



**Radio's 'New' Band**

Cox talked to real consumers about how radio should identify multicast channels. Here's what it found.

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**Talk Into This**

It's a microphone. It's a Flash recorder.

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# Radio World

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The Newspaper for Radio Managers and Engineers

January 18, 2006

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**NOT MORE MINOT?!**

▼ An academic looks at the notorious EAS 'failure' but draws new conclusions.

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## Tower Rating Changes Take Effect

With TIA/EIA 222-G, Experts Say 'No More Shortcuts' In Tower Design, Rating

by Randy J. Stine

Broadcasters with new antenna projects or those planning to make changes to existing antenna support structures will be confronted with myriad revisions made to the national standard governing construction of steel antenna towers in

this country. Some of the revisions may cost broadcasters more money than they had budgeted for projects.

The Telecommunications Industry Association/Electronic Industries Alliance 222-G tower rating standard, "Structural Standards for Steel Antenna

See TOWER, page 6 ▶



Craig Snyder at 1,200 feet

## Podcasting Expo Draws Faithful

But Radio Wasn't Much Of a Presence at 'Portable Media' Event

by Dan Mansergh

ONTARIO, Calif. If ever there was a reason to believe that podcasting has arrived, this was it. Hardly a year after the Internet-based audio distribution technology debuted with the likes of "The Dawn and Drew Show," "The Rock n' Roll Geek Show" and "IT Conversations," 700 of podcasting's bright lights and wanna-be's convened for the inaugural Portable Media Expo & Podcasting Conference.

Proclaiming "The future of multimedia entertainment is here," the two-day event featured keynote speeches by representatives of major technology and media players such as Yahoo, Intel, Audible, NPR and MTV, along with podcasting pioneers Leo Laporte, host of "This Week in Tech" and Doug Kaye of "IT Conversations."

TNC New Media sponsored the conference; the firm is a tradeshow and online media company owned by Tim Bourquin, who has been involved in streaming media

See PODCASTING, page 22 ▶



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# First Broadcasting Opens RF Lab

by Leslie Stimson

**DALLAS** First Broadcasting is launching a Spectrum Innovation Lab this month.

The Dallas-based facility will study digital and RF propagation and develop software tools to predict and measure signals. The company said its main areas of focus will be analog and digital terrestrial radio, spectrum allocation and analysis software and digital technologies related to the distribution of content.

The lab in downtown Dallas consists of more than 8,000 square feet of dedicated space, according to First Broadcasting President/Vice Chairman Gary Lawrence.

"The lab houses signal propagation

analysis and spectrum allocation equipment and software tools, including a 'war room' with high speed/dual processor computers, a bank of large LCD screens for displaying output in a group environment, and individual workstations for each of our resident and visiting RF scientists and technicians," said Lawrence. Video conferencing facilities help First employees work from other locations.

Having half a dozen broadcast/production studios allows First to conduct real-time signal tests by originating signals in the lab and sending them by T-1 to transmission sites across the country.

The company invested "well into seven figures" on the project, according to

Lawrence.

William Hieatt, formerly a regional director for broadband services and information systems developer Communications Technologies Inc., is in charge of the lab. He was named vice president of engineering and software development for First in December, essentially replacing Bert Goldman, a former engineering executive for First, who becomes senior technical advisor to the company and honorary chairman of the lab (see related story, bottom of page 3).

Hieatt is responsible for First's technology and software initiatives, including development and integration of digital tools and systems. Hieatt's expertise includes mobile

wireless, data communication, wireless broadband and network design. Lawrence and Chairman Ron Unkefer are also involved in the lab, which has a staff of six scientists and technicians, supported by back-office staff and part-time resources.

The company hopes to raise the number of technical employees to 10 by the end of the year. Periodically, the lab will extend invitations to technical experts to join the First team for specific projects.

The purpose of the lab is to accelerate development and deployment of tools and know-how for analysis of analog and digitally transmitted RF spectrum. This includes the efficient allocation of terrestrial spectrum as well as the prediction and measurement of signal propagation in various kinds of terrain and environments.

At present, the resources of the lab are available only to First Broadcasting Investment Partners and its joint venture partners, which include major group owners as well as independent and minority owners.

First has invested more than \$200 million in station transactions and owns 16 radio stations in the top 30 markets. Unkefer founded First in San Francisco in the early 1990s to acquire and operate two legacy San Francisco stations KSFO(AM) and KYA(FM). Unkefer previously had founded, then later took public, The Good Guys, a consumer electronics chain now part of the CompUSA chain.

First is hoping to use some of its tools developed for previous projects to predict broadcast coverage more accurately, Goldman said. First and its principals invested in InfoGear Technology Corp., developer of an Internet touch screen phone. Cisco Systems subsequently acquired InfoGear for some \$300 million. First also invested in Digital on Demand, a provider of digital distribution for entertainment content. Digital, though its successor Alliance Entertainment Corp., merged with publicly traded Source Interlink Companies in 2005.

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# Confusion Reigns About HD Radio

Programmers and Managers Get Ramped Up on Digital at Arbitron Event

by Leslie Stimson

**COLUMBIA, Md.** For some time, Ibiquity Digital has been telling stations they need to “promote, promote, promote” HD Radio. Now, members of the new HD Radio alliance share the mantra.

Those members — major broadcast group owners — believe a huge station promotional effort is necessary to clear up confusion about what terrestrial digital radio is, and what it is not, before stations even urge their listeners to buy the new radios.

Only then, they believe, will consumers walk into retail locations or click online and create demand for the radios.

## Explain the basics

Like satellite radio when it began telling its story, broadcasters must start small, by taking baby steps. Why? Presenters at an IBOC event sponsored by Arbitron cite confusion among listeners and even some retailers about HD Radio.

The event was held shortly after the announcement of the new alliance.

Bernie Sapienza, vice president Retail Business for Ibiquity, said, “Even retailers don’t understand HD Radio, and they’re the folks who are supposed to be doing this for a living.”

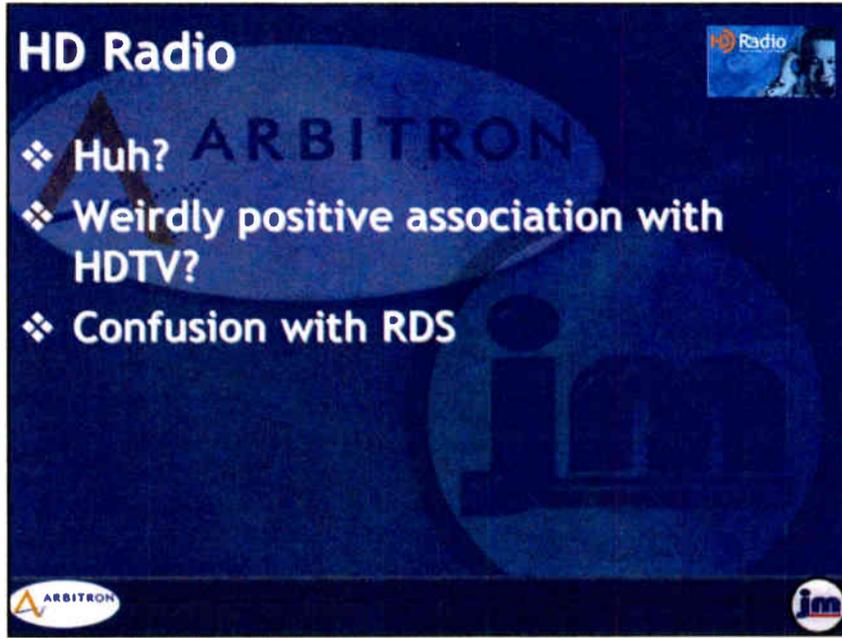
Greater Media Detroit Senior Vice President/Market Manager Tom Bender agreed. In a survey of approximately 300 multicast listeners, 57 percent believed they

could get HD Radio on satellite radio.

“We’ve got people asking us where

stations are designated as RIFF2, WCSX Deep Trax and More Magic respectively.

The supplemental channels are heard online and on multicast HD Radios.



Fred Jacobs, president of Jacobs Media, tested awareness of HD Radio.

“RIFF2” appears on the XM band. We’ve got some explaining to do.”

RIFF2 is not a satellite channel, but a local multicast channel.

Three Greater Media FMs converted to IBOC in Detroit are multicasting.

The IBOC stations are WRIF, WCSX and WMGC; their companion multicast

RIFF2 is a “made in Detroit” mix of alternative and indie rock, hip-hop and punk. Greater Media calls RIFF2 a new execution of the WRIF format targeting 18-24-year-olds. WCSX Deep Trax HD2 airs classic rock songs outside the

regular format. More Magic is a soft AC format.

## Higher denominator

Bender positioned multicasting as the chance for radio to save itself from obsolescence. “Our most successful format now is stripping everything out and putting it onto an iPod. We get this wrong, and we’re out of business,” he said.

“Please resist the temptation to criticize an analog competitor. This is a great opportunity to raise the denominator and to do it without taking big risks,” said Bender.

Programmers need to think way out of the box when programming multicast formats, and the next 12 to 24 months are a chance to experiment while the supplemental channels remain commercial-free, providing a chance to re-distribute the spot load across more outlets some day, he said.

“Encourage programmers to break their own dogma” and go beyond traditional sources for music for these channels, he recommended, although he admits that’s harder than it sounds, given the programming restraints imposed for business reasons over the past two decades.

In the survey of multicast listeners mentioned by Greater Media Detroit, respondents were asked if they were aware the station was transmitting in HD Radio; 60 percent of RIFF listeners said yes; 59 percent of More Magic listeners did.

In 2004, the term “HD Radio” meant nothing to listeners, Bender said. “We’re working in mentions as they’re logical in formats. I did not expect 59 percent to be aware already.”

See CONFUSION, page 5 ▶

## NEWS WATCH

### Goldman Forms Consultancy

**DALLAS** Prominent radio engineer Bert Goldman is leaving First Broadcasting on a full-time basis to form his own consultancy, called Goldman Engineering Management, based in Dallas.

He also becomes senior technical advisor and honorary chairman of his former employer’s new RF signal propagation lab, set to open this month; see story on page 2.

Goldman was senior vice president of engineering at First, where much of his work involved station upgrades.

Goldman had been with First 3-1/2 years. Before that he was vice president of engineering for ABC Radio and spent 17 years at Shamrock Broadcasting as vice president of engineering. He held similar positions at Patterson Broadcasting and Nationwide Communications prior to consolidation.

He told Radio World the time was right to make a change. “Getting out on my own is something I’ve always wanted to do. This the right time, given where the broadcast industry is in general and where HD Radio in particular is in its rollout.”

How much of his time will be spent on the lab and what his advisor role entails were not publicly defined at press time.

The company’s concept is to offer “as needed” engineering management services, said Goldman. “Clients may include broadcasters who cannot otherwise justify the expense of having a full-time group engineering manager but who could use someone with that expertise to help them more efficiently operate their stations. Also, larger operators may need some extra help to reinforce their own resources.”

He’ll offer sale preparation for station sellers and due diligence or pre-acquisition analysis for station buyers. “We will be able to help with facility and engineering personnel assessment, capital budget planning, relocation planning and coverage analysis,” Goldman said.

His expertise, he said, includes analyzing both business and technical conditions, helping stations decide if digital conversions makes sense, and if so, how to best plan for them.

Goldman studied broadcast management with supporting courses in engineering and business administration at the University of Maryland. A past chairman of the NAB FM Transmission Committee and the EIA DAR Field Test Task Group, he is active in IBOC development as a member of the NAB Spectrum Integrity Task Force and the DAB Subcommittee of the NRSC.

— Leslie Stimson

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# They Looked Beyond Y2K

What will U.S. broadcast radio look like in the future?

That's a common theme in our pages. Sometimes, though, it's fun to look back at what people thought it would look like today.

In a 1999 supplement about transmission technologies, I asked writer and engineer Mario Hieb to talk to industry experts and have them peek into their crystal balls to predict industry changes five years down the road. Now that the fifth anniversary has passed, let's review what they said. Then tell me how you think they did and what you think radio will look like five years from now. Maybe I'll quote you in 2011.

Many thanks to the folks who fearlessly offered predictions, knowing these might come back to bite them. (Job titles refer to 1999.)

**Mario Hieb, CPBE, consultant and chief engineer of KXRR(FM), Salt Lake City** — "Forget Y2K. What will AM and FM be like in the year 2005? ... We'll have even better buzzwords, like desktop broadcasting, virtual FCC inspection and OFEAS (Operator Friendly Emergency Alert System)."

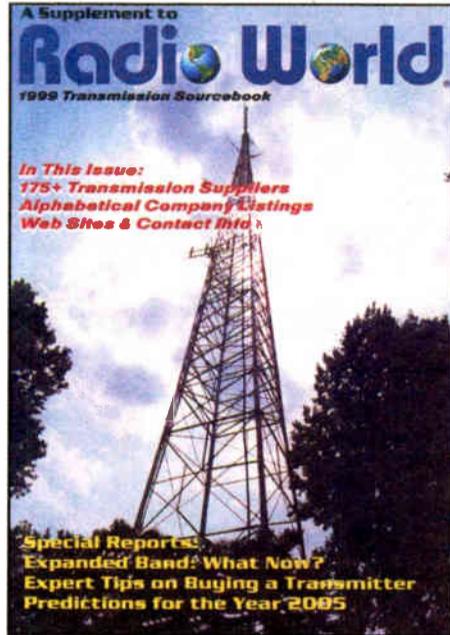
**David J. Grace, president and CEO, Nautel Ltd.** — "Conventional AM and FM will still be a major medium in many countries around the world because of receiver cost. In highly developed markets there will be early and rapid adoption of digital audio via IBOC systems by the larger broadcasters.

"IBOC success in the U.S. will lead to demand by other countries and in some cases, it may coexist with the Eureka-type systems."

**Tom Osenkowsky, consultant and RW contributor** — "I envision a mostly digital broadcasting environment for radio broadcasting. Some form of DAB will be in place and most stations will have a digital audio path.

"Consideration will be given to redefining AM and FM coverage due to the marketplace changes since tower sites

were chosen in the distant past, where cow pastures have given way to urban sprawl."



Cover of the 1999 Supplement

**Larry Wilkins, CPBE, assistant director of engineering, Cumulus Broadcasting, Montgomery, Ala.** — "To say that in the coming years digital will be the normal mode of transmission is no surprise to anyone. However, the things that digital transmission allows a station to deliver is another story.

"Whether it is IBOC or some other form of digital transmission, stations will be able to transmit multiple programs. These may be from their own operation or from a subscriber, much like SCAs are used today.

"Another item I see on the horizon is the ability of stations to operate in a 'cellular' fashion, using several smaller-powered transmitters instead of one high-power plant to cover the market. This has already started in a few markets.

"On a down note, the shrinking engineering population will continue to get worse. If the ideas above do make it, who will be around to install and keep it up?"

**Clay Freinwald, facilities engineer, Entercom-Seattle** — "From the amount of investment I have been seeing around here in analog AM and FM RF systems I'd have to say that there is a whole lot of money being bet on there not being very many changes! In this market alone we have three new FM master antenna combiner systems, about 10 new FM transmitters and in the world of AM we have a major diplexed directional array under construction in town.

"Not too sure that we will have the IBOC battle solved by then. If history is any teacher — and it ought to be — five years from now we will be damned lucky if the transmission system battle is over. Then it will be time for the battle of the set makers. Still sounds like technology that is being driven by technology, and not by public demand. It would not be the first time for that concept to take root in this country!"

**Some radio broadcasters may foresake high-quality audio programming as their primary service by narrowing the bandwidth dedicated to audio and maximizing the bandwidth available for other revenue-generating services.**

— Geoff Mendenhall in 1999

"DAB may well have found its niche, but it will remain just that. Americans are in love with local radio, and local radio delivers. If radio broadcasters really wanted to do something for themselves they would have been battling for a requirement that all cars have diversity receiving capabilities. Already a receiver maker has taken this one step further with a 'high IQ' receiver."

**Geoff Mendenhall, P.E., vice president of advanced product development for Harris Corp. Broadcast Systems Division** — "By the year 2005, the conversion

## From the Editor



**Paul J. McLane**

from analog to digital radio broadcasting will be well underway in the more developed countries. The complete conversion to all digital broadcasting may take up to 20 years, or more in some parts of the world.

"Many of the AM and FM broadcast signals worldwide will carry a digital component in 2005. In many parts of the world where there is additional RF spec-

trum available, fully DAB services will be implemented. IBOC digital audio broadcasting will be widely implemented within the existing AM and FM broadcasting bands in the United States and other countries with limited spectrum allocations.

"The ability to offer new revenue-producing broadcast data services will drive the broadcasters to make the investment to convert to digital radio broadcasting. Consumer demand for these new data services will build, and the consumer radio receiver manufacturers will

See Y2K, page 5 ▶

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# Confusion

► Continued from page 3

But when asked if they would buy an HD Radio, only 30 percent said they intended to, he said.

He urged program consultants to recommend that client stations monitor the retail supply chain for HD Radios.

"Don't pitch (listeners) to buy HD Radio tomorrow. Everything we have done up to this point has been to raise awareness of HD Radio."

Bender told Radio World his multicast stations tweaked their on-air slogans and IDs based on the listener misperceptions of HD Radio. Some listeners saw RDS text and concluded they owned a digital radio.

Yet even in Detroit, a key Ibiquity seed market with 29 stations transmitting in digital, including several multicasters, awareness of HD Radio is "vague," said Fred Jacobs, president of Jacobs Media.

In focus groups this fall in Los Angeles, Baltimore and Detroit, he found, "Some people associate it with HDTV." He too noted confusion with RDS.

## Broadcasters = chickens

Sapienza sought to dispel the chicken-vs.-egg discussions about whether stations or retailers should promote HD Radio first. Sapienza told the program consultants gathered at Arbitron, "Content drives the hardware. There is no chicken/egg debate. The broadcasters are the chickens."

Broadcasters must promote the technolo-

gy, he said, because retailers and manufacturers have plenty of other products to make and sell "without HD Radio."

Broadcaster promotion will drive demand, which leads to retailers demanding products from manufacturers, which, in turn, will lower the prices of parts, which will eventually lead to less expensive radios, he said.

Ibiquity President/CEO Robert Struble projected HD Radio prices will drop to \$199 this year.

Meanwhile, as HD Radio proponents battle confusion, listeners in the younger demos have made some surprising assumptions about radio in general, Jacobs said.

The term "radio" incorporates traditional radio, streaming and satellite, according to consumers in six focus groups conducted by Jacobs Media on new technology. The study was conducted for Arbitron as it starts to think about how to add more types of radio listening to its diary.

Jacobs said there were more negatives than positives when participants were asked about traditional radio, but one portion of the answers surprised him: Younger listeners, ages 18-34, don't think of radio as portable.

"When's the last time you saw an 18-34-year-old carrying a Walkman?" he asked. "They think radio is tethered to the car and the nightstand."

There are signs of iPod fatigue setting in, according to this study. Some participants said initially they spent a lot of time with their iPods, but now they don't. Overall, though, the product category still is getting a lot of buzz, Jacobs said.

"The broadcast studio will continue to evolve in two areas: software and controller hardware. A computer will store audio, download it over the Internet, edit it and play it into a console for mixing, routing and switching it to a variety of transport mediums. These will include the Internet, the traditional RF channel, a new digital channel or a completely new medium. Program audio will be transported digitally over both RF and telco links. Concern over cascading algorithms — and

Radio faces a marketing battle to get its message out and convince youth that traditional radio is not passé.

"Satellite radio has opened the checkbook for talent, promotion and management," said Struble. He and other Ibiquity executives used the rise of satellite radio, iPods and other technologies to illustrate why terrestrial radio has to go digital and they too pushed programming consultants to tell their station clients to promote HD Radio.

## \$750 million

Combined, XM and Sirius have spent \$750 million on promotion, he said, and analysts project satellite radio will capture 50 million listeners by the end of the decade; in the traffic arena, the satellite channels will have the look of local service in two to three years.

Struble cautioned that HD Radio "is not a silver bullet" cure-all, but if promoted effectively, he said radio can position itself for growth.

"We're playing catchup," he said, because young people aren't listening to radio using a traditional device but rather listening to music through their PCs and using those speakers rather than traditional radios.

Traditional radio is locked in a battle in the dash, Struble said, not only with satellite radio, but also iPods, MP3s and other entertainment delivery systems.

"iPod docking stations will be an anachronism in two to three years; you'll have MP3s built into the car next," he said.

"They're after your listeners and you need to respond to that. It's a little embarrassing for (radio) to be the last analog industry in the world."

## Desired feature

Meanwhile, Pierre Bouvard, Arbitron's president of PPM, subsequently named president of sales and marketing, said the HD Radio alliance "is going to be good." He noted a J.D. Power and Associates survey reported by the Wall Street Journal in December that found HD Radio was among the top three features consumers want in a car, after a price point was revealed.

"While HD Radio continues to play second fiddle to satellite radio, consumer interest in HD radio-compatible receivers exceeds consumer interest in satellite radio when the one-time fee for HD is considered," according to a J.D. Power representative.

Stability control was the first desirable feature, at about \$300, according to the 2005 U.S. Automotive Emerging Technologies Study, released earlier last year. Premium surround sound audio systems ranked second at around \$400 and HD Radio ranked third, when a price point of about \$150 was given to survey participants.

Ibiquity Director of Broadcast Marketing Don Kelly said the company has commitments from European and Asian automakers to install HD Radio in eight brands and 30 models over the next two years. No domestic auto manufacturers have signed on so far, he said. 🌐

# Y2K

► Continued from page 4

respond with low-cost digital radios. Some radio broadcasters may forsake high-quality audio programming as their primary service by narrowing the bandwidth dedicated to audio and maximizing the bandwidth available for other revenue-generating services.

**DAB may well have found its niche, but it will remain just that. Americans are in love with local radio.**

— Clay Freinwald in 1999

"Analog AM and FM radio stations will be competing for listeners with other venues including: direct-to-listener satellite radio, cable radio, Internet radio using MP3 or similar compression technology, IBOC digital audio broadcasting, EU-147 DAB, IP-based radio over new mobile radio or cellular services such as 3G audio services within the DVB-T Multiplex, and analog 'micro radio' stations.

"Terrestrial radio broadcasting will survive in the face of competition from these other venues because only local, terrestrial radio can reach the mobile audience with local traffic information, news, weather etc. The current trend of group owners to use satellite-distributed programming which reduces local content, will have to be reversed in order for the local terrestrial services to once again differentiate themselves from other services that cannot deliver as much local content.

the lack of a standard — will cause broadcasters to continue to drive toward uncompressed audio storage and transport.

"Fortunately, due to continually falling bandwidth prices and cost storage, the drive to uncompressed storage and transmission will become more and more affordable.

"The technologies used in the design of AM, FM, IBOC, DAB and DTV transmitters will merge into a largely common architecture. All of these different types of transmitters will utilize a form of vector modulation that requires linear amplification. Manufacturers with high expertise in RF modems, digital signal processing, distributed control systems and linear amplification will become the leading broadcast equipment suppliers."

How'd they do? Want to make a prediction about 2011? Write to me at [radioworld@imaspub.com](mailto:radioworld@imaspub.com). 🌐

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# Tower

► Continued from page 1

Towers and Antenna Supporting Structures," which went into effect this month, incorporates new engineering practices meant to ensure the structural integrity of antenna support structures.

Possibly the biggest change for broadcasters, industry observers say, is that now, instead of a single tower design standard to follow, several classifications are now possible, allowing broadcasters some flexibility in structure design.

While 222-G is considered a voluntary standard, experts said it will gain teeth after being referenced by the International Building Code and adopted by local permitting jurisdictions.

## Gauging the load

A shift in contemporary building codes to a performance-based approach in factoring extreme loading conditions — called "load resistance factor design," also known as limit states design — precipitated the Revision G, according to Craig Snyder. He is chairman of the TIA committee for tower writing and president of Sioux Falls Tower and Communications.

pared to the load or loads induced, regardless of the type of load, according to John Erichsen, principal of EET LLC, a structural engineering consulting firm.

Meanwhile, limit states design applies a magnifying factor to each load based upon several considerations, including comfort level. Structural engineers have to predict the load. For example, the weight of the structure will get a lower factor when compared to a load induced by wind. The engineer considers the probability that any given load will occur in conjunction with another, Erichsen said.

"Limit states design also assigns a discounting factor to the ultimate capacity of each member based upon the reliability of the member and its role within the overall design," Erichsen said.

Existing towers are grandfathered in, Snyder said, but such broadcast towers will need to be reanalyzed under 222-G if modifications are made. Depending on the findings, that could cost owners money.

"If you go from an eight-bay antenna to a 10-bay antenna or looking to host additional systems, then the tower will have to be reanalyzed to determine its support capacity and compliance," Snyder said. "That could be an advantage or disadvantage. It could mean they'll have to beef up their foundations."



Mark Malouf inspects a self-supporting tower that fell during Hurricane Rita.

reviewed every five years.

Among the new provisions in 222-G are load calculations for wind and ice loading, topographic categories, design stresses, soil parameters, climbing safety and seismic loading considerations for towers in areas prone to earthquakes.

Possibly the biggest change in the tower standard, and the one that could have the greatest impact on broadcasters, is the introduction of three structure classifications, he said.

Category I structures present a low hazard to human life and are used for non-critical communication services. Category II structures represent a substantial risk to human life and are used for services that could be provided by other means. Category III structures are considered essential facilities with substantial risk to human life upon failure, Snyder said.

Broadcast towers might be classified into any of the three, Snyder said, depending on location and whether they are considered essential facilities.

"Not all structures will be treated equal-

ly. Before, it was a one-size-fits-all standard. Now, some structures will require higher reliability standards," Snyder said. "The advantage is that one could downgrade their structure if it's in the middle of a cornfield and not essential, so it could be built with lighter weight materials. There is a risk and reward now for broadcasters willing to take a bit of risk."

The owner/user and the structural engineer of record decide the tower's classification, Snyder said, with the structural engineer having the final say.

## Ice and soil

Revision G will result in a more thorough analysis of towers while eliminating shortcuts in the design of structures, Snyder said.

"Overall, there will be benefits to broadcasters in terms of acceptance of this new standard and in keeping with engineering principals across the board. It may be more restrictive in some cases, but less so in others. Our preliminary results show some loads getting lighter and others getting heavier. We just don't have enough data yet," Snyder said.

John Wahba, senior vice president of engineering for Radian Communications Services, said 222-G requires that wind loading be calculated using three-second wind gusts, instead of fastest mile per hour. It also eliminates the use of the "normal soil" definition, replacing it with "presumptive" soil parameters for use in clay and sandy soils, which will likely require geotechnical reports.

Defining the characteristics of the soil

## The revision is considered the largest to the rules since tower standards were adopted more than 50 years ago.

"Around the world there has been a shift in how structural engineers look at things. The move is away from 'allowable stress design' and toward 'limit states design.' Those developments required a major revision to the tower standard," Snyder said.

Allowable stress design applies a single "factor" of safety to the ultimate capacity of the tower member, based upon the type of capacity that is defined. The result is an allowable capacity, which is then com-

222-G affects existing and proposed AM antenna structures as well as towers supporting FMs, Snyder said.

Snyder and his committee of tower erection contractors and structural engineers began work on the latest revision — considered the largest to the rules since tower standards were adopted more than 50 years ago — in 1998. The American National Standards Institute requires that tower standards be

## Notable Changes to 222-G:

**Geotechnical Investigations:** Used to determine the ultimate bearing capacities for each soil layer at recommended bearing depth.

**Presumptive Soil Parameters:** Specific parameters for sand and clay soils allow structural engineers to use more exact parameters when determining bearing load capacities and tower anchoring minimums.

**Classification of Structures:** Structures will now be classified as Class I, II or III. Order of classifications will be dependent upon location of structure, hazard to human life in the event of failure and essential communications necessity.

**Climber Safety:** New minimum requirements for the design and construction of fixed ladders, safety devices, climber attachment anchorages, platforms and cages will make for safer conditions for climbers.

**Basic Wind Speed and Design Ice Thickness:** Extensive data collected from the National Weather Service will be used in regional estimations for determining load limits.

**Topographic Categories:** Wind speed-up effects at isolated hills and ridges will now be included in the calculation of design wind loads.

**Protective Grounding:** New maximum acceptable electrical resistance of the structural grounding system.



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# Tower

► Continued from page 6

allows structural engineers to use more exact parameters when determining bearing load capacities and tower anchoring minimums, Wahba said.

"Ice is another major change. In some areas you'll have to use more or less. There is much more specific data collected by the National Weather Service, which is broken down county by county, including wind and ice," Wahba said. "The new standard is much more demanding in the number of calculations required and much more prescriptive in terms of how to handle loading."

It's hard to say if the tower revisions will equal increased design and construction costs for broadcast projects, Wahba said; the revisions may save money in some cases and not in others.

"In terms of analysis, it will take structural engineers longer to evaluate new projects or existing towers. They'll also need to equip themselves with new tools and software. There will be a learning curve. However, depending on the classification, the material cost could be lower," Wahba said.

## Radio impact

222-G will require broadcast engineers to "familiarize themselves with the updates and be aware of any changes made to their towers," said Mark Malouf, president of Malouf Engineering, a structural engineering consulting firm.

"They need to understand that the dynamics have changed and that they have potentially more flexibility with their towers. A lot of the gray areas have been addressed. There should be no more guessing on things," Malouf said.

Broadcasters say they have been following the tower industry developments closely because the changes will affect current and future tower projects.

"We have had structural engineers and other experts in this area speak to our regional engineering vice presidents to discuss the changes," said Steve Davis, senior vice president of engineering for Clear Channel Radio. "We expect it will add to our costs in some cases."

Marty Hadfield, vice president of engineering for Entercom, said, "We look at

towers as 'vertical real estate,' and the changes will likely impact the structural capacity for future expansion for existing towers. We will pass any structural improvement costs to the prospective ten-

Greater Media.

"I would anticipate cost increases in some, if not most, situations compared to structures completed under the old standards."

**A lot of the gray areas have been addressed. There should be no more guessing on things.**

— Mark Malouf, Malouf Engineering

ants, if we make changes."

The changes will "certainly have a significant impact in any future tower projects or tower renovations," said Milford Smith, vice president of engineering for

The latest revision should have "little impact on the daily routine" of broadcast engineers, said Chriss Scherer, president of the Society of Broadcast Engineers.

"The heart of the revision covers loading

and construction issues, which are more of a concern to structural engineers. However, just like familiarity with FCC rules is important, it's good for station engineers to know the standards for reference," Scherer said.

Scherer said SBE is considering ways to help disseminate the information with several sources being considered as a part of member services.

Climber safety requirements, which have been largely ignored in previous tower standard revisions, were addressed this time around, Malouf said.

"Safety requirements for safety access are now in place. There are signage requirements now for the structure, including radiation field warnings and tripping hazards for climbers," Malouf said.

Readers can purchase the Revision G tower standard at [www.tiaonline.org](http://www.tiaonline.org).



## Who They Are

Three entities are involved in the tower standard writing process:

**The Telecommunications Industry Association** is a trade association for the information and communications technology industry. TIA represents the communications sector of the Electronic Industries Alliance.

**The Electronic Industries Alliance** is a partnership of electronic and high-tech associations and companies promoting the U.S. high-tech industry. EIA comprises 1,300 members and is headquartered in Arlington, Va.

**The American National Standards Institute (ANSI)** is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system.

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**COMREX**

# Radio's Future Hits the Front Pages

Discussion of Terrestrial Radio Business Is Now Water-Cooler Talk at Places Other Than Stations

by Skip Pizzi

The changes that the U.S. radio broadcasting industry faces are now widely enough known that they have become fair game for the likes of the mainstream press and D.C. policy wonks. Much attention has been directed at what was considered a mature and stable industry that now faces dramatic upheaval.

One recent piece from a Washington think tank called The Progress & Freedom Foundation has an interesting take on what needs to happen for radio to weather its current crisis.

For those who care, PFF is a moderately conservative organization that focuses on media policy issues, and which is supported by a broad range of telecom and related companies (full disclosure: my employer is among them). Its views are generally non-extremist, insightful and pragmatic, and are respected across the political spectrum. If the group's politics ever enter the picture, they usually come down as strongly pro-industry, mildly pro-consumer and anti-regulatory/interventionist.

This particular report, "The Future of Radio Regulation: The Need for a Level

Playing Field," is authored by Adam Thierer, formerly director of telecommunications studies at the Cato Institute, the leading voice of Libertarian politics in the country.

## Outflanked

Thierer portrays the radio industry as a stalwart American institution now coming under siege.

## Thierer portrays the radio industry as a stalwart American institution now coming under siege.

He presents the case that radio seemed impervious to competition for so long, having spent its early years without any significant competition, and then surviving onslaughts from records, television, the Walkman and CDs. Yet today, he counters, radio is becoming outflanked by both the sheer number of emerging media alternatives, and the more specifically direct nature of their competitive services.

He cites Internet radio, music downloading and satellite radio as examples. Satellite radio presents the greatest threat, in Thierer's view, particularly given its foray into provision of local content with traffic and weather offerings. He also makes a convincing argument that although satellite radio only reaches a fraction of free, over-the-air (OTA) terrestrial radio's audience today, all indicators point toward continued strong growth in satellite radio's subscriptions, and he presents a plausible future in which satellite radio overtakes OTA radio

just as cable and satellite TV have done to OTA television broadcasting.

Tangentially, this also calls into question a point made by others that cable and satellite TV have reached their dominance coincidental to the period of OTA TV's forced digital transition, significantly reducing the return on investment of OTA's investment in digital conversion. Apply this to Thierer's view of radio's future, and it gives radio broadcasters some pause as they consider the costs of IBOC conversion.

Of course, the costs of doing so for radio are proportionally less than TV's, and the transition is voluntary in radio's case. Nevertheless, radio broadcasters may hold unrealistically high expectations for digital ROI if Thierer's predictions come to pass.

## Criticizing NAB's solution

The main premise of the paper is, as the title suggests, the need for re-regulation of radio.

Thierer contends that radio is unfairly fettered by regulations that are no longer necessary in light of so much new competition, and that market forces should be used to set boundaries rather than regulatory mandates. Moreover, he argues that having radio be bound by its current regulations, from which its new competitors are largely exempt, creates an unlevel playing field.

He then cites the radio industry's response, as presented by the NAB, as one in which the disparity is solved by "regulating up" the new competitors — specifically satellite radio, which NAB has called upon the FCC to further restrict in its moves toward addition of localized content. (This is what I would call leveling the playing field by tilting the grandstand.)

Thierer contends that this approach is short-sighted and dangerous, and instead advocates a solution that "deregulates down" OTA radio.

He enumerates the myriad regulations placed on OTA radio in the name of "public interest," which involve content restrictions (e.g., indecent speech, political broadcasting, PSAs and community info obligations) as well as business practices (e.g., payola, ownership caps), arguing that it is easier to relax or remove these rules from an established, highly regulated business than it is to add new regulations to emerging, speculative businesses. He also points out that satellite radio might not be the only entity to provide competitive local service (e.g., wireless Internet providers could do the same or more in the near future), so a regu-

## The Big Picture



Photo: Gary Hayes, BBC

by Skip Pizzi

latory solution might soon run out of fingers to plug holes in the dike.

As another aside, note that Canadian radio broadcasters, who are subject to even more stringent and intrusive content regulations including the amount of Canadian-originated content they must play, their English/French language balance and even the amount of new releases vs. catalog content they can air, have cited the argument of leveling their playing field with new competition, as well. Some broadcasters there have recently called for this dereg-down approach in asking to be freed from these rules, at least for content broadcast on any new delivery formats (such as DAB).

## Careful what you wish for

Thierer also cautions the NAB against possible unintended consequences of the regulate-up approach, since it would require broadcasters to rely heavily on the premise of localism.

Because the term is rather loosely defined and not uniformly (or in some cases, simply not) implemented today by radio broadcasters, any regulatory solution that protected broadcasters from local competition might very well set more specific requirements on how localism would have to be practiced by stations. Like an investor, if a regulator props up a threatened business, it may want more say on how the business runs thereafter.

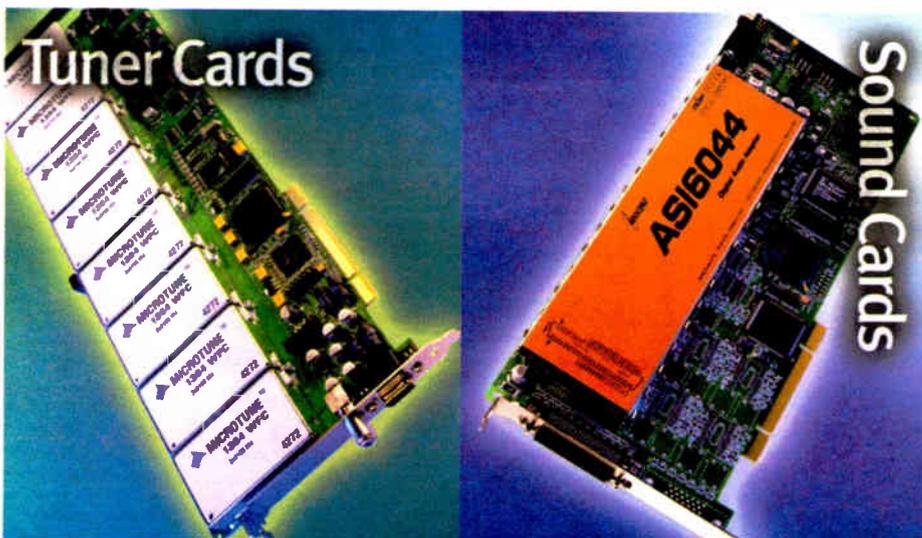
So protectionism invites control, Thierer warns, and if local broadcasters are rewarded with regulation that guarantees them a monopoly on local content, they can expect even more intrusive micromanagement of content by the regulators in return. And beyond satellite radio's current threat, this becomes a slippery slope, he contends, suggesting that each time another new-media entrant is rebuffed by regulation, OTA radio stations might face even more controls in return.

Instead, Thierer advocates removal of all content and business controls currently faced by broadcasters, although he acknowledges this as being a bit fanciful. He also echoes the point often made in this column that broadcasters must begin to separate their content and delivery businesses as a defense. But he ends with a disturbing hope that at least some regulatory change will occur before it is too late and the OTA radio broadcasting industry begins to fail.

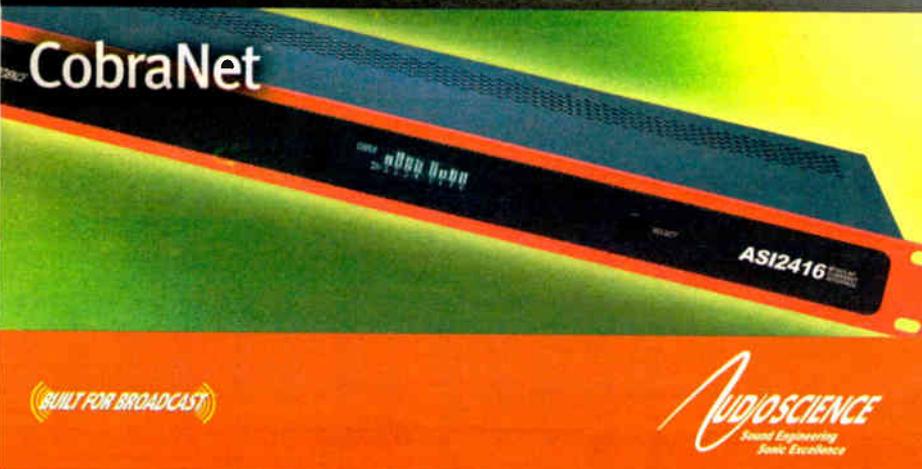
Whatever your politics, the entire paper (16pp) is well worth a read by terrestrial broadcasters. Check it out at <http://www.pff.org/issues-pubs/pops/pop12.27futureofradio.pdf>.

Skip Pizzi is contributing editor of Radio World.

Write to Radio World with your comments about this or any article. E-mail [radioworld@imaspub.com](mailto:radioworld@imaspub.com).



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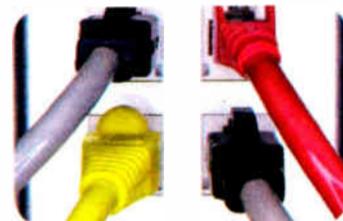
“I knew how expensive routing equipment was. I also knew we’d regret buying a system with fewer capabilities just to save money.



“More than anything, we wanted to avoid limiting our operations with the use of conventional

routers. Most of those systems force you to plan, during installation, for every signal routing configuration you might ever possibly need. If your needs change, you either have

“And expanding the network couldn’t be simpler. Just plug in more audio nodes and boom! you’ve got more inputs.



“I’ve worked with lots of equipment in the past 30 years, and Axia is by far the easiest system to install and get up to speed with. There are just a few cables instead of hundreds; the entire installation – with testing – took just *one week*.



to re-wire or settle for operational compromises. Not very user-friendly! Making sure that the system was easy for non-technical air talent to understand and operate was critical, too.

“Here’s the kicker: Axia cost about half what we would have paid for a conventional router. We’re very pleased, and plan to expand the network to our second control room. My advice? Get Axia. You won’t be disappointed.”



“Axia addressed all these concerns.

— Rudy Agus, Chief Engineer, Hi-Favor Broadcasting  
Los Angeles, California



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ROOTS OF RADIO

# Dials, Simple to Exquisite

by Mike Adams

In the Jan. 4 issue we discussed the history of the radio dial through the 1940s, as seen through pictures.

Samples of later designs appear here.

As we noted, a rule of thumb is that three-dial sets date to the mid- to late 1920s, small window dials late 1920s to mid-1930s, round dials in the mid-late 1930s, rectangular dials in the 1940s.

Figs. L and M illustrate the transi-

tion from the "round '30s to the rectangular '40s." Here are two high-end sets by E. H. Scott, the 1937 Philharmonic with its round dial, and 10 years later Scott features the "slide rule" rectangular dial then in fashion on large consoles.

In my opinion the most revealing dial is found on the 1947 General Electric 901, seen in Fig. N, a radio/phono/projection TV.

Its dial tells several stories. While the

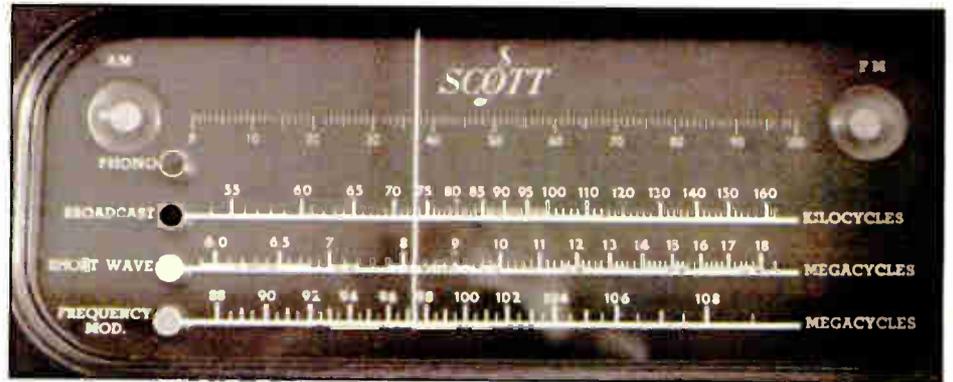


Fig. M: 1947 Scott AM/FM

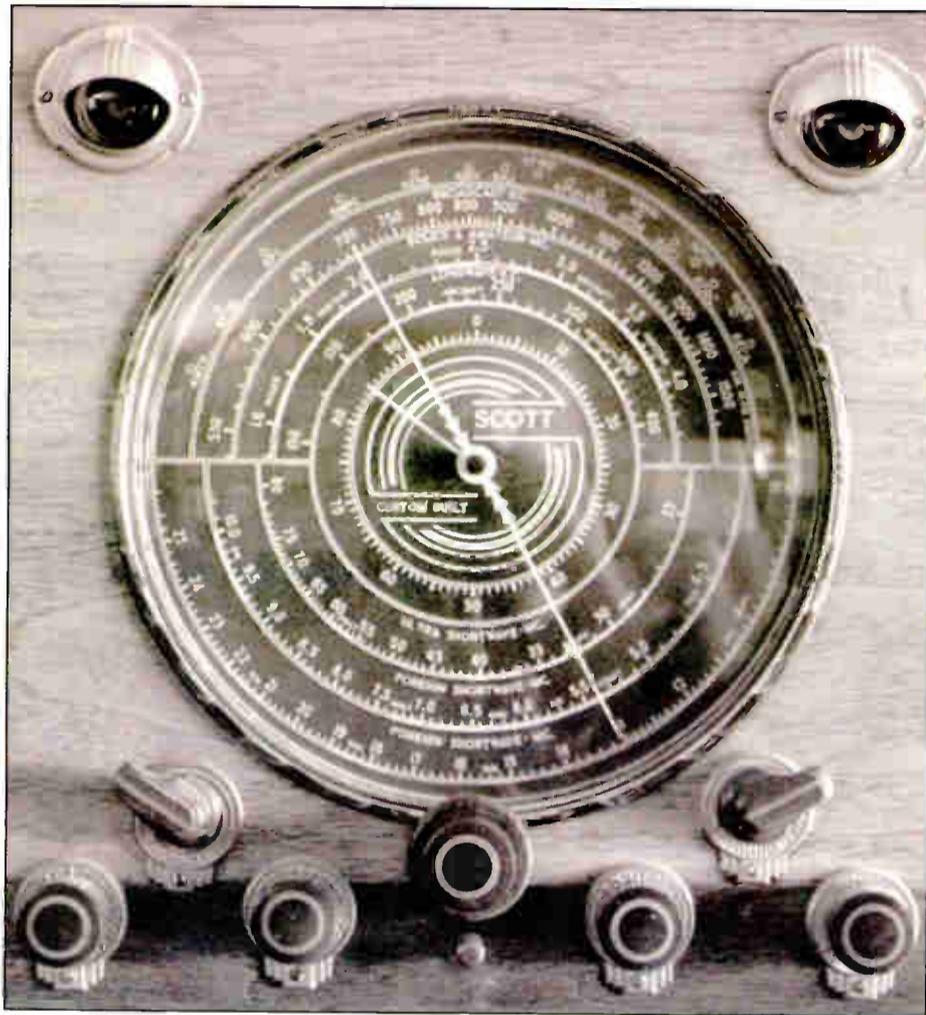


Fig. L: 1937 Scott Philharmonic



Fig. N: 1947 GE 901



Fig. O: Early 1940s FM Tuner

AM and shortwave bands carried over from the 1930s, FM appears with its old and new frequency allocations: the pre-war 42-50 mc (megacycles, now mega Hertz, MHz), and the postwar 88-108 mc. The television dial shows a channel 1. After the war, RCA and Armstrong fought over that channel, previously the original FM band. Armstrong wanted it, Sarnoff wanted it, so the FCC gave it to neither, but instead assigned it to taxicabs and other two-way commercial users.

Other 1940s sets were portable, tabletop, plastic, as shown in Figs. O through S.

By the 1950s, shortwave was losing popularity, AM was suffering from competition from television, and FM would not appear on all sets until the end of the 1970s. The big news then was the transistor radio, first introduced around 1955. The '50s dial was simple again. Early sets always advertised the

See DIALS, page 12 ▶



Fig. P: 1940s Dial. More from this period are seen in Figs. Q, R and S.

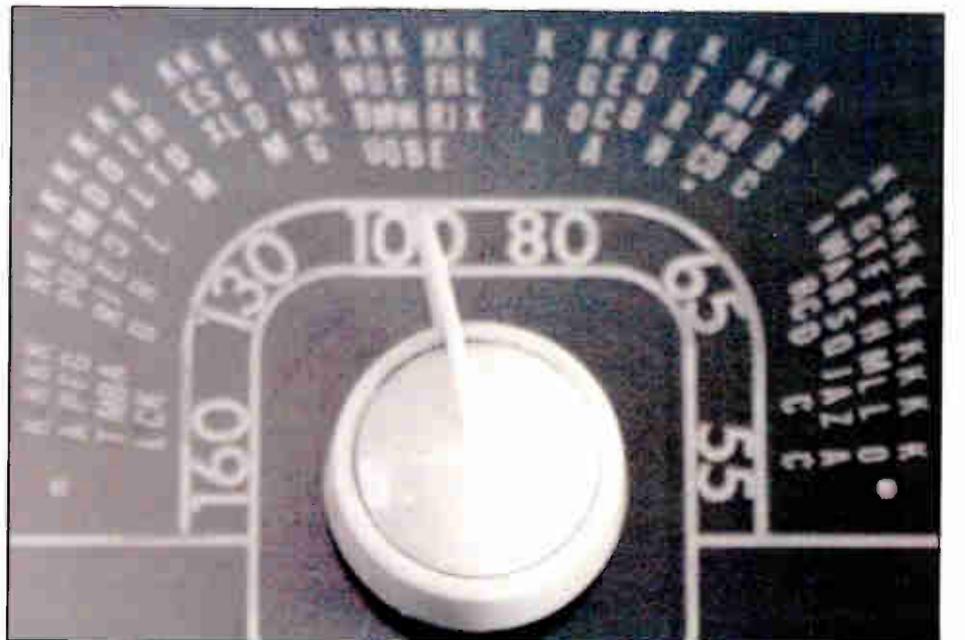


Fig. Q

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# Dials

► Continued from page 10 number of transistors.

To me, the 1960s and 1970s can be represented by the stereo receiver, most notable by Fisher and H.H. Scott. The word in 1960 was "multiplex." See Fig. V.

I'll admit to a prejudice against the ordinary (read: "ugly") design of most boombox and clock radios from the 1980s and '90s, but I will conclude our photo tour by showing one of radio's most useful new dials, now playing NPR's "Car Talk." Sorry NAB, it's my favorite!

Mike Adams is a professor and chair of the Department of Television, Radio, Film and Theatre at San Jose State University, and advises the department FM station, KSJS. From 1963 to 1973 he was at legendary AM WCOL in Columbus, Ohio, as DJ and PD. He is board chairman of the California Historical Radio Society and author of "Charles Herrold, Inventor of Radio Broadcasting."

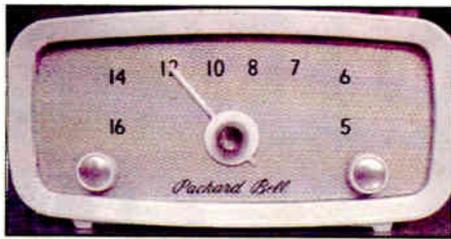


Fig. R

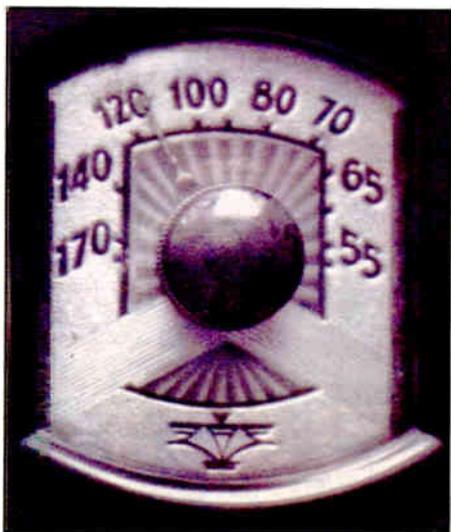


Fig. S

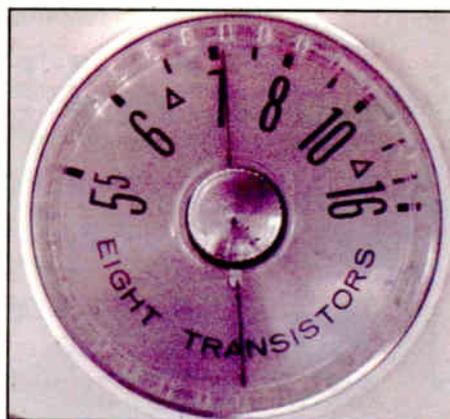


Fig. T: Early sets advertised the number of transistors.

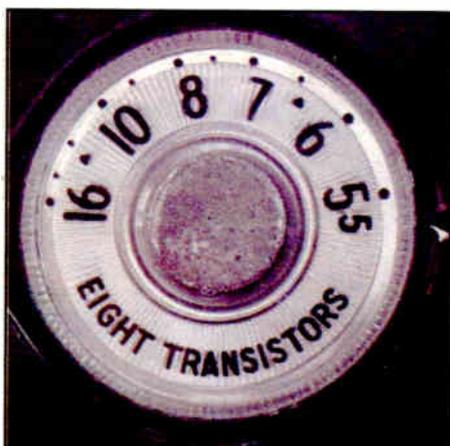


Fig. U



Fig. W: 2005 Xact Sirius Satellite

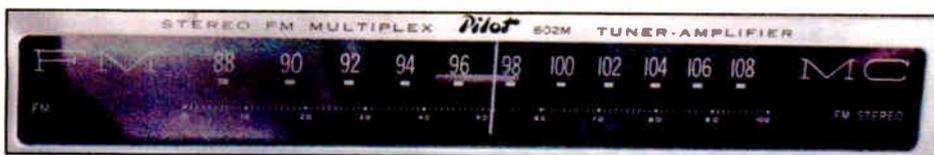


Fig. V: Multiplex

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**MARKET PLACE**

## RF Connectors Has Universal Cable Tester

The RF Connectors division of RF Industries is out with a cable tester to detect open and short faults in coaxial cable assemblies.

"This tester is constructed with the Unidapt universal connector system that allows testing virtually any connector with the attachment of the adapters from the Unidapt adapter kits from RF Connectors," the company stated.

An LED front panel indicates Pass or Fail with a red light/green light. The tester saves time by indicating whether the failure is due to a short, open conductor or open shield.

The RFA-4018-20 is powered by a 9-volt battery. It is lightweight and portable for remote site use.

The unit is available from RF Connectors distributors.

For information call the company in California at (800) 233-1728 or visit [www.rfindustries.com](http://www.rfindustries.com).



## RFS Takes Portal Approach to Site

RF technology company Radio Frequency Systems is promoting a new "portal" architecture and site navigation on its Web site, calling the design unique.

The company says it has done a major overhaul to [www.rfsworld.com](http://www.rfsworld.com).

Using the portal, visitors to the site can select one of seven industry portals with which to explore elements of the site. They are radio and television, wireless communications, in-building systems, in-tunnel systems, microwave, mobile radio, and HF and defense antennas.

The portal perspective presents system architectures depicting typical RF installations, which in turn are hyperlinked to relevant sections of the RFS product catalog.

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Radio World, January 18, 2006

Past columns are archived at [www.rwonline.com/reference-room](http://www.rwonline.com/reference-room)

## AM Site TLC Stops Off-Air Headaches

by John Bisset

Cold winter mornings are not the time to babysit AM contactors. If you maintain a directional AM, chances are these little workhorses are hidden somewhere in your site, switching twice a day. Like all moving parts, they do need periodic maintenance.

First, watch the contactor as it switches. Does the actuator arm move decidedly or does it hesitate during the transition? Hesitation can be caused by a number of things: the solenoid, rusty or binding

back to its normal position.

Movement of the linkage should be smooth. Watch the linkage for loose parts, and tighten bolts that have come loose. Check the operation of the contactor after any adjustment. It's possible to misadjust the contactor linkage.

Also important with RF contactors are the interlock microswitches. On newer phasors, each contactor is linked back to a go-no go tally light panel, as seen in Fig. 2. When the lights illuminate, the interlocks of all contactors in the chain are closed, and you can

one of the first places to check. If the interlock switch does not open, the voltage is fed to the solenoid continuously, eventually burning it out.

A failure of this small interlock switch can cause this kind of solenoid failure, but so can a misaligned interlock switch. So in addition to watching the actuator linkage switch properly, also make sure that with each actuation, the interlock switches are indeed closing.

Using a lock washer under the microswitch mounting bolts should

connections are tight.

With a strong light, check to see that the RF contact surface is smooth, not pitted. Pitting occurs when the contactor is switch "hot" — with RF power applied. Depending on the power level, you may only get one or two tries switching hot before the assembly burns up. On higher power sites, say 5 kW and above, the contacts can actually weld. Disassembly for repair is a bear.

With so many parts that can fail and take you off the air, it's a good idea to have spare parts on hand, and better yet, a complete spare contactor that can be put into service while the older one is being repaired. A good source for

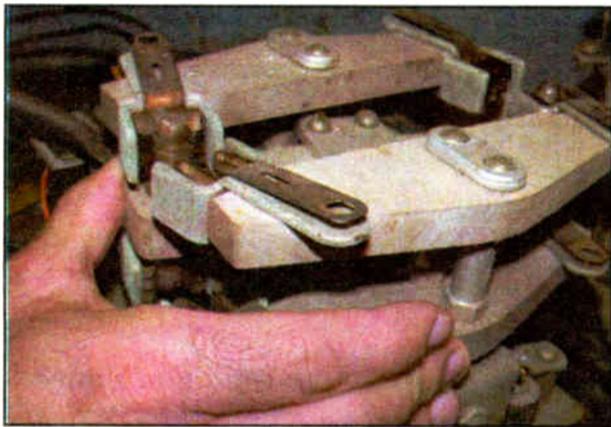


Fig. 1: With power off, work each actuator to check for binding.



Fig. 2: Tally lights help diagnose contactor failure.

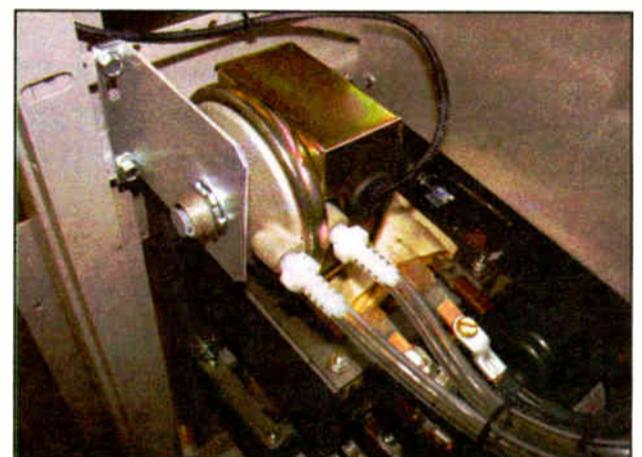


Fig. 3: Visually inspect the transmitter air interlock.

linkage, or loose or corroded wiring connections.

This device moves; so during a maintenance period, when the transmitter is off, work the actuator manually, as seen in Fig. 1. Turn off power to the phasor control system as well as the RF. Some controllers will interpret your manual movement to mean the contactor is hung up or not in sync with the position of the others, and will apply power — fighting you to switch

assume all contactors have switched properly. The small interlock switches mounted on the chassis perform this tally function.

Many older phasors used a second set of interlock switches to open the AC feed to the two solenoids. Each solenoid controls one direction of the actuator. When the actuator has switched, the second set of interlock switches break the circuit.

If a contactor is not switching, this is

help lock the switch down, so it won't move with the contactor vibration. A small drop of Glipt brand glue or red fingernail polish will also keep the contactor switching vibrations from loosening these switches.

The last major component you'll inspect visually is the RF connection. Most AM contactors use some type of pin-and-socket or pin-and-spring finger contact assembly to transfer the RF. Ensure that the bolts holding the RF

contactor parts is Kintronic Labs ([www.kintronic.com](http://www.kintronic.com)). Kintronic also stocks inductor clips, insulators, an array of inductors and both vacuum and mica capacitors.

★ ★ ★

While we're on the subject of things that can take you off the air:

When was the last time you checked

See TLC, page 16 ►

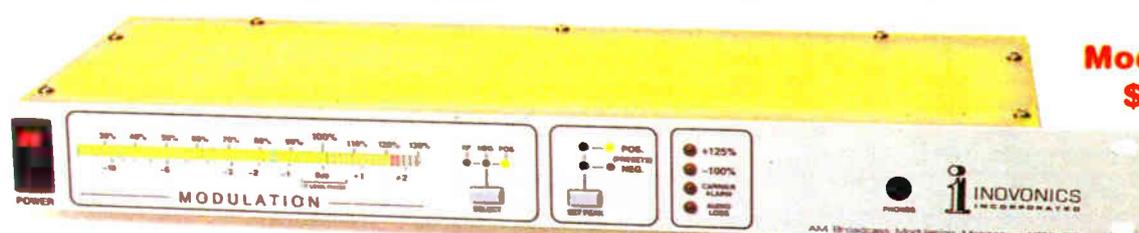
## Dependable AM Measurements

**This AM Mod-Monitor features a tunable preselector and an easy-to-read display**

Take accurate modulation readings right off the air with this compact, full-featured Mono-AM monitor. Fixed and adjustable peak flashers complement the peak-holding bargraph readout for clear, interpretation-free results.

Audio-loss, carrier-loss and modulation limit alarms may be remotely located, and an RS-232 port allows full computer/modem control. An efficient outdoor active antenna is optionally available for difficult reception situations.

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**Model 520**  
**\$1750**

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## ProFiler client success stories. Everyone post!

"PROFILER GIVES OUR PROGRAM DIRECTORS ACCESS TO LOGGED AUDIO ON ANY STATION PC. THEY'RE DELIGHTED!"

— JIM DAVIES, KSUI/WSUI  
UNIVERSITY OF IOWA

"No more forgotten airchecks since ProFiler is automatic. It saved at least one student from failing last year, since he kept forgetting to roll tape. It's hassle free!"

— Professor Mark Sagnolius  
K T I S, Northwestern University

"ProFiler solved a particular problem for us with WAXY because we needed to keep this 'logger' off our house LAN and give access to it to non-employees whose computers live on a totally separate network. ProFiler fills the bill nicely!"

→ Gary Blau, Jefferson-Pilot Miami ←

"We had a problem with competitors recording our live sports broadcasts and rebroadcasting them in their own news. We used ProFiler's scheduled record feature to spot record those stations... then our lawyers took care of them. We're very pleased with ProFiler... I bought four of 'em!"

Dennis Everett, Spectrum Indiana

"We're running 3 Profilers at our stations in New York. I want to keep audio logs for years, not just months. So I installed a terabyte hard drive; I can store 4-5 years of audio on it! I love ProFiler."

MIKE TOCCO, SBS NEW YORK

"There was a notice of proposed rulemaking, so I decided to install **PROFILER** just in case the Commission decides to require it - it's a good defensive move. ProFiler's doing great: it's effective, it's easy to access audio... It does the job."

Jeff Zeismann, WNKR-FM

"We'll have internal audits required by the University, or a University official will get a request for a transcript, so we use ProFiler for long form logging and skimming. I use removable drives & get a year's worth of audio; when one's full I just pull it out and store it."

— Jeff DePolo, WRTI-FM  
Temple University, Philadelphia

"We use our hard-drive playout system to record and re-air portions of our morning and midday shows. We use ProFiler as a backup recorder as well as for logging and skimming, and it's saved us a few times! Plus, when the jock says 'I did the greatest bit in the world!' it's nice to have an immediate high-quality version for promos or archiving."

>> Erick Steinberg, KFOG, San Francisco <<

"EVEN SALES PEOPLE WHO AREN'T COMPUTER SAVVY CAN USE IT. OURS LEARNED PROFILER REAL EASILY - NOW THEY SAVE SPOTS AND SEND THEM TO CLIENTS WITHOUT HAVING TO ASK PRODUCTION"

— GEORGE SEFFERT  
WAKR - WONE - WQMD



## We call it ProFiler. Our clients call it indispensable.

What would you do with a **computer-based audio logger**? Telos ProFiler's MP3 audio logging features alone (expandable to capture up to **8 streams** on one PC) are enough to satisfy most folks, but ProFiler is loaded with other tools... like a **skimmer** that switches to a higher bit-rate when the mic is open, **export functions** that help you assemble great-sounding airchecks and composites quickly, and remote **access via IP**. But - as you can see - our clients tell us that ProFiler helps them do even more.

Now, it's your turn. Tell us how *you'd* use a software logging package this powerful and you could win your very own copy. First, discover all of ProFiler's capabilities by browsing [www.telos-systems.com/ProFiler/](http://www.telos-systems.com/ProFiler/). Then, tell us what problem ProFiler could solve for your station; e-mail your ideas to [ProFiler@telos-systems.com](mailto:ProFiler@telos-systems.com) by March 31, 2005. If yours is the coolest, we'll send you a **free ProFiler\*** (plus, we'll use your idea in one of our upcoming advertisements).

Telos ProFiler. How will *you* use it?

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\*Free ProFiler p/n 2201-00017, includes software and one Telos ProFiler audio card.

World Radio History

# TLC

► Continued from page 14

your transmitter airflow switch? In dirty transmitter site environments, it's possible for dirt to clog vane/microswitch assemblies, so if the blower fails, the clogged vane won't move. This means the blower interlock won't open, and your transmitter potentially could melt down.

When you change a tube, visually inspect this vane/switch assembly. Be gentle; some of the vanes are very delicate and can be bent or broken easily. In a quiet environment, you can hear the microswitch closing as the vane is deflected by hand. Checking switch continuity, with the power off of course, is a better idea.

Newer transmitters use a pressure or pressure-bellows type switch. See Fig. 3. The little grey plastic plug on the left can be removed and the set-screw beneath this plug adjusted for best sensitivity.

Refer to the transmitter manual for the correct procedure. Misadjustment can be disastrous.

frustrating than reaching for a flashlight only to have it fail because the batteries are corroded.

respect to the second cell. This will prolong the shelf life of the batteries, and prevent them from corroding inside the flashlight.

The only drawback is that you have to unscrew the flashlight and reverse one of the batteries prior to use. But this is a small price to pay to keep a flashlight working.

Alan Fisher can be reached at [alanfisher@clearchannel.com](mailto:alanfisher@clearchannel.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 Broadcast Electronics. Reach him at (571) 217-9386, or [jbisset@bdcast.com](mailto:jbisset@bdcast.com). Send faxed submissions to (603) 472-4944. Submissions for this column are encouraged, and qualify for SBE recertification credit. 

**If you maintain a directional AM, chances are these little workhorses are hidden somewhere in your site, switching twice a day.**

Like the contactor parts, an air interlock switch is a good spare part to keep on hand.

★ ★ ★

Alan Fisher, engineering assistant at Clear Channel in Richmond, Va., passed on a note about keeping flashlights free from battery corrosion. Nothing's more

To prevent this problem in two-cell flashlights, Alan suggests reversing the first battery (+ to +, or - to -) with

## SUPPLY SIDE

### Omnirax Broadcast Furniture

*Supply Side is a series of occasional articles providing background about suppliers to the U.S. broadcast industry. Here, Director Philip Zittell talks about Omnirax Broadcast Furniture's line and background.*

#### What does the company do?

We design and manufacture furniture.

What differentiates us is our blend of style, functionality and ergonomics, our collaborative custom design ability and fanatical attention to detail.

We work with chief engineers, PDs, architects and station owners. We provide unique and custom solutions at near-production prices.

#### How many employees do you have?

We have a staff of approximately 25 operating out of three locations in Sausalito, Calif.

#### How was the company founded?

Alan Jewett and I met selling on the "streets of San Francisco" in the early '70s. We were both licensed San Francisco Street Artists.

Alan founded Sausalito Craftworks in 1974; I started working with him shortly thereafter. And we became partners. We made jewelry — and we still do. In 1980 we incorporated.

Sausalito Craftworks Inc. is the parent company of Omnirax. We make the finest brass, copper and sterling silver bracelets in America. We still fabricate our original designs by hand, and we sell to fine gift shops, galleries and boutiques. We operate the jewelry business under the name Sausalito Design.

Sometime in the mid-'80s, Alan, who's also a musician — and the driving creative force in the company — bought his first synth module from our local music store, Bananas at Large. He brought it home and found himself ask-

ing, "So, where am I gonna put it?"

We've always had a woodshop. Alan liked to work with wood; and we needed a place to make point-of-purchase displays for our jewelry, which has evolved into a second business of its own. He couldn't find a studio rack to fit his needs so he made a 12-space slant rack out of oak plywood. We built two. Alan took one to his studio and the other up to Bananas. They sold theirs that weekend. Omnirax was born.

So what started as a few models of rolling 19-inch racks grew to a comprehensive line of integrated modular studio furniture.

**OMNIRAX**  
BROADCAST FURNITURE

*Omnirax seems to have made inroads in radio. Why?*

Well, certainly our experience as the leading manufacturer of fine pro audio studio furniture for 18 years has had something to do with it. In fact, for years we had been selling our Omnirax product line to radio stations. We just hadn't focused on the broadcast market yet.

Then in 2003, after we were approached by Entravision Project Engineer John Buckham to design and build 27 rooms for their new flagship facility in L.A., we realized that broadcast furniture and radio stations in particular had needs that were suited to our strengths.

We really listen to customers; we don't believe in boilerplate production drawings dropped into a floor plan. We're a good size, too — small enough to give every job a personal touch, large enough to outfit a complete facility. And we're straight-shooters. It's important to us to provide a high-quality product at a price people can afford.

Our Innova line, which combines modular components with customized shapes, made its debut at Infinity Broadcasting's flagship San Francisco facility in early 2005; then we did a 10-room installation for Bonneville Communications, also in San Francisco.

After NAB2005 we won numerous contracts from stations all across the country and offshore. Two of these satisfied customers provided us with "instant referrals" for two more jobs in production, KYSL in Frisco, Colo., and KNBA in Anchorage, Alaska; and we have several other multi-room jobs in process including seven rooms for Pamplin Broadcasting (KPAM) in Portland, Ore. The response has been tremendous. 

## MARKET PLACE

### Day Sequerra Mod Monitor Receives HD Certification

Day Sequerra, a manufacturer of broadcast receivers, has received Ibiquty's certification for its M2.0 HD Radio Modulation Monitor. It said the tuner is the first on the market with AM/FM with multicast demodulation capability. Day Sequerra has started filling orders for the receiver, which is available at a list price of \$3,995. Optional remote monitoring and software upgrades should be available in the first



quarter of the year.

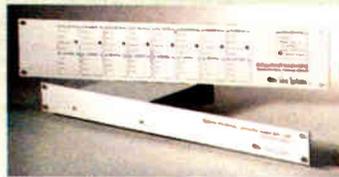
David Day, president of Day Sequerra, lauded the certification, saying, "We proudly continue to play a part in Ibiquty's transformation of today's AM and FM stations to HD Radio, by providing this modulation monitor for broadcasters to determine the signal and processing quality of their programming."

For information call the company in New Jersey at (856) 719-9900 or visit [www.daysequerra.com](http://www.daysequerra.com).

## Control Solutions

### Model RFC-1/B Remote Facilities Controller

- control transmitter from any telephone
- 8-64 channels of telemetry and control
- programmable control by date and time
- optional printer and modem adapters
- programmable telemetry alarms
- integrated rack panel



### Model RAK-1 Intelligent Rack Adapter

- parallel printer interface
- internal modem for data transfer
- front panel status indicators
- battery backed power supply
- rack mountable chassis
- accessory package for RFC-1/B



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Consider: computers, VoIP phone systems and bandwidth cost less and deliver more every year. Wouldn't it be great if broadcast gear did, too? Thanks to Axia, it can.

Axia saves you money by using open Ethernet technology to replace expensive proprietary mainframe routers. Not only is Ethernet less expensive, it's simpler and more reliable — perfect for critical 24/7 operations. The Axia IP-Audio solution eliminates sound cards, DAs, punch blocks and cumbersome cables, so it reduces installation and maintenance costs.

And now, Axia has a cool new modular control surface: Element. Scalable from four to forty faders, you can build the ideal surface for every studio. Element's abundant outputs and flexible architecture can be switched between stereo and surround mixing. Its info-rich user display, built-in router control, and integrated phone and codec support simplify the most complex shows. You'll never outgrow it.

Like all Axia products, Element does more and costs about half what others try to charge for their "Trust us, this is better than Ethernet, would we lie to you?" stuff.

Element. Worth its weight in... well, you know.



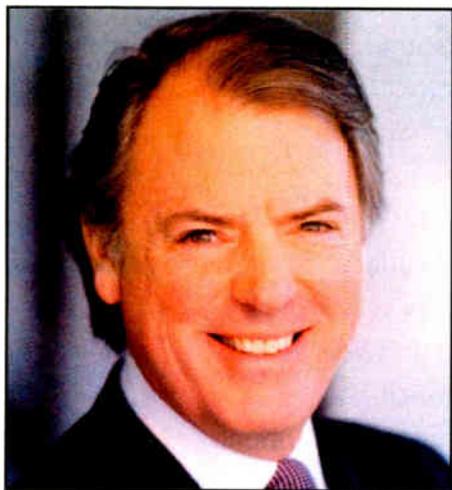
[www.AxiaAudio.com](http://www.AxiaAudio.com)

## A Canadian Call for IBOC Support

by James Careless

**WINNIPEG, Manitoba** The head of Corus Radio, largest radio group owner in Canada, believes HD Radio has a chance to succeed in Canada where the Eureka-147 technology has not.

John Hayes also has issued a call to fellow broadcasters to push their government to loosen Canadian content restrictions to help digital radio fend off competition such as satellite radio and MP3s.



Corus Radio President John Hayes

Corus Radio transmits in digital using the Eureka-147 technology in Canada's largest markets — repeating AM and FM programming, as all Canadian DAB stations currently do.

"Corus thinks that the ultimate digital radio platform with the best chance to succeed in this country is the Ibiquity system," because the U.S. has

See CANADA, page 21 ▶

### NEWS ANALYSIS

## Cox Marshals Forces for 'New' Band

*In Focus Groups, Consumers Favored the 'Expanded' Band Model for Multicast Display*

by Leslie Stimson

Cox Radio is hoping to use results from a survey to start a larger national discussion on how to identify multicast stations on HD Radio receiver displays.

It hopes the debate will lead to an industry plan to implement a new display option for the multicast channels by summer, a source with knowledge of the issue told Radio World.

The broadcaster, not yet a member of the new HD Radio Alliance, is talking to members of that group about the results and intended to present the findings to the National Radio Systems Committee at its meeting at CES this month.

Cox would like the NRSC to appoint a committee that would recommend a standard, with a companion implementation and transition plan, no later than June, said the source, adding that Cox hopes broadcasters on the NRSC will "heed the input of listeners" and adopt a standard to encourage more receiver manufacturers to make HD Radios.

"We believe that the industry, working closely with receiver manufacturers, will use this research to develop an orderly transition plan to the expanded band as the HD Radio receiver evolves and develops," said Cox Radio CEO Bob Neil.

### Options

Cox, which is not yet multicasting any of its HD-R stations, has long favored a "new band" approach to identifying multicast stations, in which the listener would see what appeared to be new frequencies on receivers.

An NRSC group studying the issue disbanded last spring with no definitive conclusions, although it did make general recommendations that the industry should focus on the existing identification system. In this arrangement, a multicast channel is identi-

fied by a frequency plus a suffix, a "layered" approach in which the name of the multicast outlet is visibly related to the name of its main station.

But Cox wanted to pursue the matter further.

The broadcaster funded 12 focus groups in the fall, at a reported cost in the five figures, to study how consumers would react if given a choice between the "layered" and new displays.

**To the listener, it makes no sense for a station to intentionally dilute its brand with a brand extension that has little or no relevance to the main station. ... It would be like the Animal Planet cable channel carrying the PGA tour.**

— Bob Harper

Ninety percent of the 156 consumers preferred the so-called "expanded or new band approach," according to researcher Bob Harper, who conducted the focus groups in Los Angeles, Detroit and Washington. The cities were chosen because they are key seed markets for Ibiquity.

Consumers were asked to discuss two possible options. One would display multicast stations as an expanded FM band above 107.9 — for example, as 108.1, 108.3 or 108.5 — although the multichannel stations would not actually be broadcasting on those frequencies. The other option associated the multicast stations with their main or "heritage" stations, with labels such as 98.5 HD-2, 98.5 HD-3 and so on. This is how HD Radios will, in fact, display multicast stations for the first few years.

The lopsided findings of the focus groups "were so conclusive that broadcasters and

equipment manufacturers would only ignore them at their peril," Harper said.

### 'I was shocked'

Radio World asked industry observers to comment on the study and its implications.

Some program consultants and one receiver manufacturer said several participants may have favored the second option only because it was the last one presented and that's what participants remembered.

One audience research consultant said moderators can sway a group, consciously or unconsciously. But Harper said he put a

video stream of the focus groups on his Web site ([www.bobharper.com](http://www.bobharper.com)) to show that "there was no leading." The streams will be available to the public until Jan. 31.

A Radio World observer, watching the Washington focus group discussions from behind a two-way mirror, questioned whether the participants fully understood what they were giving their opinions about because the concept of multicasting can be difficult for those outside the industry to grasp.

Harper said, "If people don't understand something in a focus group, they clam up and let other people talk. We didn't have hardly any of that. I kept returning to the 'losing' side to see what I could pull out. They understood it. If you watched their body language when they watched the tape, they were really into the (second) version. ...

See COX, page 20 ▶

## Hear Every Nuance and Measure it Accurately

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M2 Modulation Monitor.



- HD RADIO™ AM AND FM MULTICAST MODULATION MONITOR IN 2RU SPACE
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## Radio World's HD Radio™ Scoreboard

The HD Radio Scoreboard is compiled monthly by Radio World using information supplied by iBiquity Digital Corp. and other sources. The data shown reflect best information as of Dec. 20. This page is sponsored by Broadcast Electronics. HD Radio is a trademark of iBiquity Digital Corp.

### AMS ON THE AIR WITH HD RADIO

Station	Freq	Format	Market	Owner	Station	Freq	Format	Market	Owner
KFYI	550	News/Talk	Phoenix	Clear Channel	WWJ	950	News	Detroit	Infinity
KTSA	550	Nws/Tlk/Spt	San Antonio	Infinity	KQKE	960	Talk	San Francisco	Clear Channel
KLZ	560	Sports	Denver	Crawfor	WFLA	970	Nws/Tlk/Spt	Tampa-St. Pete	Clear Channel
WQAM	560	Sprts/Talk	Miami	Beasley	WHA	970	Talk	Madison	Wis. Public Radio
WTNT	570	Talk	Washington	Clear Channel	WHSR	980	Internat 1	Miami	Beasley
KNJ	580	Nws/Tlk/Spt	Fresno	Infinity	WTEM	980	Sprts/Talk	Washington	Clear Channel
WGAC	580	News/Talk	Augusta	Beasley	KTNQ	1020	Spn/Nws/Tlk	Los Angeles	Univision
WTAG	580	Nws/Tlk/Spt	Worcester	Clear Channel	WBZ	1030	Nws/Tlk/Spt	Boston	Infinity
KOGO	600	Tlk/Nws/Spt	San Diego	Clear Channel	WHO	1040	News/Talk	Des Moines	Clear Channel
WCAO	600	Gospel	Baltimore	Clear Channel	KNX	1070	News	Los Angeles	Infinity
WREC	600	Nws/Tlk/Inf	Memphis	Clear Channel	WDIA	1070	Old/Blk/Tlk	Memphis	Clear Channel
KOJM	610	AC/News	Havre, MT	New Media	WIBC	1070	Nws/Tlk/Spt	Indianapolis	Emmis
WTP	610	Sprts/Talk	Philadelphia	Infinity	KRLD	1080	News	Dallas	Infinity
MTVN	610	Nws/Tlk/Spt	Columbus	Clear Channel	KHXA	1090	Span/Oldes	Denver	Entravision
KMKI	620	Children	Dallas	ABC Radio	KDIS	1110	Children	Los Angeles	ABC Radio
WTHJ	620	Nws/Tlk/Spt	Milwaukee	Journal	KFAB	1110	News/Talk	Omaha	Clear Channel
KHOW	630	Talk	Denver	Clear Channel	KFAN	1130	Sprts/Talk	Minneapolis	Clear Channel
WPRO	630	Nws/Tlk/Spt	Providence	Citadel	KBIS	1160	DARK	Dallas	First Broadcasting
WJNA	640	Nostalgia	W. Palm Beach	Crystal Boynton	KSL	1160	News/Talk	Salt Lake City	Bonneville
WUJZ	640	Children	Philadelphia	ABC Radio	WRLB	1160	AdStd/Oldes	Atlanta	Atlanta Area Bcst.
WMLS	640	Sports	Oklahoma City	Citadel	WHAM	1180	News/Talk	Rochester	Clear Channel
KENI	650	News/Talk	Anchorage	Clear Channel	KEX	1190	News/Talk	Portland, OR	Clear Channel
KLTT	670	Christian	Denver	Crawford	WOWO	1190	Nws/Tlk/Spt	Ft. Wayne	Federated Media
WSCR	670	Sprts/Talk	Chicago	Infinity	WOAI	1200	News/Talk	San Antonio	Clear Channel
KFXN	690	Sprts/Talk	Minneapolis	Clear Channel	WTPG	1230	Sprts/Talk	Columbus, OH	Clear Channel
WOR	710	News/Talk	New York	Buckley	KMZK	1240	ChrsContemp	Billings	Elenbaas Media
KURL	730	Religion	Billings	Elenbaas Media	WPKI	1260	Children	Boston	ABC Radio
WKDL	730	Span/Mexcn	Washington	Mega Comm.	WVDE	1260	Sports	Indianapolis	Clear Channel
KCBS	740	News	San Francisco	Infinity	WXYT	1270	Talk	Detroit	Infinity
WSDR	740	Bus News	W. Palm Beach	Beasley	WADO	1280	Spn/Nws/Spt	New York	Univision Radio
KOAL	750	Nws/Tlk/Spt	Price, UT	Eastern Utah B cst.	WHTK	1280	Talk	Rochester	Clear Channel
KKZN	760	Talk	Denver	Clear Channel	WTMI	1290	Classical	Hartford	Marlin Bdst.
WUCN	770	Sprts/Talk	Ft. Myers	Beasley	KCFR	1340	News/Info	Denver	Colo. Public Radio
WBBM	780	News	Chicago	Infinity	WIZE	1340	Adlt Stndrd	Dayton, OH	Clear Channel
KLDC	810	Cst/Rlg/Gsp	Denver	Crawford	WGRB	1390	Black Gospl	Chicago	Clear Channel
WGY	810	News/Talk	Albany	Clear Channel	WCOS	1400	Sports	Columbia, SC	Clear Channel
WNYC	820	News/Talk	New York	WNYC Radio	WJLD	1400	R8B/Tlk/Gsp	Birmingham	Richardson Bdcst.
WOSU	820	News/Talk	Columbus, OH	Ohio State Univ.	KHRY	1450	Adlt Stndrd	Cedar Rapids	Sellers
KMXE	830	Span/Talk	Los Angeles	Radiovisa	WVNN	1470	Motivationl	Miami	Beasley
WCCO	830	Nws/Tlk/Spt	Minneapolis	Infinity	WDAS	1480	Gospel	Philadelphia	Clear Channel
KXNT	840	News/Talk	Las Vegas	Infinity	KCFC	1490	News/Talk	Denver	Colo. Public Radio
WHAS	840	News/Talk	Louisville	Clear Channel	WOLF	1490	Children	Syracuse	WOLF Radio
KFUO	850	Religion	St. Louis	Lutheran Church	WTOP	1500	News	Washington	Bonneville
KOA	850	Nws/Tlk/Spt	Denver	Clear Channel	WLAC	1510	Nws/Tlk/Spt	Nashville	Clear Channel
WKAR	870	News/Talk	Lansing	Michigan State Univ.	KCHN	1530	Adlt Stndrd	Colo. Springs	Crawford
KPOF	910	Inspiration	Denver	Pillar of Fire	WCKY	1530	Talk	Cincinnati	Clear Channel
WFDF	910	Children	Detroit	ABC Radio	KCVR	1570	Span/RhyBl	Stockton, CA	Entravision
WSUI	910	News/Info	Iowa City	Univ. of Iowa	WKSH	1640	Children	Milwaukee	ABC Radio
WHJJ	920	News/Talk	Providence	Clear Channel	WRLI	1690	Oldies	Chicago, IL	Clear Channel
WPEN	950	Oldies	Philadelphia	Greater Media					

#### The HD Radio Bottom Line

Total Licensed

On the Air

1,072

617

Last Month

Total Licensed

On the Air

969

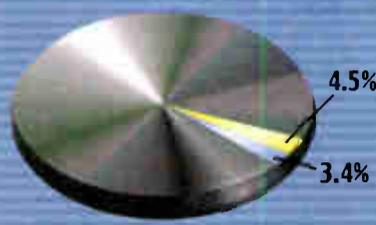
585

#### Market Penetration United States

13,599 AM & FM Stations (excludes LPFMs)

Number of FM Stations Multicasting:

54



■ Licensed by Ibiquty and on the air  
■ Licensed by Ibiquty and not on the air

## WFIT Goes IBOC

Non-commercial WFIT(FM) in Melbourne, Fla. went HD Radio recently. Harris believes the station, licensed to the Florida Institute of Technology, was the first such conversion in Brevard County, home of Harris' corporate headquarters in Melbourne.

Several Harris executives were at the September launch ceremony, including Chairman Howard Lance.

The jazz-formatted Class A WFIT also received FCC approval to multicast its digital signal but station executives have not yet decided on a format, Harris stated.

The digital gear installed included a Harris Z-Series Z6HDC solid-state hybrid FM/IBOC transmitter, Harris DexStar FM IBOC exciter and a Harris



Site Prep: Preparations for installation of the Harris Z6HDC HD Radio Transmitter at WFIT. Also pictured is the station's Harris FM5K transmitter, used for analog broadcasts. Mike O'Neill from Theatre Support Systems is working on site preparation.



WFIT managers with Harris engineers and technicians who assisted with antenna damage during Hurricanes Frances and Jeanne, from left: Todd Kennedy, Scott Swartley, Steve Hoffmeister, Terri Wright, Ryan McGuire, Josh Laney, Phil Waddell (kneeling), George Fox.

## You asked for a bulletproof console.

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**We really did shoot a bullet at a Mosaic panel. The bullet dented the panel, but it didn't puncture it. For details on how the Logitek Mosaic bullet test was conducted, visit [www.logitekaudio.com/bullet](http://www.logitekaudio.com/bullet).**

### Mosaic

Where art meets technology

NeuStar HD-FM codec pre-conditioner.

Other pieces of the Harris package include an Optimod-FM 8300 digital processor, Myat transmission line, Bird BPM Series Broadcast Power Monitor, and two Kenwood monitoring units: An KTC-HR100 HD Radio tuner and a KDC MP6025 receiver.

Harris also helped WFIT get back on the air last year after being knocked off the air following Hurricanes Frances and Jeanne. The hurricanes took out the station's satellite dish, eliminating its NPR feed. Harris GCSD employees located and temporarily installed an old Delta Gain satellite dish while the station waited for its replacement.

## Cox

► Continued from page 18

"I was shocked. Market to market, male to female, the answers were virtually the same."

### It's the marketing

The main point gleaned from the research, he said, was that the majority of participants felt a layered display is a good idea only when the main heritage station and the multicast channel carry programming that is related in some way.

"To the listener, it makes no sense for a station to intentionally dilute its brand with a brand extension that has little or no relevance to the main station. To them, it would be like the Animal Planet cable channel carrying the PGA tour," said Harper.

A common complaint about the current multicast labeling system was that it's complicated. Adding more numbers, such as HD 2, HD 3 and so on, to existing frequencies is tough to remember, several participants said.

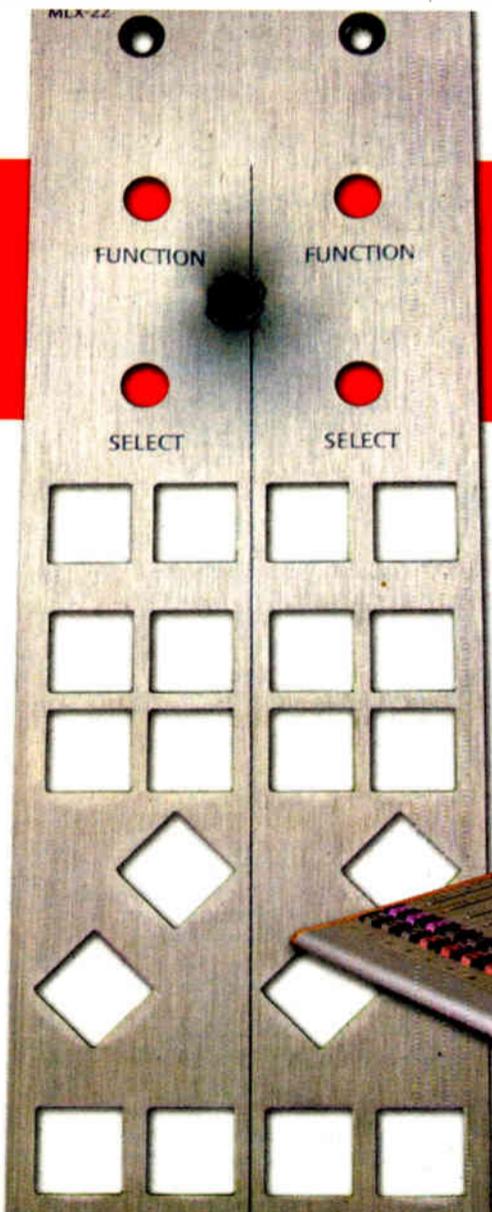
It's unusual, Harper admitted, to receive such a definitive answer as the one his focus groups appear to have given. "It means something; now we need to figure out what," he said. Harper believes more research should be done.

Cox believes a new numbering approach offers benefits. It would help radio market digital as a "new" band, highlights for consumers the need to buy new radios and minimizes confusion with legacy stations.

The change also would minimize tuning delays experienced as consumers tune "down the dial," Cox believes.

Tuning up the dial is straightforward; the receiver tunes in order. Tuning down presents challenges with current HD Radio multicast receivers. Logically, users would want a receiver to tune to the channels in reverse order, beginning with the supplemental channels in reverse order, then down to the main channel. But current units tune

See COX, page 21 ►



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Logitek  
Console Router Systems

# Canada

► Continued from page 18  
adopted it, he said.

Hayes, president of the group, which owns 51 AM and FM stations, spoke during a digital radio session at the annual Canadian Association of Broadcasters convention in November.

"Content is what will drive adoption of any technological solution," he told attendees, believing the promise of technical superiority by promoters of Eureka-147 DAB has failed to convince Canadian consumers, because "there is not an audio quality problem with FM."

As for the appeal of offering text data on DAB receiver displays, Hayes said, Canadians already have access to text messaging on their cell phones.

Hayes declared the only way for digital radio to succeed was for the government to remove Canadian content restrictions from the new medium.

AM and FM stations here must play 35 percent Canadian music to keep their licenses, and format restrictions have kept top-40 hit-based formats off FM.

# Cox

► Continued from page 20

to the main channel first, then find the supplementals, introducing a few seconds of delay into the process.

Changing the tuning and the numbering display is a software change for receiver makers, not a major hardware retooling, Cox believes.

Some focus group participants, identified as early adopters, realized that with the new numbering approach it's possible to program a pre-set button on the radio just above 108 MHz and that by hitting "seek" or "scan," they would hear a virtual HD-R band, Harper said.

Some receiver manufacturers had hoped that the research would include a more hands-on approach for the tuning experience; having people take part in a focus group is not the same as placing an actual radio in front of them, they said. Participants watched a tape with a simple display of the two options.

One receiver maker told RW the disadvantages of the new band approach, such as delays when tuning down the dial, were not presented to the focus groups. Harper said the research was narrowed for the sake of simplicity and discussion. It's easy, he said, for such discussions about HD Radio to go off-course and enter areas "not relevant and difficult for them to understand."

Other radio owners including Clear Channel, Jefferson-Pilot and WBEB in Philadelphia as well as several receiver makers advised Harper on the study design.

Although the study generated questions about process, even skeptics came away from the effort with useful knowledge, several said, information that will be helpful as they work toward subsequent generations of HD-R product.

For example, several focus group participants stated a preference for having channels grouped by format genre.

Such a program guide concept has been discussed among receiver makers and industry participants as a feature for HD Radios. Receivers would group stations by genres rather than by frequencies. RDS receivers have this capability, but only on a per-station basis. A program channel guide would allow the users to see the list for the entire market. 

Without such freedom, Hayes said, commercial radio will not survive in Canada against satellite radio, MP3s and other competitors. "The genie is out of the worldwide media bottle, and none of us can stuff him back in."

Hayes called upon broadcasters to sell the concept of deregulation to the Canadian government. When asked how he would win federal authorities to his side, he said, "I have no idea ... I'll leave that argument to another day."

## King Content

Compelling content will attract listeners to digital radio, said other panelists, who agreed with Hayes. Whether this content is delivered by Eureka-147 receivers or HD Radios does not matter, they said, because consumers do not care about technology platforms.

Skip Pizzi is manager of the Technical

Policy, Media/Entertainment & Technology Convergence Group for a division of Microsoft; he's also a Radio World columnist. He argued that FM did not grow because it sounded better than AM, but rather because it offered different content not found anywhere else on the dial.

Scott Campbell, U.S. media and communications advisor for UK Trade & Investment, reinforced that message.

In reviewing the success of Eureka-147 DAB in the United Kingdom, Campbell cited research by Eureka marketers that showed "68 percent of DAB owners bought their digital radio to get more choice."

"Today IBOC has proven itself," said Charlie Morgan, semi-retired as senior vice president for Susquehanna Radio Corp., who added there were about 600 HD Radio stations on the air, with more added daily.

HD Radio would succeed in Canada

where Eureka-147 has failed for several reasons, he said, including strong support of HD Radio by U.S. broadcasters and the size of the U.S. market, large enough to motivate receiver manufacturers to make HD Radios.

Add the multichannel broadcasts that HD Radio stations are starting to offer, plus the development of surround sound broadcasting, and the point is clear, according to Morgan: It's time for Canada to dump Eureka-147 DAB in favor IBOC.

Glynn Walden, senior vice president of engineering for Infinity Broadcasting and one of the first advocates and developers of the U.S. IBOC system, backed Morgan and added a point of his own for Canadian broadcasters who oppose digital radio. To these AM/FM-loving attendees, Walden said, "There is no future for analog in the digital world," he said. "Analog is not compatible with the digital lifestyle." 



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# Podcasting

► Continued from page 1

since 1999 and podcasting since the fall of 2004. TNC estimated that 700 people, including speakers and press, attended.

Some 30 sessions were offered on topics including podcast production and distribution, marketing, content, hardware, metrics and legal considerations, the competitive media landscape, and finding business models that work in the on-demand world.

The exhibit hall featured approximately 60 booths from companies hoping to capitalize on the growth of the new technology. The included downloadable audio veteran and conference sponsor Audible, as well as established device and accessory makers such as Archos, Belkin and Griffin Technologies, and a number of podcast-specific startups offering hosting and directory services, production tools, hardware and support resources.

## Unconventional

Prominent on the floor were a number of companies known to broadcasters and audio engineers, including names like Telos Systems, Marantz (D&M Professional), Sony, Audion Labs/VoxPro, Adobe and BIAS.

But that's where the similarity to a standard technology-oriented conference ends.

The mood throughout the convention center was something else entirely. Part old-style tent revival meeting, part computer users' group, part business conference and part circus sideshow, the vibe was one of happy chaos as the different worlds of podcasting met and mixed and tried to make sense of it all.

Everywhere, there were digital video and still cameras, audio recorders and microphones. Podcasters and bloggers used the ubiquitous WiFi access and their ever-present laptops to post updates to their sites from every corner of the show.

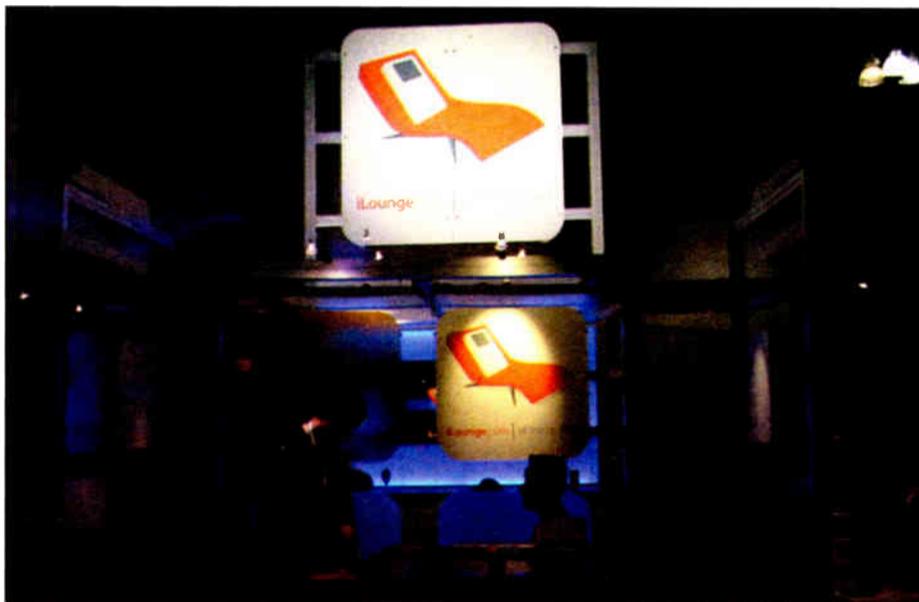
Former MTV veejay and podcasting guru Adam Curry held forth in the Podshow lounge at the Sheraton down the street to recruit new talent, while Doug Kaye exhorted his keynote audience at the convention center to "Change the world."

Chicago drag queen Madge Weinstein, in full regalia, interviewed conference attendees for her podcast as they entered the exhibit hall, watched by the bemused attendees of the adjacent trade show of the Portable Sanitation Association International (or, as one session moderator quipped, "the other portable technology conference").

In one telling example of convergence, the booth of Los Angeles talk-formatted station KFI(AM) was thronged with onlookers for three hours on a Saturday in November as broadcaster/podcaster Leo Laporte conducted a live remote broadcast of his show "The Tech Guy" devoted exclusively to podcasting.

## It's a business

Although the unbridled enthusiasm of the T-shirted true believers was apparent throughout the convention center, their intensity was counterbalanced by a slightly more reserved group of attendees wearing collared shirts. (This being a technology conference in California, ties were in short supply.)



iLounge is a Web site dedicated to all things iPod. The company featured accessories to try out in the booth's 'lounge' and a display of various models of the iPod sold to date.

In ad-hoc conferences in the hallways, whispered conversations in the back rows of meeting rooms and at sit-down power lunches of \$10 sandwiches from the snack bar, there was a common refrain from the collared-shirt set: There's a business to be made here.

These are the folks who look for the dollar signs before getting too excited about technologies. Although wary veterans of the dot-com bubble to some extent had to check their skepticism at the door, participants who spoke with Radio World seemed to find a lot to like in the future of podcasting. A common theme of these conversations with broadcast and business people was how similar the show felt to early dot-com and streaming conferences — though they also seemed to sense more potential for a real business with on-demand portable media.

Several conference sessions focused on

funding models and business trends, and according to panelists, the fundamentals of the on-demand business are strong.

They see the rapid uptake of podcasting by users as a sign that consumers value and want to use on-demand and portable media, when delivered in a convenient way and when content is made easy to manage. Panelists find that the costs associated with production and distribution of content via the Internet are relatively low and can be managed by aggregation. An additional advantage, they say, is that the portable media marketplace for players and accessories is booming, with millions of iPods and other mobile media players already in consumers' hands.

new voices into radio, as radio branches out into podcasting with established programming and talent. A lively session, "How Citizen Media Is Changing the Face of Traditional Media," explored how news programming on traditional broadcast outlets increasingly is looking to blogs, podcasts and other citizen-generated content to complement and shape coverage of events.

Many were surprised that broadcasters weren't more of a presence at the conference, exploring the possibility of moving programming into this new distribution medium. Aside from National Public Radio and some larger public radio stations, very few radio stations were represented.

Some believe that radio stands to gain if stations embrace podcasting. Session speaker Dave Van Dyke of Bridge Ratings discussed recent research his company has conducted indicating that listeners of radio stations that distribute podcasts actually increase their Time Spent Listening to the main broadcast signal once they begin using the podcasts.

The consensus of these discussions was that podcasting (or whatever on-demand, portable audio eventually comes to be called) presents a challenge to radio broadcasters and that they must learn from it and adapt in order to thrive.

## The broadcaster as podcaster

The most impassioned critique and call for broadcasters to change and grow came from broadcaster/podcaster Laporte in his keynote address.

"Playlists and program directors are constrained and constricted. This is why radio is failing," Laporte argued.

He is no fatalist, however. As a long-time broadcaster, Laporte know well what makes radio special. "Radio is the first and best broadcast medium, the original medium. It's intimate, direct ... not like anything else. You're in their head, whispering into their ear."

But, he insists, programmers must always remember that the listener comes first.

"One of the things radio did wrong is that they forgot that they were local. You can't forget to serve your community."

Laporte sees podcasting as a natural outgrowth of this need, although the audience for podcasts are built around ideas and communities of interest, not geography. Things that people are passionate about will draw them together, Laporte says.

"When you come from your passion, that's when you succeed in podcasting."

The organizers are planning another convention for September. 🌐

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PRODUCT EVALUATION

## Harris Acknowledges the Little Guy

*But Compact StereoMixer digital Is Big on Features at \$3,695*

by John Penovich

It always amazes me what can be squeezed into a chassis these days.

I have to admit that when I first opened the box on my new digital Harris console, I felt a bit like the guy in the old AMC Gremlin commercial from the '70s: "Hey, where's the rest of your mixer!?" That may be a bit of a stretch, but like him I became a believer.

The footprint of the mixer — its full name is written as the "Harris StereoMixer digital," complete with italicized, lower-case "digital" — is only 16 inches wide by 17 inches deep and only 4 inches high. This is good news for a smaller station, or a larger station that needs to fit in just one more small production room. In fact, Harris targeted smaller markets with the SMXd, according to Rich Redmond, director of broadcast systems for Harris' BCD Radio Broadcast Systems unit. The mixer was designed for Harris by its PR&E division.

One of the difficulties in designing and bringing a small-format mixer to market is deciding which features to cut in order to make the price point; but it doesn't seem like much has been cut or even overlooked. I'll touch on the highlights.

### Switching channels

The SMXd has seven input channels. Channels 1 through 4 are analog, each switchable between +4 balanced or -10 unbalanced operation. Channels 5 through 7 are digital (AES-3). The digital inputs feature integral sample rate conversion, accepting rates from 32 to 48 kHz. All digital I/O is 24-bit, and internal sample rate and output sample rate is 48 kHz. Maximum analog input and output levels are 24 dBu. External monitor and talk inputs are included.

Channels are stereo (line level for analog channels) except for Channel 1, which is mono; and configurable for a pre-amplified talent microphone. A Talk button and associated output is provided for Channel 1 only. Channels 2 and 3 can be setup for mics as well, and mic channels can be configured to mute the monitors when on. Any one of the inputs can be set up for use with a telephone hybrid or codec, and a mix-minus is provided, both analog and digital.

Each channel has illuminated Program 1 and Program 2 bus buttons, a Cue button, a 100 mm fader and a single illuminated on/off switch. The headphone and monitor controls also each have a fader and common source selection buttons. The on/off switch has a clear removable cap, making channel

ID labeling literally a snap.

Balanced +4 analog outputs are provided for Program 1 and 2 busses, monitors, mix-minus and talk outputs. AES3 outputs are provided for Program 1 and 2 and mix-minus outputs. An end cap-mounted headphone output has its own fader, as does the monitor output. The mixer's meter bridge in



addition to housing the LED PPM/avg meters also has an auxiliary front-panel TRS input for Channel 4.

I/Os on the SMXd are located on the unit's rear panel except the talent headphone output and aux input. It sports silk-screened legends for channels, audio and logic connector pinouts, making cabling and installation easier.

Digital and analog audio and logic I/O use AMP mod IV crimp connectors, with the exception of the start pulse and timer reset output, which uses a DB15 connector. An ample supply of pins and housings is included with the mixer, but you will need to obtain the proper crimper, as one is not included with the mixer.

The power supply accepts 95 to 264 VAC at 50 or 60 Hz. It is a relatively large line lump that connects to the mixer via a 5-pin DIN connector. The connector fit is a bit loose — I'd like to see a connector with mounting screws or some type of strain relief. Proper cable management and mixer installation should prevent problems. A grey aluminum cowl is included for covering the back-panel connections and provides a sleek finished look.

Comprehensive logic I/O is provided in the form of talk and warning tallies, as well as start pulse and timer reset outputs. Tally output closures are active as long as the associated functions are, i.e. talk and mic on; while start pulses and timer reset are momentary (250 ms) closures. Unfortunately there are no stop pulses provided. External talk input also is present, and an optional Harris mic panel is available to control Mic 1 remotely.

The SMXd is sturdily constructed using thick-brushed aluminum for the mixer surface, side rails, hand rest and meterbridge. The end caps are cast with a durable gray

enamel finish. Removing three screws on the back of the meterbridge and lifting the top allows access to two banks of DIP switches used to configure channels for microphone or hybrid/codec use, as well as various metering options.

This little mixer is big on features, but unlike most feature-laden equipment the user interface is about as simple and easy to use as you can get. The spare number of controls belies the amount of thought that went into the design.

Simple things mean a lot. The meters and the faders are calibrated in dBFS, and the faders are marked with a red line at approximately -12 dBFS. This serendipitously corresponds with the reference level where I work. If desired, both peak and average levels can be represented on the meters (this is the default configuration), and the threshold of the bright blue peak indicators also are user-configurable to light at 0, -2, -4 or -6 dBFS.

The meters follow the monitor source selection of Program 1, Program 2, and External or Cue busses; and are large, bright and legible from almost any angle. Even the hue of the green LEDs is pleasant. The rest of the indicators and controls are bright and ergonomic and provide good feedback to the operator. For example, the channel configured for hybrid use blinks its bus assignment button to indicate from which of the two main busses the mix minus is being derived.

During the couple of months I was able to use the SMXd I had the opportunity to see how it performed with a variety of sources. It never disappointed.

The sample rate conversion works like a charm — MiniDiscs recorded at 44.1

Flash Mic:  
First Look  
Page 28



### Product Capsule: Harris StereoMixer digital

#### Thumbs Up

- ✓ Clean uncluttered interface
- ✓ Solid design and construction
- ✓ Comprehensive feature set
- ✓ Compact size

#### Thumbs Down

- ✓ Unsecured power supply DIN connector
- ✓ No logic stop pulse

Testing configuration: EV RE-20 mic; Grace Design 101 mic preamp; Telos One Hybrid; Tascam MD801R MiniDisc; PC with LynxOne sound-card using AES I/O; Dynaudio BM5A monitors

Price: SMXd Tabletop \$3,695  
SMXd Rackmount \$2,995

CONTACT: Harris Corp. in Ohio at (800) 622-0022 or visit [www.broadcast.harris.com](http://www.broadcast.harris.com).

kHz and input via AES-3 input to the mixer were converted on the fly. Logic control was easy to set up; turning on the hybrid with its associated Channel On button was as simple as making an interface cable. Audio quality is excellent and the unit is quiet. Fader travel is smooth and has a solid feel. The buttons also seem robust and should last many years.

The folks at PR&E and Harris have built a great small mixer with the StereoMixer digital. Clearly intended for smaller stations, its comprehensive feature set and relatively reasonable cost should make it a first choice for engineers in need of a compact mixer. At \$3,695 list, the SMXd is not exactly cheap, but when you take into account all of the features, the build quality and the performance of the unit compared to other small format consoles the SMXd holds its own. A rackmount version also is available.

John Penovich, CEA, CBNT, is a senior technician for Radio Free Asia.

PRODUCT GUIDE

## Audion Labs Ships VoxPro 4.0

Audion Laboratories releases version 4.0 of its VoxPro software this fall.

The company says it includes an "overhaul" of the file format, networking protocols and the way user accounts and settings are maintained in an effort to ease station/system reconfigurations.

Added features include markers, Automatic Gain Control, auto-network, zoom and improved effects.

Users can mark while recording or playing back. VoxPro shows a floating window with time line position and marker titles. Right-clicking a title allows note editing and auto-play from

the marker.

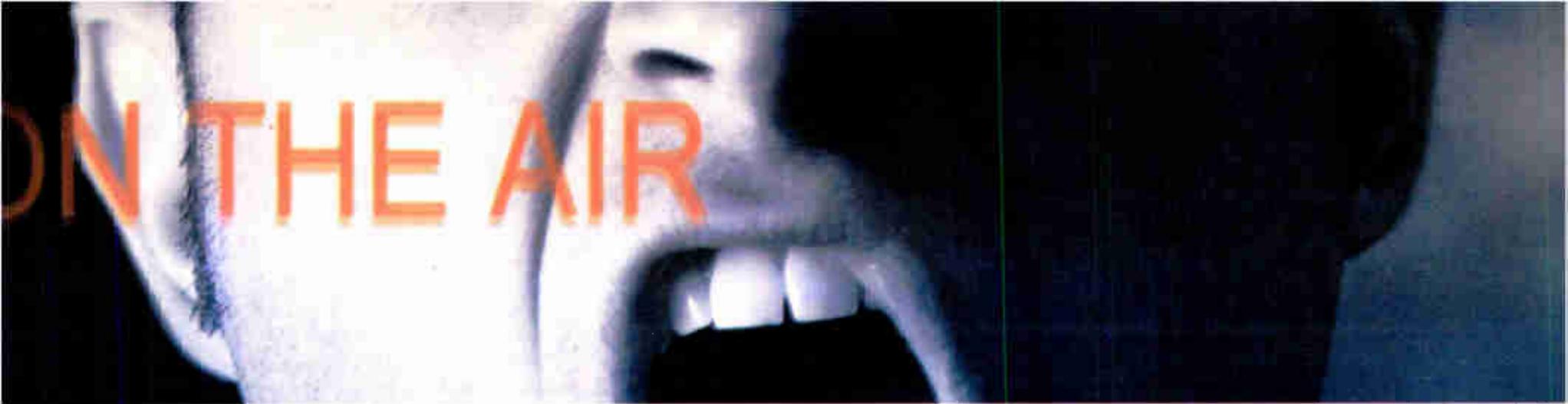
AGC limits the loud on either or both channels. The peak program VU meter with a 72 dB range also is new.

Auto-network enables users to network VoxPro machines. VoxPro workstations connected to a station's LAN detect each other and stay connected, so users can access their password-protected accounts from another VoxPro workstation.

The 100X zoom feature facilitates editing. Users can toggle between Zoom and Normal modes.

Additional highlights include auto-import, which imports media files that appear in a user-specified folder; E-Z Export, which exports files to a particular format; and improved time stretching and pitch shifting effects.

For more information, visit [www.audionlabs.com](http://www.audionlabs.com).



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The BD600 offers two different methods of delay buildup and

reduction: Eventide’s catch-up and catch-down system, and an exclusive fast-entry-and-exit feature which allows starting a broadcast with the delay already built up to a safe amount and ending it with a rapid reduction of delay.

For HD, the BD600 offers MicroPrecision Delay™ mode which allows up to 10 seconds of delay to be adjusted in real time in 100 nanosecond increments. This is useful for synchronizing analog and digital signals while on-air, without audible artifacts, to maintain a seamless user experience.

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World Radio History

## PRODUCT EVALUATION

# Sony Forges on With SF Version 8.0

Now From Sony Pictures Digital, Sound Forge Adds Audio Scrubbing, Scripting, VST Plug-In Support

by Read G. Burgan

I began using Sound Forge 10 years ago. Back then it was the primary product of Sonic Foundry. There were few other digital audio editors for the PC Windows platform.

From the beginning, Sound Forge has been a stereo/two-track digital audio editor and has remained so as other products added multi-channel support. In response to the need for a multi-channel editor, Sonic Foundry added the Vegas editing package, which eventually evolved into a video editing program.

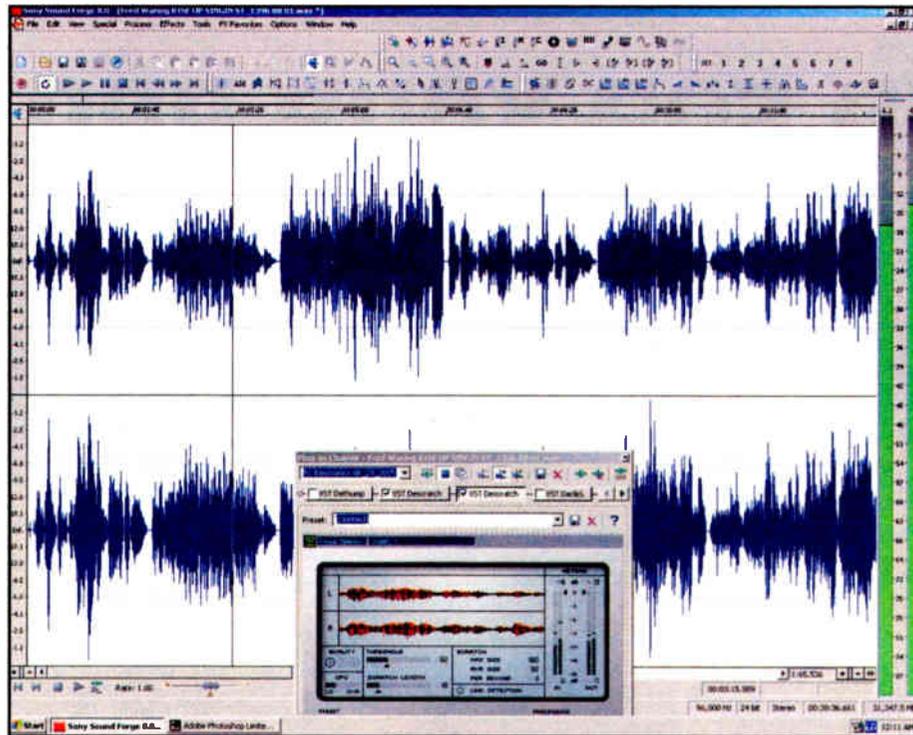
For many years Sound Forge has been the audio editor on which I rely. It is intuitive and stable, and Sonic Foundry regularly improved both Sound Forge itself and the many tools bundled with it.

Two years ago Sonic Foundry sold Sound Forge and related software assets to Sony Pictures Digital. There is always apprehension when another company takes over an established product. Will the same quality and innovation continue? Or will the product stagnate as the new owner concentrates on other products?

## Variations on a theme

Version 8.0 continues the tradition of a high-quality, stable digital audio editing package that adds sufficient features to keep it competitive with other two-channel, professional digital audio editing

software. Here are some of the more significant additions.



The plug-in chainer of Sound Forge 8.0 runs VST plug-ins in addition to the Direct-X plug-ins supported by previous versions.

Sound Forge traditionally separates the audio editing process from the CD burning functions, which meant you needed two programs to produce an audio CD; Sound Forge to do the audio editing and

CD Architect to produce and burn the final CD.

Sony continues this approach, but a full version of CD Architect 5.2 is included with version 8.0. You can export files directly from Sound Forge to CD

Architect without having to first open CD Architect and then manually import the files.

Under the File menu in 8.0, select "Export to CD Architect." CD Architect will start and the open file in 8.0 will be selected automatically. If you have created regions in the file, they will be used to create the CD tracks.

I have found CD Architect to be one of the premier programs for burning CDs, and I welcome this feature. It saves time, I use it frequently and it works well. CD Architect continues to provide the power and resources I need to burn various kinds of audio CDs.

Sound Forge 8.0 includes Audio Stream Input/Output support for sound cards with an ASIO driver. While ASIO was developed primarily to facilitate the use of sound cards in multi-track audio, it enables the audio editing software to communicate with the sound card hardware more directly and provides a lower latency.

In many cases, this will result in better performance and might prove the difference when recording and playing at higher resolutions and bit rates — 192 kHz/24 bit, for example. The higher the resolution and bit rate, the greater the strain on a computer's resources and the more likely there will be gapping and glitching.

I had some problems with version 8.0's ASIO support using the initial release. I have not had any problems since installing the latest upgrade. When using 8.0, I recommend you check the Sony Web site to ensure you have the latest version installed.

Version 8.0 also provides the option of selecting the Microsoft Sound Mapper and the Windows Classic Wave Driver. This lets you decide the best means of addressing your sound card.

The ASIO driver relies on the sound

## Product Capsule: Sony Sound Forge 8.0 Digital Audio Editing Software

### Thumbs Up

- ✓ Integrated Batch Converter
- ✓ VST Support
- ✓ ASIO Audio Driver Support
- ✓ Scripting
- ✓ Keyboard Mapping
- ✓ Direct Export to CD Architect

### Thumbs Down

- ✗ Integrated Batch Converter is not compatible with previous batch converter scripts

Price: Packaged: \$319.96  
Downloaded: \$299.96  
Upgrade From Previous Version: \$149.95

CONTACT: Sony Media Software in Wisconsin at (800) 577-6642 or visit [www.sonymediasoftware.com](http://www.sonymediasoftware.com).

card's interface for selecting the amount of buffers while the other drivers let you make that choice using Sound Forge's own preference menu. I found that sometimes when using the Plug-In chainer with a lot of plug-ins, the traditional drivers provided better playback performance.

Most digital audio editors include some form of batch converter. Sound Forge has had a stand-alone batch converter for several years. A batch converter provides a means of automating routine processing tasks.

For example, I routinely use the Sound Forge Batch Converter 5.0 to restore files with similar noise characteristics. My batch files include a series of impulse filters, a normalize function and a noise reduction filter with a pre-set noise print. I can let the Batch Converter accomplish the basic digital restoration on a number of files while turning my attention to other matters.

With version 8.0, Sony takes the Batch Converter from an independent stand-alone product to an integrated menu within Sound Forge itself. The advantage to Sony is it no longer has to support a separate software package to provide a batch converter. The advantage to the user is one no longer needs to open a separate program.

The disadvantage is if you used the previous standalone Batch Converter, you will not be able to use the previous Batch Converter scripts, as they are not compatible with the integrated Batch Converter. For someone like myself, that means I will eventually have to create several dozen new batch scripts to replace the ones I have been using under Batch Converter 5.0.

The good news is one can continue using the old version, as there is nothing inherent in Sound Forge 8.0 that renders it unusable. Eventually changes in how processes like Direct-X plug-ins work may render the old version unusable. By that time one should be able to create the new scripts required for the integrated Batch Converter.

## Additional highlights

Audio scrubbing has been added in version 8.0. "Audio scrubbing" derives its name and function from the days of reel-to-reel recorders when we would locate a particular portion of audio by manually rocking the tape back and forth across the

See SF 8.0, page 28 ▶

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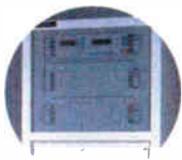
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**HARRIS**

World Radio History

# FlashMic Connects Reporters, Subjects

by Carl Lindemann

Since HHB unveiled the DRM85 FlashMic at the IBC show in Amsterdam in September, the buzz about this microphone with integrated Flash recorder has pleased Sennheiser USA Product Manager Rob Blumenreder. Sennheiser distributes HHB products in the USA and Blumenreder's task is to introduce it here.

design that people respond to," Blumenreder said.

The FlashMic's anticipated ship date as of press time is this month, January; we'll have a product review soon. But here are my first impressions.

My first look at the FlashMic reminded me of a celebrated observation from science fiction writer and futurist Arthur C. Clarke. He said that a technology, sufficiently advanced, is indistinguishable

**There are lots of recorders with built-in mics, but this is the only microphone with a built-in recorder.**

— Rob Blumenreder

The day after the IBC launch, he Googled the new product to gauge interest.

"It had already scored 28,600 hits, the kind of visibility typical for classic audio products with years on the market. This is one of the most highly anticipated audio products in some time," said Blumenreder. Of course, he's paid to say those kind of things. But the product is sufficiently unusual to justify a great deal of interest.

According to Blumenreder, the first stateside appearance at the AES show only intensified the interest. The fact that the units shown have only been preproduction prototypes with just 10 seconds of recording time hasn't dampened enthusiasm. Sennheiser's champagne toast press conference at AES was packed, greater than the company had anticipated.

"There are lots of recorders with built-in mics, but this is the only microphone with a built-in recorder. There's a fundamental simplicity and elegance to the

from magic. Here, HHB has managed something like that — a magic wand for field recording.

The miniaturization of memory and audio processing has gotten to such a level that the mechanism is nearly transparent, with the digital recorder integrated into the end of a standard-sized field mic 9.6 inches long and weighing 13 ounces. This design eliminates the inherent issues with standard recorder/microphone combinations — there's no tangle of wires, or having to look down and away from your subject to check recording levels.

The omnidirectional condenser microphone is an adaptation of Sennheiser's K-Series capsule. The recorder built into its base integrates a gigabyte of memory, enough to record better than three hours of audio at the highest, uncompressed quality. MPEG-1, Layer 2 (compressed) recording at 256 kbps yields some nine hours. Dropping down to 128 kbps saves over 18 hours. The company claims a battery life of six or more hours for a pair

confess I am not familiar with those scripting programs, so I am not able to provide an evaluation of how well this feature works.

On the plus side, scripting should provide the qualified user with the ability to greatly automate many common editing tasks. For those who are familiar with one of the supported scripting languages,

Sony provides sample scripts on its Web site in a zip file that can be downloaded from: <http://mediasoftware.sonymovies.com/download/step2.asp?DID=591>.

As one who is not familiar with a scripting program, I would like to see Sony implement a scripting program based on keystrokes, offering much of the same advantages for those of us who haven't mastered a scripting language.

Version 8.0 also has added customizable keyboard mapping. As with most audio editors, Sound Forge has had



HHB Flash Mic

of standard AA cells.

The challenge with this level of miniaturization is creating controls that work for normal-sized fingers. The FlashMic achieves a simplicity and depth that are likely to go unsurpassed until a voice-operated technology makes our pushbutton era obsolete.

Users can access options manually by working through various menus, but the preferred method is to sidestep this and program these through the FlashMic Manager computer applet. Here, instead of being limited to the few buttons that will fit on the unit, you open up the computer's interface.

There are nine user presets allowing for the choice of recording quality, pre-

numerous keyboard shortcuts that can speed up routine tasks. With the addition of keyboard mapping, the user can create personalized keyboard short cuts. If you want, you can reassign the keyboard shortcuts that come with the program. This is one of those features that can reduce the time necessary of repetitive tasks.

**Version 8.0 continues the tradition of a stable digital audio editing package with sufficient features to keep it competitive.**

Version 8.0 includes support for VST plug-ins. With previous versions, if you wanted to use a VST plug-in you had to use a third-party wrapper utility that would provide an interface enabling Sound Forge see the VST plug-in as a Direct-X plug-in. I have used a variety of third-party VST plug-ins successfully in version 8.0 and find the VST support a welcome addition.

Additionally, version 8.0 is being offered with the Noise Reduction 2.0 software bundle.

record buffer, gain or automatic gain control, backlighting on the LCD for monitoring levels, plus various other configuration options. In the field, you can manually set the presets, but it's much easier to simply toggle between the nine configurations you can preprogram into it.

This arrangement makes the most of the limited real estate available. This leaves room for the integrated connectors including a 1/8-inch headphone jack and a high-speed USB 2 port.

The HHB FlashMic design opens intriguing vistas for what the future of field recording holds. If this model takes hold, perhaps the recorder becomes just another mic accessory, like a wireless module. It is possible this integrated design might give way to a plug-in version that could be used with most any microphone. Or later, as WiFi and other wireless broadband connectivity become ubiquitous, the idea of needing to store field audio in the field may become outdated.

Turning the mic into an IP-connected endpoint allows reporters to deliver audio data directly to the remote studio or production computer instantaneously. We're still a while away from achieving the robust connectivity needed to make that possible, but the inspired design of the FlashMic provokes such thoughts. It's our first glimpse of reporters unencumbered by ENG technology and able to focus on more important things like connecting with their subjects.

One drawback is the price. The MSRP on the unit is \$1,400, which is very pricey. Part of the problem is the value of the U.S. dollar vs. the Euro. While reporters using this on, say, the campaign trail will be the envy of their peers, it's a bit precious. I'd sure hate to drop it.

Also, the dedicated design is a bit limiting to a degree. It would be nice to have a long-handled version for working crowds — when you need that extra "reach."

The HHB DRM85 FlashMic is an exciting concept; I'm eager to try it out and see if it holds up to expectations.

Carl Lindemann is a frequent contributor to Radio World. 

The Noise Reduction 2.0 plug-in collection features four DirectX sound restoration plug-ins: Vinyl Restoration, Noise Reduction, Clipped Peak Restoration and Click and Crackle Removal. The processing is suitable for salvaging vintage vinyl recordings and rescuing problem tracks.

For basic restoration solutions, use the Noise Reduction plug-in preset parameters, or develop and save custom settings.

In summary, I had set out to test Sound Forge 8.0 with some concerns. What I found was encouraging. Sound Forge 8.0 continues its decade-long tradition of providing a high-quality, two-channel digital audio editing package for radio production and editing, and independent audio production studios, while providing new features to increase productivity.

For a rundown on the other new features in version 8.0 and minimum system requirements, go to [www.sonymediasoftware.com](http://www.sonymediasoftware.com).

Read Burgan is a former public radio station manager specializing in digital audio restoration, and a frequent contributor to Radio World. He can be reached at (906) 296-0652 or via e-mail: [rgb@chartermi.net](mailto:rgb@chartermi.net). 

## SF 8.0

► Continued from page 26  
playback head by manipulating the supply and take-up reels.

In version 8.0, audio scrubbing allows one to move the cursor across a file at varying speeds to find a particular spot quickly. The nice aspect about Sound Forge's audio scrubbing is there are several ways to do it including the audio scrubbing icon at the bottom of the screen, three keyboard commands, the audio event locator above the file or manually dragging the cursor while pressing the Control key.

I found that each method works fine, but my personal preference is the use of the three keyboard commands. For those of us who are radio veterans, audio scrubbing is both a pleasant reminder of and a vast improvement over the many hours we spent editing on a tape recorder.

Sony has added application scripting to Sound Forge 8.0, which makes it possible to automate repetitive tasks. To make use of the scripting feature, the user must be knowledgeable in a scripting language like JScript, VBScript or C#. I



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BRIC technology can also deliver wideband audio over 3G cellular data networks like EV-DO and UMTS, as well as the increasing number publicly available of Wi-Fi hotspots. The forthcoming Portable ACCESS will provide easy connection to data cards supporting these services. Studio ACCESS can also be adapted to work over these services by using a special external adaptor. Contact Comrex for more information on this.

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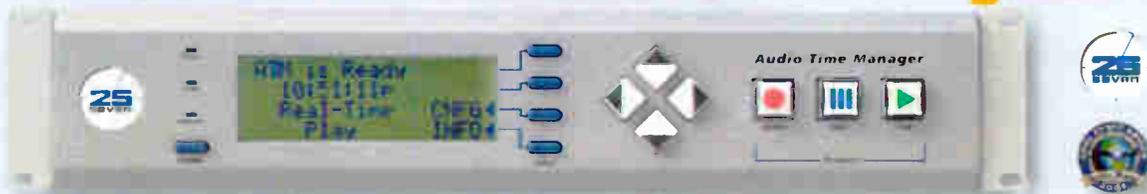
**Henry Engineering USB Matchbox and USB Match Plus**

For use with your computer, the new USB Matchbox gives you pristine audiophile performance without the noise, hum and interface problems that you can get with built-in sound cards. It provides XLR input and output, as well as an RCA Aux input and converts them to a digital signal to send via USB to your computer, or vice versa. The USB Match Plus gives you the same great quality of the USB Matchbox, but also adds some extra features to enhance the sonic experience, such as easy-to-read level meters and a headphone monitor amp/jack so you can quickly evaluate your audio quality. **NEW!!** Shipping in February.

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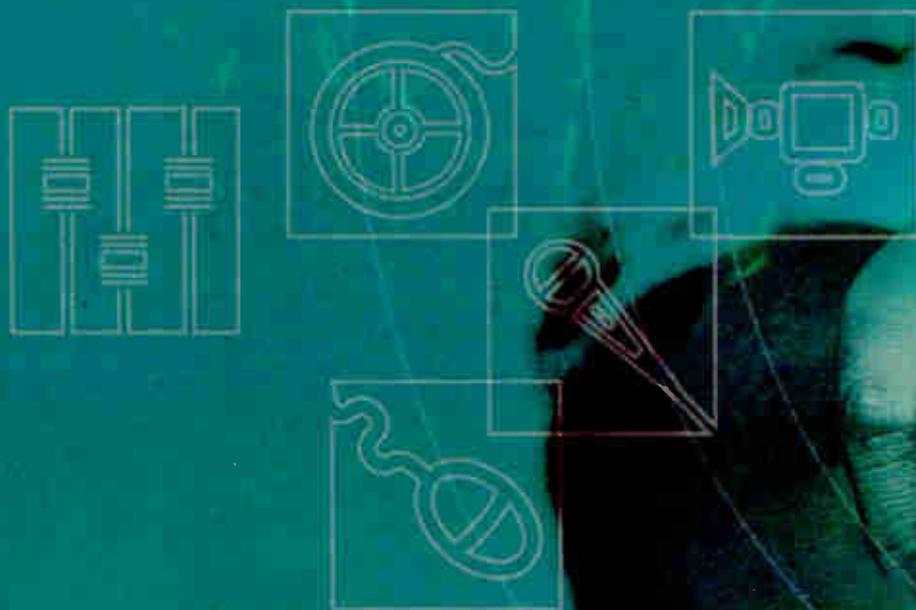
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# Buyer's Guide

Radio World

Profanity Delays, Logging &amp; Timeshifting

January 18, 2006

USER REPORT

## Network Trusts BD500 to Catch Slips

*Air America Radio Uses Eventide for Protection Against Comments of 'Politically Charged' Guests*

by **Juan M. Diaz**  
**Vice President of Technical Operations**  
**Air America Radio**

**NEW YORK** The year 2004 was an interesting one for people in my position — some might say too interesting. It was the year of the infamous Super Bowl Janet Jackson costume malfunction. The nation was mortified and the FCC reacted swiftly by raising its scrutiny and threatening ruinous fines.

Being tasked with operating a new nationwide radio network in this super-charged environment was chilling. The fact that we are the country's first openly liberal talk show network featuring some of the world's most outspoken progressive talk show hosts and callers only heightened our anxiety.

It didn't take much imagination to predict that such a politically charged format would serve as a lightning rod for passions on both the right and left. And with startup finances stretched to the limit, airing just one profanity could prove fatal.

As Air America Radio's vice president of technical operations, it was my responsibility to build the right kind of protection. While I was faced with hundreds of equipment decisions, none was more critical than protecting us from airing language that would result in massive fines.

We also were committed to producing reasonable, thoughtful and sincere content rather than spew hate and obscenities, which was just as important to our staff and backers as a new network. One thing that was crystal-clear from the start: We needed a profanity delay on which we could bet our future.

My primary criteria for equipment selec-

tion are reliability and proven performance. My philosophy is to equip studios with the best gear from day one, so when I arrived at Air America Radio I was pleased to find



Juan Diaz at Air America Radio's new Manhattan facility.

Eventide profanity delays in place. I had used several of the company's delays at my previous station and was convinced of their reliability. They were in use from 1998 to 2004 without failure.

### Every second counts

Recently, we moved operations into a permanent home located in midtown Manhattan. Our new full-service facility houses all Air America Radio operations nationwide out of a central command studio that consists of two talk rooms, one control room, one production room and one news room.

The Eventide delays are located in the

central control room and monitor the studio's 24-hour programming schedule. With Eventide's remote control functions, the production staff is able to control the delays through an SAS Rubicon work surface, enabling producers to control the delays from any studio room.

Four Eventide BD500 broadcast obscenity delays provide reliable, uniform performance throughout Air America Radio operations, with up to 40 seconds of delay time. The first two units are used for the national broadcast, one live and one as a failsafe backup. A third unit is used for Air America Radio Syndication, a service provided to local market radio partners that broadcast select Air America Radio content. The fourth unit is used for WLIB(AM) broadcast, the local New York station and flagship home of Air America Radio that airs live weekend content.

With so many of Air America Radio shows having call-in segments, diligent pro-

gram screening is imperative. Eventide provides the backbone of this screening process from a central location at the New York studio, enabling Air America Radio's producers to have control of every second of programming.

Centralizing our content monitoring under one roof with Eventide broadcast delays has made our production process nearly effortless. For instance, Tom Hartman hosts a show out of Oregon via ISDN and we channel live callers through the delays out of New York. The result is a seamless and secure broadcast, which will be invaluable as we continue to add talent and shows from around the country.

Our entire broadcast air chain is delayed by 10 seconds across the board. This gives us the ability to control each second of content. With Eventide's Rebuild and Ram-Up features, we don't have to worry about gaps to bring our broadcast up to speed. The delays have been up and running 24 hours a day since we launched in March of 2004 and they have worked well.

Our new network was faced with skeptics who doubted a progressive talk network would attract enough listeners to be viable. We knew we had to have "appeal." With the profanity delay keeping us out of trouble, we used Eventide Eclipse effects processors to create unique sound effects and voices for shows and promotional spots.

The Eclipse, with its 90 effects algorithms and 390 presets, is used as the go-to effects box if talent wishes to provide a playful alternative to the traditional talk radio format. Our talent includes some of the most creative (and funny) people I've ever had the pleasure to work with. They use the Eclipse to alter their voices during skits or promos. They will have one normal mic and one channeled through the Eclipse to create a great back-and-forth effect.

Eventide's newest broadcast obscenity delay is the BD600, which offers 80 seconds and features a Panic feature that allows a .WAV file stored on a Compact Flash card to be played when the Panic button is hit.

See EVENTIDE, page 33 ▶

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World Radio History

## USER REPORT

# Cluster Taps Prophet for Logging

*DigiLogger Skimmer Enables Airchecks, DJ Critiques, Logs Competition*

by **Chris Karb**  
Chief Engineer  
Clear Channel Asheville

**ASHEVILLE, N.C.** The squeals from the Tascam 112 transport mechanism told me I should have left it in the dusty closet where I found it.

The country station was complaining about how long it took to find their breaks on the VCR tape they recorded each morning to make the promos. The new AC's regional PD was screaming for airchecks. The operations manager needed to critique the jocks for all three FMs. There had to be a better way.

So I called Prophet Systems. Being a Clear Channel cluster in Asheville, N.C. — home to WKSF(FM), WWNC(AM), WQNS(FM), WQNQ(FM), WPEK(AM) and WMXF(AM) — there was no shortage of Prophet gear here. And we already knew the Tech Support folks quite well.

So we worked with Prophet software developer Dustin Bond on a skimmer/logger.

## Performance criteria

Four applications were key.

First, it had to toss off production-quality files when any of the three stations' main mics were open. Second, the stations needed to be able to drag these into Adobe to edit for promos. Third, the files had to be easily e-mailed to clients as live-read confirmations. Fourth, the OM needed to be able

to conveniently listen to each personality on each station for critique purposes, perhaps burning a CD to hear on the ride home. And the air personalities needed to hear how those breaks really sounded.

The DigiLogger does all this plus long-form logging. We set it up to make 32 KB stereo WAV files as a

pressed formats, so the single computer easily handles all three stations. But the DigiLogger will produce just about any file format at any bit rate you could want.

We used a 2.4 GHz processor in an old HP box we had and upped the RAM to 1 GB. We added two more sound cards to have simultaneous inputs for each of the three stations, and set the recording parameters for each from the Hardware tab in the sys-

**After insisting all they wanted was skimming, and after using the system**

**for two months, the OM has decided long-form logging of the competition was necessary.**

skimmer for each station, directly from the unprocessed audio out of the automation switcher. We don't want to sacrifice anything in the promo production process. The files may be larger, but storage is cheap and quality is important.

The PC's DB9 com port connector accepts contact closures when any of the three main mics are open and triggers the recording process. An easy set-up routine allows assignment of contact closures to the appropriate recording process. The WAV files require less processor energy to produce than com-

puter properties folder. You want to be sure the record monitor and playback are muted for each sound card or you will go crazy for the two hours it takes to figure out why you are hearing everything all at once.

DigiLogger can be set to run as a service so it starts up running after a power failure. Our PC hides in a closet — not as dusty as the one where I found the cassette player — without even a monitor, keyboard or KVM switch. We VNC into it every once in a while to be sure it is still running.

As direct PCM, the WAV files con-

sole control surfaces. Fill, Empty and Dump functions can be programmed into the control surface soft-keys or activated via external buttons. The delay also can be controlled from a PC via Logitek's vScreen program or the vDelay IP client program.



The vDelay PC program can operate the SharAttack delay function.

Machine start and stop commands can be linked to the audio delay time. Pressing a start button while operating in delay mode causes the machine to start at the end of the current delay period when the associated audio exits the Audio Engine. The company says this allows the implementation of downstream ad insertion without requiring an extra operator.

Users of Logitek's Console Router Systems do not need to purchase external delays, as profanity delays are incorporated into the SharAttack processing card. Logitek says the ability to control the delay functions from the control surface or via PC also is useful.

For more information, including pricing, contact Logitek Electronic Systems in Houston at (800) 231-5870 or visit [www.logitekaudio.com](http://www.logitekaudio.com).

ten to a text file that can be imported to a spreadsheet or a text editor.

DK-Levelread software also can be used for logging audio levels in post-production to secure the audio quality of program material.

For more information, contact DK-Technologies in California at (800) 421-0888 or visit [www.dk-technologies.net](http://www.dk-technologies.net).

## Logitek Incorporates Profanity Delays Into Consoles

Logitek's line of Console Router Systems performs profanity delay functions in addition to digital audio console and X-Y routing functions. The company says the functions are enabled by the optional SharAttack processing card for the Logitek Audio Engine.

Each SharAttack card includes two stereo profanity delays with a maximum delay of 10 seconds each. An Audio Engine can accommodate two SharAttack cards, providing support for up to four independent profanity delays. The delay length is user-adjustable and the multistep dump is fixed at 4 seconds per step.

A large bargraph with numeric display of the delay length is available on the Remora, Numix and Mosaic con-

tain all the audio found in the original for broadcast-quality production. The individual files are held on a 30 GB drive, and are automatically archived every two weeks to a second 80 GB drive. Set up is a snap from the DigiLogger front-panel screens. Present usage rates indicate that we'll get six months or more of archive space for the three stations — more than enough.

Files can be burned to CD, or saved as MP3s and e-mailed to clients with ease. No more remembering to start the 360 Shortcut or cassette before a live read.

There were several minor software issues, like lock-up when multiple mics were simultaneously turned on, but Dustin sorted those out in short order. Our system hasn't crashed since we did the final update in October.

The DigiLogger dates and time-stamps each audio file, and places it in the folder of your choice. We have arranged them separately for each station, in both recent and archive folders. The DigiLogger includes a built-in Web browser with a player for easy access and listening.

The staff also can access the files directly from our network with their media players. All files are selected to be read-only, so irreverent breaks can't mysteriously disappear before the OM hears them.

Everyone appreciates the ease and immediate access of the DigiLogger. Procedures that used to involve many steps and much hunting and pecking are now just a few keystrokes. Dragging a file into Audition beats trying to find it on a long-form recording, and then recording it into the editor.

So after insisting all they wanted was skimming, and after using the system for two months, the OM has decided long-form logging of the competition was necessary.

We have ordered an FM tuner card. The work of the Electron Shepherd is never finished.

For more information, including pricing, contact Prophet Systems Innovations in Nebraska at (877) 774-1010 or visit [www.prophetsys.com](http://www.prophetsys.com).

## TECH UPDATES

## DK-Levelread Monitors, Logs 16 Signals in MSD

DK-Technologies debuted a software product designed to help broadcasters monitor audio levels emanating from the station and transmitter.

DK-Levelread Windows-based software works in conjunction with the company's MSD meters including the MSD600M++, PTO600M, PTO660M and the PTO660M-LS, provided they are running the DK-Levelread software connects to the Master Stereo Display using a serial port, enabling it to read the meter's PPM levels.

The software works by monitoring and logging up to 16 audio signals in the MSD, with each log entry separately time-stamped to make it easier to spot problems. Overload and underload (if the signal is too high or too low) are indicated in the level log. Thresholds can be set from -95 dB to 0 dB full scale and an audible alarm can be triggered if an overload or underloads/dropouts are occurring.

The company says the logging interval can be as little as one second to as much as four hours and when logging stops, a graph of each channel is produced for spotting errors. Data from the level log can be viewed in DK-Levelread or writ-

## TECH UPDATE

## Digital Juke Box Lets Stations Log Competition

Digital Juke Box offers its Multistation Audio Logger software, which records up to eight radio stations in mono on one PC. Broadcasters can record their stations along with the competition; the software records to MP3, WAV, OGG, WMA, AU or AIFF files.

Users can select record sample rate, bit rate, days and hours. Files that are 15, 30 or 60 minutes can be recorded.

The company says the Multi-Station Audio Logger uses multiple inexpensive audio cards. It requires a PC, Windows XP, 512 MB memory, any speed above 1.5 GHz and at least a 40 GB hard drive.

A free trial can be downloaded from the company's Web site. The Multi-Station Audio Logger retails for \$299.

For more information, contact Digital Juke Box in Ohio at (888) 662-4799 or visit [www.digitaljukebox.com](http://www.digitaljukebox.com).

TECH UPDATES

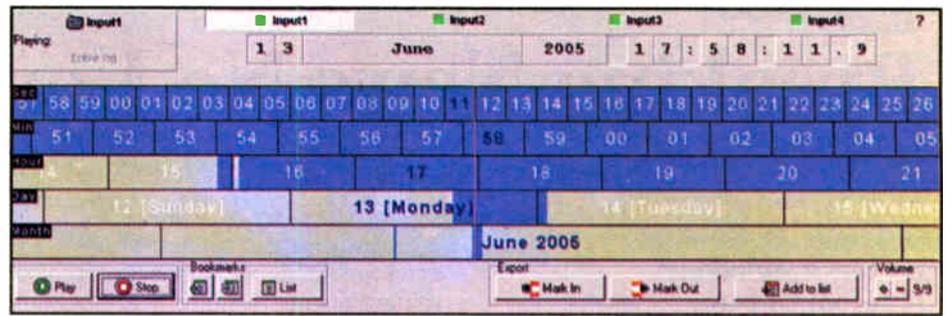
## BE AVLogger Records, Marks, Exports Audio

Broadcast Electronics says its AVLogger audio-capture and archiving module is suitable for long-term storage or immediate airchecks.

AVLogger is capable of recording audio feeds from the studio console or off the air. It can record at various bitrates and com-

pression algorithms for short- as well as long-term archiving. Audio segments can be marked and exported in their original format or as PCM audio. Broadcasters can configure AVLogger to record multiple sources at once; or independently record left and right inputs on an analog source, each at different compression rates.

AVLogger's interface, bookmark feature and event toggle offer navigation and access to archived audio, which can be played back over a network or Internet connection. The module has file markers that are used for logging events such as the opening or closing of a microphone, and a timeline menu that lets broadcasters easily log audio by month, day, hour, minute and second. Users can define personal bookmarks for auditioning audio segments stored on a local hard drive or at multiple station locations, FTP sites or Web sites. Shortcut buttons let them



AVLogger Timeline Interface

move between locations without restarting the application every time. AVLogger also e-mails information to multiple e-mail and SMS addresses.

Audio files can be archived to removable media such as CD-ROM, or transferred to another local or network drive or to an FTP site.

BE says the module is compatible with major automation systems and can be purchased as a standalone application or integrated into the BE AudioVault digital media system.

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

## Pristine Blackbox Has 'Virtual Radio' Player

Pristine Systems' Blackbox is a digital audio logger, monitor and alert system that features up to 16 stereo channels of logging. Users can choose from various WAV audio devices as well as AM and FM tuner boards. The company says most popular audio storage formats are supported.

Blackbox is suitable for non-stop recording, proof of program and commercial content, monitoring your station's performance as well as the competition's and reviewing the performance of talent. Time-based and microphone Skimmer modes are included.

In addition to standard audio logging functions, when Blackbox is used with the 87xx series of AudioScience tuner boards, RF signal strength monitoring and alarm functions are available to alert the appropriate person and respond to off-air conditions. Blackbox also monitors audio level on selected channels and responds automatically in the event of dead air using the same alarm system.

A "Virtual Radio"-style player allows switching between multiple stations during playback as though the user were listening to a radio in real time. Users can listen to their stations or market history on a push-button radio, and switch between channels to hear what each station was playing at that time. This feature is available for operation on multiple desktops over the LAN.

Other features include a time-shift recorder for recording programs for later playback, a repeat broadcast recorder for recording live programs for "repeat" playback and "Best Of" show recorder.

For more information, including pricing, contact Pristine Systems in California at (800) 795-7234 or visit [www.pristinesys.com](http://www.pristinesys.com).

## Eventide

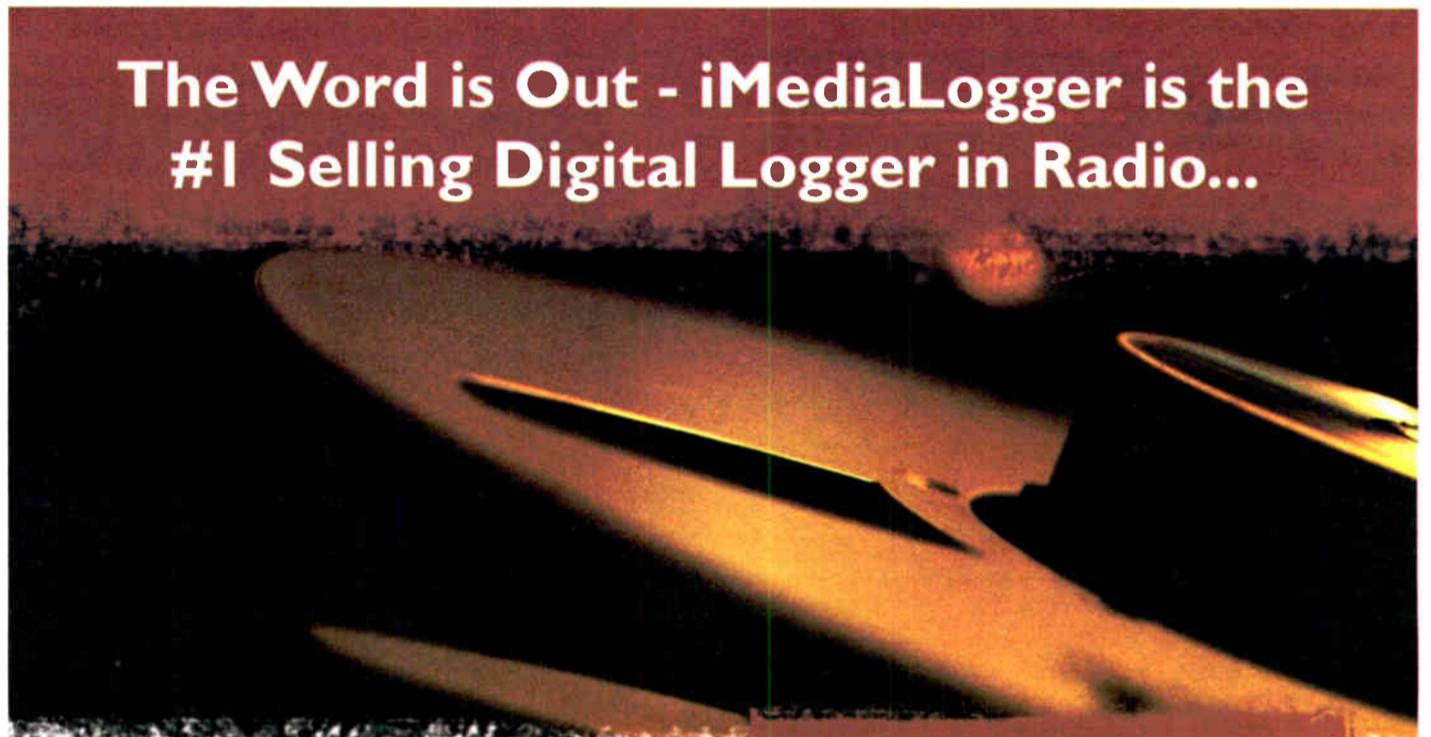
► Continued from page 31

While the file, which may be a jingle, station ID or other message, is played, the delay buffer is rebuilding; allowing programming to continue as soon as the jingle has completed.

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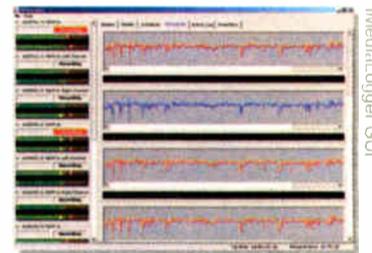
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- ✎ Supports non-proprietary computer hardware and audio cards
- ✎ Includes a dynamic built-in web browser so any one on the local network can instantly access the files via a web browser



iMediaLogger GUI



Web Browser Interface

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USER REPORT

# Breaking News No Longer Broken

*Clear Channel Station Uses 25-Seven Systems' ATM To Capture, Playback and Join Network Shows*

by Jeff K. Williams  
Program Director  
KTMS(AM), KIST(AM),  
KSMA(AM) & KVEC(AM)  
Clear Channel Radio

**SANTA BARBARA, Calif.** No matter what piece of equipment we may have had at our disposal, one thing many news/talk stations have a hard time controlling is timing of live news and useful information for our listeners.

We're all familiar with the infamous news conference that was supposed to last only 25 minutes, but lasted more than 45 minutes and over the top of the hour. How about events that start earlier than expected? Thanks to 25-Seven Systems' Audio Time Manager, news can break — and doesn't have to sound broken.

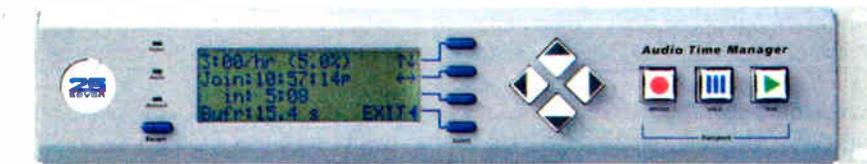
## Playing catch-up

Something listeners find disturbing is doing a legal ID on top of a news conference, cutting out an important question or response; or not describing what the news is during especially long news conferences. Trust me, I hear from the listeners when we screw it up, doing the best with what we have — a live feed from the satellite and nothing else.

About six months ago, News Radio 990 KTMS(AM) in Santa Barbara solved time issues by using one of the first 25-Seven System Audio Time Managers, and we are happy with the useful audio tool. The installation was made easy and

quick by taking an output of one of our router sources, feeding it to the Audio Time Manager and taking the audio output to one of our modules on our console.

Once the wiring is complete, go to the soft keys on the front of the unit, input current time, and set audio levels and the percentage of time compression you would like to use.



news is expected to go long and we need to get into a network show seamlessly.

Many times traffic reports usually expected to run only 45 seconds go to more than a minute because of a highway closure. With the Audio Time Manager, our board up is able to let the traffic go long; push the big front-panel Record

button to capture the network show we are going to next and wait for the traffic to end; and press Play to playback the network show. As the audio is played off of the Audio Time Manager, it is working

**When you have to slip in a legal ID during news conferences, the operator waits for the right transition time ... hits the Pause button, airs the legal ID and presses Play again, picking up where the Pause button was pressed.**

KTMS carries a lot of network programming, while inserting produced local content like news, traffic and weather. This has created a dilemma, whereby the

to catch up to the live time of the network without audio artifacts.

Another great example of the unit's flexibility is when you have to slip in a

legal ID during news conferences. The operator waits for the right transition time in the conference, hits the Pause button, airs the legal ID and presses Play again, picking up where the Pause button was pressed.

Recently there was a presidential address scheduled to take place during our morning drive period. The address started early, despite our news provider's best efforts to communicate with the affiliates. My producer, monitoring the network feed during a local commercial break, heard the president step up to the podium, pressed the record button on the Audio Time Manager and joined the address at the end of the local break.

This style of time management makes our station sound better, more smooth and full of content the listeners expect. Plus the audio is seamless — you don't hear pitch changes, glitches or the usual chipmunk sound we've heard on cheap audio editing systems thanks to the care 25-Seven Systems has given to how the time is gained. During the set-up of our unit, we found out that 12 percent time compression is not detectable and really transitions well when it catches up to live programming.

The company offers software and user upgrades that I was not able to sample by the time of this writing. However it has been open to suggestions from the field.

I'm looking forward to upgrading to sample the Web interface, along with setting it up to work with our on-air automation system. In this digital age, 25-Seven has it set up to work with analog or digital plants along with an Ethernet connection to work within your computer network.

For more information, including pricing, contact 25-Seven Systems in Boston at (888) 257-2578 or visit [www.25-seven.com](http://www.25-seven.com).

USER REPORT

# OMT Wears Several Hats for Cluster

*iMediaLogger Software Simultaneously Supports 12 or More Stereo Feeds, Eases Cut Production*

by Michael G. McCarthy  
Principal/President  
McCarthy Radio Engineering

**CHICAGO** Management often scoffs at procuring equipment that appears to be outside the core function of the station or cluster. Some stations find logging to be one of those things. Who needs loggers when we have traffic systems that automatically track everything?

Ah, short-sighted managers. The reality is that logging systems are so much more these days. The core function of logging systems still involve the ability to recover what spot aired and create Best Of shows or audible affidavits. However, loggers — now commonly referred to as "capturing" systems — have evolved to accommodate the increasing need of stations and clusters to capture programming automatically, ready to air or ready for production.

When I first started looking at loggers for a client six years ago to replace a dying single-channel reel-to-reel logger, I was introduced to iMediaLogger software by OMT Technologies. What appealed to me most about iMediaLogger was its scalability.

We had just acquired a third station in the growing group and management

wanted all three logged. By ordering the four-station package and installing one of their eight-channel sound cards, we were able to capture up to four stereo feeds in one machine and code them in any of the standard coding formats, including PCM, WAV, MP2 and MP3. I hadn't seen anything else that could do four stereo feeds concurrently and in a multitude of audio coding formats.

## Then and now

Today, iMediaLogger can support 12 or more stereo feeds at once.

The software also is capable of simultaneously encoding several streams for each incoming feed. We can log in MP3 at a sample rate of 128 kbps mono, do mic skims at 128 kbps mono and capture special shows in uncompressed WAV, all from a single feed of audio.

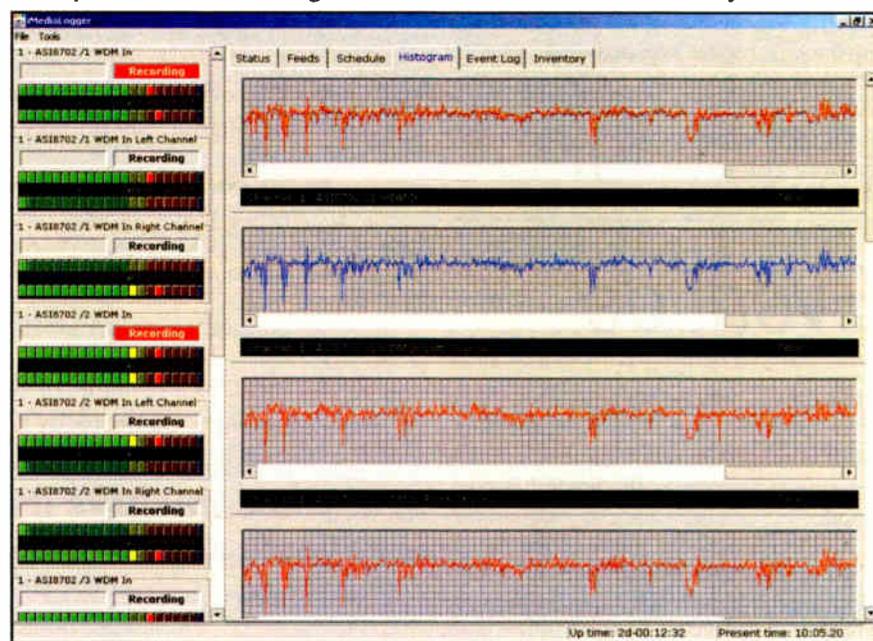
Files can be truncated down to the quarter hour so spots can be located quickly. Audio cuts can be automatically placed pretty much anywhere on the network where permissions allow, and can be made available via VNC or other means of remote access.

Hardware requirements will vary by installation, but Windows XP Pro is now the standard operating platform. A four-station logger can survive on most any P4

system with a couple large hard drives.

On the other hand, eight- to 12-station logging systems have more specific hardware requirements, but nothing exotic or

By programming input closures on the parallel port of the host computer, a skimming function can be created just like a standard cassette deck. Although the system doesn't auto-telescope the audio like a cassette, or provide a start/pause configuration, it does create a cut for each time the mic is opened. This allows us to immediately download bits



The iMediaLogger Histogram screen shows the recording in action.

esoteric. The hardware requirements for these larger scale systems are: a fast bus, a lot of main memory and plenty of HD space available in an external drive array. SATA or SCSI 320 technology is the preferred means for these larger installations.

for production of teaser elements while the talent is still on the air, thus keeping the production people busy all the time.

This is far better than waiting until after a show is done and there is a mad

See OMT, page 35 ▶

TECH UPDATE

## Axia iProFiler Offers Three Recording Modes

Axia Audio's iProFiler IP-Audio logging software works with Axia IP-Audio networks to capture and store up to eight stereo or 16 mono audio channels, of time-stamped MP3 audio without audio cards. The software uses a computer's Ethernet port to record audio streams directly, which the company says eliminates computer sound card hassles and noise A-to-D conversions.

Users archive audio by using the software to choose the audio channels to store from the IP-Audio network. Select a bit rate and click OK. Axia says users can archive audio inputs on the network so iProFiler can be used to log on-air programming, store-and-forward network audio feeds and counter-program the competition.

Managers, salespeople and clients can use it to search securely for, listen to and extract selected audio, or audition live streams as they are recorded. There is an integrated SQL database to help locate audio segments by date and time. iProFiler archives store audio using MP3

technology so audio can be shared.

MP3 compression bit rates from 8 to 320 kbps are supported. Audio segments can be backed up as they are created, either to a network drive or a remote FTP server. Multiple backup locations can be specified.

Each iProFiler audio stream can be recorded in one of three modes: Continuous Recording, Skim and SmartSkim.

In the Continuous Recording mode, audio is recorded without pausing, and audio split across file segments can be recombined.

In Skim mode, audio is recorded only when external contact closure inputs are activated or deactivated. Axia says this mode is suitable for constructing telescoped airchecks or capturing live commercials for proof of performance.

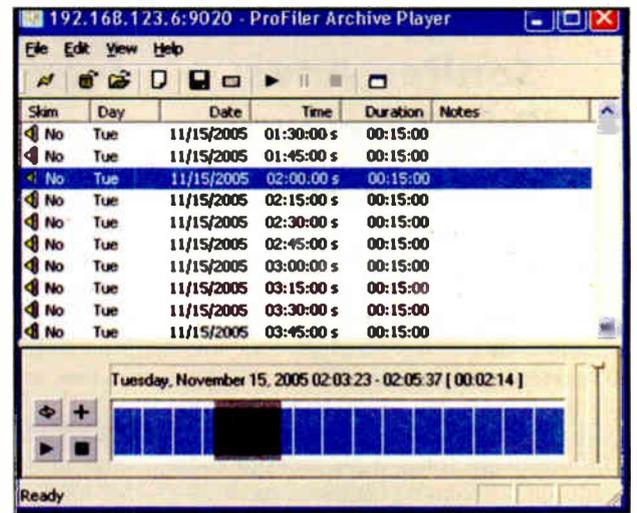
SmartSkim mode archives non-critical

programming such as music at a low bit rate, then automatically switches to a higher bit rate when talent is on-mic.

Both Skim and SmartSkim modes feature ESP "pre-roll" and "post-roll" technology that captures recordings just before the microphone contact closure is activated, and continues recording briefly afterwards so all desired audio is logged.

The software retails for \$1,295.

For more information, contact Axia Audio in Cleveland at (216) 241-7225 or visit [www.axiaaudio.com](http://www.axiaaudio.com).



The iProFiler Archive Player lets users listen to live audio as it is being recorded.

## OMT

Continued from page 34

rush to get the cuts made. It also allows the PD to review the talent's audio instantly from the comfort of his or her own office.

When the client came to me and asked about trapping a network show and airing it later without the intervention of staff, a quick call to tech support opened a new door to this system. With the ability to record based on specific timed windows, we were able to capture hours of programming in our native playback file format with no operator intervention. It's a daily operation we now consider a background function, as no one does anything but confirm the cut is there.

The same client came to me and asked whether this system could capture programs based on a closure and auto-deposit them into the playback database, so I placed another call to tech support. By using the parallel port of the host computer or a Broadcast Tools 8x2 switcher, external closure inputs can be programmed to select an audio source on the 8x2 and trigger the start and stopping of timed event windows. This can be used for news feeds, traffic reports, weathercasts, remote broadcast inserts and actuality filing.

It does take some time to develop the skill set needed to manage iMediaLogger successfully in the more advanced arenas. However, the system is user-friendly enough that once you get started, you can leave the manual on the bookshelf and really get into seeing how powerful the system is — and how it can save the station many times its cost in man-hours, production and legal fees.

A trial version of iMediaLogger is available for download from the company's site.

For more information, including pricing, contact OMT Technologies in Canada at (888) 665-0501 or visit [www.imediatouch.com](http://www.imediatouch.com).

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## TECH UPDATES

## Sonifex Adds RB-DS2 Delay to Redbox Line

Sonifex offers its RB-DS2 time-zone delay, which the company says performs the same function as its DPD2000 digital program delay but with greater accuracy. Suggested applications include shifting a broadcast program by up to three hours, and synchronization of programs across different time zones using delayed audio paths on different transmission feeds.

The RB-DS2 is a 1 RU unit and part of the Sonifex Redbox range of audio converters. It has both balanced analog and

AES/EBU digital audio inputs and outputs on 3-pin XLR connectors. It acts as a combined A/D and D/A unit, so analog inputs can be delayed and output as AES/EBU and vice-versa. It is a stereo delay, but also can be used as a dual mono delay to process each audio path separately.

The unit has internal memory to process short delays of up to 10.5 seconds at 96 kHz sampling, 24-bit; 42 seconds at 48 kHz, 16-bit. To delay audio for long time periods, it uses an internal Compact Flash expansion of up to 2 GB of memory to provide delay times of more than 3.5 hours at 44.1 kHz stereo.

Delay times can be selected in samples, fields, frames and milliseconds.

Additionally, it corrects a permanent audio delay, or can be used on an intermittent basis to provide occasional correction by remote switching.

Both analog and digital outputs can be separately muted and a front-panel Bypass button disengages electro-mechanical relays to divert both analog and digital inputs to their outputs. This also is disengaged automatically when a power-fail occurs.

A front-panel blue vacuum-fluorescent display with rotary controller is used for selecting the various settings of the delay,



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which include the source, channels, sample rate, sample bit width, format, delay units and the delay itself. Input peak digits can be selected from +12 dBu, +18 dBu and +24 dBu for FSD, and two left and right preset potentiometers on the rear panel allow the input gain range to be altered by +/- 3 dB around the selected peak digits.

FSD stands for "full scale digits," the analog representation of the maximum digital value that the converter in question can use before digital clipping occurs.

For more information, including pricing, contact Independent Audio in Maine at (207) 773-2424 or visit [www.independentaudio.com](http://www.independentaudio.com).

## Documentor-2 Stores Programs For a Year

Energy-Onix offers the Documentor-2 two-channel 365-day station logger, which the company says is the basic hardware in the Documentor series. It contains a recorder and player, and can be used with the Internet to provide communication between remote recorders and players.

The recorder accepts two mono or one stereo input and can store these programs for 365 days, automatically deleting them after that. Recordings can be selected for playback by month, date, hour and minute.

The player can be used to select a specific portion of the recorded program that is stored on the recorder. The player can be installed in terminals of a LAN system that would permit selection of the desired program by month, day, hour and minute. As many as 10 players can simultaneously select and monitor any portion of the 365 days of programming stored on the recorder.

The company says any number of audio channels can be recorded. In order to provide two mono or one stereo channel, only one Documentor-2 is required. For four mono channels, a second Documentor-2 would be used.

Each Documentor-2 occupies 3-1/2 inches of 19-inch rack space. The output of each Documentor is connected to a hub, which is used to drive the existing Ethernet connection.

A conventional keyboard and mouse are used to select the program source as well as the specific time of interest.

Multiple Documentor-2s can be used together for multichannel logging.

For more information, including pricing, contact Energy-Onix in New York at (888) 324-6649 or visit [www.energy-onix.com](http://www.energy-onix.com).

## Upcoming in Buyer's Guide:

**Feb. 15**— Portable Audio and Newsgathering

**March 15**— Digital Audio Production

**April 12**— Microphones and Audio Monitors

USER REPORT

# Sirius Uses MDOUK Delay for BBC Feed

by **Jeremy Savage**  
**Director of Broadcast**  
**Operations**  
**Sirius Satellite Radio**

**NEW YORK** Several months ago, I was informed that Sirius Satellite Radio would be taking a 24/7 feed from BBC Radio 1 from England. BBC Radio 1 is the BBC's new music channel with a variety of music 24/7, and is the second biggest radio network in the U.K., with a weekly reach of more than 12 million listeners.

Sirius was creating a totally new channel on our platform. Obviously a fairly simple task from an automation standpoint would be simply to source the channel with that feed and be done with it. But of course, to complicate things a bit, I was told BBC Radio 1 would have to be delayed five hours so the dayparts would be broadcast at the correct times. So for example, the popular Chris Moyles breakfast show would be broadcast at breakfast time for our audience in the United States.

This presented a bigger issue.

We initially considered a setup to capture/replay one- to two-hour segments. Then segments would be played back-to-back. This method tied up two valuable capture streams, so that while one segment ended we could start the next record on another card while the prior segment file was closing. Plus if we wanted redundancy then we'd need another two on another PC. It became a costly and awkward solution.

I Googled like a madman to find a cost-effective delay unit that allowed for delays longer than 7-10 secs. There are a few solutions available used for video time-zone delay, and they were costly. Then I came across the **MDOUK Broadcast Delay** system and was intrigued at the ease with which we could deploy and use it and how cost effective it would be. The license is under \$1,000. All we needed was a professional sound card and PC.

## Over there

The Broadcast Delay allows up to 100 hours of program delay. Speaking to the manufacturer, we learned the system essentially records small, uncompressed files and plays them back in sequence. The bigger your delay the more hard drive space needed, though this is not a problem on today's PCs as it works out at 0.6 GB per hour. A full 100-hour delay would require a capacity of only 60 GB (at a standard 48 kHz sample rate). The user can select the digital sample rate required.

There are two modes of operation.

In the first — the one we use — the user sets a fixed delay. We set the delay to five hours, the normal delay between the East Coast and England, and let it run. In five hours we had a feed from BBC Radio 1 and their time checks matched ours.

The second mode allows the operator to begin capturing an event, then start it live on-air when it was scheduled to be broadcast. The user manually starts audio capture and later manually starts playout.

So if you want to delay a live event for broadcast as part of an existing schedule, you would start the capture as the event

starts and start the playback at the appropriate point in your schedule, at this point fixing the delay. This could be used to delay whole time zones or the start of an event from 1 p.m. to 1:05 p.m. (say after a scheduled news bulletin), or just to allow scheduling flexibility where you do not have control over the exact start time of an event — a neat trick.

The software is licensed via a small USB dongle. The GUI is easy to understand. The operator selects the length of delay (in the mode we use), clicks Start and that's about it. Setup also is easy and self-explanatory.

I tested the Broadcast Delay with several cards from ASI and it worked fine. For our solution, however, we opted to go with a card recommended by the manufacturer to ensure we were using a

See MDOUK, page 39 ▶



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TECH UPDATE

### Prism Sound's Transerv Logs, Indexes Recordings

Prism Sound says its Transerv logging recorder system is a modular, automated multichannel audio recording system suitable for applications that require large numbers of recordings, or long or continuous recording.

Recordings can be held on disc while space allows and optionally may be archived to removable media such as DVD. An SQL database is used to index the recordings: this provides the means to store additional metadata describing or annotating the recordings.

Software applications for use in logging, transcription or monitoring of recordings complement the Transerv recorder. The company says these Client software packages are tailored to applications, such as parliamentary transcription or real-time monitoring of broadcast or communications traffic.

Live monitoring or playback is performed by streaming data across the network to the listener's workstation using the appropriate client side software.

The Playback capability can be integrated into database or document-based applications, making Transerv suitable for indexing recordings such as in media monitoring and logging.

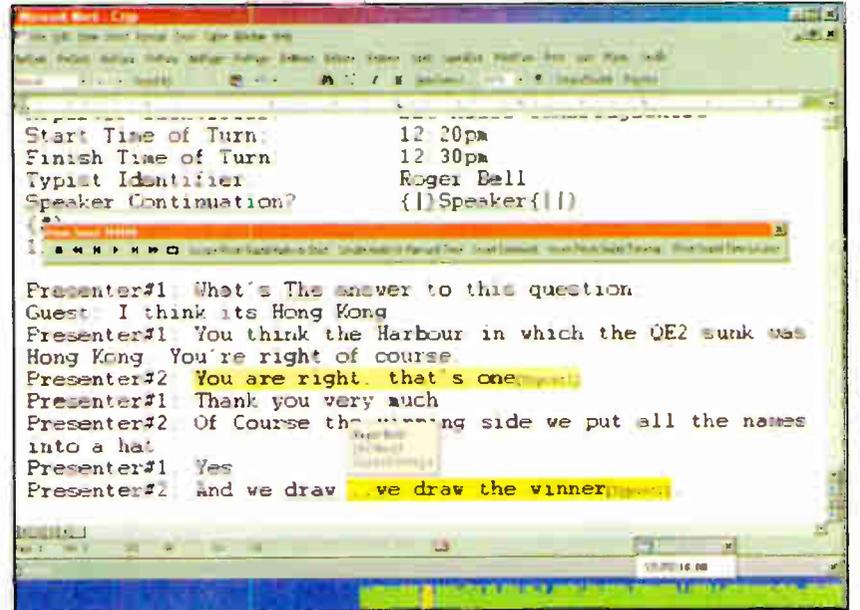
For making notes while monitoring a broadcast transmission, Transerv's

Transcriber tools include an indexing capability that allows notes to be made in real time to a transcript template or document. Time-tags are inserted during the indexing stage and are useful later for locating the desired point in the recording.

Should applications involve an editorial review stage in which the transcript is proofread and checked against the original recording, time-tags enable the desired recordings to be located automatically when the document is opened. The "Go to Word" feature allows rapid location to the desired point.

The company is now offering the second generation of Transerv.

For more information, including pricing, contact Prism Sound in New Jersey at (973) 983-9577 or visit [www.prism-sound.com](http://www.prism-sound.com).



## MDOUK

► Continued from page 37

solution they vetted, as we were close to deadline. It was important that content was as sonically unaltered as possible, and so we used AES digital in/outputs. We now have a five-hour delayed feed from BBC Radio 1 that was sonically transparent.

We set up two machines so we'd have a redundant feed in the event of machine failure. We purchased two Dell PE750 IU servers running Win XP.

At first we had a bit of an issue getting things to work. This turned out to be a bad Dell motherboard, which Dell replaced. The folks at MDOUK were more than helpful and accommodating. We received duplicate dongles and cards overnight so we could set up an emergency replacement machine while troubleshooting, and helpful information from its support group.

We have had no issues with the MDOUK Broadcast Delay since the initial deployment. We have set up silence-detect on both the raw inbound feed and the delayed feed. The advantage of this is if we lose connectivity from the BBC in London, we know about it six hours in advance and can fill gaps with material.

If you are looking to either delay particular program events and playback on demand, create time zone delays or replay programming in its entirety up to 100 hours later, I recommend the Broadcast Delay system.

For more information, contact MDOUK at [sales@broadcastdelay.com](mailto:sales@broadcastdelay.com) or visit [www.broadcastdelay.com](http://www.broadcastdelay.com).

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USER REPORT

# AirTools 6100 Rids WOR of Tone Woes

by Thomas R. Ray, III  
Vice President/Corporate  
Director of Engineering  
Buckley Broadcasting/  
WOR Radio

**NEW YORK** Moving the WOR studios was a great opportunity to take a look at how we were doing things and to see if we could do them better. The former WOR facility was designed in 1978 for one radio station. We now have two national radio networks plus our Internet stream in addition to WOR.

Running a national radio network requires that we send cues to our affiliate stations for local breaks. When I started at WOR, we were using older "Brand X" digital delay units. They were mono. They also had audible glitching on air while ramping into delay. To send cues, the operators had a bizarre method of hitting the fill spots, then hitting the Send Local button eight seconds later.

Needless to say, this method was fraught with issues, particularly when ramping into delay when going to break, as you couldn't tell how many seconds you actually were into the delay.

We then installed Symetrix 610 delay units, which were stereo. The idea was to run audio on the left channel and touch tones on the right channel. The problem is we found in a real hurry that touch-tone decoders have no sense of humor about pitch shift in the audio, as the 610 would use pitch shift on ramp in and ramp out.

So we changed to subaudible tones, which were decoded in the Master Control room to outpulse cues to the satellite uplink. This worked with varying degrees of success, and the tones would decode while pitch shifted.

Moving to the new facility, I wanted to eliminate our tone problem. Doing a bit of research, it appeared the Symetrix Air Tools 6100 was just what we needed.

## Bridging the gap

The Air Tools 6100 is a 1 RU device with a nicely laid out front panel. Operation is simple. Foremost, the 6100 uses 24-bit data words for the audio and is clean, topping out at 20 kHz frequency response. It is stereo, perfect for our new facility, as WOR's on-air New York signal is stereo in HD.

The 6100 has available four methods for building or exiting delay. We chose to use "gap detect and catch up." This mode is great for talk programming. It detects gaps between words and sentences and silently extends the gap or, if no gaps exist, "splices" in small segments to build delay. It does this almost inaudibly.

The front-panel buttons for functions such as Delay Start, Delay Exit and the ever-popular Dump button are removable from a DB-25 connector on the back of the unit.

One button on the front is curious. It is marked Cough. While WOR does not use this feature, it is nice to have. Pressing Cough stops the "recording" process of the

audio while audio plays from the buffer. This lets a talk host give the operator instructions. Releasing the Cough button starts the recording process again, making the interruption seamless.

WOR uses the 6100 with eight seconds of delay, as this is what the operators were used to in our old facility. The 6100 can give you up to 40 seconds of delay, and this parameter is accessible from the front-panel menus that appear on the LCD screen.



The AirTools 6100 in the rack in WOR's new studios.

Users can set the 6100 to dump a specified number of seconds when the Dump button is pressed. To play it safe, WOR dumps the entire buffer if someone says a profanity.

Analog input levels also are selectable on the front-panel menus, covering just about every standard level available in a facility. And the 6100 has AES audio in and out standard. At present, WOR is using

the analog inputs, and we have set them to a nominal +4 dBu. The unit appears to have plenty of headroom at this setting, as we haven't clipped the audio yet. Input and output levels can be set separately from each other.

## Cool stuff

Remember I mentioned our network cueing? The 6100 offers a cool feature.

Each WOR console has a set of buttons for sending network cues. These buttons connect to the GPIO port on the 6100. When the operator presses a button to send a local cue, the 6100 registers the button press on its LEDs, then will output a contact closure dependent on the amount of delay built up.

We use the contact closure output of the 6100 to send a pulse through the GPIO's of the Axia system to Master Control and up to the bird. This has solved and simplified a major headache for us in sending our network cues.

One final feature that can't be neglected is the port for TC-89 clock data. We use ESE GPS Master Clocks in the WOR facility. Studios have a combination of analog clocks and digital clocks that run off the TC-89 time code. With the 6100, you put your TC-89 clock data into the unit. It comes out another TC-89 port and drives your clocks. The time code is advanced by the amount of time built up in the delay, even during ramp in and ramp out, and the operators see clocks that are "real-time" in the studio.

Using the TC-89 feature on the 6100 displays the time that audio actually hits air. This feature is really handy.

Overall, the Air Tools 6100 digital delay has solved many problems at the WOR facility. It has many practical features, is simple to operate and has integrated seamlessly into the WOR facility.

For more information, including pricing, contact Symetrix in Washington state at (425) 778-7728 or visit [www.symetrix-audio.com](http://www.symetrix-audio.com).

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## ◆ READER'S FORUM ◆

### Stirring the IBOC Kool-Aid

I'd prefer not to engage in an argument via the pages of Radio World, but the tone and content of Tom Ray's "Coverage vs. Protection" letter (*Reader's Forum*, Nov. 9) merits a response.

Thanks for the primer on WOR's signal nulls and the WOR Radio Network's sales philosophy, but that totally misses the point I was trying to make about the economic viability of thousands of AM broadcasters post-IBOC (*Reader's Forum*, Sept. 28).

And don't take my word for it — check the pages of Radio World; those numerous commentaries expressing alarm about IBOC's potential damage to existing AM service are not reactionary, obstructionist rants, but rather well-reasoned and persuasive arguments that a rush to embrace arguably flawed technology for technology's sake could be terminally harmful to AM radio.

Need more evidence? Next time you're at a crowded broadcasters' convention, walk on stage, grab the mic and announce: "Attention, AM people. We're pushing a technical standard that will strictly limit you folks to your interference-free protected contour, and everything else will probably be wiped out by adjacent-channel IBOC skywave. You guys okay with that?"

If the absurdity of such a proposition doesn't strike you, objects thrown by the audience probably will.

IBOC promoters trot out the "interference-free protected contour" argument as if it were the only technical standard applicable to AM. Last I checked, there also are regulatory limits on occupied bandwidth, modulation, frequency and directional antenna performance — all of which are imposed to prevent co-channel and adjacent-channel interference.

Allowing IBOC AM stations to crud up 50 kHz of the band while requiring analog operators to observe the NRSC mask is, to use Tom Ray's term, "foolish," not to mention outrageously unfair.

On the other hand, there may be a self-regulating aspect to the clouded HD Radio future. It's a highly dubious proposition that millions of existing AM listeners will run out to buy IBOC receivers once they discover the band has become a wall of noise on their estimated 1 billion analog radios. If that happens, they'll just go elsewhere. When the audience figures start plummeting, top management of the major groups will dash to the transmitter rack to turn off the HD exciter faster than you can say "C-QUAM."

I'm sorry I apparently pushed Tom Ray's buttons. I wish him, his nulls and his network well. But if HD-AM promoters insist on moving to some technological Jonestown and glugging down IBOC Kool-Aid, don't expect to drag the rest of us along with you.

Robert C. Savage  
President/CEO  
WYSL(AM)  
Avon, N.Y.

### Remembering Hilmer Swanson

It was a sad day when I heard Hilmer Swanson had died ("Legendary AM Innovator Remembered," Oct. 12). I can only imagine the loss felt by those who knew him for many years. Although my acquaintance with him spanned less than a year beginning in 1994, I learned much from him.

His presence injected a quiet confidence. His approach to technical problems was to quietly and systematically dissect the problem with application of solid electrical principals. I never heard him speak loudly to make a point, instead he tended to ask questions — he tried to have others lead themselves to the answer.

He was the kind of person who did not hurry a conversation. You might have time to cover one or two of the 20 questions you had, and you knew he could explain, but time simply ran out.

One situation I witnessed that clearly illustrated his gracious manner occurred at a test site set up by USADR for the 1995 NAB convention. Some days in advance of the show, Glynn Walden had overseen the assembly of a temporary experimental station in the desert that used a DX-10 transmitter.

Glynn had certainly covered the bases with Hilmer Swanson and Ron Rackley on hand as consultants, along with a number of radio personnel from California and a local station present to be go-fers and helpers, and to provide general labor assistance until the convention started.

As with any new system there were all

sorts of technical issues to work through and by the third day any sense of formality was gone. As new people came and went each day, names were forgotten, introductions were missed and as problems continued, the pace quickened.

During a lull in the action, a group of young station guys were in the transmitter shack, dodging the sun. I happened to be walking past outside and noticed

Hilmer leaving the building in his usual relaxed manner. After he had gone some distance, I walked into the shack and asked those present who that fellow was that had just left.

"Oh, he's some local guy who heard USADR was in town and wanted to see what we were doing out here." "Yeh, I think he was an old retired guy or something; but he sure knew a lot about the equipment!"

"You guys really don't know who that was?" I asked.

"No, who?"

"That was Hilmer Swanson."

"No! You mean Mr. AM?" — the first time I had heard that applied to him — "Oh no! We sure didn't know that. Are you sure?"

A couple days later I had a chance to relate the incident to Hilmer. He just smiled. I told him I appreciated his quietness but if he wasn't going to toot his horn sometimes then I would do it for him. He was just that kind of man.

Steve Meng  
RF/Analog Engineer  
Northrop Grumman/Xetron  
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Hilmer Swanson

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Radio World, January 18, 2006

GUEST COMMENTARY

## Reconsidering Minot and EAS

*Author Says Emergency Managers and Corporate Radio Are Both to Blame for Failures in EAS*

by M. Marian Mustoe

This article is derived from a broader study that considered the implications of the localism of commercial radio on the Emergency Alert System. Using a naturalistic design, the research began with a survey of the train derailment that occurred in Minot, N.D., on Jan. 18, 2002. The event became the model for this research, and as the study emerged the role of the EAS was evaluated in other rail accidents with similar characteristics as those found at Minot.

The Minot derailment is unique in that it brought the use of the EAS to the attention of the public, especially since issues of localism and de-regulation have collectively made the news. Furthermore, previous scientific studies have been conducted of this event and, thus, are open to further testing.

### Failure to communicate

The Minot accident has become the quintessential model of the failure of a public warning system. In addition to the dispatch system going down, local sirens not operating and power going out, radio and the Emergency Alert System as a means of public warning were seen as a failure.

Academic analysis of the apparent breakdown of the EAS in Minot focused its criticism toward the de-regulation of broadcasting and, in particular, corporate radio as the cause of the failure of Minot's radio warning system. A 2004 study from Cornell University by Figueroa, Damone and Whitefield cited the Minot event as an example where "Clear Channel's cost-cutting practices have undermined public safety."

**In each of these events the EAS system was not used. ... The stations did not provide EAS activation because emergency managers chose not to activate the system or the network itself was not configured correctly — not because of their association with corporate radio.**

In another 2004 study, conducted by Dorothy Kidd of the Department of Media Studies at the University of San Francisco, the researcher states that Clear Channel Radio's KCJB(AM) that morning "was on automatic, piping out a satellite feed. This was not unusual as Clear Channel only employs one full-time news employee in Minot, who rips and reads the newscasts from state and national

wire services."

In contrast, my research suggests the problem in Minot was two-sided, evolving from both poor interpersonal communications between the staff of KCJB radio and local emergency managers, and a lack of training and unfamiliarity with EAS activation by emergency personnel.

**In contrast to other findings, my research suggests the problem in Minot was two-sided.**

My findings suggest the EAS at KCJB could have been activated that morning by emergency managers accessing the National Weather Service through the National Warning System, or NAWAS. In a 2005 interview, Lt. Fred Debowey of the Minot police department stated, "But at the time of the derailment we were not aware that we could activate the National Weather Service with the hotline. No one had informed us that this was an option."

Using Minot as a model, I found similar situations surrounding EAS activation at three additional events.

### EAS derailed

At the derailment of chlorine tank cars in Macdonia, Texas in June 2004, the gas plume from this event reached as far as the outskirts of San Antonio. I interviewed officials at local radio stations, the National Weather Service and the Environmental Protection Agency, and determined a civil emergency message was not initiated and the EAS was not

activated during this event. In addition to the LPI and LP2 stations not being activated, decoders at remotely controlled stations in the area (capable of relaying an EAS) were not activated either.

Essential emergency programming during this event came from the news departments of local San Antonio corporate radio stations, WOAI(AM) Clear Channel and KKYK(FM) Cox Radio Inc.

Their knowledge of the event came by way of monitoring police scanner traffic.

In January of 2005, 5,400 people were evacuated after the derailment of tank cars carrying chemicals at Graniteville, S.C., near the state line of Georgia. The EAS actuation, delivered from the NWS, arrived two hours late. Although the local primary stations were monitoring their assigned NWS sources, the actuation was sent to other surrounding NWS transmit-

ters. The activation had to be rerouted to trigger the EAS decoders across the state line in Augusta, Ga., at local primary stations WBBQ(FM) and WYZA(FM) (Clear Channel).

Conversely, it was these radio stations that covered the event with live news immediately following the event and hours before the arrival of the official activation of the EAS. NWS radio (VHF) did provide a public alert but could not act as a news outlet.

In October 2005 a train accident near Texarkana, Ark., produced a tank car explosion requiring the evacuation of 2,000 homes within a radius of one mile from the blast. The event took place at 5 a.m. My interview with Dave Hall, emergency manager for Miller County, Ark., revealed that emergency managers chose door-to-door contact and police car sirens to notify residents in the area, assuming most people were sleeping and not listening to radio, television or NWS radio. A 911 callback system also was successfully employed.

Wes Spicer, operations manager for Clear Channel's KKYR(FM) in Texarkana, Ark., said that in the Texarkana emergency management plan, local officials are to contact the LPI KKYR and have station personnel (in attendance 24 hours) activate the EAS from the station locally. Officials also have the option of contacting the NWS or the state relay to provide activation.

There was no CEM issued and the EAS was not activated during this event. However, KKYR News Director John Williams said in an interview that within 15 minutes of the first reports of the event, KKYR (Clear Channel) was receiving information from the local police department and broadcasting live emergency programming until residents could return to their homes.

### Human touch

In each of these events the EAS system was not used, as was the case in Minot.

In the case of Graniteville it was activated locally well after the emergency

began, and thus was useless as an early warning system. Like Minot, the stations providing emergency service broadcasting during these events were corporate broadcasters. In pragmatic terms, these stations failed to provide EAS activation because emergency managers chose not to activate the system or the network itself was not configured correctly — not because of their association with corporate radio.

A 2002 study by Kris, Wetzler, Marbut and Craveb, critically reviewing the corrections made to the system in Minot since the derailment, clearly finds that the complexities of FCC deregulation have little to do with the actual problems that occurred there. Rather, it has everything to do with the communications interface, both human and technical, between two very different entities charged with the dissemination of emergency information to the public.

Studies show that problems with the EAS existed long before deregulation. In addition to its unfunded mandate, the effective delivery of the EAS has been complicated by the following: convoluted state emergency management plans; complicated networks; poor reception from primary stations; unlinked stations; stress on volunteers heading up emergency communications committees; untrained personnel; poor communications between public officials and station managers; and a lack of government support.

Although EAS technology is gaining stability, research suggests it is the human administration of the system that presents the greatest challenge to its use. Given that in each phase of its existence, the EAS has only been activated from the bottom for local emergencies, this research conversely suggests a bottom-up approach to re-evaluating its usefulness.

The digital technology of the EAS works as well in a station "on auto" as it does with a full news staff. It can act as an early warning tool, not unlike the alarm whistle of a prairie dog. Today, radio's role in this initial warning phase of a disaster has not diminished but rather is being shared.

Some public preparedness organizations are calling for the integration of the EAS into a variety of media: cell phones, televisions, the Internet etc.

Radio, if engaged correctly, can easily and efficiently reach a collective audience with information beyond the initial warning stage.

However, privately owned radio stations are only information outlets. To make these stations effective through all stages of an emergency, they must be directed by publicly controlled emergency management personnel who, in turn, must understand the limitations and functionality of radio's communication role.

Unless we seriously consider the messenger's needs — and its value — we will lose a vitally important link in emergency communications to the public.

*Interested readers can see the author's research in detail by visiting [www2.eou.edu/~mmustoe/easrw.html](http://www2.eou.edu/~mmustoe/easrw.html).*

*M. Marian Mustoe, Ph.D. is a professor of geography at Eastern Oregon University.*

## ◆ READER'S FORUM ◆

## Possibilities

## Rules Are Rules

I enjoyed reading the article about LPFM station WQRZ and how they were instrumental in being a reliable source for information during a disaster ("Gulf LPFM Airs Emergency News," Nov. 23). It is nice to see LPFM credited for something useful. As a matter of fact I wish I could help them and be part of a little radio station like that.

But I would like to point out a few "issues" I did find disturbing; not all related to WQRZ, but that I have noticed in many situations, including the attacks on the World Trade Center.

The FCC has made stringent rules about how radio is regulated. When a station is licensed, it is licensed for that particular location, and at that particular frequency and power levels. A CP for a radio station is almost impossible to obtain no matter how smart you are. As a 13-year engineer, DJ, VO and licensed ham radio operator and electronics tech, I have constantly seen the FCC "bend" the rules to the point of breaking, many times because of a particular disaster event.

An LPFM radio station only can be licensed for a maximum of 100 watts and non-profit. But yet the FCC just granted them the OK to be able to go 4,000 watts — even temporarily? That would make WQRZ a commercial high-power, non-LPFM station. And to be allowed to move the transmitter and antennas? This too is against the FCC rules because the application strictly requires all the mathematical coordinates and figures to be made before the license is ever considered on the applied channel. The licenses show the exact location of the transmission antenna.

One small radio station I knew built the tower, and found out afterwards there was an error on the CP. The tower had to be on the other side of a major highway. This station had to tear the new tower down and re-erect it in the right place.

We here in Illinois, Indiana, Missouri and all the tri-state area get tornadoes, severe weather and even earthquakes. Hurricanes are part of nature, and always have been. If you live by the coast areas, you know there is a risk of a major storm coming on land. When you move there, you have to consider this.

Rules are rules, regardless of the weather situation. The FCC will not grant LPFM licenses for any reason now. And this small area of Crawford,

Jasper, Richland and Clark counties is nothing but an automated, computerized farmland of radio broadcast signals. There are only two radio stations I know that are, for the most part, live in the entire area. But I know of one that is starting to use automation more and more. Sad, sad...

All I am asking is, please FCC — break the rules for me just this once. License my little LPFM radio station so I can have an enjoyable hobby and serve the public. There are plenty of open channels here, and I am a weather expert with more than 20 years in meteorology study and all the weather instruments and radar to give the area up to date info on severe weather. This is my opinion, respectively, as a man that really loves radio.

Doug Pringle  
WXZL Radio Productions  
Robinson, Ill.

## The Big Test

The CONELRAD experiences of Jack Sellmeyer (*Reader's Forum*, May 13, 2005) and Jack Layton (*Reader's Forum*, Nov. 23) were interesting. I was impressed about how much preparation Layton's station took to be ready for a test.

My first experience occurred while I was an electronics instructor at the Ordnance Guided Missile School at Redstone Arsenal, Ala., in 1959 (due to the Russian Sputnik in late 1957). A test of the CONELRAD system was scheduled during the summer of 1959, so a fellow instructor and I put together a super sensitive AM receiver using a Philco trainer. We strung a very long wire antenna and prior to the tests we heard many stations in Alabama, Tennessee, Georgia and Mississippi.

However, when the big test came the entire AM dial was dead. We tuned back and forth between 640 and 1240 kHz and scanned all in between, and heard nothing but noise. Following the test the dial came back alive with the signals we had previously heard. We concluded it was an abject failure.

In 1960 and '61, I was employed by two AM-DA stations in Baton Rouge, La. Sometime during that period there was a nighttime test in which one attempted to participate. However, there were a couple of problems. While the regular frequency of the station was 1300 kHz, we were

assigned operation on 640 kHz. If we had been assigned 1240, it would not have been difficult to retune, but on 640 the three towers were much too short and the RF components were way too small in values.

In addition, the CE was a pure audio type. The transmitter was a Collins 20V3, so he called the factory and got capacitor values, but he hooked them up using long lengths of meter lead. I told him the leads

should be short and ideally flat copper strap, but he did not see the need for this. So we fumbled around from midnight to 4 a.m. and gave up — another abject failure.

The two-frequency idea was nothing short of idiotic.

Ron Nott  
Vice President  
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Farmington, N.M.

It's coming up on 10 years since the 1996 revision of the Telecommunications Act. At that time, big radio groups were poised to consolidate and reverse the financial flatness of previous years, which many people blamed on an overabundance of FM move-ins plus laws that allowed owners to flip stations quickly.

One benefit of consolidation, the groups said, would be diversity of programming. By and large, that didn't happen, despite what a dwindling number of radio's defenders will tell you.

As Wall Street money poured in to make ever-larger groups possible, programming formatics became narrower. Stations owned by publicly traded companies generally take fewer risks, the better to keep investors happy every quarter. Big radio became a poster child, in many eyes, for bland, old, predictable media.

Radio's corporate reality is unlikely to change. We start a new year, though, with some hope that owners will feel more latitude to experiment — pushed by competition from satellite radio and attracted by the opportunity to create new formats offered by multicast HD Radio.

We're also encouraged by the approach CBS Radio, the former Infinity Broadcasting, is taking in its strategy to replace Howard Stern. Given the appeal of a nationally syndicated mega-personality, some may have expected CBS to replace Stern with a similar big name. It didn't. The group wisely took a more localized approach and replaced 27 morning shows at a sloop, a move the broadcaster believes is unprecedented.

CBS decided to replace Howard with 10 solutions, including its new "Free FM" format, and give local personalities a wider exposure. It also opted to try some talent who have never been on radio.

Arguably, three of these personalities are not "local" — certainly David Lee Roth, Penn Jillette and Adam Carolla come to their new jobs with established national names — but the thrust of the move is clear: new strategies, fresh thinking, a willingness to try something beyond the usual radio model and with people from off the radio plantation.

CBS Radio knows it's taking a financial risk with its decision; Chairman/CEO Joel Hollander declined to say how much is at stake but said Stern brought in about \$100 million in annual revenue.

We'll see whether the company will stick with its multi-talent, multi-market approach. And we are sure that if one of these new morning shows succeeds in a big way with listeners, CBS will spread it around; the company is not rejecting the idea of syndication outright.

But the move is interesting; and when it comes to making radio better, "interesting" is good.

CBS Radio also is a member of the new HD Radio Alliance of owners, formed to promote and coordinate innovative programming for the supplemental digital channels. Hollander, Clear Channel Communications President/CEO Mark Mays and Greater Media President/CEO Peter Smyth form the oversight management committee for the alliance.

Big groups have taken plenty of heat in these pages for lack of creativity. CBS Radio and its peers deserve a tip of our hat for trying to shake things up and, we hope, put the "local" back in radio.

— RW

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