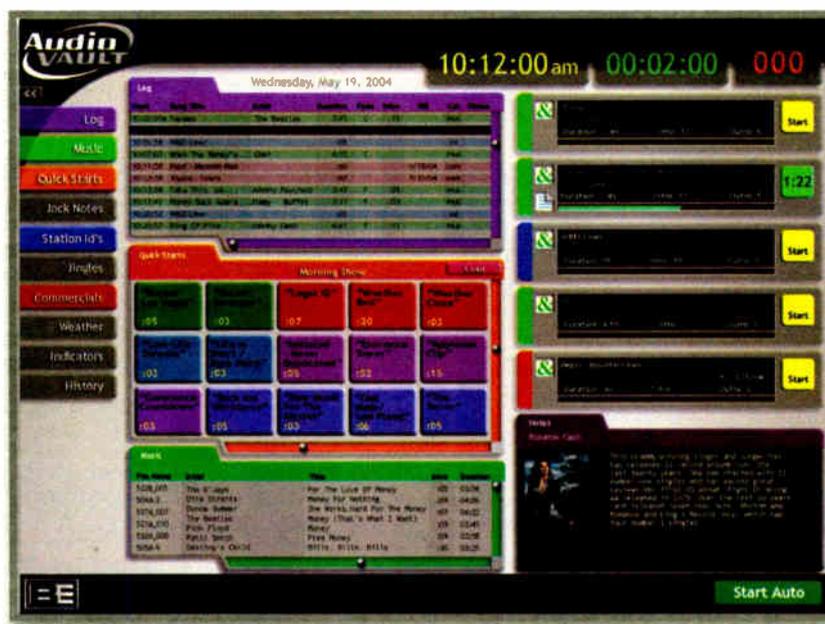
The complexity of many of the remotes at WBUR requires a great deal of planning and coordination with other departments.

They also require good documentation. Rose uses AutoCAD to document equipment and signal flow at the multiple sites that are involved in some remotes.

In a recent talk show broadcast from Baghdad, satellite phones were used to make the link. Rose notes some precautions: "We used the geostationary INMARSAT, rather than the LEO. For broadcasts of greater than an hour, the handoff times of low-earth orbit satellites are unpredictable."

For international remotes, it is also important to check out thoroughly and pack two of everything. "We try and break things ahead of time to help anticipate what will fail at the remote."

*Do you have a clever solution to a remote problem? Tell us about it or send us the documentation. E-mail to radioworld@imaspub.com.*



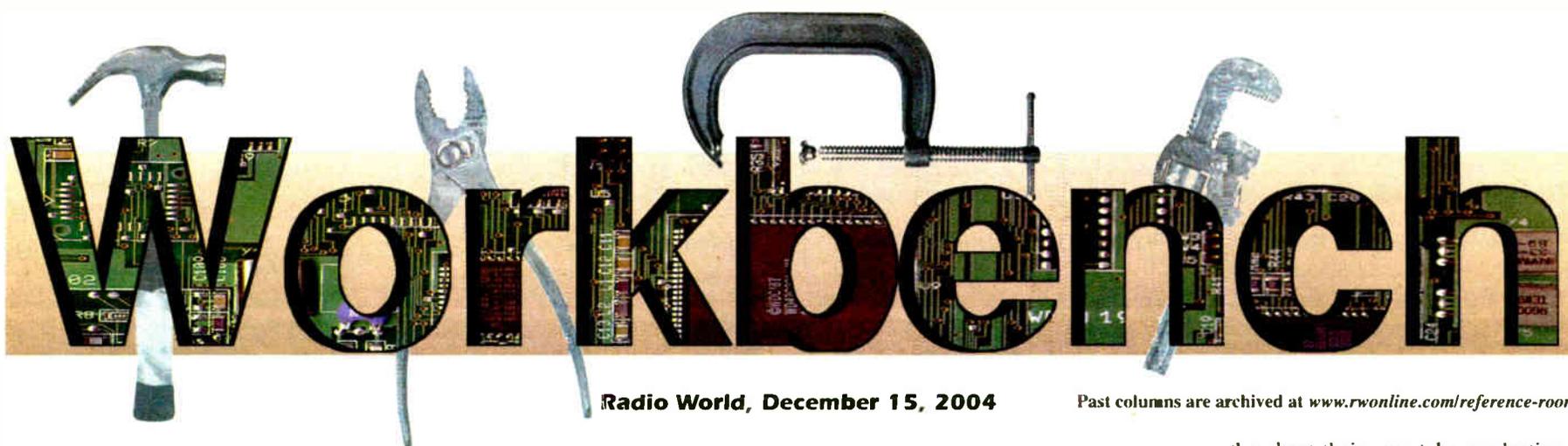
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Radio World, December 15, 2004

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## Steel Wool Ends Rodent Munchables

by John Bisset

Hunting season is upon us. It's a good time to monitor your line pressure frequently. The dry air or nitrogen that pressurizes most FM and some high-power AM lines keeps moisture from forming and causing a breakdown or flashover of the inner conductor to the grounded outer conductor.

But a single bullet from a gun, aimed from outside your transmitter site fence, can puncture the line, or worse. Fig. 1 shows a cross section of line that was hit, then burned. Contrast the discolored spacer and dark interior on the left with the bright copper on the right.

know it will happen on Christmas Eve, or during morning drive the first day of the next book!

\*\*\*

Jack Quinn, an independent engineer out of Santa Rosa, Calif., offers historical perspective and opinions on why all new or rebuilt vacuum tubes do not always work in some FM transmitters, as first discussed in our Oct. 6 *Workbench*.

There is a natural tendency on the part of engineers constantly to improve their product. Couple that with MBAs constantly looking for cost savings in manufactur-

metalized ceramic envelope end. The two were then heli-arc'd together to form the output vacuum seal.

Over time, EIMAC, its imitators and, to some extent, rebuilders have sought ways to reduce costs. In some cases, engineers made changes to the internal structure. Small changes can affect the input or output circuit of the original transmitter design. The original design engineer built his transmitter around the parameters of the tube he had. The tube became, therefore, an integral part of the RF circuit design. This included the internal cone's support inductance and capacitance, same for the filament support, and the final

they kept their own tube production engineers from making any changes that were not comparable with the original design. This group also included a Specifications Manager who had the authority to stop production or shipping, if any of the tube parameters got out of limits. Those tubes were destroyed and production started only when QC got the variance under control. All of this and much more, thanks to the founders Bill Eitel and Jack McCullough (hence the name EIMAC).

Those well-intended changes do not generally effect AM or HF (shortwave) transmitters. But if you get a structure that is not the same as that for which the FM transmitter originally was designed, in many cases your only out is to select tubes, or even sometimes to modify the input/output circuit.



Fig. 1: Burned and clean lines.



Fig. 2: The Insulation Displacement XLR doesn't need a soldering iron.



Fig. 3: Wires are ready for final assembly.

If your dehydrator runs continuously, or you suddenly lose a tank of compressed nitrogen, suspect that a line has been hit. Sometimes, if there is slack in the line as it comes off the tower, you can hear the slug rattle around as you gently jiggle the line. This is a repair that can't wait until spring. If the line hasn't flashed over already, it's an accident waiting to happen. And you

ing, and you have a formula for problems. All of the 4CX5000A and the 3CX5000A7 families originally were designed by EIMAC. The internal elements were supported on metal cones, and the grids and filaments were spot-welded to them. The anodes used two matching metal flanges, one brazed to the copper anode, the other brazed to the

anode seal configuration. Messing with any of these parameters at FM or TV frequencies is a guarantee for trouble.

Because tube engineers were not transmitter engineers, and visa versa. EIMAC had a separate highly expert Marketing Application Engineering Group, which would go out and help the transmitter manufacturer in marrying the two. In addition

Markets change, companies change, time marches on. Fortunately, as George Badger has stated, it does work if you specify the transmitter make and model. Keep that in mind the next time you specify a replacement tube.

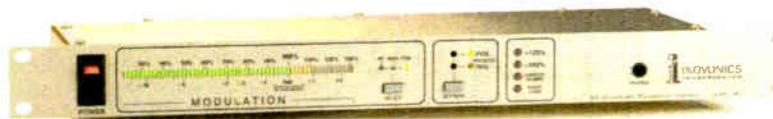
Reach Jack Quinn at [w6mz@worldnet.att.net](mailto:w6mz@worldnet.att.net).

See WORKBENCH, page 19 ▶

## Dependable Modulation Monitors for AM & FM

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**BUSINESS DIGEST**

**BE RF Reps Gather**

Broadcast Electronics gathered its RF representatives at a meeting in Quincy, Ill., in November to cover new products and developments in the works for the coming year.

In the photo, reps gather around the new BE 4MX 50kW AM transmitter.

*Back row, from left:* Jay Linderer, Principal Engineer for BE; Chris Kreger, RF Specialties of Missouri; Ellis Terry, Western Region RF Sales Manager-BE; Rick Funk, RF Specialties of Missouri; Steve Vanni, Technet Systems; and Mark Bisbee, Technet Systems.

*Middle row:* Matt Cauthen, SCMS Inc.; Corey Meyer, Audiomedia

Associates; Mel Sather, Octagon Company Inc.; Jerry Westberg (partly obscured), Senior RF Design Engineer-BE; Ernie Vincent, SCMS; Lyndsay Collins, Technet Systems; and Bill Glore, Design Engineer-BE.

*Front row:* Joseph Costa, AVR Communications Ltd.; Marc Vallee, Marketing Marc Vallee; Steve Schott, Southwestern Region RF Sales Manager-BE; Bob Cauthen, SCMS; and John Sims, RF Specialties of Missouri.

*Send us photos of your engineering gathering to radioworld@imaspub.com.*



**Workbench**

► Continued from page 18

★ ★ ★

I worked with Jim and Larry Schropp on several transmitter projects. The father-son team comprising Schropp Electronics Services is a full-service broadcast engineering firm serving Charlotte, N.C., and the surrounding areas since 1982. Jim is following in his father's footsteps in providing broadcast engineering service to stations in this region.

Jim writes that he enjoyed the article about XLR connectors, and ways to make life easier while attempting to solder them. He also offers an alternative view: Why solder them at all?

Jim has been using a new type of XLR by Neutrik. It is an IDC, or insulation displacement connector, and Jim has found it to be of excellent quality. The connector is available in male and female varieties.

Schropp Electronics Services built a multi-million dollar studio complex using only these XLR connectors and has yet to experience a failure. Fig. 3 shows the red wire laying in the cradle of the insulation displacement jaws. When the connector is screwed together, the wire is forced between the jaws for a firm connection.

In addition to a reliable connection, Jim writes that once you have assembled a few of these connectors, you generally can complete an XLR in 35 to 45 seconds. Conversion to these connectors has saved him an incredible amount of time that would have been spent soldering.

He recommends that you read Neutrik's instructions for the XL's, as they contain important tips for assembly. See [www.neutrik.com/images/lock/downloads/Media\\_996806503.pdf](http://www.neutrik.com/images/lock/downloads/Media_996806503.pdf).

There are two part numbers for these connectors: Neutrik IDC Male XLR NC3MEZY-NI and Neutrik IDC Female XLR NC3FEZY-NI.

If you're looking for a good source, Jim suggests Mike Phelps at SCMS; visit [www.scmsinc.com](http://www.scmsinc.com).

Jim Schropp can be reached at [jim@schroppsvcs.com](mailto:jim@schroppsvcs.com).

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is the northeast regional sales manager for Dielectric Communications. Reach him at (571) 217-9386, or [john.bisset@dielectric.spx.com](mailto:john.bisset@dielectric.spx.com).

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

**Logitek Brings Large Console Flexibility**

**to small workspaces**



*Remora-10 console at Cache Valley Broadcasting, Logan, UT*



**Possible Remora Configurations**

**Remora-4:** four faders with controls for input assignment, monitors, and console functions-

**Remora-10 (shown):** addition of six-fader module brings additional mixing capability with another stereo LED meter

**Remora-16:** incorporates Remora-4 base unit with two 6-fader modules

**Remora-22:** incorporates Remora-4 base unit with three 6-fader modules

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MARKET PLACE

## DaySequerra Plans HD Broadcast Reference Tuner

DaySequerra will introduce three models of its HD Broadcast Reference tuner at the upcoming Consumer Electronics Show. The company is a subsidiary of ATI - Audio Technologies Inc.

The HD Broadcast Reference is a modular design that, depending on configuration, can receive and distribute 10 audio and video signal sources including HDTV, new digital HD Radio AM and FM broadcasts, analog FM broadcasts using the FM Reference circuitry, analog AM and TV. The company plans broadcast modules to include satellite radio as well as streaming Internet audio.



The company is positioning it as a benchmark receiver for these new high-definition broadcast sources.

The modular design lets a customer to purchase a two-channel, FM-only M1 unit now and add more broadcast sources including HDTV, or upgrade to an M3 display later.

Three models will be available. The model most likely to appeal to radio will be the M1-HDFM, retailing for \$2,999 with the appropriate audio output module. The M1 has a vacuum fluorescent display that provides station, channel, RDS center channel tuning, signal strength and RF multipath indications.

Broadcast peak and hold LED meters in the M2 indicate RF carrier modulation and audio modulation in dB. The M2 design includes optional broadcast alarm outputs for over-modulation, loss of audio and loss of carrier.

The M3 uses a CRT for oscilloscope indications of center tuning, signal strength and RF multipath as well as audio phase and gain. The Day Sequerra Panalyzer is also an option in M3.

For information contact the company at (856) 988-1590 or visit [www.daysequerra.com](http://www.daysequerra.com).

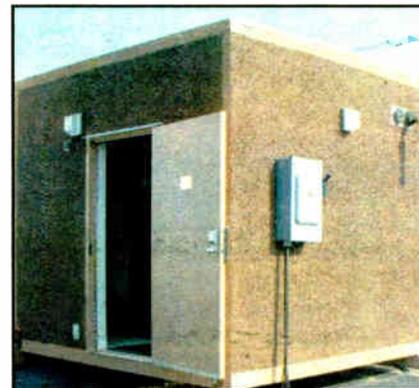
## Transmitter Buildings from Balsys are Prewired

You've heard of "plug and play" electronics. Now here's the Plug & Play Transmitter Building.

Balsys Technology Group CEO Larry Lamoray said the company's pre-cast concrete buildings are custom sized and configured. Electrical and other specifications adhere to local codes. Equipment is installed at the Balsys facility in Florida, wired, tested and powered.

"When delivered to the final site, all that is required is a pad to place the building, electrical and transmission line hookups, phone line and/or STL hookup, proof, and the job is done," the company said, estimating that its configurations typically represent a 15 percent or greater savings over site-built facilities.

For information contact the company in Florida at (407) 656-3719 or visit [www.balsys.com](http://www.balsys.com).



## Turbo Adds Three-Band AGC To Omnia-3fm

Omnia Audio said its Omnia-3fm Turbo gives users more control and dial presence.

The processor includes a three-band AGC section that the company says conveys a larger, warmer sound in lower frequencies while maintaining open, natural texture in the highs.



"The resulting segment-to-segment quality is smooth and even, giving broadcasters a signature sound imbued with even greater spectral consistency," the supplier states.

Features include 48kHz sampling with adjustable, over-sampled three-band limiter; multiband limiter using a feedback configuration for low and midbands, with high bands using a feedforward design; Omnia Bass Management controls; remote software application that can connect via serial, or optional modem or Ethernet ports; distortion-canceling composite clipping stage; removable PC Card storage system; digital stereo generator; and analog and AES/EBU inputs and outputs.

For information contact the company in Ohio at (216) 241-7225 or visit [www.omniaaudio.com](http://www.omniaaudio.com).

## Aviom Has A-Net Pro For Cat-5 Networking

Aviom has introduced a new version of its A-Net protocol.

According to the company, A-Net Pro64 ASIC gives increased data capacity and signal control; it said the protocol is suitable for broadcast and other audio networking situations.

Because A-Net was conceived for live stage monitor uses, it was designed to transmit in only one direction, the company said, from the input module or distributor hub to the performers' mixers. It was built to carry 16 channels. A-Net Pro, it stated, is bi-directional and has more capacity. It remains an uncompressed, low-latency system.

"The new version of the protocol carries up to 64 audio channels on a single wire pair in a Cat-5 cable, still at 24 bits. In specialized networks, A-Net Pro can carry 256 channels without sacrificing performance," according to Aviom.

The protocol has bandwidth for bi-directional talkback, plus Virtual Data Cables, which can be assigned to multiple simultaneous data types, such as MIDI, RS-232 and GPIO.

"Using the VDCs, users can distribute these data throughout the A-Net Pro network, without installing additional cable and without compromising audio performance."

The company said this makes an A-Net Pro network a hybrid network with high-bandwidth data capability via standard Ethernet-type cable.

The company plans to roll out networking products based on the protocol next year, and hopes other audio manufacturers will integrate it.

For information contact the company in Pennsylvania at (610) 738-9005 or visit [www.aviom.com](http://www.aviom.com).



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## A 2005 Promotions Calendar

*From Diapers to Graveside, Here's  
A List to Spark Your Creative Juices*

It was an awesome moment.

I was sitting at my desk watching a joyous crowd tear down the Berlin Wall. After the news concluded, I wondered what we could do as a local radio station in the nation's capital to bring this feeling to listeners. It was obvious! We'd give away pieces of the actual wall on the air and at station events!

I felt like I had just come up with the most original idea on the planet. Ten minutes later, my phone rang. It was an acquaintance who gleefully said: "I've got a great idea! You guys should give away pieces of the Wall!"

### Promo Power



by Mark Lapidus

So much for my "original" idea. He even had a friend who could mail us the pieces immediately. Although many stations soon followed suit, I believe I was with the first station to execute the promotion.

### Plan now

It's almost impossible to come up with a truly original idea in radio; and in the end, it's not nearly as important to be original as it is to be fast and plan well.

I can't help you with the "fast" part. That's something everyone must develop for themselves. But I can help you with the planning part.

Here's a list of events for you to choose from. These may make your coming year easier and more profitable. Too often, sales departments are presented concepts to sell two weeks before airtime. Sometimes, due to topicality, that can't be helped, but most of the time it can — with the help of good annual planning.

If you don't like any of these specifically, use them for brainstorming.

### January

"Super Bowl" — Find a large bar or restaurant for your annual Super Bowl Party. Since these places can't charge admission while showing NFL games anyway, they'll be happy to learn you're

gonna pack the place by giving away tickets on-air. Perhaps a beer would like to be the title sponsor. Other sponsors provide prizes, like your grand prize of a plasma TV set and a comfortable sofa.

The establishment should have free finger food for your winners and perhaps offer their first beverage free as well. Your jocks host; but be careful not to interrupt the game too much. This is one of those rare occasions where people actually want to see the ads.

Also remember that the phrase "Super Bowl" is owned by the NFL and may not be used without permission. I've never heard of the NFL granting radio permission to use the name in way other than promoting the actual broadcast, so you'll have to work around that in naming your event.

### January/February

"The Diaper Derby" works great in a shopping mall when things are quiet. Parents sign up babies to crawl in a race to the finish line. Race the babies in heats of a few at a time. Clock them for best time, or pair off winners. Parents can encourage them to crawl, but can't touch them. They have to be able to crawl, but don't include a baby who is already able to walk.

Give away a family trip as a grand prize. Fill in the other prizes from stores who sell baby stuff. Invite media.

### February

Leading up to "Groundhog Day," listeners vote on your Web site, yes or no, as to whether Punxsutawney Phil will see his shadow. Randomly select a winner from the correct answers and award a prize suitable for a longer winter or an early spring. Prizes come from sponsors.

You may also want listeners to register in "yes" and "no" boxes at sponsor locations.

Another quickie promotion for today



Seasonal promotions help make a memorable impression. Greater Media's WMGC(FM) created 'Pet-O-Ween' and pitched the idea to Olde World Canterbury Village in Lake Orion, Mich., which has now been its sponsor for two years. Dogs, cats, ferrets and rabbits dress in costumes like The Grinch, Elvis and a magician. Morning host Jim Harper helps judge the contest.

is simply to give away ground hog (sausage). The trigger to win could be a clip from the movie "Groundhog Day."

*Feb. 14: Valentine's Day* — 1) "The Ultimate Blind Date": Listeners enter through your Web site or at retail locations by submitting a picture of themselves and a written description of their potential dream date. You try to find two entries that match up. Your morning team goes and gets the two winners in a limo, carefully blindfolding them before they meet. Still blindfolded, they take them to dinner and a show. The next day, your "blind-daters" join the morning team on-air to describe the date and to guess what they think the other person looks like.

2) Hold a mass wedding or renewal of vows with free services and lots of on-air attention. Begin by seeing if anyone in your audience would like to propose on-air. As mundane as this may sound, it often gets TV coverage.

3) Maybe a surgeon in your area needs a little publicity. Give away free vasectomies for Valentine's! If your morning show likes to push the envelope, the actual operation provides an unusual live broadcast opportunity.

4) A different kind of Valentine's

See CALENDAR, page 23 ▶

## Martz Builds Cross-Border Audience

by James Careless

94.7 Hits FM bills itself as "Montreal and the Seaway Valley's 20 in a Row Hit Music Station." Meanwhile, its sister station 101.5 The Fox is "Ottawa and the Seaway Valley's Classic Hits Station."

Despite the fact that 94.7 Hits FM and The Fox claim Canadian markets as home turf, neither is a Canadian broadcaster. Both are actually U.S. stations: WYUL(FM) and WRCD(FM), respectively.

Because they are located about 70 miles south of the Montreal and Ottawa markets in Massena, N.Y. — just across the St. Lawrence Seaway on the Canada-U.S. border — their 50 kW signals are able to punch into the second and fourth largest cities in Canada.

### Why Canada?

Tim Martz, president of the U.S.-based Martz Communications Group LLC, owns 94.7 Hits FM, The Fox and seven other FM and AM stations in upstate New York. For 17 years, Martz has specialized in buying low-priced radio stations in small U.S. border communities close to large Canadian cities.

Martz then rebrands the stations to fit seamlessly into the Canadian market he is targeting. As a key part of this strategy, he drops obviously non-Canadian call signs such as WYUL, and replaces them with non-national monikers such as 94.7 Hits FM, The Fox, Q Country, YES FM, PAC 98.7, The Valley and Wild Country.

The stations are clustered in the New York border towns of Massena, Malone and Ogdensburg.

The reason Martz goes to all this trouble is revenue. By promoting 94.7 Hits FM as a Montreal-area station, he is able to sell advertising on the basis of the 3 million-plus population of that city (although the potential audience is only about half that, as the station's reception is not uniform throughout Montreal).

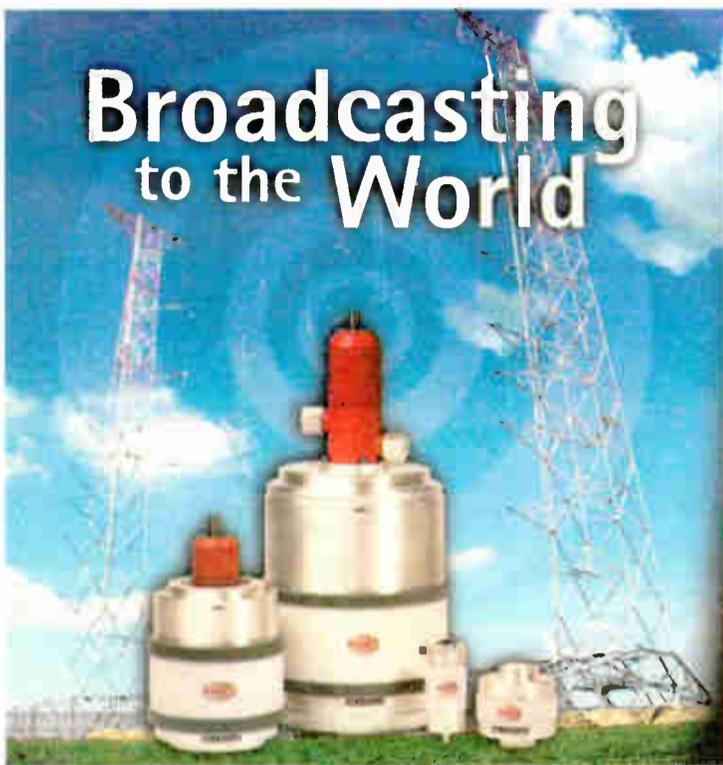
"We are strong in the English-speaking West Island, and northward into Laval," said Martz. "According to audience research conducted for us by Eastlan, we have a 4.3 percent share of listeners 12 and older in the West Island, which makes us number six in the market."

For Montreal proper, the Spring 2004 ratings compiled by the Canadian Bureau of Broadcast Measurement (BBM) ranked 94.7 Hits FM 17th in the market, with a 0.8 percent share, out of a total of 20 stations (it bumped up another tenth of a share in the summer).

By way of comparison, the English music station Mix96, the prime target of 94.7 Hits FM, ranked fourth in the West

See MARTZ, page 29 ▶

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# Calendar

▶ Continued from page 21

shopping: singles night at a grocery store. Women get roses. Guys get carnations. Match up couples for a scavenger hunt of items. Invite the media.

**Feb. 19: President's Day** — George Washington couldn't tell a lie, but your DJs can. Tell listeners that at least once an hour, you'll lie about something. When someone catches you, they win "dead presidents" — a \$5 (Lincoln), \$20 (Jackson), \$50 (Grant) and so on.

## March

**St. Patrick's Day** — 1) Invite listeners to visit your morning breakfast broadcast to show off "their green thing." The strangest green thing wins prizes. Serve green eggs and ham.

2) Find the largest parade in your market and reserve a spot. If you don't have something to enter, rent a hot car that you can attach banners to, or get a bunch of golf carts, attaching one call letter to each cart, until your letters and frequency are spelled out.

3) Arrange free cabs for drinkers who are too green to drive.

**The Oscars** — Check the phone book for a family named "Oscar." Get their predictions. Make them celebrities. Invite a select group of listeners to your private "Oscar Party." Note that Oscar is a service mark of the Academy of Motion Picture Arts and Sciences.

## March/April

**"Final Four Weekend"** — Have bands fight each other for the weekend championship.

**April 1: April Fool's Day** — 1) Tell your audience your station has been purchased by a Chinese company and hire a Chinese announcer to do the morning show. Keep the music the same. Watch the phones light up.

2) Make it a day of "foolish" prizes like the worst seats in the ballpark.

3) If there are enough songs in your format to do so, you can have people listen for the word "fool," to call and win money — as in "fools gold."

4) Put real-looking parking tickets on cars and have them call a number for details on how to pay the fine. April Fools!

5) Have your morning rave on and on about the new "pet tax." Put on "experts" to discuss to make it sound real.

6) Another new law that can light up your listeners: talk about the newly introduced law that prohibits people from smoking in their cars.

## April

**Easter Egg Toss** — Have kids design packages to keep eggs from breaking when dropped from a tall building or cherry picker. Sell-in a packaging store and a grocery store.

No — the eggs may not be hard-boiled.

**April 15: Tax Day: "Dunk The I.R.S."** — Hire an actor to pose as a guy from the Internal Revenue Service. Listeners pay you to toss balls at your I.R.S. agent, with the money going to charity. Do it near a TV station for almost guaranteed coverage.

## May

1) **"Mother's Day's Queen for a Day"** — Put together the ultimate Queen prize pack, with limo transportation for the day; all meals out; a complete spa treatment; new wardrobe. Have listeners nominate their mom for the prize via your site.

2) **"Throw Mama on the Train"** — The title says it all.

## June/July/August

**Ballpark Marathon** — The listener who sits in the most seats in a day or

bulldozer that can pull it out immediately. Have an ambulance on-site.

There used to be several promotion companies around that would do it for you, although with liability being what it is today, I'm not sure if they've survived.

## November

**Thanksgiving: 1) The Mayflower Marathon** — Listeners or DJs move into a Mayflower moving truck until they are able to fill the truck with donated food for the poor.

## How many promotions are too many? I would not recommend undertaking more than one major event promotion per quarter.

even two days or three days wins a big prize. Let them rest as often as you want. You have to have someone watch each person and count the seats. The prize could be great season tickets to see that team. Start with at least five listeners in the competition.

**July 4** — 1) **"Watermelon Block Parties"** — Get lots of melons for watermelon bowling, seed spitting and eating contests. Works great with kids and adults. Do a bunch of parties or one really big one.

2) Fireworks always work, and if you can time them to music on an actual broadcast, you can have everyone turn on their car radios.

## September

**"Back To School Shopping Spree"** — Give it away on-air, or register listeners at sponsors.

**Do book covers** for kids with your station logo and sponsors. Sell ads throughout the book cover and the distribution rights.

## October

**Pre-Halloween: 1) Boofest** — Kids treat or treat in a safe environment — in this case, it's in an empty concert venue. Sponsors all provide free candy at their tables. Make sure you have pony rides, hay rides, face painting, clowns, a petting zoo and a big costume contest. Pass out the "free" tickets at sponsors several weeks leading up to the event.

2) **Boo At The Zoo** — Same concept as above, but this one benefits your local zoo and since attendance will probably be more limited, you may want to do it over several days.

**Oct. 31 Halloween: Buried Alive!** Tie-in a funeral home as the sponsor. Do at their place if they like. Yes, bury a DJ or two DJs together for a shift or two. Pump in oxygen. Have the coffin attached to a

tions have been doing this on and off for 50 years.

Locate needy kids. They're probably in foster homes. With permission from the state or local agency, find out what they'd like to have as a present for Christmas. Have each child make a list of 10 items. Look at the list to determine what you think you're listeners realistically will donate.

Visit the children and record their wishes. Produce these wishes and run them in the morning show or around the clock. Have your listeners call, e-mail or go to your Web site to commit to fulfilling the wish. Thank each listener on the air and on your site for making each generous donation.

At the end, invite all the kids, the donors and the sponsors to a party at a local restaurant. Make sure the party stay focused on the children, with kid's food, ice cream, decorations. You'll never forget the smiles on those kid's faces. You may want to tie-in your local newspaper. Imagine them publishing photos of the kids.

Please note that is not intended to be a comprehensive list, but it does get you moving for 2005. I'm sure you also noticed that I tossed in a few contest promotions just for fun.

How many promotions are too many? I would not recommend undertaking more than one major event promotion per quarter. When you do more than one per quarter, you lose listener and sales focus.

Stations that are just beginning to sell event promotions seriously should start with one or two at opposite ends of the calendar.

Remember that most account executives are not equipped to sell events and need training. There are many good sales trainers in our industry and it is worth the investment.

I hope you found the list useful. If I missed one your favorites, please drop me an e-mail with the details. Happy New Year!

The author is president of Lapidus Media. E-mail him to [marklapidus@yahoo.com](mailto:marklapidus@yahoo.com).

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### Noise-Canceling Headphones

Always travelling? This headphone reduces noise by 70% (10 dB), and allows you to hear music against a much quieter background. Its ideal for air travel, listening near humming computers, or for use in noisy work environments. Features: cancels noise from 40 Hz to 1,500 Hz, more than 10 dB noise cancelation at 300 Hz.



MDRNC5 List \$79.99

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We planned on doing a gratuitous holiday ad with bright shining lights, jolly Santas and reindeer. But even after we got all the lights untangled, we couldn't get them to work - this despite having so many talented engineers in the building. Go figure.



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### DJ Wireless Microphone

Perfect for DJing on the side or midnight karaoke, this Gemini wireless system features 16 UHF synthesizer-controlled frequencies and a handheld XM-16 uni-directional dynamic mic. Operates on two AA batteries with a range of 250 feet. At this price, anyone can go wireless!

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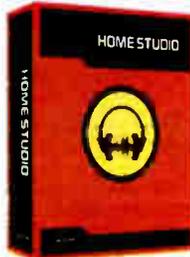
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STAC6 List \$3,200.00

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**FREE HD202 Headphone!**



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# Free Speech: More Than Just Howard

by Scott Fybus

The First Amendment has been part of the U.S. Constitution since 1791, but that one 45-word sentence presents questions for broadcasters that are as fresh as this morning's headlines.

Indeed, when several experts on the issue came together to discuss the issue at the NAB Radio Show in San Diego, one First Amendment issue was quite literally in that morning's news: Howard Stern's decision to leave terrestrial radio for the less restrictive — and less regulated — confines of Sirius Satellite Radio.

"The big problem in having regulation of terrestrial radio and not in other areas is that you're going to have a flight of talent" to satellite, said Bob Eatman, president of Robert Eatman Enterprises in Los Angeles and agent to "shock jocks" such as the Regular Guys, formerly of WKLS(FM) in Atlanta.

"Free speech is going to be the province of those that can afford satellite radio," Eatman warned, adding that many of his clients are actively investigating moving to one of the satellite services.

Eatman questioned the legality of a congressional proposal to begin fining not only broadcast licensees but also the air talent themselves.

"I wonder how, constitutionally, (talent) can be fined when they are not licensees, not partners in the station," Eatman asked.

Another panelist, communications attorney John Crigler of Washington-based Garvey Schubert Barer, warned, "It's not immediately clear who would be



John Crigler, Robert Eatman and Bryan Tramont

**It's not immediately clear who would be captured by that performer liability. It could be the production guy as well as the air talent.**

— John Crigler

captured by that performer liability. It could be the production guy as well as the air talent themselves."

Crigler also warned of constitutional

questions about the FCC's pending proposal to require stations to keep archives of their programming.

"A program that assumes you're going to do the right thing would be replaced with one that assumes you're going to do the wrong thing," Crigler said. "The interest that's alleged is to improve the complaint process, but the process is already pretty efficient."

### Congressional mandate

Bryan Tramont, chief of staff to FCC Chairman Michael Powell, acknowledged that the rules his office enforces can be confusing.

"There's no doubt that it's incredibly difficult to figure out what that (contemporary community indecency) standard is," he said, as evidenced by the rash of 3-2 decisions emanating from the FCC.

But Tramont noted that the "contemporary community standards" definition came to the FCC from Congress, leaving little leeway to the commissioners themselves.

Eatman contends that enforcement of indecency and obscenity rules still leaves the FCC too much leeway, and keeps his clients from talking about the topics that their audiences want to hear.

"At least with all my clients that are on stations that appeal to 18-34 males," Eatman said, "they've always maintained that when they don't talk about those things (sex-related topics), the ratings go away."

And Eatman wonders whether the people complaining about "shock jocks" are really representative of their audiences. Noting that less than 2 percent of Howard Stern's audience is younger than 18, he asked, "Is a minority really making these decisions? Are we ruled by a minority? Why should a person with millions of listeners be controlled by one (complaining) person?"

The crackdown on broadcast content may be driving the next generation of Sterns and Mancows completely out of the business, said Crigler.

"I got a call from the manager of a college station who said, 'Hormones are all the students know. There's nothing left that they want to play,'" he said.

### Changing standards

Even long-held exemptions to the indecency rules seem to be up for questioning in the current political climate.

Jonathan Green, afternoon talk host at Milwaukee's WTMJ(AM), raised the question of obscene language heard during live coverage of news events. When WTMJ carried the Jeffrey Dahmer murder trial, one witness used the "F-word" in quoting something Dahmer had allegedly said.

"I felt OK with that," Green told the panel. "I thought it was actually great radio, and I had no problem with having it on."

While the FCC's Tramont acknowledged that the use of the word in that context would probably be covered by the "news exemption," he warned that "it may be that the next commission doesn't view that news is different."

Eatman agreed that the indecency and obscenity rules are likely to change, arguing that generational shifts will bring new ideas about what is and isn't acceptable on the air.

"There are a lot of things that the younger generation does that parents and grandparents might not find acceptable, and we have to listen to that," he said.

"It used to be that I could tell you what indecency was in seven words," Crigler recalled wistfully, "and we didn't have to have panels to talk about it."

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**Speaker/Panel Moderator:** Consumer Electronics Association, Federal Communications Bar Association and regional equipment shows

**Heroes:** My husband, and my late parents Catherine and Burt Stimson

Radio World's pages are home to the finest writers and columnists in the industry. Like Leslie Stimson. Just one more reason we're the newspaper for radio managers and engineers.

NEWS WATCH

### NAB: Repeal the EDP Rule

The following is excerpted from an NAB filing with the FCC, which sought comment on ways to eliminate market entry barriers for small telecom businesses and to advance opportunities in the allocation of spectrum-based services for small businesses and those owned by women and minorities.

#### Reinstate tax incentive

NAB ... strongly supports the reinstatement of a tax incentive program that would give companies tax credits or other benefits if they sold broadcast properties to minorities or women. In particular, NAB has endorsed the legislation proposed by Sen. McCain to provide tax incentives to those selling broadcast stations to socially and economically disadvantaged small businesses.

NAB regards the commission's previous tax certificate program as one of the most effective policies in promoting minority ownership of broadcast stations. ...

#### Repeal or narrow equity/debt plus attribution rule

Under the "equity/debt plus" rule adopted by the commission in 1999, the holder of a financial interest, whether equity or debt or both, in excess of 33 percent of the total assets of a licensee or other media entity has an attributable interest in that licensee if the holder is either (1) a major program supplier to that licensee (i.e., supplies over 15 percent of a station's total weekly broadcast programming hours), or (2) a same-market media entity subject to the broadcast multiple ownership rules (including radio and television broadcasters and newspapers). All stock, whether common or preferred, voting or nonvoting, is counted toward the 33 percent threshold.

NAB urges the commission to repeal or at least narrow the EDP rule, which can adversely impact new entrants in the broadcasting industry, including minorities and women, by disrupting the flow of capital from existing broadcasters.

The commission and Congress have agreed that the primary impediment to entry into the broadcast industry for small businesses (particularly those owned by minorities and women) is access to and the cost of capital. Unfortunately, NAB believes that the EDP rule has only increased the difficulties experienced by small businesses, including those owned by minorities and women, in accessing capital and exacerbated their lack of representation in the broadcast industry.

Specifically, the EDP rule discourages investment by existing broadcasters (or by newspapers) in new entrants, including minorities and women, because more investments — including those of pure debt — are attributable.

In the proceeding in which the EDP rule was adopted, minority-controlled media companies agreed that the EDP rule would restrict the availability of capital for those new entrants, especially minorities and women, that most need the capital, thereby hindering their ability to enter the broadcast marketplace.

Because existing broadcasters are an important source of capital for minority broadcasters, any reduction in the amount of capital made available by existing broadcasters for investment is particularly deleterious for current and prospective minority broadcasters. Other entities working to promote minority ownership of broadcast outlets have consistently expressed concern that the EDP rule has the "unintended consequence" of discouraging broadcasters from providing

investment to socially and economically disadvantaged small businesses.

The EDP rule also tends to inhibit the spin off of broadcast stations to new entrants

exceed the numerical limits in local markets. Unfortunately, the EDP rule discourages spinoffs to new entrants, as merging group owners are reluctant (or even unable) to transfer stations to minorities, women or other new entrants in the local market who are more likely to need investment from the

small broadcasters, even in markets where those investors currently own no stations, because such investments could become attributable under the EDP rule if the investors were to later acquire stations in those markets.

Given these adverse effects the EDP rule can have on the flow of capital to new entrants and their ability to participate in the broadcast industry, NAB urges the commission to repeal this rule. At the very least, the commission should limit the rule's breadth by applying the rule only to investors that are also major program suppliers, or by determining not to attribute investments of pure debt.

Narrowing the EDP rule in either one of these ways would ameliorate its adverse impact on minorities, women and other new entrants.

## The rule 'can adversely impact new entrants in the broadcasting industry ... by disrupting the flow of capital from existing broadcasters.'

as part of station mergers. As the broadcast industry has consolidated in recent years, many group owners have been required to spin off stations (particularly radio) that

merging parties. The EDP rule further discourages established broadcasters from making non-controlling investments in new entrants or other

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Ryan Steelberg, Pres. of dMarc



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Chad Steelberg, CEO of dMarc

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## APPRECIATION

# Bob Murphy, the Voice of Family Ties

by Jim Nedelka

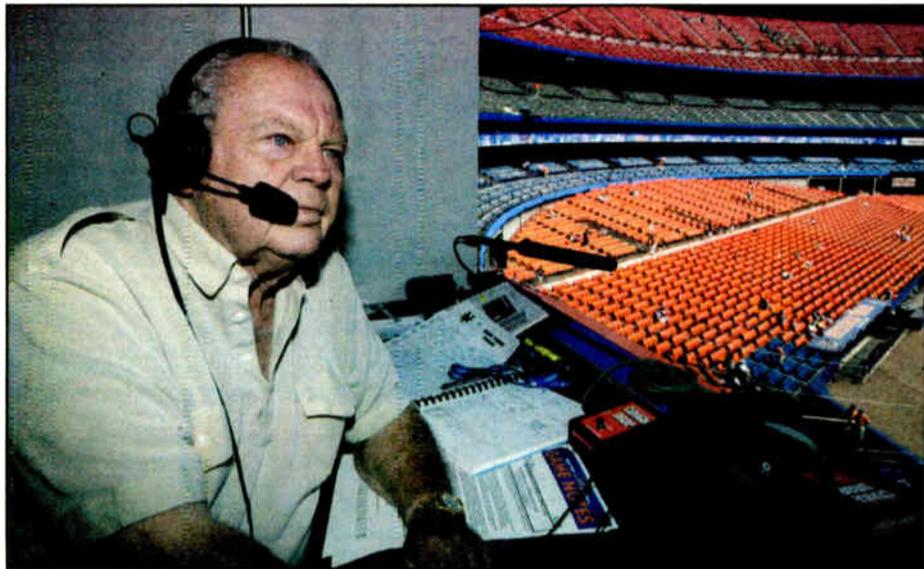
My friend Bob Murphy was short, round, Irish, impish. He loved a good story and a good drink. He was the Voice of Summer, a constant presence in our baseball lives, a chain-smoker.

But that's not why Bob Murphy was my

— a mere six blocks from his apartment — or listening to Red Barber.

When "that sumbitch O'Malley" kidnapped the Dodgers after the 1957 season, Brooklynites were left with nothing; and nothing could convince Grandpa to root for the damned Yankees.

So in 1962, Grandpa was ready for the



Bob Murphy

friend. His voice helped a 7-year-old kid better relate to a 77-year-old man, linked by blood and first name and not much else.

Murf died in August. How did he get to be 79?

## Childhood friend

Summer 1962: I was just learning baseball. My mom's dad, Grandpa Jim, had lived and died with his beloved Brooklyn Dodgers. Only his duties as an officer for the Fire Department of New York could keep him from a game, be it at Ebbets Field

expansion Mets. Calling the "action" on WOR(TV) Channel 9 and 77 WABC Radio were Lindsey Nelson, Ralph Kiner and Bob Murphy — always introduced in that order, Murf last.

Lindsey had the network TV chops and Ralph was the fabled National League home run hitter, but Murf was no slouch. He had called Red Sox and Orioles games in the eight seasons before becoming an Original Met. Yet, in 1962, you could've fallen over the diminutive announcer and not known who he was.

## Bob Murphy

Sept. 19, 1924 ~ Aug. 3, 2004

Bob Murphy was born in 1924. A native of Oklahoma, he saw action as a Marine in WWII. He began his baseball broadcasting career with the Muskogee Reds; among his duties were radio recreations of road games.

He did play-by-play for the Oklahoma Sooners during the Bud Wilkinson years, then was invited by fellow Oklahoman Curt Gowdy to work with him in the Boston Red Sox booth in 1954. The best advice Gowdy gave him: "It's a small booth and a long season."

Murphy moved to Baltimore to handle Orioles games in 1960. His call of Roger Maris' record-tying 60th home run of 1961 off the Orioles' Jack Fisher helped him land the job as announcer for the expansion 1962 Mets, where he teamed for 17 years with Lindsey Nelson and Ralph Kiner. The latter called Murphy "the brother I never had."

Murphy was inducted into the Mets Hall of Fame and received the Ford C. Frick Award for broadcasters from the National Baseball Hall of Fame. During his career he also covered AFL-era N.Y. Jets games and the Orange Bowl.

His older brother, Jack Murphy, was a sports writer and editor in San Diego, where the Padres and Chargers stadium was named in his honor.

Bob Murphy is survived by his wife Joye and six children.

In lieu of flowers the family asked that donations be made in Bob Murphy's name to the Hospice of Palm Beach County, 5300 East Avenue, West Palm Beach, FL 33407



Early Mets years, Murphy at left.

At home or with my Grandpa in Brooklyn, I watched and listened and learned.

On June 24, 1964, Grandpa took me to the new Shea Stadium for my first Major League game, in which Pittsburgh beat the Mets 3-1. Grandpa's health kept us from getting to another game together. But we continued to share the Mets' exploits, including their 1969 Miracle, until he passed away mid-season, 1975. Through it all there was Bob Murphy, unknowingly helping to open the door to part of my career.

## Rejuvenation

In 1974, as a 19-year-old rookie production assistant for WHN(AM) — coincidentally, the former radio home of Dem Bums — I soaked up everything, awed as our engineers successfully "covered" the

good listen, the game almost a secondary consideration. Humor and wit became as frequent as hits and strikeouts.

One night, the Mets took a double-digit pasting. At game's end Murf, reading the sponsor's scripted lead line, asked of Thorne: "And the turning point of the game was...?" Without breaking stride, Thorne quipped, "The National Anthem." Murphy rewarded him with a belly laugh.

## Cutting back

He usually bounced onto the scene. But age began to catch up. After all, Murphy had cut his teeth doing baseball re-creations in his native Oklahoma following World War II. Now his knees bothered him; his voice became more phlegmatic, a cough never more than a sentence or two away.

Murf, who had been inducted into the broadcast wing of the Baseball Hall of Fame in 1994, began to cut back on his workload as he turned the corner of 70. He feared dying alone in a hotel room, somewhere out on the road. A reduced schedule allowed him to spend time with his wife, Joye, herself a cancer survivor.



Vintage New York broadcast trio: Lindsey Nelson, Murphy and Ralph Kiner

Mets' "network" beer commercial with our local beer spot. Eleven years later, I was assistant producer and in 1987 was promoted to producer.

After 22 years of watching and listening, I found myself working with Bob Murphy.

He had gone through challenging times. The Mets spiraled downward after their 1973 National League pennant.

In 1982 Murf was assigned strictly to radio — banished, some said.

He then endured a series of bad hires who were poor at the bread-and-butter basics of baseball radiocasts: ad-libbing between pitches. We nicknamed one of these bad hires "Limiters" because, during long stretches of non-talk, WHN's transmitter would pump up the background noise in a desperate effort to put something on the air.

By the end of 1984, Murf was a mess, afraid of getting caught in the train wreck of lousy broadcasts of lousy teams.

Everything changed for the better for Murf with the arrival of fellow announcer Gary Thorne in 1985. Thorne invigorated Murf, bringing out his best. It was great fun for me to be a small part of the rejuvenation of this broadcast veteran.

As always, his radiocasts were filled with loquacious baseball stories; but now there was an appreciative audience sitting next to him in the booth. The spark in his voice came through, almost like never before.

Once again, Mets' broadcasts were a

He announced in 2003 that he would retire from the Mets radio booth, named in his honor the year before, after 50 seasons of calling Major League baseball games, 42 with the Mets. Subsequently we learned that Murf was battling lung cancer.

I've been a "civilian" for more than 15 years, no longer connected to the team's radiocasts except by earbuds.

But when the Mets announced an on-field tribute saluting the man who had painted word pictures of more than 6,000 games for generations of fans, I knew I had to be in the stands on Sept. 25, 2003. It wouldn't have been enough for me to listen to the radio, applauding the receiver. Now a gray-haired father of two, I needed to thank him with cheers and applause for the better connection he helped forge between my Grandpa and me.

I think he heard me.

Today, I know Murf's up there covering another marvelous day for baseball. Perched behind a heavenly microphone in the ultimate Field of Dreams, he's calling a close game between some Angels and Cardinals, encouraging listeners to fasten their seat belts for the finish.

And I'm sure my Grandpa is close by his radio, scoring at home, waiting for the happy recap.

Jim Nedelka is a manager of program and technical operations with the ABC Radio Network. He worked at 1050/WHN(AM), later WFAN, from 1974 to 1998. Reach him at jim.nedelka@abc.com.

# Martz

► Continued from page 23

Island with a 8.8 percent share in the Eastlan survey, and eighth in Montreal with a 5.7 percent share in the BBM survey.

In contrast to the 1.5 million listeners Martz targets in Montreal and the 1 million in Ottawa — plus the 112,000 people living directly across the St. Lawrence in Brockville and Cornwall, Ontario — the populations of Massena and Malone only stand at about 11,000 and 10,000 respectively.

“To attract advertisers, we have done a lot of promotion in Montreal, and bus, aerial and outdoor advertising in Ottawa,” Martz said. “We also have sales offices in Montreal, Ottawa, Cornwall and Brockville with Canadian representatives that sell air time to Canadian advertisers to reach Canadian customers.”

It is no wonder Martz Communications is hungry for Canadian listeners and advertisers. Canada is where the money is for this radio entrepreneur.

### For the listeners

The question is why the listeners want to tune to 94.7 Hits FM and The Fox, rather than their home-grown stations.

“No Cancon,” Martz said.

Short for “Canadian Content,” Cancon refers to the percentage of domestically produced music that Canadian stations must play to keep their licenses. Under the rules, anglophone stations must play at least 35 percent Canadian music each week. Meanwhile, 65 percent of the music aired on francophone stations must be in French.

“Unlike our Canadian competitors, we can play whatever we want,” said Martz. “This means that we can play the music Canadians really want to hear, as opposed to what their government tells them to listen to.”

Canadian stars such as Shania Twain and Bryan Adams do turn up on Martz stations, but only because their songs are international hits.

Still, the longstanding popularity of homegrown broadcasters plus a limited promotional budget have required some creative marketing by Martz.

For instance, in order to grab some initial attention from Mix96 in Montreal, Martz launched a campaign, “Nix The Mix,” which included a Web site with links to the 94.7 Hits FM Web site.

“We also do guerilla-style marketing, where we crash competitors’ promotional events in order to gain some attention,” he said.

### More conventional

In a more conventional vein, the Web sites for the Martz stations have Montreal and Ottawa weather reports from The

Weather Network. Also, the 94.7 Hits FM Web site promotes the Canada-based Much Music music video channel.

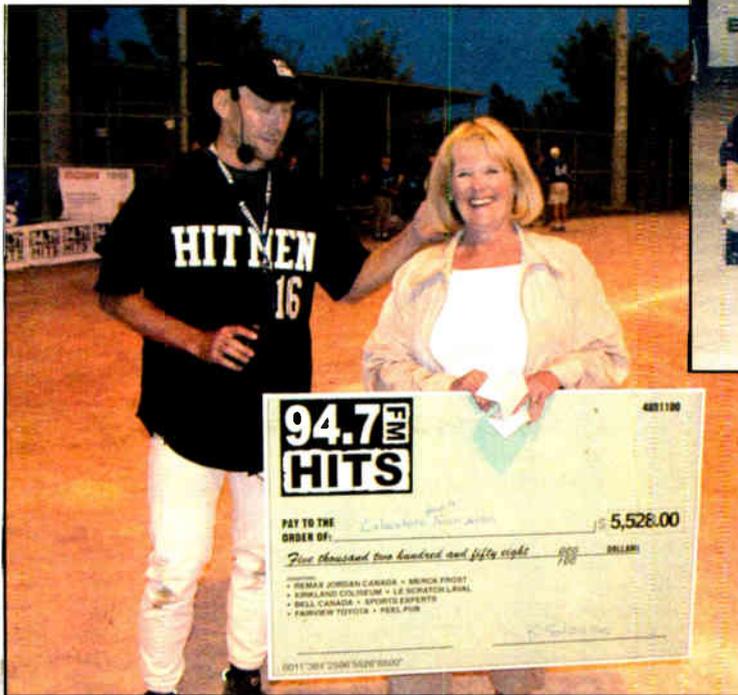
“We are also committed to giving back to the Canadian communities that we reach,” said Martz. “For instance, we are involved in various charities, and have raised \$20,000 so far for the West Island’s Lakeshore General Hospital.

“We also have some 15 Canadian

orientation.”

But are these U.S. licenses nothing more than a business strategy to reach a

far better than Infinity’s WPGC or Bonneville’s WWZZ serve their cities of license — wonder how many of their lis-



One way 94.7 Hits FM ties itself to its Canadian listenership is by participating in charity events for Montreal-area causes, such as Lake Shore General Hospital.



employees and numerous interns, and buy our promotion vehicles, T-shirts and other prizes and merchandise from Canadian suppliers,” he said.

94.7 Hits FM also provides English/French bilingual traffic reports and commercials, an approach that was dropped in Canada decades ago in favor of monolingual broadcasts.

“Montrealers are generally bilingual, so they do not have a problem listening in both languages,” Martz said. “In fact, more than half of our Montreal listeners identify themselves as French-speaking.”

### Competitive reaction

But how does it serve the U.S. cities of license to orient its programming to Canadian listeners?

“Our programming orientation is not inconsistent with our license obligations,” Tim Martz replied.

“For those stations that do have a significant Canadian audience like 94.7 HITS and 101.5 The Fox, we don’t hide the fact that we are American, we’re just not ‘in your face’ about it. Indeed, we use it to our advantage as it’s generally regarded as ‘cool’ in Canada to listen to our U.S. stations, especially since we aren’t the typical ignorant Americans about Canada.

“We air news, weather and local issues about both countries and relate to listeners in both countries. We support local charities in both countries. We provide public service information regarding both countries. We have advertisers in both countries. We employ a lot more U.S. citizens than if we were just the local ‘ma and pa’ station.”

The station airs Montreal and Ottawa traffic reports, he said, “because unlike our U.S. markets, those cities have rush hours and traffic. And since our rating shares are consistently higher in the U.S. than in Canada, our U.S. population has apparently embraced our programming

Canadian market? “Not at all,” he said. “Our strategy is to reach as many people as possible regardless of where they reside. attract the largest audience as possible regardless of where they reside, so that we can maximize revenue regardless of its country of origin. Over the past 18 years, we have honed a strategy to serve our U.S. markets but at the same time attract non-U.S. listeners.

“It’s not all that different than other border markets: Detroit-Windsor, Buffalo-Niagara Falls. In reality, it’s not anything different than any purely U.S. market. I guarantee that we serve our cities of license

teners have ever heard of Morningside or Waldorf, Md.’”

Not surprisingly, Canadian broadcasters are not keen on the encroachment by Martz Communications on their turf. However, the U.S. frequencies used by Martz are legal under a U.S.-Canada cross-border frequency allocation agreements.

Martz said the reaction ranges from acceptance to animosity in the form of complaints to the Canadian Radio-Television and Telecommunications Commission.

However, the Canadian company Standard Radio — which owns stations in Montreal and Ottawa, including Mix96 — has dealt with the competition from Martz by buying a 25 percent stake in Martz Communications.

Standard Radio President Gary Slaight explained the purchase, the maximum allowed under U.S. foreign ownership law, as a means for Standard to invest in the U.S. radio broadcasting business.

It also gives Standard a way to profit from the portion of Canadian advertising that ends up on the Martz stations.

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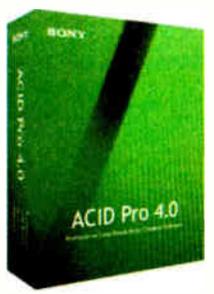
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# Buyer's Guide

Tech Updates



Inside

Radio World

Antennas, STL & Transmission Support

December 15, 2004

USER REPORT

## HDR Eases Space Woes for Cluster

*Dielectric Interleaved FM Antenna Combines HD Radio, Analog; Answers Vertical Space Concern*

by John Valenta  
Engineering Manager  
Infinity Chicago

**CHICAGO** The events of 9/11 taught broadcasters many lessons, and the importance of developing back-up transmission systems was one of them. In evaluating the antenna systems for the Infinity Chicago cluster, we saw that several of our FMs had inadequate backup systems — or none at all.

One of our tower sites was located in the heart of Chicago, and was identified as an ideal location for auxiliary transmissions for four of our Chicagoland stations. The self-supporting tower would handle the additional antenna load, but we were working with a very short aperture for the antennas for our four FMs. It became clear that we couldn't support four individual antennas. My plan was to combine the four transmitters into a single antenna using a constant impedance combiner.

I contacted Dielectric Communications, given its experience with combining and filtering. After outlining the requirements with FM Product Line Manager Matt Leland, I was dismayed to find that the dimensions of a constant impedance combiner were larger than our available transmitter room space.

But Matt had another idea. Two branch combiners are about



To improve isolation between the bays of the two antennas, the polarization also is reversed. The first antenna's bays are circularly polarized, with left-hand polarization. The second antenna's bays, also circularly polarized, are right-hand polarized.

one-third the size of an equivalent constant impedance combiner. The branch combiners could be mounted on their side, and suspended from the ceiling of the transmitter room. Two of the four stations would be fed into each branch combiner.

With the combiner space issue solved, we moved on to how to handle the antennas. By combining two of the four stations into two branch combiners, only two antennas would be needed. We had reduced our antenna count from four to two, but two three-bay antennas still occupied more vertical space than was available on the tower. Matt's solution to this problem was to feed the combined outputs up the tower into a Dielectric HDR interleaved FM antenna.

### HD Radio or analog backup

Initially designed for combining both HD Radio and analog signals, Dielectric's HDR interleaved antenna also can provide enough isolation for two pairs of FM frequencies to be transmitted from the interleaved bays. For our application, this new antenna consists of two three-bay antennas. The bays of the first antenna are full-wave-spaced.

The bays of the second antenna are also full-wave-spaced and are "interleaved," so the bays of each antenna are half-wave-spaced from each other. To improve isolation between the bays of the two antennas, the polarization also is reversed. The first antenna's bays are circularly polarized, with left-hand polarization.

The second antenna's bays, also circularly polarized, are right-hand polarized. This change of polarization on each bay can be seen in this article's photo of the interleaved antenna.

We opted for pattern optimization, to achieve the best circular pattern for each antenna. Dielectric Flexline was selected for the transmission line feeds, as it has a heavier outer jacket and thicker copper construction.

Installations are never without snags, but I was impressed with Dielectric, and its crew's handling of issues as they occurred, such as last-minute cable dressing changes and antenna mount changes. Installation questions or issues were handled by the company's senior FM antenna design engineer, in addition to structural, mechanical and manufacturing specialists at the Raymond, Maine factory.

Dielectric's interleaved antenna provides a solution to stations looking to convert to HD Radio, but our experience shows that this new antenna technology can also be adapted to provide backup all-analog transmission for an auxiliary facility. The technology gives equal coverage for all the combined stations, as the auxiliary antennas are mounted at essentially the same height and location on the tower.

Dielectric products, including Flexline, are warranted for five years. When an antenna "system" — line, tower, combiner or antenna — is ordered and installed by Dielectric, the company will extend the warranty to 10 years.

For more information, including pricing, contact Dielectric Communications in Maine at (207) 655-8139 or visit [www.dielectric.com](http://www.dielectric.com).

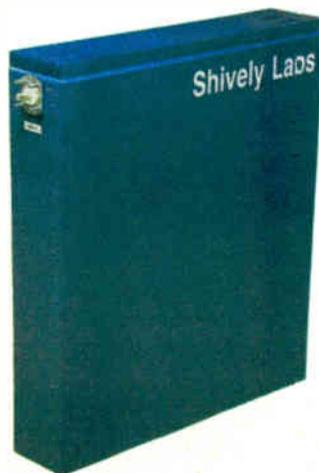
TECH UPDATE

## Shively Offers Bandpass Filter for Low-Power, IBOC Installations

Shively Labs says its Series 2600 bandpass filter was designed using interdigital resonator technology normally found at higher RF frequencies. The design allows for a footprint filter, while maintaining the performance of traditional cavity-type designs. The filter can be used as a stand-alone bandpass filter, or as the basis for compact branched or balanced combiner systems. The company says the filter is suitable for low-power combiners for HD Radio implementation, and for sites where space is limited.

Features include low loss, high isolation and natural-convection or forced-air cooling.

For more information, including pricing, contact Shively Labs in Maine at (888) 744-8359 or visit [www.shively.com](http://www.shively.com).



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## USER REPORT

# Cluster Transports Audio With Harris

*Radio One Taps Intraplex STL Plus After RF STL Line-of-Site Path Is Lost During a Temporary Move*

by Ken Wallace  
Regional Engineering Manager  
Radio One Inc.

**DETROIT** A temporary studio move gave us our first experience with the Harris Intraplex STL Plus system.

Radio One had purchased three stations in the Detroit market and wanted to consolidate two of the properties into one studio/office space. The present AM facility was too small to house two stations, and the location didn't satisfy the main studio requirement for the FM.

Moving the AM studios to the FM location had its challenges. While there was plenty of space and the location fulfilled the AM's main studio requirement, we no longer had a line-of-site path for the RF STL. We began to consider new options, as this was to be a temporary move. The three properties were scheduled for consolidation in a little over a year, once the current building leases had expired.

The first thought was to "double-hop" an RF STL to one of the FM towers. This idea quickly was scrapped because there were no frequencies readily available for the path azimuth needed. The only other option was to have the local phone company install a point-to-point T1 circuit.

Once this had been decided, the next decision was what type of T1 modem to use.

## Space-efficient

We wanted a system that did not need an external CSU and had a small chassis; rack space was at a premium. Reliability was also a concern because this would be the only method of transporting our audio to the transmitter site. The final consideration was for the available data transport options, aside from audio.

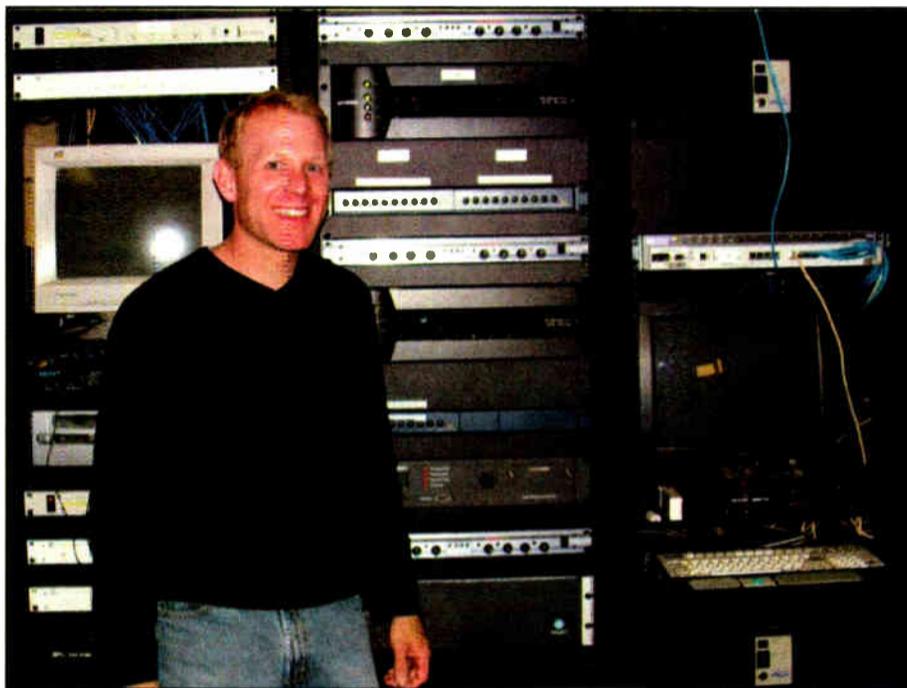
We decided to go with the Harris Intraplex STL Plus system. It addressed our need of a small chassis, as it occupies only three rack spaces. Reliability was addressed with hot-swappable cards in the event of a failure, and redundant power supplies offered as an option. However, the optional cards we could purchase to transport data back and forth from the sites were what really sold us on the Intraplex.

A full T1 has 1.55 Mb of available bandwidth. This bandwidth is divided up into 24 64 kb partitions, called time slots. The Intraplex uses a certain number of time slots depending on the amount of data that needs to be transported by the various cards installed.

Our initial needs were to deliver audio to the transmitter site, receive audio from a modulation monitor for monitoring purposes, send and receive remote control data and place a phone extension from our office PBX at the transmitter site. The Intraplex handled all of this.

We used two sets of PT-350 (transmission end) and PR-350 cards (receiving end) to transport audio back and forth. These cards can be configured for stereo or mono operation, and also can provide 7.5 kHz to 15 kHz of audio bandwidth and add pre-emphasis, depending on your needs. The bandwidth you require deter-

also were able to run a phone extension on the VF-15/16A cards, so the transmitter could dial direct to the studios without



Wallace appreciates the system's 3RU size, but was sold on optional cards to transport data back and forth from the sites.

mines the number of time slots these cards use.

One nice thing we found was that adding the TSL portion for audio back to the studio did not require more time slot usage, as the T1 circuit is bi-directional. We used the same time slots in each direction for all our audio.

For the remote control data, we purchased the VF-25 four-wire card set. This provided us with multiple channels for remote control, metering and status. We

long distance charges. The last card set we purchased was a set of DA-191A serial data cards to provide RS-232-type control for processors, etc.

We configured the internal CSU for operation after SBC installed the T1. I was amazed at the ease of this process. The click of a few toggle switches to select the type of T1 and timing was all that was needed. The CSUs were communicating in a matter of minutes. Configuration of the various cards

required only a brief run-through of the correct manual section and the setting of some DIP switches.

## Other solutions

We ran this Intraplex solution for a year until the completion of our permanent facilities for all three stations in downtown Detroit. This facility had the same challenges as the former facility, being in an area without a line of site to the three transmitter sites. Again we selected Intraplex as our T1 STL solution, and now have two FMs and one AM station using the Intraplex STL plus systems full-time.

As new technology came onto the scene along with the need to transport more and different types of data back and forth to the transmitter sites, we've continued to look to the Intraplex line. The biggest change to date has been the addition of digital transmission. We have all three stations running Ibiqity's HD Radio system, which required us to provide an AES signal stream from the studios to the transmitter sites. We accomplished this with new card sets for the Intraplex.

Additionally, we wanted to extend our office LAN to each site for off-site data backups and control of equipment with an Ethernet jack. We now have processors, transmitters, exciters and remote PCs controlled from our studio desktop PCs with the addition of the LAN bridge cards.

Radio One uses the Intraplex STL HD Plus system in markets such as Los Angeles, Dallas, Detroit, Houston, Columbus, Washington, Baltimore, Atlanta and Cleveland. We even use the Intraplex STL HD Plus with T1/E1 spread spectrum radios in addition to our telco-based T1 units.

For more information, including pricing, contact Harris in Ohio at (513) 459-3400 or visit [www.broacast.harris.com](http://www.broacast.harris.com).

## TECH UPDATES

### ERI Installs 2,000-Foot Guyed Tower in Oklahoma

Among its offerings, Electronics Research Inc. provides design, fabrication and turnkey installation of guyed towers, such as a recent 2,000-foot structure for Perry Publishing and Broadcasting in Anadarko, Okla.

The company says the structure is the tallest in the state, and supports a 16-bay half-wave Rototiller SHPX antenna broadcasting KRMP(FM).

According to the president of Perry Publishing and Broadcasting, the tower and high-power FM antenna system allows KRMP — "Power 105.3" — to reach two-thirds of Oklahoma and a large portion of Texas. An ERI Lambda mounting system was employed to minimize any distortion caused by the tower.

As the distributor for Andrew Corp.'s Heliac equipment and system accessories, ERI also supplied 2,100 feet of 5-inch air Heliac semiflexible coaxial cable for the transmission line run.

For more information, including pricing, contact Electronics Research Inc. in



Indiana at (812) 925-6000 or visit [www.eriinc.com](http://www.eriinc.com).

### Tele-Link Uses Internet Transmission

The Tele-Link STL link from Energy-Onix consists of an encoder and decoder that the company says permit reliable transmission over the Internet using a wideband, dedicated connection.

Broadcasters use the "free highway" to deliver a stereo program with 22 kHz response on left and right channels, as well as AES/EBU digital services.

The company says the decoder of the Tele-Link contains a "smart system" which, in the event of an Internet overload or server overload, will reset the

equipment in two seconds. If audio is not present within 10 seconds, a local pre-recorded "fill" from the internal hard drive will serve as the program, and an appropriate "pager" will be notified. Tele-Link guards against interruption of the Internet connection and the possibility of overloading a broadband connection.

Tele-Link hardware consists of two computers, and each terminal contains an encoder and decoder. Both computers are supplied with a keyboard and mouse. Customers are required to supply an uninterrupted power supply, a video monitor and a wideband-dedicated connection to the Internet at each end of the system. These connections must have a minimum capacity of 128 kbps.

Additionally, each terminal uses LynxOne digital/analog audio mixer cards, each capable of handling two balanced analog signals or one digital AES/EBU signal.

For users who want multiple destinations for the same stereo program source, only one originating terminal is required. The company says this combination is capable of delivering quality stereo information to five terminations. Each termination requires a wideband-dedicated connection, a Tele-Link terminal and an appropriate UPS, video monitor and audio distribution equipment.

For more information, including pricing, contact Energy-Onix in New York at (518) 758-1690 or visit [www.energy-onix.com](http://www.energy-onix.com).

USER REPORT

# Kintronic Keeps WBIS On Air

*Diplexer Enables Business Radio to Room  
With Full-Time Host Nearby After Lease Ends*

by James Weitzman  
President  
New World Radio

**ANNAPOLIS, Md.** It was every broadcaster's nightmare — a certified letter bearing our landlord's return address. Its message: "Your lease is up. Vacate the transmitter site."

In a matter of weeks the bulldozers would be coming, but our planned relocation to a new community had been delayed by various contractual and regulatory issues. Unless we could quickly build out new studios and antennas at a temporary site, our station would go silent.

The Baltimore/Annapolis market's WBIS(AM) Business Radio 1190 broadcasts only business and financial news. With a 10,000-watt transmitting signal at 1190 kHz on the AM dial, it reaches from Washington, D.C., to the Eastern Shore, south to Virginia Beach and north as far as Wilmington, Del.

My 30 years of lawyering for literally hundreds of radio stations, coupled with our company's experience in operating two other high-power major-market AMs, gave me the solution: find a nearby transmitter site to share temporarily until our new facility was ready.

The choices were few — several area stations that seemingly had no particular interest in keeping us on the air. Of these stations, two seemed to hold the most promise. The first was a flea-power facility with aged, compromised ground radials, a neglected transmission system and part-time management. Quick field measurements confirmed our impressions of a

significantly degraded radiation efficiency — in short, an engineering disaster-in-waiting.

The second choice, however, was a full-service full-timer with good facilities and 1/4+ wavelength towers at our frequency. Perfect! The question was, would



WBIS DOE Brian Edwards (center) points out the base current ammeter in one of WBIS' Kintronic ATU/filter/detuning networks to WNAV(AM) GM Steve Hopp (left) and WBIS President Jim Weitzman.

they let us come aboard?

Fortunately for us, the general manager was a seasoned broadcast veteran and businessman, whose firm grasp of the technical principles of a diplex and whose graciousness in extending a hand to a fellow broadcaster recalled the kinds of relationships and camaraderie common in our industry in an earlier pre-consolidation era.

His only conditions were a transparent technical setup and minimal downtime during installation.

My second call was intuitive — to Kintronic Labs in Bluff City, Tenn.

During my many years representing countless AM stations in markets from Punxsutawney to New York, I'd worked with virtually every major manufacturer of RF broadcast equipment and most major consulting engineering firms. Unique among these is Kintronic, as the company's steadfast devotion to quality and responsive customer service has earned it a hallowed position in the industry.

To meet our host station's conditions, and thereby avert dead air on our frequency, we needed ATUs and pass-reject networks that would: (1) be well-designed, electrically stable and mechanically robust; (2) fit within restricted-space tuning houses; (3) perfectly match the host station driving and feedline impedances; and (4) exhibit high isolation between stations and flat response across each station's respective bandwidth.

Additionally, we needed them to arrive on time precisely on the day when engineers, field crews and riggers were

scheduled to do the install; and work flawlessly out of the crate, with no or minimal adjustment, to facilitate a quick problem-free installation.

Kintronic met our challenge in every respect.

In the planning stages, longtime President Tom King and his engineers worked with us to collaborate on the proposed physical and technical layout, and to check and double-check the electrical operating constants of the host station's then-transmission system, in order to perfect the design.

During this process, in the interest of promoting ease of installation and minimal downtime, we decided to replace the host's ATUs, and incorporate that circuitry into the Kintronic equipment. Everything would be matched, pretuned and tested at the factory before shipment and set into position upon delivery.

Kintronic's truck from Tennessee arrived 12 hours early. The driver, offered a hotel room, insisted on sleeping with the load so he could keep an eye on it. The packing and crating of the equipment would have qualified for air or sea shipment.

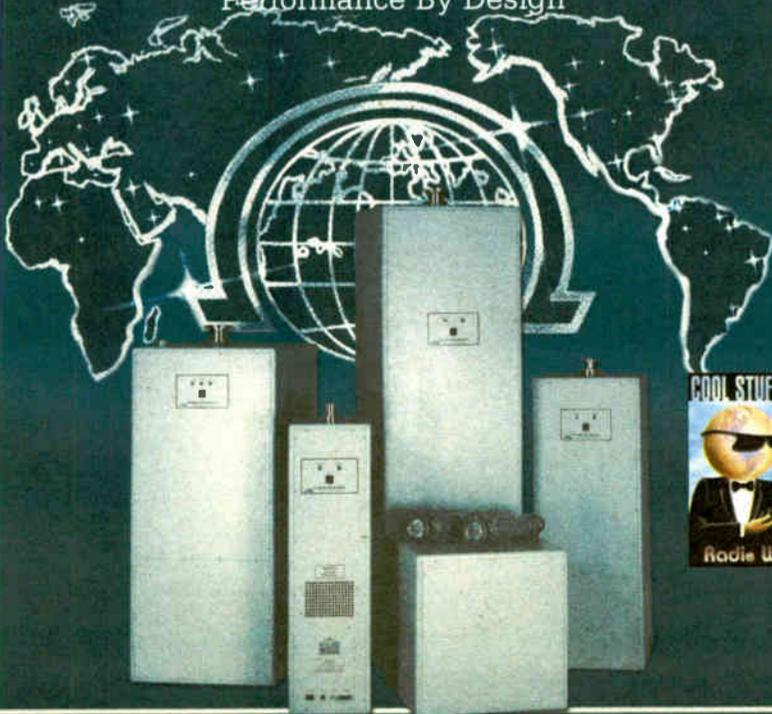
Once unloaded and unpacked, the physical dimensions of the enclosures manufactured by Kintronic were correct to the inch, and they fit into the designated spaces. The circuitry, components, layout, connections and ease of access were described in superlatives by the engineers on site.

After the connections were made to the towers and transmitters, both stations switched over to the new equipment at full power. The only adjustment necessary was to move one tap on a coil to eliminate a small amount of reflected power to our solid-state transmitter.

Both stations sound better than before the consolidation of the two sites, and enjoy stable operation. Three days after our move, the towers at our old site came crashing to the ground as we handed over the keys to the landlord. But WBIS was still "standing," thanks to Kintronic Labs.

For more information, including pricing, contact Kintronic Labs in Tennessee at (423) 878-3141 or visit [www.kintronic.com](http://www.kintronic.com).

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## USER REPORT

# Logitek Offers Fiber-Optic STL

*Michigan Broadcaster Uses Long-Distance Fiber To Link Studios' Audio Engines to Remote Site*

by Craig Bowman  
Owner  
Bowman Engineering  
and Management Group

**PORT HURON, Mich.** A zoning regulation prohibits satellite dishes/towers at the new studio site: This is a problem as old as satellite reception itself. However, it does not sound like a real problem until you realize what formats are to be contained in the building — one is a news/talk station, another is a satellite music station, yet another station runs satellite news in the morning. And of course all five of Liggett Communications' stations have off-site transmitters.

We looked at many ways to tackle this two years ago, and the technology to integrate the remote site seamlessly did not yet exist. We were using Logitek Audio Engines in the new studios and we thought it would be great if we could place an audio engine at a remote site and connect via fiber to the main studio. What the heck, the engines already talked to each other via fiber. We just needed the link between them to be about 10 miles longer.

## 3.0

So, we talked to Tag Borland at Logitek and he said the product was already in development and would soon be available. We used an assortment of switchers and spread-spectrum devices to get us through until the final fix could be implemented. Then one day I got the call; the long-distance fiber was ready.

The Logitek Optical STL function requires two Audio Engines, one at each end of the link, plus single-mode dual-strand fiber. The fiber can be obtained from any of the standard suppliers of fiber-



Bowman poses with station engineer Fred Bennett, holding the yellow fiber that connects the studio's Audio Engines to the tower/downlink site.

optic cable. In our case, the fiber was installed by a local cable television company. They had set up a head end at one of our tower sites, and we made arrangements with them to do the cable run for us.

Additionally, Engines can be separated by more than six miles, and up to 64 channels of uncompressed 24-bit audio can pass in each direction.

Because our Audio Engines were due for a software upgrade to Version 3.0, I flew in John Davis from Logitek to help with the conversion. He brought the new engine and the long-distance fiber cards with him. Our configuration files had been e-mailed weeks earlier and were checked and edited by the company for compatibility with Version 3.

Because we interface logic from our Scott Studios system to the Logitek Audio Engine via GPIs, there were many commands that had to be checked, and they worked perfectly. We actually did the Audio Engine upgrades during the day. By manually patching engine inputs (Scott Studios automation or direct satellite feed) to outputs (to Processing) the switch went

un-noticed. And then the test ...

Out to the tower site we went with a new Engine and plugged in the fiber. Voilà! There was nothing.

And then we saw a blinking blue LED, which indicated we had a signal. "Quick, program an output and let's listen," I said. Sure enough, there was audio — not just audio, but a station program from the other end of a nearly 10-mile fiber.

At first we wired a program output to one of the inputs so we could monitor the round-trip path, and after a couple weeks we began with a migrated program of one station to the fiber. Then we added satellite feeds for the news talk. Now we are running four RPU's, 30 satellite channels and two station program feeds to the STLs on the tower without a hiccup.

The Logitek Optical STL provides us with a reliable, flexible solution to a problem that has existed for as long as there have been zoning boards and satellite dishes. Our news department once had to send a serial stream programmed into a hot button on the Scott to change one of the satellite cards or Broadcast Tools switchers, which were feeding our old system to the studios. Now they dial up the source using either the control surface in one of the studios, or one of the newsroom computers running Logitek's vMix routing software.

If Logitek would change their engine protocol IP rather than their proprietary model, it would open up bandwidth on the fiber to allow for other communications between the studio and transmitter / downlink site. Currently we are using two audio channels and DTMF interfaces to relay closures via the Logitek. IP communication would allow us to utilize IP-to-serial interfaces for these issues, not to mention extending our LAN to the transmitter site.

For more information, including pricing, contact Logitek Electronic Systems in Houston at (713) 664-4470 or visit [www.logitekaudio.com](http://www.logitekaudio.com).

## USER REPORT

# Arizona CE Samples Bext Antennas

*A Fan of Bext Transmitters Beefs Up Antenna 'Fleet' With Broadband, Circularly Polarized Models*

by Dennis Gilliam  
Chief Engineer  
KJZZ(FM) and KBAQ(FM)

**TEMPE, Ariz.** Welcome to my engineering shop in our new Tempe, Ariz., facility, featuring KJZZ(FM) and KBAQ(FM), also known as the public radio headquarters for the Phoenix metro area. We operate two full-power FM facilities here, with translator outreach all over the state and into Western New Mexico. Because we are a public radio facility, the dollars I spend come from our listeners and underwriters.

When I came to the station 20 years ago, there were three translators in service in Northern Arizona, all of them channel-specific crystal-controlled models. I fought them to stay on the air like all engineers did, as the units were less than dependable in those days. When I heard about a new company called Bext in San Diego offering transmitters to replace those boat anchors, I got a set on trial. And it never went back.

Our stations have since purchased receivers, excitors, digital audio converters and power amplifiers over the years. With our ever-expanding translator ser-

vices, we also have been buying a lot of antennas.

**Peak performance**

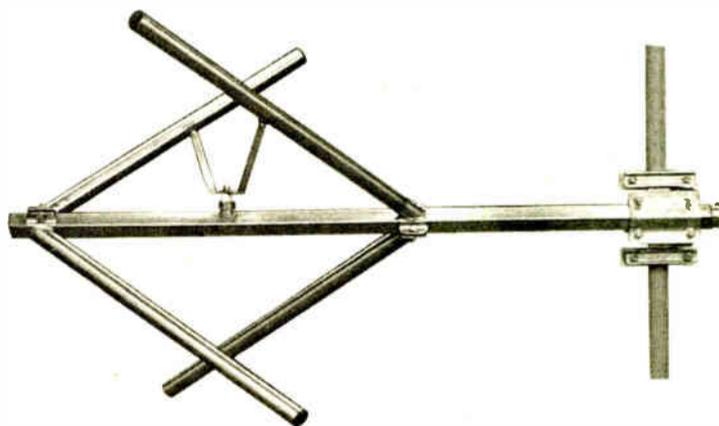
Our antenna fleet was mainly from Scala and ERI. I had spoken with Dennis Peri of Bext about the need for an alternative source for antennas offering the same quality and price structure we have found with their electronics gear. He assured me that antennas were on the drawing board, but had to be rigorously tested before sales were planned.

I was given the opportunity to field-test the TFC2K, an omni-directional broadband, circularly polarized transmitting antenna — a compact and robust stainless steel unit, with the exceptional benefit of not having to tune it for VSWR anywhere in the FM band. We put it in service on a 10,000-foot peak minus the customary radome to see how it would hold up to the terrible winters in Northern Arizona. It worked fine throughout the season, and still works the same today.

Features include lightning protection, as metal parts are DC-grounded. A galvanized steel mounting bracket is included, and an optional mini white fiberglass radome is available on the feedpoint for protection against icing. Pressurization is

available upon request, and arms can be disassembled for transport and shipping.

Bext does not recommend snow country-operation without radomes, but I found the broadband design allows the antenna immunity from icing. This is valuable to operations in locations where occasional icing may happen, or wind-loading restrictions exist. The only minor flaw I



noticed was that one of the mechanical connections between the feedpoint and the arm did not line up too well, and I had to bend it a little to put in the bolt and tighten it. But it was no big deal.

This design has evolved into a line of high-power, CP antennas with accurate

null fill and beam tilt as options. It still retains the broadband ability; so, if you have several FM stations co-located at a site, you can use one agile transmitter with this antenna for a space-saving backup. If you are short on tower space, it also will handle multiple transmitter inputs simultaneously up to the rated power maximum level.

The Bext Log R FM is a log-periodic low-power broadband antenna made of tough alloys, which has withstood the winter snow and ice loads with no element bending. It has great linear receive

characteristics and works as a highly directional transmit antenna for both LPFM and translator service. Multiple arrays are easy to erect and aim.

For more information, including pricing, contact Bext in San Diego at (619) 239-8462 or visit [www.bext.com](http://www.bext.com).

# The routing switcher gets a new twist.

(About five twists per inch, actually.)

**Everybody needs to share audio.** Sometimes just a few signals — sometimes a few hundred. Across the hall, between floors, now and then across campus. Routing switchers are a convenient way to manage and share your audio, but will your GM really let you buy a router that costs more than his dream car? Unlikely.

If you need a routing switcher but aren't made of money, consider Axia, the Ethernet-based audio network. Yes, Ethernet. Axia is a *true network*. Place our audio adapter nodes next to your sources and destinations, then connect using standard Ethernet switches and Cat-6. Imagine the simplicity and power of Ethernet connecting any studio device to any other, any room to any other, any building to any other... you get the idea.



*Routers are OK... but a network is so much more modern. With Axia, your ins and outs are next to the audio, where they belong. No frame, no cards, no sweat.*

### Scalable, flexible, reliable... pick any three.

An expensive proprietary router isn't practical for smaller facilities. In fact, it doesn't scale all that well for larger ones. Here's where an expandable network really shines.

Connect eight Axia 8x8 Audio Nodes using Cat-6 cable and an Ethernet switch, and you've got a 64x64 routing switcher. And you can easily add more I/O whenever and wherever you need it. Build a 128x128 system... or 1024x1024... use a Gigabit fiber backbone and the sky's the limit.



### Are you still using PC sound cards?

Even the best sound cards are compromised by PC noise, inconvenient output connectors, poor headroom, and other gremlins. Instead, load the

Axia IP-Audio Driver for Windows® on your workstations and connect *directly* to the Axia audio network using their Ethernet ports. Not only will your PC productions sound fantastic, you'll eliminate sound cards and the hardware they usually feed (like router or console input modules). Just think of all the cash you'll save.

**Livewire**



100/1000

*There's a better way to get audio out of your PC. No more consumer grade '1/8" connectors — with Axia your digital audio stays clean and pristine.*



*Put an Axia Microphone Node next to your mics and send preamplified audio anywhere you need it, over Ethernet — with no line loss or signal degradation.*

### Put your preamps where your mics are.

Most mainframe routers have no mic inputs, so you need to buy preamps. With Axia you get ultra-low-noise preamps with Phantom power. Put a node in each studio, right next to the mics, to keep mic cables nice and tight, then send multiple mic channels to the network on a single Cat-6 cable. And did we mention that each Mic Node has eight stereo line outputs for headphones? Nice bonus.



### Put your snake on a diet.

Nobody loves cable snakes.

Besides soldering a jillion connectors, just try finding the pair you want when there's a change to make. Axia Audio Nodes come in AES/EBU and balanced stereo analog flavors. Put a batch of Nodes on each end of a Cat-6 run, and BAM! a bi-directional multi-channel snake. Use media converters and a fiber link for extra-long runs between studios — or between buildings.



*An Axia digital audio snake can carry hundreds of channels of digital audio on one skinny CAT-6 cable. We know you're not going to miss soldering all that multi-pair...*



Scott Studios



*Axia is already working with some great companies. Like Enco Systems, Prophet Systems, Scott Studios, Radio Systems, Balsys Technology Group, and of course Telos and Omnia. Check [AxiaAudio.com/partners/](http://AxiaAudio.com/partners/) to find out who's next.*

### With a little help from our friends.

A networked audio system doesn't just replace a traditional router — it *improves* upon it. Already, companies in our industry are realizing the advantages of tightly integrated systems, and are making new products that reap those benefits. Working with our partners, Axia Audio is bringing new thinking and ideas to audio distribution, machine control, Program Associated Data (PAD), and even wiring convenience.



### Would you like some control with that?

There are plenty of ways to control your Axia network. For instance, you'll find built-in webservers on all Axia equipment for easy configuration via browser. PathfinderPC® software for Windows gives you central control of every audio path in your plant. Router Selector nodes allow quick local source selection, and intelligent studio control surfaces let talent easily access and mix any source in your networked facility.



*Control freaks of the world, rejoice: intelligent Axia mixing surfaces give talent complete control of their working environment. Reconfigure studios instantly and assign often-used sources just where they're most useful.*



**"This sounds expensive."** Just the opposite, really. Axia saves money by eliminating distribution amps, line selectors, sound cards, patch bays, multi-pair cables, and tons of discrete wiring — not to mention the installation and maintenance time you'll recover. And those are just side benefits: our hardware is about half the cost of those big mainframe routers. That's right... *half*. Once you experience the benefits of networked audio, you will never want to go back. [AxiaAudio.com](http://AxiaAudio.com) for details.



Axia products are available in the USA from Broadcasters General Store and Broadcast Supply Worldwide. See [www.AxiaAudio.com/buy/](http://www.AxiaAudio.com/buy/) for more information. © 2004 HNS Corp. All rights reserved. Axia is a trademark of HNS Corp. All other trademarks and licenses are property of their respective owners.

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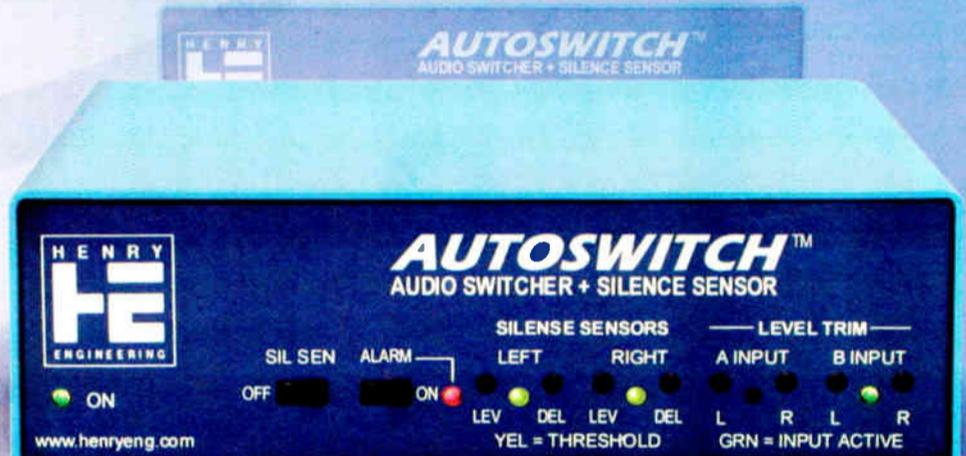
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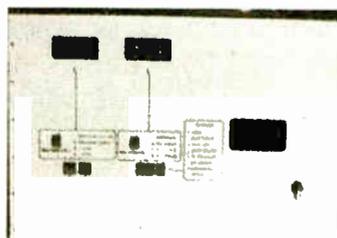


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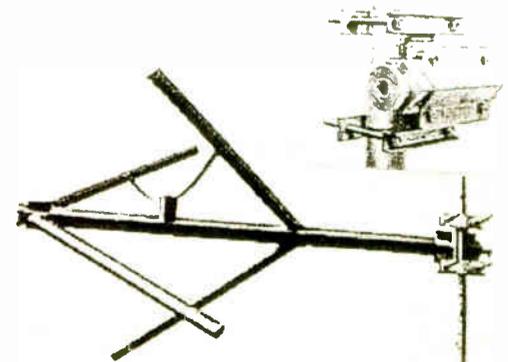
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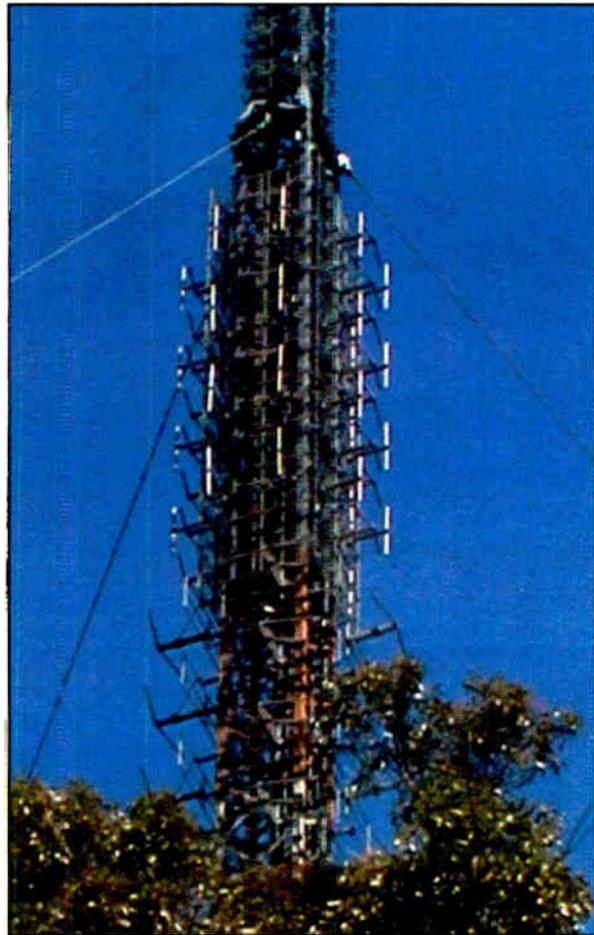
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## TECH UPDATES

## RFS Adds Full Screen To 904 FM Panel Array

Radio Frequency Systems says its fully screened Band II FM panel array was developed to extend the power-handling capabilities of its RFS 904 series of panel arrays.



The unit is suitable for broadcast applications where powers can be in the order of 120 kW for half-antenna applications.

The broadband 904 series offers customized radiation patterns for high-power broadcasting in the FM band. Each panel, which the company says is designed for use on rectangular cross-section masts, comprises four dipoles mounted off a reflective screen. The fully screened version electrically and mechanically joins the galvanized steel back-screens of each array around the tower.

The full screen shields the tower and branch feeders from induced electromagnetic radiation, preventing an increase in power levels inside the tower. RFS says broadcasters are able to avoid intermittent distribution cable burn-ups at high powers, reducing the need for ongoing maintenance.

Repositioning of the dipole feed-point so that it

resides inside the reflective cage is an additional modification to the 904 array, and is accompanied by improvements in cabling insulation and the introduction of looms specifically engineered to avoid tight loops in the cabling.

For more information, including pricing, contact Radio Frequency Systems in Connecticut at (203) 630-3311 or visit [www.rfsworld.com](http://www.rfsworld.com).

## BE Big Pipe STL Has More Bandwidth Than T1

Broadcast Electronics is shipping its Big Pipe wideband STL, a bi-directional, broadband link capable of 45 Mbps transfer rates. The company says it offers more than 25 times the bandwidth of a T1, and is able to carry digital radio, analog audio, AES/EBU uncompressed audio and RDS or HD Radio data. Ethernet and RS-232 communications also are included.

The company says Big Pipe is in use by stations as a high-speed pipeline between studios and transmitter sites for transporting audio and data. Some stations use the broadband STL to network studio and Ethernet-capable transmitters into a wide-area network capable of redundancy, while others use it to supply the feed capacity necessary for large clusters of stations or to prepare for high-bandwidth advanced digital radio applications.



Big Pipe offers interchanges of uncompressed analog and digital audio, HD Radio data, Ethernet, serial data and telephony via a wireless or terrestrial path. The link operates on a high-frequency RF band and can be configured as an STL link, or an STL link for clustered groups. Broadcasters can allocate bandwidth for audio, data and other feeds in a single connection.

For more information, including pricing, contact Broadcast Electronics in Illinois at (217) 224-9600 or visit [www.bdcast.com](http://www.bdcast.com).

## PSI Offers Antenna Solutions for IBOC FM

Propagation Systems Inc. has made available a variety of antennas and antenna/combiner units for broadcasters looking to initiate IBOC FM broadcasting. The company says it can supply the RF package of transmission line, combiners and antennas for analog and IBOC, and will install the system on a turnkey basis if requested.

PSI says it can supply FM antennas using a variety of panel antennas for single- or multiple-station applications using the separate amplification approach. It also provides the necessary combiner and reject load.

For the separate antenna approach, a variety of antenna types are available that use directional or non-directional horizontal or circular polarization. The company provides a selection of panel types to satisfy mounting or radiation requirements.

Panels and a standard-type FM antenna are available for broadcasters that want to use the dual-input/single-antenna approach, in addition to an antenna combiner. The company says this approach is best-suited for stations that must maintain a particular propagation pattern or use large-faced towers that require side mounting.

Systems are checked at PSI's test range before shipment, and stations purchasing a turnkey package receive an extended warranty.

For more information, including pricing, contact Propagation Systems Inc. in Pennsylvania at (814) 472-5540 or visit [www.psbroadcast.com](http://www.psbroadcast.com).

## Eimac Debuts Ceramic/Metal Tube For Digital Shortwave

The Eimac division of CPI says it introduced a ceramic-metal high-power tetrode for digital shortwave broadcasting. It said new transmitters are in demand as a result of increasing digital shortwave broadcasting and the international Digital Radio Mondiale standard, which the company says will enable improvements in audio quality and easier tuning.

The compact 4CM100,000G tube is rated for 100 kW output power. It features multiphase cooling and Pyrolytic graphite grids. The company says the advantage of the multiphase cooling is the tube does not require a separate boiler like vapor phase-cooled tubes.

Anode cooling is accomplished by circulating water through the water jacket. Water/vapor cooling enables anode heat removal and affords extra capacity for temporary overloads. The inlet and outlet connections are marked on top of the jacket, and the company says it is important that they are used as indicated.

Auxiliary forced-air cooling of the tube base is required to maintain filament and grid seal temperatures at safe operation levels. Minimum airflow of 100 cfm at 50 degrees C. maximum temperature at sea level should be directed through the Eimac SK-2011A series socket toward the filament and grid seals. The company says the temperature of the ceramic/metal seals is the controlling and final limiting factor.

Tube life can be compromised by poor water quality. Contaminated water leaves deposits on the inside of the water jacket and cooling passages, causing localized anode heating and eventual tube failure. To minimize electrolysis and power loss, water resistivity at 25 degrees C. should be one megohm per cubic centimeter or higher.

The company says the water flow rate for the cooling is less than that of a standard water-cooled tube, with requirements of 13 gpm under normal operation, and that the Pyrolytic graphite grids in the 4CM100,000G dissipate more power than standard wire grids. Drive power needed to achieve 100 kW output is 1000 W.

The 4CM100,000G must be mounted with its major axis vertical. The tube base may be up or down, as the unit contains a thoriated-tungsten filament and should be protected from shock and vibration.

For more information, including pricing, contact CPI-Eimac Division in California at (650) 592-1221 or visit [www.eimac.com](http://www.eimac.com).

## Moseley Lanlink Gives LAN/WAN Connectivity to Tx Site

Moseley says its Lanlink 900 LAN Extender was developed in response need for a data transport system that would compliment a 950 MHz STL without incurring additional expense, as the addition of the return portion of the link to a 950 MHz system until now has required licensing more TSL channels or leasing circuits from the telephone company.

Lanlink connects in-line between the STL transmitter or receiver and the 950 MHz antenna system.

It transports bi-directional Ethernet at 512 kbps and two RS-232 serial data channels over a license-free 900 MHz RF link. Because of the closeness in frequency to the 950 MHz STL band, Lanlink can be duplexed into an existing 950 MHz antenna system. A license is not required for Lanlink, as it operates in the 902-928 MHz ISM band.

Lanlink uses spread-spectrum technology, which takes a narrow-band signal and spreads it over a broader portion of the RF band, producing signals that can be recovered with a low signal-to-noise ratio. The power output is 1 watt, sufficient to provide paths of up to 30 miles. In situations where there is a working 950 MHz STL in service, the company says the Lanlink operates smoothly, and in these situations it is unnecessary to conduct additional path studies.

The system's duplexer combines the RF output of the STL and the Lanlink with less than 1.2 dB of insertion loss.

For more information, including pricing, contact Moseley in California at (805) 968-9621 or visit [www.moseleysb.com](http://www.moseleysb.com).

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USER REPORT

# FT-1AP Helps CSN Get 'Clean' Signal

## Receiver Not Fazed By Adjacent-Channel Energy, Resists De-Sensing in High RF Fields

by Kelly Carlson  
Director of Engineering  
CSN International

**TWIN FALLS, Idaho** We live in a world with an ever-increasing amount of RF floating about, the abundance of which can make it tough for those of us trying to maximize performance of FM translator sites, or get a usable signal to rebroadcast.

What the translator world needs is an FM receiver with high sensitivity to capture those far-off signals, and with razor-sharp selectivity to reduce interference from first and second adjacent stations. Add to this a certain degree of reliability to work through a winter on a cold wind-swept mountaintop, and you've got a pretty tough order to fill.

At CSN International, we operate more than 400 FM translators. Many of them are satellite-fed, but approximately 100 are terrestrial-fed from a full-power station or another translator. Congestion in the FM band has made it increasingly difficult to pick up a clean signal from a dis-

In addition, a 20 kW station on 105.7 is just a tenth of a mile away, as well as a high-power UHF transmitter and numerous other sources of RF energy. The



The author checks the Fanfare FT-1AP FM receiver.

antenna is pointed towards a first adjacent on 90.5 MHz approximately 100 miles away; a 100 kW co-channel just 50

amount of first-, second- and third-adjacent energy, coupled with high RF fields near the receiver, made it almost impossible to hear the target translator, let alone with audio quality good enough to retransmit. Several different FM "relay" receivers were tried at this site with disappointing results.

We were just about to give up on this one as a lost cause when I saw something on the Fanfare FT-1AP in Radio World. With nothing to lose, I ordered one for the Sandy Plains translator and the results were great.

While the FT-1AP is analog, tuning accuracy is maintained by a microprocessor-driven PLL circuit, which negates drift during warmup or during sudden voltage anomalies. For initial tuning, the unit's "Uniset" microprocessor sends a tuning voltage to the tuning varactors. Should there be any change in tuned frequency compared with the actual frequency

counter, an error signal is generated at the PLL and the local oscillator brings the monitor to the correct frequency.

At the heart of the "Uniset" control system is a replaceable software PROM, which assists the analog function by providing the necessary parameters for the digital control system. Additionally, it allows for field updates to the control system without having to return the unit to the factory.

Without any external filtering, the Waleska translator could now be heard cleanly. We experimented with power levels from the Waleska translator, and when we did drop the power, one of the co-channels could be captured by the Fanfare. But as long as the source translator was operating at power, we had a feed for the translator suitable for air.

Fanfare has since redesigned their carrier sense circuit, making it adjustable to deal more efficiently with co-channel interference. To make sure we would have no problems, we did install a bandpass cavity at 90.7 MHz, and put a 90.1 MHz notch cavity in.

If time and space permitted, I could list a number of other sites that we could not get to function with any of the existing FM receivers normally used in translator work. The Fanfare represents an impressive ability to resist de-sensing in high-RF environments, and its sensitivity and selectivity are better than anything we've used before.

Since ordering our first Fanfare about six months ago, we now have approximately 15 of them in service. It is now the receiver of choice for our field technicians, as they continue to build out our translator network.

If you are experiencing difficulty in trying to receive a distant or low-power signal at a site in a high-RF environment, or with numerous first-, second- or third-adjacent signals, try the Fanfare. It won't solve every difficult situation you run into, and external filtering in the form of bandpass and notch filters may still be needed. But the Fanfare will outperform just about anything you've tried.

For more information, including pricing, contact Fanfare in New York at (716) 683-5451 or visit [www.fanfare.com](http://www.fanfare.com).

**If you are experiencing difficulty in trying to receive a distant or low-power signal at a site in a high-RF environment, or with numerous first-, second- or third-adjacent signals, try the Fanfare.**

tant station for rebroadcast. Several equipment manufacturers have begun marketing "FM relay" receivers to fill this niche requirement. At CSN, we have used several different receivers from various manufacturers with varying success.

However there are some sites that resist just about anything you throw at them. In desperation we turned to a manufacturer with which we had no experience at all. Buffalo, N.Y.-based Fanfare Electronics markets an FM receiver, the model FT-1AP. The unit is billed as an FM receiver suitable for accurate off-air monitoring, and for FM relay/translator service.

### The Waleska test

We had a number of sites that would be ideal candidates to test the merits of the Fanfare receiver, sites in which extensive filtering, grounding and antenna configurations had been employed in an effort to extract a signal for retransmission, one suitable for air. Our translator W229AG in Sandy Plains, Ga., is a good example.

This translator picks up a signal from another translator in Waleska, Ga., some 20 plus miles away. The translator in Waleska runs at 10 watts ERP, with line of site to the Sandy Plains translator. The difficulty with receiving the 90.7 MHz signal is due to a 96 kilowatt third adjacent just 5 miles away. The receive

miles away on the backside of the antenna; and another first adjacent on 90.5, 80 miles away at a 90-degree angle to the receive antenna.

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TECH UPDATE

### AzEP SureShot Uses GPS, Sensor Module to Position Antenna

Arizona Engineered Products says its SureShot-Microwave automatic antenna positioning system is suitable for stations that do live remotes.

The unit positions a directional antenna toward the receiver site. It uses an integral GPS receiver to determine the location of the live remote, and a sensor module that determines where the transmit antenna and receiver site are positioned. In the instance of a broadcast from another market, SureShot stores 40 sets of receive site coordinates in memory.

The company says that because the system "knows" where the vehicle and receiver site are, it can compute the correct direction and tilt required to aim

the vehicle's directional antenna at the receiver site. SureShot then moves that antenna, by controlling its pan/tilt, until its direction matches the computed "tar-

get" direction. Accuracy of the system is said to +/- 1 degree; it is available in an azimuth-only configuration.

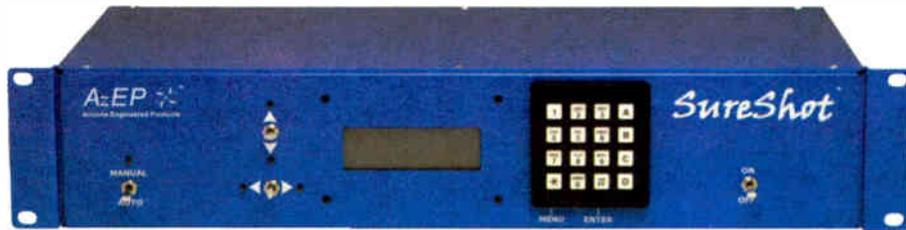
For non-pan/tilt applications, a manual model is available. The operator can turn the antenna until the antenna's actual azimuth reading matches the target direc-

tion. As an option, SureShot can provide continuous antenna-tracking capabilities to enable signal relay to or from any air-

borne platform. The company says this feature is useful when a ground vehicle cannot achieve a direct microwave shot because it is too far from a receive site or blocked by terrain.

Additionally, there are several SureShot variations available within this upgrade category. Each configuration uses internal communications modules and encrypted, compressed data transmission via Kenwood 780/880-series radios in trucks or aircraft. Also, a communications module in the aircraft acquires and processes positioning data from onboard GPS gear.

For more information, including pricing, contact Arizona Engineered Products at (520) 891-5858 or visit [www.azep.us](http://www.azep.us).



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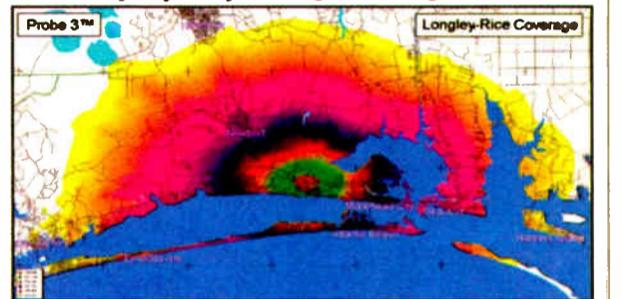
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## ◆ READER'S FORUM ◆

Radio World, December 15, 2004

### Saint Digital

I was shocked when I read your editorial that applauded Clear Channel for reducing the audio bandwidth of their AM stations ("The Time for 5 kHz AM Has Come," Nov. 3). That is just what AM radio needs, lower audio bandwidth! I can hear the difference on a radio that I purchased from K-Mart!

Everyone seems to think that Saint Digital will be AM's savior. I am not holding my breath. What about nighttime? What about directional antennas?

Just some food for thought.

*Craig Kopcho  
Jacksonville, Fla.*

I am responding to the article "AM Bandwidth Issue Catches Fire" (Nov. 17). I am a former contract broadcast engineer and am working in a related technical position where my broadcast engineering experience is utilized. I am a great fan of the AM broadcast band, have constructed various simple AM receivers with surprising results and own a GE "Super

When WIND(AM) 560 kHz Chicago commenced IBOC transmissions, it totally blew away the adjacent-channel station WMAM(AM), Marinette, Wis., to which I would listen from time to time. Although the Marinette station may not enjoy protection on their adjacent channel in our area, it does prove the adjacent-channel interference level increases with IBOC. WIND has since changed format, and at this time has ceased IBOC transmissions.

I think the IBOC signal level should be attenuated more so the interference levels are no greater than normal analog side-wash. I can understand why the FCC has not sanctioned IBOC after sunset. I think if that comes to pass, it will be a nightmare.

*Tom Lange  
Sheboygan, Wis.*

This IBOC thing is out of control. I mean, after reading all the pro/con comments, it amazes me that there are really concerted efforts to get listeners back to AM. For what? Talk, sports, religious, etc.

### Everyone seems to think that Saint Digital will be AM's savior.

— Craig Kopcho

Radio," as referenced in the article. I especially enjoy DXing daytime ground-wave signals.

I find it ironic that the broadcast industry could be talking about reducing analog bandwidth to reduce interference, when my listening experience tells me the biggest form of adjacent-channel interference to date is the IBOC signal! High audio bandwidth most greatly affects the first adjacent channel.

Paradoxically, where side-splatter from a stronger station may tear up a weaker adjacent channel someone is listening to, at least that weaker signal is still audible. Once the station employs IBOC, the weaker signal is totally masked. I can attest to that.

We all know that "no one listens to AM" anymore. That's a comment many salespeople get everyday from clients. And this fool at Clear Channel that is cutting analog back to 5 kHz must be from the Stone Age. Nothing the FCC or NAB has proposed for AM in the past three decades has made any real impact on the medium.

(Littlejohn) talks about interference; his company with all its stations will be bombarding the band with noise and crap. What will bring listeners back is local programming and local news — not 24/7 satellite delivered mish-mash.

*Dick Tyler  
Retired ABC Radio Network Engineer  
Burlington, N.J.*

### Strength in Numbers

For many months I have remained silent regarding the HD Radio fiasco. After reading the Clear Channel story, announcing the decision to limit their bandwidth to 5 kHz, I realize it's time to make some noise.

I applaud Mr. Littlejohn's idea of limiting the bandwidth to 5 kHz, although 7.5 kHz may be enough to do the job. However, how can he make the statement with a straight face? Think about it. With the 5 K bandwidth, he was able to pick up WOR(AM) 710 in Cincinnati, near his 700 AM broadcast site — how cool is that!

He must know it all disappears when IBOC is kicked on. It wouldn't matter if he limited bandwidth to 2 kHz because HD Radio wipes out everything well beyond the first-adjacent channel and into the second. It makes his memo and all the talk about the reduction of interference and efficiency a ton of hot air, and probably not worth the ink used to print it in your fine publication.

At this late hour, we broadcasters who oppose the destructive technology of HD Radio must stand up and make our voices and concerns heard. If we don't, our AM stations will be unheard.

*Jonathon R. Yinger  
President and CEO  
The Christian Broadcasting System Ltd.  
Flint, Mich.*

**Our readers have something to say**

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Radio World, December 15, 2004

GUEST COMMENTARY

## Take Five — KiloHertz, That Is

*The Author Laments the Reduction of AM Bandwidth Just as AM Radio Receives Its 'Digital Vaccine'*

by Rick J. Vogel

I would like to respond to the well-written article "Clear Channel Reduces AM Bandwidth" (Oct. 20) by Jeff Littlejohn of Clear Channel. He raised several good and foundational propositions, and his initial analysis of the facts as they exist is quite clear.

However, when it comes to his logic in coming to a conclusion, we must part ways.

If we use his conclusion and apply it to the past, several things in broadcast history should never have happened: UHF television's existence; the AM

VHF "bag" phones. Can you imagine this?

The use of SSB (Single Side Band) by the 27 MHz. Citizens Band increased its effective range. I am not going to argue the virtues of CB radio — only making a point.

The Internet. Wireless networks. Cordless telephones and more. The list could go on and on.

Since when has the FCC (or the broadcasting industry, for that matter) made decisions in support of their planned services, based solely upon whether manufacturers were already producing supporting equipment at the time? Maybe

**If Mr. Littlejohn's view is to be the line of thinking, why not just get the whole thing over with and shut down the entire AM band now to avoid its slow, painful death?**

broadcast band's expansion to 1700; FM stereo subcarrier broadcasting; color television reception; cellular telephone service; 27 MHz Citizens Band using SSB; and possibly even the Internet.

All of the above would never exist today if we were to solely depend on manufacturers to make equipment capable of such services — one of Mr. Littlejohn's main arguments — or if such services caused a "little" inconvenience to other broadcast services.

### History

In the case of UHF television, the FCC mandated in the 1960s that all television receivers had to include UHF channels, which jumpstarted the industry into UHF broadcasting. The FCC's 1952 "Sixth Report and Order" decision to add UHF television channels did not appear to be going anywhere.

Regarding the AM broadcast band's expansion to 1700, this was a forced upgrade for receiver manufacturers, as well. It essentially gave birth to and kept new stations on the air above 1600 kHz.

FM stereo broadcasting as we know it would still require the use of two receivers: both an AM and FM receiver to receive both left and right channel audio. Back in the '60s, few manufacturers made receivers that could receive AM and FM bands at the same time to hear stereo broadcasts.

Color television reception — maybe we'd still be watching television in black and white.

Our present day cellular telephone service represents a heavy-duty change. If the FCC hadn't forced UHF television translators "off" Channels 70-83, making room for cell service, we might still be carrying around bulky "low band" or

never.

Based upon Mr. Littlejohn's own logic, even Clear Channel's mega-ownership wouldn't exist today.

What's the bottom line?

AM radio's popularity and use are, and have been for some time, on a steep decline in comparison to FM and satellite radio. FM and satellite radio are growing by bounds, while AM radio is dying, in spite of all the "injections" to cure its ills.

Let's face it, folks. The main reason AM is not as popular as the others is *one single factor and nothing else*: audio bandwidth. That's it, end of story.

## Translators

► Continued from page 46

Getting back to our comments in the broadcast localism inquiry, I am asking that LPFM stations be allowed to displace a distant translator if no other channel is available, and if the LPFM meets all distance-spacing guidelines. Due to rules that apply to LPFM stations, such as over-protections of LPTV and lower powered FM broadcast stations, and because a majority of the distant translators are located in the reserved band, as they are fed directly by satellite, there are not many opportunities for LPFM stations in the reserved band.

Out of the 900+ LPFM licenses and permits that have been issued, only about 10 of them are in the reserved band. Even with the rules restricting "satellites" to the reserved band, there are still over 180 translators in the non-reserved band specifying primary stations that would meet the criteria of a distant translator, and this does



Photo by Scott Fyback, www.fyback.com. Shows: Blount-Knox AM Tower Array at WBT, Charlotte, N.C.

Whenever one listens to the AM band, all music sounds muffled and drained of its

not include the permits that have not yet been issued as a result of the Great Translator Invasion window.

I feel that the displacement of distant translators as a last resort is just one part of expanding the LPFM service while maintaining the protections afforded to full-power and local translator stations.

I also support changes to the rules on how an LPFM station protects LPTV Channel 6 stations, using a criteria that better represents the LPTV's service area instead of assuming "full facilities," as dictated in the current LPFM rules. Less than a dozen LPTV stations are even near the "full facility" level to require as much protection that LPFM is required to offer. Currently, FM translators are protected by LPFM stations at one of three different levels based on the size of the translator's service contour.

In a separate Petition for Rulemaking, I am asking the FCC to increase these three levels to eight, to better reflect the actual service area of the translator. Under the present rules, the LP-10 class of LPFM station can be displaced by translators and LP-100 stations. I am ask-

life — empty. Sure, it's a great place to tune in to distant talk show broadcasts, sports and news, where the audio barely needs to go past a telephone's voice band. But when it comes to listening to music, the medium of choice is FM, audio CD or satellite radio.

We all know this is reality. Most people I've spoken to don't even turn on their AM radios — and that includes folks I know working in the broadcast industry.

To quote the Hon. Matthew J. Rinaldo (U.S. House of Representatives, June 21, 1989): "According to a recent study, AM radio listeners are just 26 percent of the overall radio audience, down from 75 percent in 1972 — just 16 years ago. About half of the 5,000 AM stations lost money last year ... I don't think any of us want to see the AM band wither away."

That was back in 1989. I shutter to think of what the stats are today.

But now, AM radio finally has received a hopeful shot in the arm by getting a digital vaccine. *And* this whole inoculation is still in its beginning stages. But then Mr. Littlejohn comes along and wants to limit the audio bandwidth back to 5 kHz, so who knows who can hear an adjacent-channel NYC station in Ohio slightly clearer, with a bandwidth standard that is so outdated its cobwebs are growing cobwebs? Radios don't use megaphone horned speakers anymore, ya know?.

If Mr. Littlejohn's view is to be the line of thinking, why not just get the whole thing over with once and for all, and shut down the entire AM band now to avoid its slow and painful death — and the wasted expense of trying to improve it? What's the point of going on any further if we limit bandwidth to 5 kHz?

Rick Vogel is the owner of Broadcast Solutions/Associates in Libby, Mont.

ing for this rule to be changed. I also am asking that translators be required to protect an LPFM's second adjacent channel. This will put translators and LPFMs on a more level playing field, and will allow for a digital future for both station types.

For the K-Love and Air-1 listeners who are worried about losing their favorite station: As a majority of their listeners actually listen on a full-power FM station or a translator that feeds off one of those stations, most listeners can relax; K-Love/Air-1 is not going away on the part of LPFM. For listeners who are worried if their K-Love/Air-1 station is a "distant translator," they can visit our EMF page to find out: [www.recnet.com/emf](http://www.recnet.com/emf).

I feel that my proposals strike a balance between expanding the LPFM service, assuring more localism in our 100 channels and protecting full power stations and those translators that, like LPFM, are providing a more local service to their listeners.

Rich Eyre operates REC Networks, which provides free FCC database information and operates the online LPFM Channel Search.

## ◆ READER'S FORUM ◆

GUEST COMMENTARY

## LPFM and 'Distant Translators'

The Author Says K-Love and Air-1 Audiences Will Not Be Hurt by Distant Translator Proposal

by Rich Eyre

Recently, the FCC has been taking comments on a Notice of Inquiry regarding broadcast localism (MB Docket 04-233). While the NOI discussed many aspects of issues that have been impacting television and radio in light of the massive consolidation in the industry, broadcast localism is the last issue in the NOI to generate thousands of comments from the general public.

In the NOI, the FCC is asking about the impact of translators on the future of a local LPFM service, especially in light of the "Great Translator Invasion" filing window of 2003. The FCC gives a brief description of the FM translator service, which was created to "provide a means whereby the signals of FM broadcast stations may be retransmitted to areas in which direct reception of such FM broadcast stations is unsatisfactory due to distance or intervening terrain barriers."

The commission then mentions that non-commercial FM translators in the reserved band (88-92 MHz) can be fed from satellite from commonly owned stations. Well, I think that ruffled some feathers at EMF Broadcasting.

EMF or Educational Media Foundation is the second largest licensee of full-power non-commercial FM broadcast stations and translators. EMF operates two networks, "K-Love" and "Air-1."

Before the comment deadline, EMF started a campaign on both of its networks' Web sites stating that advocates of a "new" broadcast service called "LPFM" want to expand the service in a way that would allow "new LPFM stations to take priority over the current FM translator service." This resulted in thousands of comments left on the FCC's comment filing system from loyal K-Love and Air-1 listeners, and their message was very clear: Don't let LPFM take K-Love/Air-1 away.

Let me clear the air a bit, as one of the most vocal advocates on this exact topic.

REC Networks, as well as many of the groups with whom I communicate in the LPFM movement, does not support the

displacement of all translators by LPFM. Instead, we support the placement of LPFM in a higher status as it relates to a certain type of a facility that we refer to as a "distant translator."

I have gone on record several times to define a distant translator as one where the ultimate primary station is located in a different state and at least 400 km from the translator. Even if the translator is feeding off another translator, it is the ultimate primary station that determines the facility's "distant" status.

In the past, other LPFM advocates have come up with different criteria for a distant translator. Even National Public Radio hinted of a "distant translator" criteria based on the full-power FM station's class, a comment made in a petition by Calvary Chapel of Twin Falls requesting translators in the non-reserved band (92-108 MHz) be allowed to be satellite-fed, like translators in the reserved band.

I picked the 400 km interstate criteria because it fulfills the need to provide FM translator service in some areas of the west, allowing public radio organizations to maintain their statewide radio networks without fear of displacement. Within that range, the primary station can provide some form of local service.

Compare this to the station in Idaho trying to provide local service for Key West. Of the 900+ distant translators, more than 400 are owned by Calvary Chapel of Twin Falls, and more than 120 of them are owned by EMF. Other groups such as American Family Association and Pensacola Christian College have about 40-50 distant translators.

In the Calvary Chapel proceeding (RM-10609), REC and other LPFM advocates stated that the FM translator service was designed to provide "unserved and underserved" areas with FM service. Calvary responds that their programming, or entertainment format, fills a niche that serves a previously unserved audience. They go on to use that reason to justify why they need translators in large metropolitan areas such as Phoenix, which already receives 20+ city grade FM signals.

## XM: Smarter About Radio Than Radio Is

"I watch a lot of baseball on the radio."

Gerald Ford said it, and people mocked him for it. But if Yogi Berra had made the quip, we'd call it sly genius. We knew what Ford meant. His comment captured what is best about radio sports: the experience of creating a game in one's mind.

Baseball and radio are perfect partners. Since 1921, when the first game was broadcast on KDKA in Pittsburgh, and 1935, when the Chicago Cubs became the first team to allow all of its games to be aired, the sport and the medium have been bedfellows — often literally, as generations of fans grew up listening to games under the covers. Television came along just a few years later, but never fully dislodged radio as baseball's special media partner.

Unfortunately for terrestrial radio managers, XM Satellite CEO Hugh Panero probably appreciates this history more than they do. Panero calls baseball "a sport ideally suited for radio, given its natural pace and the ability to vividly describe each play." He feels strongly enough to spend \$650 million over 11 years on a contract to carry Major League Baseball games. The package lets XM broadcast games of every MLB team nationwide beginning in the preseason — just two months from now.

If XM thrives, in a few years that price tag will seem cheap.

As baseball fans, we are fascinated by the prospect of being able to choose from thousands of games from around the country all season. The deal fulfills the definition of good radio: finding innovative ways to deliver great content.

But as radio fans, we recognize that the announcement is a big change in the 84-year relationship between the sport and the medium. Certainly it can be viewed as a loss to terrestrial radio; and we're disappointed that, once again, the powers-that-be in our biz are losing the battle of the headlines to the satellite guys. Where were they when XM was scrapping to pick up rights to our best sports content? Why didn't radio put up more of a fight to keep baseball programming — what Panero calls his "crown jewel" — strictly on our local dial, where all Americans can hear it for free?

Part of the answer is that the XM deal does not supplant local relationships between baseball teams and radio stations. But we think it marks a fundamental change in baseball's relationship with its listeners, one that will have unknown consequences later. The package instantly makes XM the headquarters of nationwide baseball radio. This is a good deal for fans, who will be able to listen to the local broadcasts of their favorite teams and learn about others from anywhere in the country. It's great for XM, which instantly adds yet more credibility to its case to subscribers and investors.

Smart local radio managers may turn all this into good news. Perhaps some will follow the example given by local TV stations that used cable TV to develop nationally recognized brands. Others may find ways to make their local baseball outlets more compelling in the face of new and greater choices on the satellite dial. Most important, perhaps terrestrial radio will start acting preemptively to protect its best assets.

One thing's for sure: Right now, Hugh Panero — a satellite guy — is doing a better job of selling Americans on the strengths of radio than radio's top owners and managers are. And if you think that's about to change, consider the name of Sirius Satellite's new top salesman: Mel Karmazin.

— RW

The issue at hand is, can a distant translator render a form of local service, especially in the time of an emergency? While translators are allowed to break in with "local information" in the event of an emergency, they are not required to be equipped with EAS. Instead, they receive national EAS from their primary station, as well as any local activation in the primary station's city of license.

LPFM stations, on the other hand, are required to be equipped with EAS decoders and are proud to use them to support their community. Many LPFM stations have reported to REC that they rebroadcast local EAS messages for areas within and outside their primary service contour.

Many local organizations, schools,

churches and ministries also would like an opportunity at the microphone. As we have seen in some cases already, LPFM stations are willing enter into time-share agreements to assure that everyone gets a turn.

In the four years since the service was created, more than 500 LPFM stations are now on the air with a nearly spotless enforcement record. These LPFM stations have proven that they want to serve their communities. We feel that more organizations should have the opportunity to provide their local community with local programming, even if it requires the displacement of a signal imported from thousands of miles away.

See TRANSLATORS, page 45 ►

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