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**UNB Modulation and You**  
H.R. Walker says UNB offers bandwidth efficiencies that critics believe are impossible.

Page 45

**You Pooped**  
With max...  
doing it, max...  
time you did...  
how.

Page 16

# Radio World

\$2.50

The Newspaper for Radio Managers and Engineers

April 25, 2007

## INSIDE

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## JOURNAL

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## ION

from Derek Kumar, Tony lark Krotz, Tim Shook, McLeod, Frank McCoy, er, John Pavlica and Jerry

## A King of AM Antenna Systems

*NAB Honors Kintronic's Louis King With Engineering Achievement Award*

by Randy J. Stine

The sheer number of Kintronic Laboratories' phasors and tuning units in use all over the world are testimony to the impact Louis King has had on the radio broadcast industry, those who know him say.



Louis King

Peers describe him as an inventor, educator, consulting engineer and successful businessman. He taught electrical engineering at the former Clemson College in the 1940s and later helped design the first air-cooled 50 kW AM transmitter while working at RCA.

In addition, King received the patent for the bistable multivibrator, the "flip- See KING, page 3 ▶

## DIGITAL RADIO RULES, DUDE!

Skip Pizzi says the overdue FCC action signals full speed ahead for IBOC.

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### NEWS ANALYSIS

## Can Radio Crack the New Media Nut?

*Convergence of Audio, Text, Video Presents Radio With Distribution Options*

by Daniel Mansergh

The Internet is a tough nut. Broadcasters have been trying to crack it for well over a decade, experimenting with online brochures, e-mail marketing, streaming media, online archives, forums, podcasts and blogs,

with varying degrees of success (or lack thereof).

It would seem a good fit: a widely distributed digital network optimized for providing multimedia content to anyone who wants it, and a (largely) digital broadcasting industry that has refined See MEDIA, page 6 ▶

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**NAB2007**  
in pictures.

◆ NEWS WATCH ◆

### ConDep Not Yet On Its Own

**WASHINGTON** Dual "legacy" and ContentDepot operations will continue indefinitely, according to the Public Radio Satellite System.

A message on the PRSS Web site states: "We are committed to this dual-operations plan until the ContentDepot system is reliable enough, and the comfort level of the users high enough, to make the full transition."

Operational and software issues have plagued the new system. The most recent

target date to end dual operation was the end of April, moved back from a February date and earlier from November 2006.

### Hartle Creates New Company

**BELLEVUE, Wash.** Radio data pioneer Allen Hartle has formed a new company, Jump2Go Inc., and snagged a contract with Entercom.

The interactive data services company will focus on station datacasting. Hartle is chief technology officer while continuing at Broadcast Electronics as director of

development for broadcast data services.

Entercom is the initial customer to roll out Jump2Go Interactive Radio services and will do so at 100 stations.

Jump products complement The Radio Experience system architecture. Software that allows a station to synchronize PAD text with audio across multiple platforms is Jump's first product.

### DRM Is Highlight of Shortwave Meeting

**OKEECHOBEE, Fla.** The annual gathering of the National Association of

Shortwave Broadcasters takes place May 11 at the HCJB Global Technology Center in Elkhart, Ind.

Members, stations, equipment manufacturers, producers, listeners and others are expected. Digital Radio Mondiale developments will be a main topic. The agenda includes a tour of HCJB's engineering center. Attendees will also visit LeSea Broadcasting in South Bend.

Adrian Peterson of Adventist World Radio's "Wavescan" program will present "The World's Oldest Radio Cards, 1901-1945."

There is no registration fee. For a schedule and info, visit [www.shortwave.org](http://www.shortwave.org).

### NAB Engineering Handbook Ready

**WASHINGTON** The 10th edition of the NAB Engineering Handbook is available. The reference book is published by Focal Press and NAB; editors are Edmund A. Williams, David H. Layer, Graham Jones and Thomas G. Osenkowsky, an RW contributor. RW is not involved in the project.

This edition has been updated to reflect recent advances in digital radio and television and technologies. It's available from the NAB, bookstores, Amazon and Focal Press.

### Dan Mason Returns To CBS Radio

**NEW YORK** Dan Mason returns to lead CBS Radio, replacing CEO Joel Hollander. See NEWSWATCH, page 10 ▶

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# King

► Continued from page 1

flop circuit" used as a switching device in early computers.

King, 92, founder of Kintronic Labs, is the recipient of this year's NAB Radio Engineering Achievement Award.

## Hard projects

Ron Rackley, vice president of consulting engineering firm du Treil, Lundin & Rackley, cites King's confidence in doing unusual projects and his willingness to innovate.

King "was not afraid to take on projects that you might have a hard time finding anyone else to do. He took on projects that were outside the comfort zones of many other people doing similar work," Rackley said. "Louis was the first to start the now popular trend of designing phasors without conventional power divider circuits and with low-Q unequal-resistance networks of different types."

Rackley said he began his career working as an antenna designer at Kintronic Labs nearly 30 years ago working under the tutelage of Louis King.

"I recall fondly many late nights and weekends spent with Louis trying to figure out a customer's problem. He was very good about customizing a solution to fit the circumstance," Rackley added.

King was from the pre-computer mod-

Kintronic Labs helped advance the state of terrestrial AM broadcasting.

"Louis placed an emphasis on practical perfection, which he instilled in his employees."

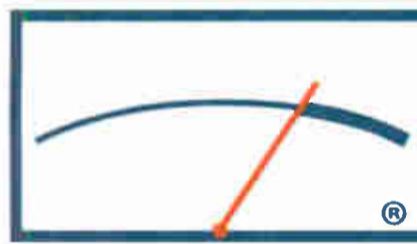
King began his study of electrical engineering following the Depression at the University of Tennessee and gained his first patent for a unique pulse transformer design while a graduate student at the University of Missouri. He later taught electrical engineering at Clemson

both RF system design and RF component design, creating many custom RF components and inductors to make them easier to use," Silliman said.

King named his manufacturing enterprise Kintronic Laboratories Inc. and discontinued his consulting business in 1962. Kintronic, based in Bluff City, Tenn., has several dozen employees and is run by Louis King's son, Tom, who is president. Louis King's daughter, Gwen, is vice president.



Louis and Tom King inspect an AM directional antenna system circa 1986.



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eling era "when engineers designed things using calculations ... then built them to see what they would do." Rackley said King had insights and intuition like few engineers he's known.

Lynn Claudy, senior vice president of NAB Science and Technology, said, "Louis has mentored many professionals in the broadcast engineering field and did a lot of work for broadcast engineer education. His contributions to the field have been considerable."

Kintronic Labs has become a leader in the design and manufacture of components and systems for the broadcast industry under Louis King, said Tom Silliman, president and CEO of Electronics Research, Inc.

"Kintronic has become a leading supplier of medium-wave broadcast antenna systems worldwide. This is very largely attributable to the guiding influence of Louis. He has dedicated himself to the success of his company and the radio industry for over a half a century," Silliman wrote in his nomination of King for this year's award.

## 'Practical perfection'

Jack Sellmeyer, president of Sellmeyer Engineering, said he has known King for more than 35 years and watched as

College, now called Clemson University, where he developed the Radio Engineering curriculum.

It was at the Radio Corporation of America that King, while working as a high-power transmitter design engineer, patented the bistable multivibrator, which was used in the grid circuit design for the power tube used in the first air-cooled 50 kW broadcast transmitter. The "flip-flop" circuit constituted the basic switching logic device for the earliest digital computers later developed by RCA.

King also developed an RF drying process for the Goodyear Tire and Rubber Company while at RCA, one that allowed for a foam rubber production plant to yield a consistent quarter-inch thickness used for cushions.

Despite successes at RCA, King left in 1949 and returned to his native Tennessee to launch his own broadcasting engineering consulting firm, known as Louis A. King Consulting Engineers. By 1952, King began producing isocouplers and AM antenna equipment.

During the 1950s King designed custom antenna systems for numerous transmitter manufacturers, such as Singer, McMartin, CCA, ITA, Wilkinson, CSI, Elcom-Bauer and Collins Radio.

"Louis was innovative as anyone in

"My father never turned down a technical challenge. You just had to tell him what you wanted and he would build it for you," said Tom King, who took over the presidency in 1993.

Louis King, still chairman of Kintronic Laboratories, lives in Bristol, Va.

## Honor Roll

Recent winners of the NAB Engineering Achievement Award are listed.

- 1992 Edward Edison & Robert L. Hammett
- 1993 Robert M. Silliman
- 1994 Charles T. Morgan
- 1995 Robert Orban
- 1996 Ogden Prestholdt
- 1997 George Jacobs
- 1998 John Battison
- 1999 Geoffrey Mendenhall
- 2000 Michael Dorrough
- 2001 Arno Meyer
- 2002 Paul Schafer
- 2003 John W. Reiser
- 2004 E. Glynn Walden
- 2005 Milford Smith
- 2006 Benjamin Dawson & Ronald Rackley

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"Here is my take," Lee Tabor e-mailed me.

"I am a subscriber [of] XM Radio. I love it. If it is true that allowing XM and Sirius to merge would truly be a monopoly, then why is the National Association of Broadcasters complaining so vociferously?"

"I'll tell you why," he continues. "It is because the true competition of satellite radio is terrestrial radio. If it weren't the case, then why is the NAB complaining so much?"

"I don't hear automakers complaining; that is because they don't compete with satellite radio."

"I don't hear cigarette manufacturers complaining; that is because they don't compete with satellite radio."

"I don't hear Wal-Mart complaining; that is because they don't compete with satellite radio."

"You should be honest, because it is too easy to see through your logic," he continued. "You and the NAB have no interest in what is best for anyone outside of yourselves, yet you claim you have the best interest of all Americans at heart. Be aware that we are not as stupid as you take us for, and we know what we want."

"If free terrestrial radio is so good, and so good for America, then why is it that 15 million of us are willing to pay for what we could have for free? It is because terrestrial radio sucks, and it is clear that you are terrified of satellite radio, because it truly is your competition."

"My name is Lee Tabor, and I build houses for a living," he concludes. "I live in Victorville, Calif., and I'll take you on anytime."

★ ★ ★

A lot of people agree with Tabor, if not quite so confrontationally. It's not pleasant to receive a "put up your dukes" from a guy who builds houses and wants to rumble with me, even when he lives as far away as California; but the fact is that Tabor is not alone in

his feeling about satellite. Emotions run high.

It's too bad he attributes such cynicism to my March 28 editorial about the merger, which was widely circulated and mentioned by NAB in its own newsletter. In fact, as I noted then, I favored the concept of satellite radio, and said so against the wishes of many broadcasters when it launched.

**Hey, here's a thought. Let's crank WLW up to a half-million watts again. Why not? How is a national WLW with its antenna in Ohio different from a national XM with an antenna in the sky?**

Satellite has been good for the U.S. radio industry and consumers; it has pushed our industry to improve, without question. I have no doubt NAB and many broadcasters oppose this merger for their own business interests, some of which are more valid than others. I'm not stupid, nor do I think Lee Tabor is.

I oppose the merger for other reasons. The issues are whether allowing this monopoly within the pay radio market respects the conditions under which the service was launched, and whether it is good for you and for me as consumers. It is not.

There's no question satellite services compete with radio; Mary Quass, head of NRG Media in Iowa and a member of the NAB Radio Board, had it right when she told members of Congress, "Radio broadcasters do not compete in the national market of the satellite radio companies, but XM and Sirius do compete in the local radio markets."

Now, if you want to approve the merger and also give Clear Channel and CBS the right to establish national broadcast services, OK then. I certainly

don't advocate that path. But don't laugh. If the merger goes through, I predict you'll see big efforts to justify dramatic easing of current ownership limits on local broadcasters, and not just little tweaks of local market caps.

Hey, here's a thought: Approve the merger, but also allow Clear Channel to crank up WLW to a half-million watts again. Why not? How is a national

WLW with an antenna in Ohio different from a national XM with an antenna in the sky? If you accept the argument that satellite services compete nationally with local radio, maybe that's *exactly* what regulators should allow.

From satellite's inception I found it ironic that many supporters chose to ignore its big-business nature. Talking to some of these fans, you'd think XM and Sirius had been started up by the "Coalition for Micro Radio" or "Radio Free Everybody."

Folks, listen up: XM and Sirius are "big consolidated radio" and have been from the day they were launched. They are multibillion-dollar corporations that want to merge into an even bigger multibillion-dollar corporation. Competition with each other has driven them to produce a decent product. But what you profess to hate elsewhere on radio is what they will become under this merger.

Unfortunately, Lee Tabor makes another point with his e-mail. Commercial U.S. radio allowed the quality of its programming to slip so much over a decade that the phrase

## From the Editor



**Paul J. McLane**

"radio sucks" has become part of the vernacular. The proposed merger would be a lot easier to argue against if radio had been a better steward of its spectrum since the mid-1990s. He's certainly right about that.

However, one of the radio executives responsible for terrestrial radio as it exists today is the person trying hardest to merge XM and Sirius, a man who made his national mark at CBS/Infinity Radio. Lee, if you like what you hear on the satellite now, you might wish to oppose this merger. Because if it goes through, what you should expect are more ads, less program choice and higher rates.

★ ★ ★

Included in this issue of Radio World is "HD Installed: The Tale of Two HD Radio Facilities," a special pullout supplement. RW Technical Adviser Tom McGinley finds out more about a station that has been much in the digital news, early adopter WUSF(FM). And contributor Scott Fybush reports on Clear Channel's recent, intensive HD Radio conversion at its cluster in Cleveland.

Also, be sure to send John Bisset your suggestions for his first Workbench caption contest in this issue. When I was in college and helping to run WXDR(FM) in Newark, Del., I was Captain Caption, posting odd photos and soliciting captions from the staff. My offering is the headline on page 12. What's yours? ●

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# Conditional Access Tests Underway

by Leslie Stimson

**TAMPA, Fla.** Field tests of conditional access of an IBOC system are expected to continue through May at WUSF(FM).

As RW reported in the March 28 issue, this testing is a next step towards refining software and hardware necessary to encrypt the HD Radio signal for stations that choose to do so.

Conditional access requires encrypting and un-encrypting a broadcast signal, then "permissioning" a receiver so that it can decode the signal. Conditional access company NDS has developed the technology for HD Radio and its system is being tested at the station in Tampa.

Stations would need two pieces of NDS hardware to support the software, mating units called the Initiator and Protector. The Initiator is an administrative control unit; the Protector encrypts the signal. Both are installed ahead of the Importer in the air chain of a station using a second-generation or later HD Radio Importer. The Importer requires a software upgrade to accommodate conditional access.

WUSF is a longtime-Ibiquity test bed and was also the first public station to go HD Radio. Also involved in the tests are NDS, Ibiquity Digital and Harris; NPR Labs is observing.

The International Association of Audio Information Services is involved; WUSF is transmitting its radio reading service on its analog SCA as well as its HD3 channel. Program-associated data is being transmitted on the HD3 signal; for example, "WSJ" is displayed if an announcer is reading from the Wall Street Journal.

The process of permissioning a receiver to access the protected channel is being tested. There's no detrimental effect on the



From left: Hal Kneller, Harris; Tom Rucktenwald, NDS; Tim Anderson, Ibiquity/TBA Communications; Pat Malley, Ibiquity; Mike O'Shea, WUSF; Bob Hadden, NDS; Tom Dollenmayer and Dustin Hapli, WUSF; and Girish Warriar, Ibiquity.



PAD is being transmitted on the HD3 signal; e.g. 'WSJ' is displayed when an announcer on the WUSF reading service reads from the Wall Street Journal.

audio quality of either the HD3 or main digital signals by the encryption process, said Hal Kneller, senior manager of public radio initiatives for Harris.

The station is operating with a throughput of 48 kilobits per second on its main and HD2 channels and operating on the extended hybrid carriers at 24 kbps on the HD3, he said.

Test participants are turning on and off the equipment that encrypts the signal to see

how the digital sounds and if it affects the analog SCA at all. Kneller said it does not.

The audio quality at 24 kbps is noticeably different than what it would be on an SCA, he said. "It sounds almost as good

as analog FM. It's in mono. There's no static or hiss and all distortion is gone."

In order to receive a protected channel, a consumer would have to provide a serial number from his or her radio to the station or an entity in charge of a national database. Once the number was verified, that receiver would be unlocked, allowing the consumer to hear that channel, either for a one-time event or for as long as the individual pays for access.

The stations would decide how to use the channels and if they should be encrypted full-time or occasionally.

The serial number system and the actual encryption are two levels of security against system hackers, Kneller said.

Results of these tests were to be shared at the NAB show. By then, proponents hoped to refine the user interface, a Web browser that stations would use to operate the conditional access technology.

Kneller stressed that the software and hardware used in the tests is considered beta gear still under development. It may look different this summer, when NDS plans to ship equipment to stations. Receivers that can de-code the encrypted signals could be on the market by year-end.

When engineers were installing the HD3 test equipment, WUSF's HD2 channel was off the air for 10 minutes while participants upgraded the Importer. That could happen to a station when it completes initial setup of a conditionally accessed multicast channel, Kneller said.

WUSF is not using a second-generation Importer and required a loaner from Harris for the test; that could account for some of the downtime, he said.

## 'High-Definition Expanded Radio,' Based on SCAs, Will Deploy in Mexico and Haiti

**SARASOTA, Fla.** A Nevada-based technology company says it is working on a 50-channel radio broadcast technology using FM SCAs that it will deploy starting in nine major Mexican cities.

It says it has achieved 15-channel delivery and expects to expand it to 50 MPEG 3-quality digital channels soon.

Compress Technologies Inc. says prototype units of its FM-SCA technology have transmitted digital channels adjacent to analog FM signals. It expects to have products ready for market in about a year.

It says it has patented hardware and software designed to "greatly improve the efficiencies of bandwidth and network topographies for the cable TV, FM-SCA radio, satellite and wireless industries." According to the company, its systems "without loss of integrity shrink the size of digital packets to about 2 percent to 5 percent of their original size."

"HD Radio is being introduced and advertised as the new wave of radio," Compress stated. "(Our) technology goes beyond existing High Definition to HDE (High Definition Expanded) radio. High Definition Expanded radio offers more than just one or two new programs next to an existing FM radio station."

The company's licensee Ludwig Enterprises Inc. has entered a partnership with broadcast group New Century Services Inc. for deployment on stations in markets of Mexico. Compress Technologies will receive royalty payments from the operations. New Century Services will start deployment in Mexico City, Acapulco, Puebla, Veracruz, Cancun, Merida, Monterrey, Toluca and Salina Cruz.

"Network broadcast of up to 50 channels could be deployed in the top 10 Mexican markets yielding 50 times 10, or 500 channels of new programming," Compress stated in the announcement.

Ludwig Enterprises also signed a deal with Haitian American Broadcasting Corp. to deploy the technology in that country.

Compress Technologies' activities were prompted in part by its acquisition of VMSK Technology. It envisions an expansion of "narrowcasting" capacity that will "foster a new wave of creative thought within the industry."

Stations committed to certain professionals will be feasible for the first time, i.e. a "law station dedicated to legal topics of interest to attorneys in New York or even nationally through the network model." It envisions more ethnic broadcast outlets, education by radio in the car and simulcasts of programs from existing U.S. or foreign TV or radio programming.

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# Media

► Continued from page 1

the art of providing multimedia content to anyone who wants it.

But somehow it isn't that simple. How do we do we make the best use of these possibilities?

Public radio executives are discussing these questions, and the issues they are pondering apply to commercial broadcasters as well.

Attendees of the recent Public Media Conference in Boston gained insight and ideas from Internet and broadcasting industry insiders, outsiders, analysts, observers and colleagues. The annual conference was coordinated by the

Integrated Media Association, an organization of public broadcasting stations, program producers and networks.

The stated focus of this year's conference was action: finding concrete ways to change the culture and focus of traditionally conservative broadcasting organizations to recognize the challenges and opportunities presented by the new ways users are communicating through the Internet and other digital technologies.

The attendee demographics would certainly seem to indicate a willingness to look at the new realities; more than 80 of the 500 attendees were CEO- or GM-level representatives at their stations.

## Urgency

Attendees explored ideas to boost community engagement, create commu-

nities of content, encourage collaboration and tap into new sources of revenue through their online activities.

A sense of urgency seems to be driving these discussions. Virtually every presenter referenced the rapid pace of change in Internet media consumption behavior, whether by statistics or by anecdote.

As a key example, last year's conference attendees discussed how podcasting had grown quickly from an interesting collection of Internet technologies to a full-fledged, subscription-style audio service in just a few months. This year, podcasting was barely mentioned.

The most common cited examples of the shifting Internet landscape were the growth of YouTube and the growing importance of social networks built



IMA Executive Director Mark Fuerst



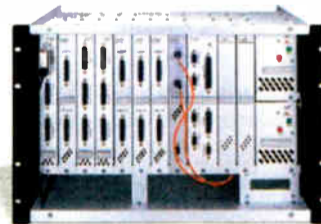
“The South has a lot of ‘favorites’ including barbeque, football and great hospitality. I’m adding Logitek to my list.”

“Logitek was the solution for our consolidation in Birmingham. We wanted a system that was flexible and reliable. The most flexible systems are based on router technology, and after looking at the choices, I picked Logitek. Logitek lets me make changes fast and seamlessly. It manages my satellite feeds, ‘talks’ extensively to my Prophet system and lets me add sources and outputs without ever changing a wire connection. My operators love the ability to get any source anywhere, too.

“When we built this facility we had four FM’s and an AM. Suddenly, I had four additional HD streams to incorporate into the system. Logitek let me add the additional stations with a minimum of frustration.

“Logitek may not be as high on my list as great barbeque, but it gets my vote for a great audio platform.”

Bob Newberry  
Market Engineering Manager  
Clear Channel – Birmingham



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around user-contributed rich media.

Tom Mohr, now director of the New Media Innovation Lab at Arizona State University and former president of Knight Ridder Digital, shared a cautionary tale from the newspaper industry's experience in the online world that put the urgency in context.

A conservative industry, newspapers are cautious about the Internet and have watched their revenue sources get snatched up by eBay and Craigslist, he said. But even now, Mohr believes, newspapers have a chance, as long as they react quickly: “Newspaper industry leaders are frogs in a pot,” he wrote in a Manifesto printed in Editor & Publisher magazine. “The water’s starting to boil, and it’s time to jump.”

## One ‘digital medium’

Another theme of the PMC had a familiar ring: Convergence.

But this wasn't the ghost of NAB convention slogans past; to this crowd, the convergence of media and computer technologies was a foregone conclusion. What was much more interesting to them was the convergence of all kinds of content — audio, text, video, still images, animations — into a single “digital medium” with many possible distribution channels.

Perhaps no one presented as strong a case for this idea than Michael Rosenblum, whose keynote address had conference-goers enthralled. A longtime journalist, video producer, trainer and consultant who started his career in public television, Rosenblum has developed and refined the concept of “video journalism” as an alternative to the traditional team-based television news production model.

Only half-jokingly, Rosenblum explains the central idea of video journalism as “Here’s the camera; there’s the door.” He likens the invention of the handheld video camera to the introduction of Gutenberg’s printing press, with the radical reduction in cost of equipment and complexity leading to a substantial increase in video production, rather than just a select few “illuminated manuscripts.”

Rosenblum told how he came to realize the value of using source material in different ways for different platforms. In the 1980s he worked with National Public Radio to provide international stringers with video cameras; he kept the video and NPR got the audio. He credits the experience of working with the network with raising his awareness of the need for pristine audio; he now routinely replaces the stock camcorder microphones with high-quality shotgun mics.

See MEDIA, page 8 ►

# Internet remotes... there's been talk.



## ➔ Live from 37,000 Feet— No kidding—Live Broadcast from a Lufthansa flight!



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*Peter Greenberg—Host of the syndicated radio program Travel Today*

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## ➔ Radio Free Asia—Live from the Himalayas



"The results [with ACCESS] were especially reliable considering that Dharamsala has one of most "problematic" Internet infrastructures that we have come across." — David Baden, Chief Technology Officer Radio Free Asia

For the complete story visit  
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## ➔ Ski Mountain Remote



This picture, really demonstrates what ACCESS is about. This product truly has the ability to cut the wires.

For the complete story visit  
<http://remotebroadcasts.blogspot.com>

## ➔ JAMN 94.5—Walk for Hunger



"ACCESS was used on the air exclusively for JAMN945 at this one. It was all over EVDO with a tremendous amount of active cell phones in the area. The ACCESS was connected to the Verizon wireless Broadband...

For the complete story visit  
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Put Comrex On The Line.

DIGITAL NEWS

## XM Sued by Second Music Group

**LOS ANGELES** XM Satellite Radio is being sued by a second music publishing group in a digital rights management issue. The National Music Publishers' Association filed a copyright infringement lawsuit over the satcaster's "XM + MP3" service.

The NMPA stated that XM MP3 players allow users to engage in illegal downloading because listeners can record "perfect, digital copies" of songs they hear on the satellite radio service, store them and arrange them into playlists. The music publishers' group says the satcaster is not paying appropriate copyright royalties for the reproduction and distribution of the music.

XM says it is paying music royalties to writers and composers who are also compensated by device manufacturers; further, the satcaster has said the song copies stay on the device and cannot be copied elsewhere and that the record-and-store ability only lasts as long as the user is a subscriber.

The plaintiffs in the suit, filed in federal court in New York, are Famous Music, Warner/Chappell, Sony/ATV and EMI music publishing entities. In the complaint, they seek a maximum of \$150,000 in damages for each work infringed by XM, and

list more than 175 songs as a "small fraction" of those being illegally distributed through the XM + MP3 service.

The publishers announced the lawsuit after months of talks with XM over the issue; in a statement, XM said the lawsuit was a negotiating tactic to gain an advantage in ongoing business discussions.

Last year, the Recording Industry Association of America filed a similar copyright infringement lawsuit involving XM's Inno on behalf of its record label members. This January, a federal judge denied XM's motion to dismiss the lawsuit. In that case, the satcaster said a consumer's right to make one copy for home use is protected by the 1992 Audio Home Recording Act.

## Tiered Pricing Plans Described in Merger Proposal

**WASHINGTON** In approximately 70 pages of documents filed with the SEC and FCC in March, XM and Sirius describe a tiered pricing system that would take hold if the merger of the companies is allowed by regulators.

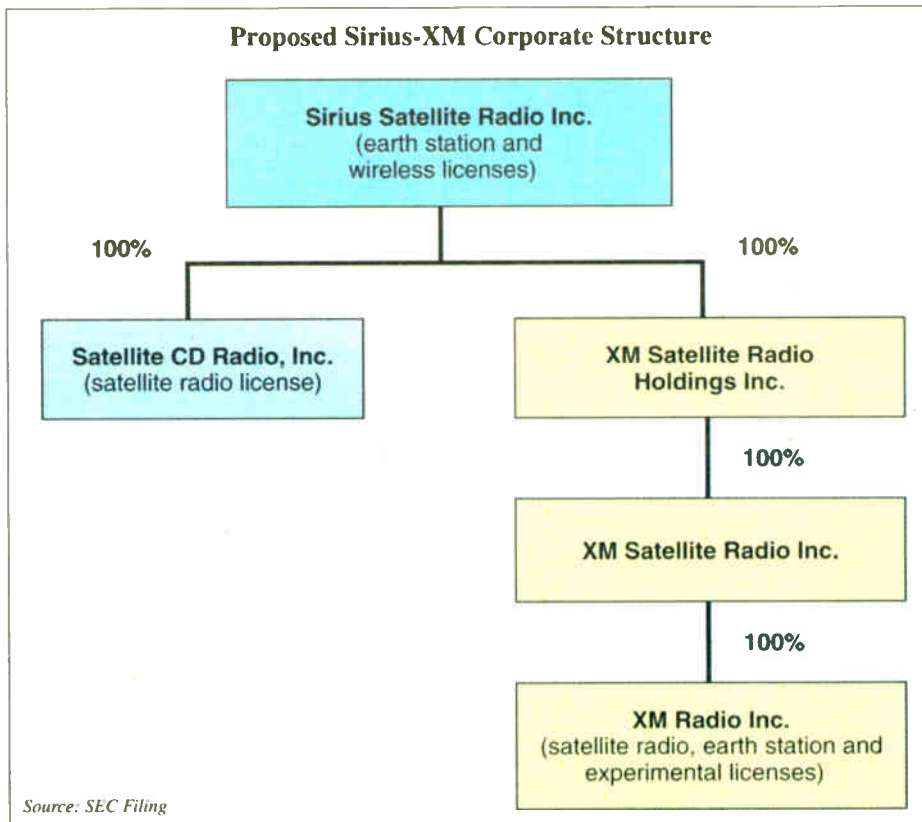
"After the merger, customers may elect to receive fewer channels at a monthly price lower than \$12.95; substantially similar programming at the existing \$12.95 price; or more channels, including

pubcasters face as they attempt to reinvent their businesses and connect with users in different ways through non-broadcast channels — and compete with thousands of other content producers — the experience at the PMC seemed to fill many attendees with optimism.

Presenters from outside the industry seemed to share that optimism. They spoke of the opportunity to broaden the reach and impact of public media and of public broadcasting's strengths built upon a history of community engagement and local focus.

In his conference wrap-up session, technology writer and guru Doc Searles told a story about the residents of Santa Barbara who, dismayed last year by the rapid decline of their local newspaper in the wake of an editorial power struggle, asked each other, "Why don't we make a public radio station?"

"You have a huge opportunity," he concluded. 



some of the 'best of both' networks, at a modest premium to the cost of one service, and considerably less than the cost of subscribing to both services," they stated.

At a hearing before the Antitrust Subcommittee of the Senate Judiciary Committee, Sirius President/CEO Mel Karmazin mentioned a possible figure of \$8.95 a month "or some lower price" and said the merged entity "would be willing to work with regulators" on that point.

In the filings, the companies state that a merger would benefit the public and not reduce competition in audio entertainment. The application repeats claims that XM and Sirius executives have made but does little to explain how they would be met. "The merger will not harm competition in any market, because a combined satellite radio provider will have no market power, let alone be able to dominate the market," they stated.

A chart at the end of the filing illustrates the planned corporate structure of the merged entity, with Sirius Satellite Radio Inc., "holder of earth station and wireless licenses," perched at the top, above both Satellite CD Radio Inc., "holder of the satellite radio license," and XM Satellite Radio Holdings, XM Satellite Radio Inc. and XM Radio Inc., "holder of satellite radio, earth station and experimental licenses."

## No Pay for Blocked Content

**WASHINGTON** Lawmakers are talking about programming, among other topics, as they see answers from the satellite companies about their reasons for wanting to combine.

Previous hearings included numerous discussions of price; however, members of the Antitrust Subcommittee of the Senate Judiciary Committee also focused in March on indecent and religious content.

Sen. Orrin Hatch, R-Utah, said in a hearing he assumed that faith-based channels on XM and Sirius would be halved in a merger.

Karmazin said those channels are popular. "You should not assume there'd be a reduction."

Hatch asked how children would be protected from indecent content; Karmazin said customers can have certain channels blocked. For the first time he indicated that those users wouldn't have to pay for the adult content, referring to a planned tiered pricing structure.

"Not only can they block it, but there'd be a cost reduction in their bill. They're not getting it and not subsidizing it somewhere else," said Karmazin.

See DIGITAL NEWS, page 10 

## Media

► Continued from page 6

Rosenblum sees a natural transition to what he calls "digital journalists" who create a variety of digital media for all platforms.

"The platform will define how it is used," he predicts. "Print will have text and stills, TV will have video, radio will have audio and the Web will have an interactive site with content that works."

### The future?

Writing on his blog shortly after the keynote, Rosenblum concluded, "In truth, we have moved from a world of discrete print, radio and television journalism to an increasingly integrated world of digital online journalism. The distinctions go away. We are all in the same business now."

But even in light of the challenges

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# “My Number One Codec Rental is Zephyr Xstream”

-Steve Kirsch, President Silver Lake Audio



Rack 'em and stack 'em! The Silver Lake Audio Crew pictured from left to right: Steve Kirsch, Ken Stiver, Kirby Miovac and Jay Shoemaker

“When ISDN equipment rentals began in the early 1990s, we started with an equal number of different companies’ codecs. Today, Silver Lake has over 100 Zephyrs in stock, ten times more than any other brand.” says Steve Kirsch, owner of Silver Lake Audio.

The reasons should be obvious. Reliability, ease of use, compatibility, great support.

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## Digital News

► Continued from page 8

David Balto, a former antitrust lawyer for the Justice Department and FTC, told lawmakers, "Courts have almost never approved mergers" in which the parties said they wouldn't raise prices. "Creating a monopoly is a problem. Our antitrust laws don't allow you to go back later and re-do."

Referring to the movie "It's a Wonderful Life," Balto said, "I'm not suggesting that satellite radio is like Mr. Potter ... but nothing replaces competition."

### Separate Platforms To Remain for Now

**WASHINGTON** If the satellite radio companies merge, they would need to support separate technology platforms until about 2016. This is important; Wall Street analysts have been debating how much Sirius and XM might save by merging and when those benefits would be realized.

The 2016 date comes from Karmazin, who testified before a House subcommittee. Satcasters don't want to make current receivers obsolete, he said.

When asked by Subcommittee Chairman Ed Markey, D-Mass., if a merged company might be able to give up one of its two chunks of 12.5 MHz spectrum space, Karmazin said that using compression technology, each company

could "squeeze more channel capacity" out of their respective services to add some more programming, but could not give up a big swath of spectrum.

### News Roundup

**INTEROPERABLE:** Sirius and XM combined have spent \$25 million on developing an interoperable radio. Karmazin told lawmakers that if there any manufacturer wanted to make the \$700 radio, "we could do it." "The issue is, we don't want to subsidize it" as separate companies.

**HD-R SUBSCRIPTION:** Karmazin has used HD Radio as an example of competition faced by satellite radio. When Hatch said a merged entity would be a "colossus," Karmazin said of terrestrial broadcasters, "HD Radio may someday evolve into a subscription service. They may choose to do that someday."

**ADULT CONTENT:** Lawmakers brought up adult content in questioning Karmazin. Sen. Sam Brownback, R-Kansas, went into a detailed line of questioning about "explicit material," content he said some might call pornographic. He asked Karmazin if a merged entity would still provide adult content; Karmazin said yes. Brownback asked whether as a condition of merger approval, he would agree to follow the same indecency regulations as terrestrial broadcasters. Karmazin said no.

— Leslie Stimson

## Newswatch

► Continued from page 2

der, who left after more than two years in the job. The company has 144 stations. Mason was president of CBS Radio 1995–2002. When he left it had 184.

He returns after serving as an adviser to CBS, other broadcasters and Ibiqity Digital for the past five years with partner Walter Sabo in a consultancy. Mason integrated the original CBS, Group W, Infinity Radio and American Radio Systems stations.

### 'Sirius Backseat TV' Is Coming

**NEW YORK** Sirius says the Chrysler Group and the satcaster will offer backseat TV service in 2008 Chrysler product line.

We reported from CES in January that the satcaster demoed the technology in a Dodge and said it would be available this year.

Sirius has been promising such a service since 2004, working on deals with manufacturers and content providers.

The satcaster has content deals with Nickelodeon, Disney Channel and Cartoon Network. The service will be in some 2008 model Chrysler, Jeep and Dodge vehicles, beginning with the 2008 Chrysler Town & Country and Dodge Grand Caravan minivans, available later

this year.

The system operates with an in-vehicle satellite video receiver and two small roof antennas. Programming is displayed on the vehicle's second- and/or third-row video screens. Rear-seat passengers can watch while front-seat occupants listen to Sirius.

The backseat TV option lists for \$470.

### News Roundup

**BEASLEY & LOUPAS:** Beasley Broadcast Group signed a two-year deal with James Loupas Associates for audio processing consulting and other services for stations in Philadelphia, Miami and Las Vegas. "Jim Loupas ... has developed a proprietary process for adjusting and processing the sound of a radio station to appeal specifically to its target audience," Beasley stated.

**NEW NCE CPs:** The FCC has voted to bring new or improved noncom FM broadcast service to 76 communities. The agency said the action represents a step toward opening the first filing window for new NCE FM station applications this fall.

**FORMS:** When new rules went into effect in January allowing commercial stations to change city of license, non-coms had to wait until new construction permit application forms were approved. The new Form 340 is ready. Use the Media Bureau's Consolidated Database System to access the form, which must be electronically filed.

# Recipient of NAB 2007 Radio Engineering Achievement Award

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Thank You!

To The NAB and All Of Our Friends In The Industry Who Helped Make This Possible



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# Wireless Broadband Internet Remotes



*"The first time out with the Tieline was a brilliantly simple experience for everyone involved. For lack of a better phrase, the codec just worked."*

- Christian Vang  
Chief Engineer  
Clear Channel St. Louis



*"The codecs sounded great. My management was very, very impressed with the demos"*

- Grady Jeffreys,  
Technical Manager,  
Mackay Communications



*"The remote was a spectacular success, in no small part thanks to the flawless sound which the Tieline G3 provided over the public Internet"*

- Mike Rabey  
Chief Engineer  
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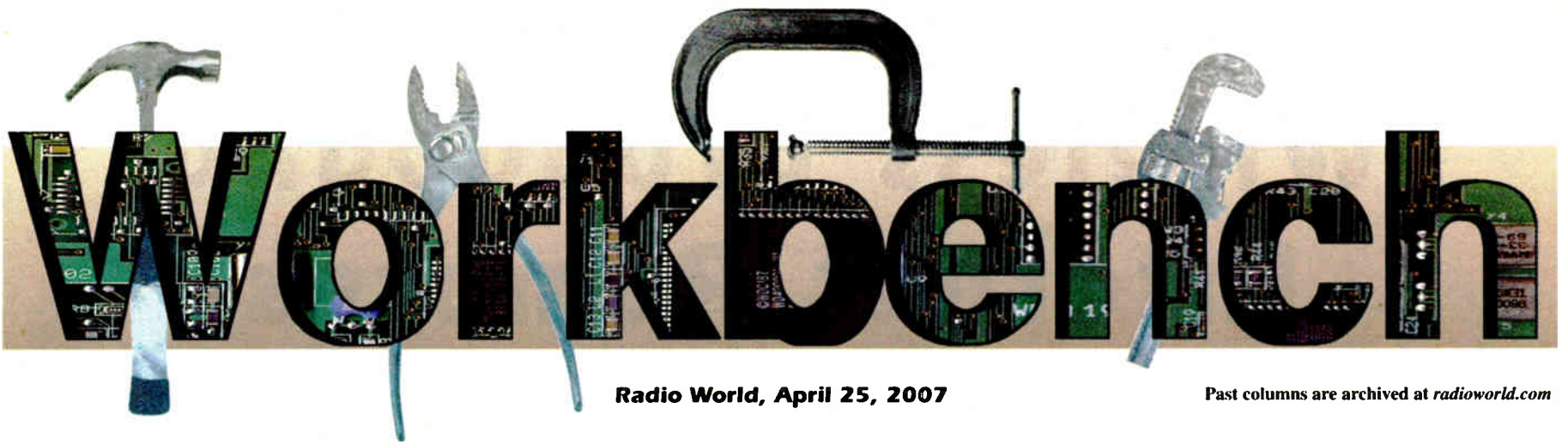


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Radio World, April 25, 2007

Past columns are archived at [radioworld.com](http://radioworld.com)

## 'Radio Station Has Blowout Ad Sale'

by John Bisset

Can you come up with a caption for Fig. 1? E-mail it to me at [jbisset@bdcast.com](mailto:jbisset@bdcast.com). We'll print the most creative captions in a future column.

★ ★ ★

Kevin Larke is the chief engineer for the Mid Michigan Radio Group; like many engineers he does a little contract work on the side.

While he was installing an automation system at one of his contract station sites, the manager asked Kevin to check out the VHF Marti RPT-2 that a church uses every week for a one-hour broadcast. The staff said it sounded bad.

Kevin hadn't planned this work, so he didn't have his dummy load, frequency counter and related test equipment along. All he had with him was a Bearcat handheld scanner with unlimited coverage from 26 to 1300 MHz. Checking out the signal on the scanner, Kevin discovered that the Marti sounded best around 161.6475 MHz. It was licensed to 161.67 MHz.

In the past, Kevin has fed a tone into the Marti transmitter and set the center frequency by tuning for lowest total harmonic distortion on a distortion analyzer. Since he didn't have a tone generator or distortion meter with him, an alternative plan emerged.

Kevin had brought his little Sandisk Sansa 512 MB MP3 player in his truck. He mainly uses it to listen to talk show podcasts while traveling. The MP3 player is patched into his JVC KD-HDR1 receiver. Yes, it's HD, but as many buyers found out, it doesn't decode RDS! The patch cable has 3.5 mm stereo plugs at both ends.

Kevin used Cool Edit Pro (now Adobe Audition) to create a minute of 700 Hz sine wave. He saved it as an MP3 and loaded it into the Sansa player via the USB port. He was able to use the same 3.5 mm stereo cable to patch it into the Marti RPT-2 line-level aux input.

Then with the tone playing through the transmitter and received through the scanner, Kevin tuned the Marti frequency for minimum distortion. It's easy to get the center frequency, just tune for the purest-sounding tone. If the tuning is off a little, you can actually hear the harmonic



Fig. 1: Can you come up with a caption for this picture?

distortion. Granted, it's not precise, but better than it was before the adjustment. Kevin then ordered a new pair of crystals because the tuning slugs were at their limits.

Kevin saw a 256 MB MP3 player on clearance in a K-Mart for \$20. His Sansa m230 512 MB player was only \$35 at Best Buy. In a pinch, borrow an MP3 player from a teen!

You could load a lot of high-quality test tones, white noise, etc. into one of these tiny players, making it a dirt-cheap little tone and noise generator to keep in the

toolbox. It gives a pretty decent line-level output since it's designed to drive 32 ohm ear buds.

That's amazing technology considering the device only uses one AAA cell. Kevin adds that it wouldn't be hard to add a resistive attenuator to drop the signal down to mic level.

Other simple mods could include the addition of a tiny transformer, switch and resistors in a box to get balanced line or mic levels. You could even get fancy and

See TESTING, MP3, page 14 ►

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# Feature packed.

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**Go (con)figure** • The folks at MPR say they really love being able to configure and administer an entire building full of consoles and routing equipment from the comfort of their own offices. Put an Internet gateway in your Axia network and you can even log into Element (or any other part of an Axia system) remotely from home, where there's plenty of Cheetos and Pepsi. Great for handling those 6 P.M. Sunday "help me!" phone calls from the new weekend jock.

**Perfect timing** • You can't have too much time. That's why Element's control display contains **four different chronometers**: a digital time-of-day readout that you can slave to an NTP (Network Time Protocol) server, an elapsed-time event timer, an adjustable count-down timer... and there's also that big, honkin' analog clock in the center of the screen (Big Ben chimes not included).

**Black velvet** • Some things just feel right. Like our premium, silky-smooth conductive plastic faders and aircraft quality switches. We build Element consoles with the most durable, reliable components in the industry — then we add special touches, like custom-molded plastic bezels that protect on/off switches from accidental activation and impact. Because we know how rough jocks can be on equipment. And nothing's more embarrassing than a sudden case of *broadcastus interruptus*.

**Swap meet** • Element modules hot-swap easily. In fact, the **entire console** hot-swaps — unplug it and audio keeps going; an external Studio Engine does all the mixing.

**How many?** • How many engineers does it take to change these light bulbs? None... they're LEDs.

**Talk to me** • Need some one on one time with your talent? Talk to studio guests, remote talent, phone callers -- **talk back to anyone** just by pushing a button.

**The Busy Box for jocks** • Element comes standard with a lot of cool production-room goodies you'd pay extra for with other consoles, like per fader EQ, aux sends and returns and custom voice processing by Omnia™, enabling you to quickly build and capture compression, noise gating and de-essing combinations for **each and every jock** that load automatically when they recall their personal Show Profiles. Context-sensitive SoftKnobs let production gurus easily tweak these settings, while simultaneously satisfying their tactile fixations. (Don't worry: for on-air use, you can turn off access to all that EQ stuff.)

**Screen play** • Use any display screen you choose, to suit your space and décor. Get a space-saving 12" LCD, or go for a big 21" monster. (This is Dave Ramsey's favorite Element feature, by the way. Anyone want to bet he bought his monitors on sale?)

**Lovely Rita** • LED program meters? How 1990's. SVGA display has lots of room for timers, meters, annunciators and more — enough to show meters for all four main buses at once. Reboot to 5.1 surround mode and the light show is even cooler, with surround audio and associated stereo mixes all going at once.

**Memory enhancer** • We know how forgetful jocks can be. That's why Element remembers their favorite settings for them. Element's Show Profiles are like a "snapshot" that saves sources, voice processing settings, monitor assignments and more for **instant recall**. Profiles are easy to make, too: just have talent set up the board the way they like it, then capture their preferences with a single click for later use. (Hey, make *them* do some work for a change.)

## Split decision

No, you're not seeing double.

Element gives you the choice of single-frame or split-frame configurations of **up to 40 faders**. Perfect for complicated talk or morning shows where the producer wants his own mini-mixer, or to give talent space for copy, newspapers and such. Solomon would be proud.

**Stage hook** • This button activates the emergency ejector seat. OK, not really. It's the Record Mode key; when you press it, Element is instantly ready to record off air phone bits, interviews with guest callers, or remote talent drop-ins. One button press starts your record device, configures an off air mix minus and sends a split feed (host on one side, guest on the other) to the record bus. Like nearly everything about Element, Record Mode is **completely configurable** — its behavior can even be customized for individual jocks. Sweeteeet.

**Missing features** • Did we forget something? Program these **custom button panels** with any macro you want, from recorder start/stop to one-touch activation of complex routing and scene changes using PathfinderPC™ software. You could probably even program one to start the coffee machine (black, no sugar, thanks).

**Mix-plus** • If constructing a complicated mix-minus on-the-fly brings a big grin to your face, you're excused. But if you're like us, you'll love the fact that Element does mix-minus **automagically**. Forget using all your buses for a four-person call-in, or scrambling to set up last-minute interviews. When you put remote codecs or phone calls on-air, Element figures out who should hear what and gives it to 'em -- as many custom mix-minuses as you have faders.

**Great Phones** • With Element, jocks never have to take their eyes or hands off the board to use the phones. Element works with any phone system, but really clicks with the Telos Series 2101, TWOx12, and new NX-12 that connects four hybrids plus control with a **single Ethernet cable**. StatusSymbols™ (cool little information icons) tell talent at a glance whether a line is in use, busy, pre-screened, locked on-air, etc. Even dial out with the built-in keypad.



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

Shown: 16-position split-frame Element, nicely equipped, \$12,538.00 US MSRP. Not shown but available: 4-, 8-, 12-, 16-, 24- and 28-position Element. Dual exhaust and whitewalls optional at extra cost.  
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## Testing, MP3

► Continued from page 12  
add various connectors and alligator clips. Of course there would be plenty of room left in the player for music and voice test audio files, too.

There's yet another benefit. Once your tones are stored in the Flash memory, they stay, even if the battery is removed or goes dead.

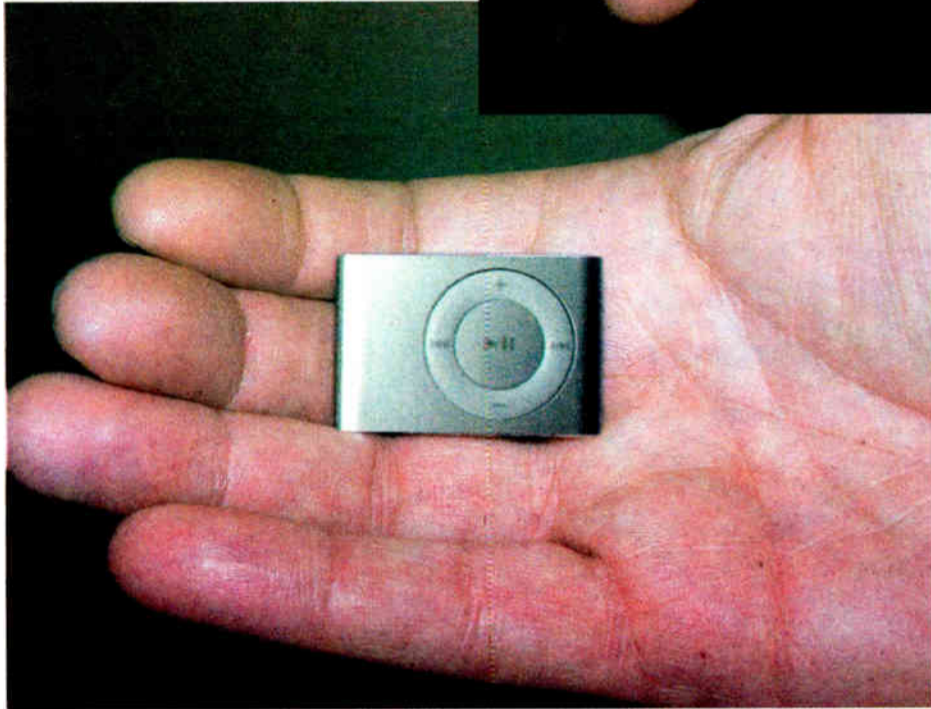


Fig. 2: It's an iPod. It's a tone generator. It's your backup audio source.

Pretty cool, huh? A tiny pocket size test tone, white noise, pink noise, music and voice audio source for under \$50. Such a deal!

Reach Kevin Larke at [klarke@mmr-glansing.com](mailto:klarke@mmr-glansing.com).

★ ★ ★

Dave Doherty manages the engineering for WBRU(FM), Brown Broadcasting in Providence, R.I. He got a slick Christmas present last year, an iPod

Shuffle, seen in Fig. 2, an MP3 player like the one Kevin described above.

Fig. 3 shows the control buttons. The stereo mini jack is located on the opposite end of the player. Note the squeeze clip. It could fit on your lapel — or clip to a blank rack panel!

Dave's application is to provide backup programming should there be an automation or STL failure at the station. Remember the adage "Good things come in small packages"? This one could really save the day as a backup for the station.



Fig. 3: Controls are on one end, the stereo jack on the other. Test gear in your teenager's pocket.

★ ★ ★

John Pecore of Stormin Protection Products, manufacturer of the Optilator, writes that if your unit has been installed for more than four years, you ought to consider sending it back to have the batteries replaced and the unit calibrated.

For those not familiar with the Optilator: This device serves to isolate and protect equipment from telco surges using a fiber optic transmitter/receiver.

If your Optilator went dead for whatever reason and was replaced with a new one, there is a 90 percent chance that the factory can repair the dead unit. Repairs are \$62.95 + \$9.40 shipping, and they do accept major credit cards. John Pecore can be reached at (888) 471-1038 or at [www.storminprotection.com](http://www.storminprotection.com).

The factory does not recommend that repairs or calibration be done in the field.

*John Bisset has worked as a chief engineer and contract engineer for 38 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). Faxed submissions can be sent to (603) 472-4944. Submissions for this column are encouraged, and qualify for SBE recertification credit.*

### BUSINESS NEWS

## Orban/CRL Brings U.S. Presence To New Audio-Over-IP Group

Orban/CRL has joined a new group that focuses on audio over IP issues and hopes to develop standards-based systems.

**audiip**  
audio-via-ip experts group

AETA Audio Systems in France and Mayah Communications in Germany recently founded the Audio-via-IP Experts Group, a move to coordinate technical efforts and reach interoperability of audio codec products of various manufacturers.

Orban/CRL's codec R&D department now has joined; the company is based in the United States.

The three companies issued a statement saying they have successfully performed transmission tests of their codecs applying SIP/RTP protocols according to draft standards from the European Broadcasting Union. Tests involved bi-directional transmission using G.711, G.722 as well as MPEG Layer 2 and Layer 3 audio coding.

### Mature

According to the suppliers, "EBU draft recommendations on compatibility of audio codecs during communication via IP standards include the following significant topics: unification of the connection set-up with SIP/SDP, audio formats, Forward Error Correction (FEC), as well as implementation of the further IP protocols. Support of these standards must be provided in the products of the company to join the Audio-via-IP Experts Group."

Executives involved include Aeta CEO Gerald List, Mayah CEO Detlef Wiese and the head of R&D for Orban Europe, Thomas Krey.

Wiese said codec recognition with SIP/RTP is becoming mature, "and automatic connection set-up has now become a reality for IP-based transmissions."

Key commented in the statement: "During the last weeks we have had good and intensive communication with both partners. The cooperation between the three companies has accelerated the development ... A compatible implementation of audio over IP with SIP/RTP will be the result. We are implementing new SIP/RTP features into our codecs."

A logo program allows a company to be identified as a supporter of the Audio-via-IP Experts Group and recognized as compatible with other partners.

Information about the organization is found online at [www.audio-via-ip.com](http://www.audio-via-ip.com).

ViaRadio Corporation  
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MARKET PLACE

## RDS Encoders Are From BW Broadcast

BW Broadcast is out with three new RDS encoders.

The RDS 1 encoder is marketed as a cost-effective rack-mount unit. The user interface allows basic parameters to be controlled with four buttons.

The encoder transmits RDS information such as program service name (PS), program identification (PI) and program type (PTY). Decoder information and music/speech flag are supported. The unit does not require a computer to set up or operate.



BW Broadcast RDS3

The BW RDS2 encoder supports scrolling text and timed text lists. A user can program up to 8,000 characters of program service name information. Programming is via a supplied Windows program, which can be used remotely via satellite. RDS groups are supported including "real-time" time and date.

A loop-through interface is for connection to an existing broadcast chain.

The RDS3 is a dynamic encoder with TCP/IP connectivity. It creates an RDS subcarrier and permits the insertion of static RDS parameters as well as EON, CT, PTYN, SLC, PIN, LINK, Paging, IH, TDC, TMC, ODA and EWS.

It can be connected to automation software for automatic display of artist and title. The RDS3 may be controlled through its 10BaseT Ethernet port and has an embedded Web server. Network protocols supported: Telnet, TCP/IP, FTP, HTTP, SNMP, SMTP and MIB integration.

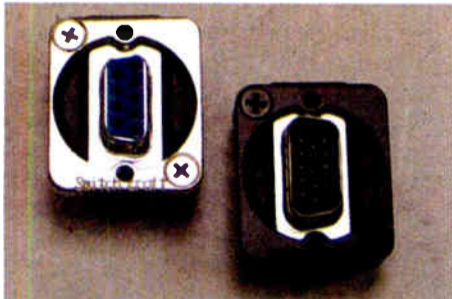
Scrolling PS is supported. Song titles and artist information from the automation software can be automatically wrapped around with text. The text can be customized and configured through a new HTML Web page, for example "Now playing" title "by" artist name "with name of the station."

An embedded scheduler displays messages based on time and date. This is useful for talk shows or news, the supplier said; a program director can access the embedded scheduler via browser and enter the names of guests of the talk show.

For information contact the company at (888) 866-1671 or visit [www.broadcast-warehouse.com](http://www.broadcast-warehouse.com).

## Switchcraft Offers D-Sub Connectors in XLR Receptacles

Switchcraft's EH Series range of panel-mount XLR receptacles fitted with USB, FireWire, BNC, phono, PS/2 and SVHS connectors has been expanded with versions fitted with 9-way and 15-way HD D-sub connectors.



The EH family uses Switchcraft's E Series XLR housings that fit standard 24 mm diameter panel cutouts.

The new D-sub versions have three feed-through options: male to male, male to female and female to female. They can be supplied with nickel- or black-plated front flanges. Male to female inserts are reversible to provide flexibility for installers. Mating cord connectors can be secured by tightening locking screws into the front flange.

For information visit [www.switchcraft.com/products/560.html](http://www.switchcraft.com/products/560.html).

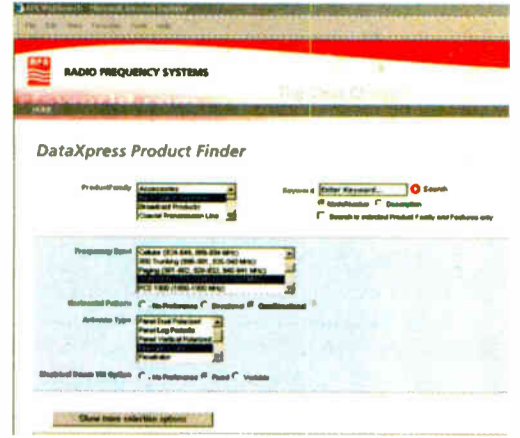
## RFS Upgrades Product Search

Radio Frequency Systems has updated its Web site.

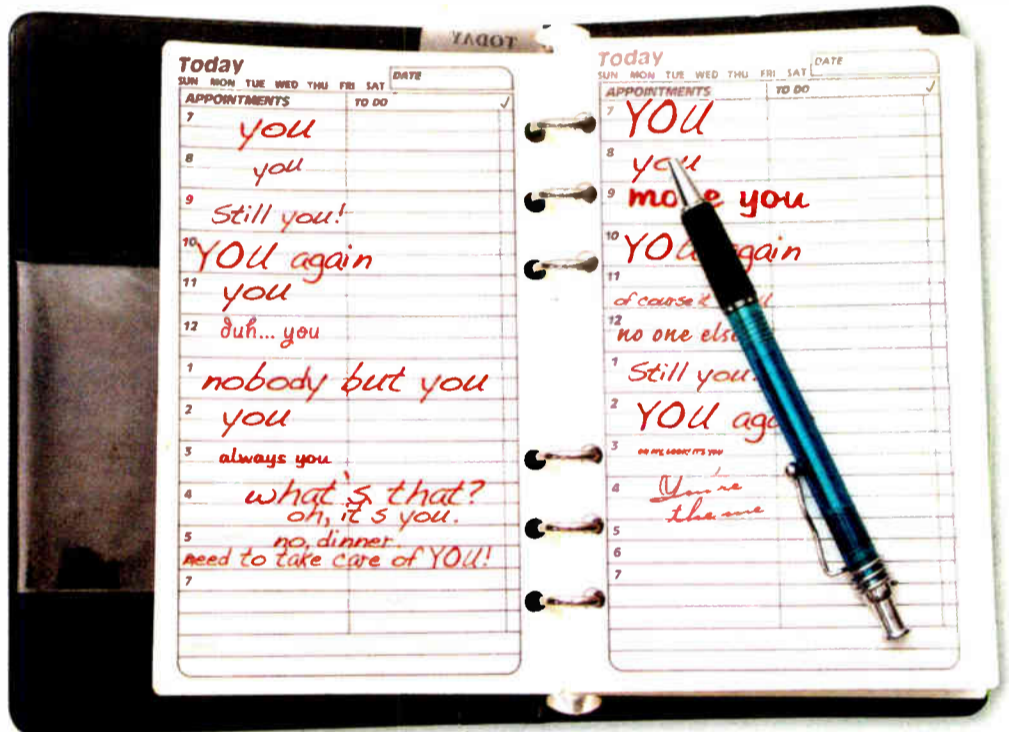
Two new inclusions are RFS DataXpress Product Finder, a searchable product catalog, and Stay Connected Xpress, providing local-language, region-specific versions of RFS's magazine.

The product finder provides improved access to information, RFS stated. It allows users to drill down through product sub-categories and display search results almost immediately.

For information visit [www.rfsworld.com](http://www.rfsworld.com).



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## RADIO IT MANAGEMENT

# You Can Podcast at Your Station

*With Many Stations Doing It, Maybe It's Time You Did Too. Here's How*

by **Brian C. Anderson and Christopher Prewitt**

In the last few years, radio stations have begun to investigate how podcasting can be used to enhance traditional broadcasting.

Due to the market explosion of portable media players, driven by increased popularity and falling prices, podcasting has become a valuable method for reaching more listeners. Podcasting can be a source of new revenue and quickly is becoming a service that listeners expect.

## What you need to know

Podcasting, in its simplest form, is audio that can be downloaded to a computer or portable media player and listened to at a later time. There are two major components of a podcast, the audio file and the RSS file.

Most podcast audio segments are compressed MP3 files. Other file formats, such as Apple's AIFF can be used, but the MP3 format is by far the most popular.

The second component of podcasting is the Really Simple Syndication (RSS) file.

RSS files are the key to syndication. They make the content available to applications, often called aggregators or podcatchers, and other Web sites.

RSS files, referred to as RSS feeds once made available online, contain information about the podcast such as the title, Web site URL, description and a link to



This icon has been established to identify syndicated content. Read more at [feedicons.com](http://feedicons.com).

the audio file itself (more details may also be included). RSS is a form of the Extensible Markup Language (XML) and it is this agreed-upon specification that allows for such a wide range of applications and Web sites to read and understand your RSS feed.

any particular podcast. By keeping older content off of your server, most storage problems will be alleviated.

Bandwidth issues, perhaps the most frequently overlooked consideration, can create big headaches for server administrators. Popular content has the potential to bring old hardware to its knees. Radio stations that pay for bandwidth (or have monthly bandwidth limits) may want to evaluate current bandwidth use carefully

## Our Podcasts

### Podcast Name



KCUR's Top Stories



KCUR's News Features



KCUR's KC Currents



KCUR's KC Currents (Arts Features)

Make your podcast links easy to access on your Web page.

Before we look into implementing podcasting, we will take a look at how radio stations can profit, and issues that you may potentially encounter.

Podcasting has the ability to be profitable in a number of ways.

Foremost, making podcasts of popular broadcast shows will widen your audience and increase listener loyalty. Increased Web traffic will add revenue if you use banner ads, and with these banner ads you can advertise radio station shows and services, or sell ad space to underwriters.

**A popular method that has emerged is the adoption of underwritten mini-commercials that precede podcasts.**

Some radio stations also require registration to access podcasts. This allows for the collection of listener demographics and contact information. Stations may also want to consider charging monthly or yearly fees for access to popular podcasts (as Rush Limbaugh began doing in 2005). Last, a popular method that has emerged is the adoption of underwritten mini-commercials that precede podcasts.

Podcasting is not just profit and potential; there are a host of issues that must be explored before you begin serving up podcasted material. Most issues fall into two categories: hosting issues and copyright issues.

Even compressed audio files can take up substantial storage space on servers if left unchecked. Although sizes vary dramatically based on quality and sampling, one hour of MP3 audio easily can occupy 30 to 60 MB of space. Make sure that you have ample storage space to accommodate your daily broadcasts.

Many broadcasters help to mitigate this issue by only posting the last five shows of

and consider a slow and steady podcasting implementation.

Even the best server hardware may not be able to survive what has been coined as the "Digg Effect" (also known as the "Slashdot Effect"). Popular social news sites like Digg.com and Slashdot.com have the ability to route massive amounts of visitors to smaller sites. Although definitive numbers do not exist, the "Digg Effect" has been reported by some server administrators as causing several thousand hits per minute for prolonged periods of time.

Server administrators will need to be prepared in advance to identify spiking content and possibly remove it until things calm down. The "Digg Effect" is magnified in situations where media files are involved (like a popular podcast), so it is an important issue to consider when podcasting.

## The law

An entire article could be written about the legal issues concerning podcasting.

In general, radio stations need to follow the fair use doctrine in U.S. copyright laws; this is something that broadcasters should already be aware of. The most important thing broadcasters need to consider, in relation to podcasting, is that it is illegal to redistribute commercially licensed music without a license. Obtaining licenses for commercial works can be difficult and sometimes impossible. For this reason, few stations podcast shows with blocks of music (due to the work required to edit out the commercially licensed content).

If a station wants to include music, one thing they can do is feature independent or Creative Commons licensed music. Creative Commons licenses do not always mean you can redistribute the work, so you still need to read the license. If you would like to read more about legal issues concerning podcasting we recommend you visit the Podcasting Legal Guide at [wiki.creativecommons.org](http://wiki.creativecommons.org).

## How to begin

Podcasts transform from content sent over the airways to files on a listener's See **PODCASTING**, page 18 ►

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# Podcasting

► Continued from page 16  
MP3 player in just a few steps.

Most stations already have the content generated that they need, and it is likely to already be in a digital format. If this is not the case, then your first step will be to capture your content into a non-compressed digitized format (such as a WAV file).

As mentioned, the audio file can be compressed into a variety of formats, but the most common encoding for a podcast is the MP3 format. Your station probably already has, and is familiar with, an audio editing/converting software package that can be used to create the MP3 files for your podcasts. If not, a free

product called Audacity is capable of editing audio files and MP3 encoding (using the free LAME MP3 encoder). You can find Audacity at [audacity.sourceforge.net](http://audacity.sourceforge.net).

Before you compress your audio file you will want to perform any necessary editing.

You may want to add segments like station identifiers, advertisements or bumpers to your audio file. A bumper is a brief piece of music that starts off, finishes or separates part of your podcast. You will also want to remove dead air, copyrighted material or anything else you do not want included.

While editing, please keep in mind that the length of your podcast is an important factor. Summary podcasts less than 10 minutes in length are more popular, but you may want to also have longer segments if listeners are looking for the entire show.

Once your content is fully edited, you are ready to compress.

In simplest terms, the MP3 file you wish to podcast can vary in sample rate (in Hz), sample format (in bits) and length. The higher the sample rate and format the larger your file will be, although you will benefit from higher quality. You will want to consider your content (the quality it

requires) and your storage restrictions when setting these values. A sample rate of 44,100 Hz and a sample format of 32 or 64 bits are the norm. If you have many files to convert to MP3 you may want to look into a batch/scripted LAME encoder or something like [www.audioconvert.com](http://www.audioconvert.com).

Once the MP3 file is ready, you will need to create or edit your RSS feed. Although you can create RSS feeds by hand (an excellent tutorial can be found at [rss-specifications.com](http://rss-specifications.com)) there are several



FeedForAll is a popular automation tool for generation RSS feeds.

tools to automate this task. The most popular software for creating feeds currently is FeedForAll and can be found at [feedforall.com](http://feedforall.com).

Once you have both components of your podcast, it is time to publish them on your station's Web site. Have your podcast links easy to access on the Web page to assist listeners in subscribing to them.

You may want to add your podcast to a directory so that people who do not visit your page are also able to find them. Three popular free podcast directories are iTunes, iPodder.org and PodcastAlley.com.

Podcasting services offered by radio stations are a popular supplement to live broadcasts. They allow listeners to catch missed shows and serve as a valuable tool to increase listeners, loyalty and profit. With so many broadcasters already providing these services at some level, radio stations not yet podcasting should consider the advantages sooner than later.

The authors are support systems administrators for UMKC Information Services at the University of Missouri, licensee of KCUR(FM). E-mail them Brian Anderson at [radio@brian-anderson.net](mailto:radio@brian-anderson.net) or Chris Prewitt at [radio@theprewitt.com](mailto:radio@theprewitt.com).

## Control Solutions

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- integrated rack panel



### Model RAK-1 Intelligent Rack Adapter

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- 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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News of recent sales and purchases of broadcast radio equipment and services. Sellers and buyers, send your news to [radioworld@imaspub.com](mailto:radioworld@imaspub.com).

Several vendors reported passing notable milestones.

**A-Ware Software Inc.**, developer of the MusicMaster for Windows music scheduling software, said it has exceeded 2,000 users. The company has been a music scheduling software provider since 1983 and launched a Windows-based platform in 2003. ...

**DaySequerra** announced the sale of its 1000th HD Radio monitor. The manufacturer sold the unit to **Vermont Public Radio** in Burlington, which ordered the new Model M4.2R. ...

And **Media Monitors** has said it has surpassed the 700-client mark. Customers include radio and TV stations, local cable operations and newspapers. The company offers broadcast monitoring and verification services. ...

**The Mississippi Public Broadcasting Network** now carries local weather content provided by **The Weather Channel** after signing an affiliate agreement. ...

**Heil Sound** said **Denise Plante** of Denver's "Murphy and Denise Show" on Entercom station KOSI(FM) is the first radio personality to adopt the Heil Pink Pearl as a primary on-air microphone. A percentage of the proceeds from the sale of Heil Pink Pearl microphones is donated to The Susan G. Komen Breast Cancer Foundation.

**Dalet Digital Media Systems** said Fjölmiðlavaktin, an Icelandic media monitoring group, chose DaletPlus Activelog to manage audio feeds of its broadcast monitoring business. ...

**Christian Broadcasting Services** began broadcasting on **WHKC(FM)** to the Columbus, Ohio area using a **Jampro** flat-panel, directional antenna. It's a new Class B station using a JCPD single-bay circularly polarized four-

dipole antenna system with protective radomes and deicers. Frequency is 91.5 MHz. ...

**Klotz Digital Asia** received an order to supply a 16-fader Aeon Digital On-Air Console to **Fly FM**, one of the two radio stations owned by Media Prima Group. The Malaysia station went on the air in 2005 calling itself the first in the world located in an airport.

Separately, Klotz system integrator **Telesto Broadcast Solutions Pte. Ltd.** installed and delivered a Vadis system to **Gulf News Broadcasting** of Dubai in the United Arab Emirates. ...

**Harris Corp.** said **Jefferson Public Radio** agreed to install Harris HD Radio transmitters at its FM and AM stations. JPR owns 21 stations in Oregon and Northern California.

Harris will also provide FlexStar HD



DaySequerra users Mike Seguin and Rich Parker of VPR

Radio products. JPR also is upgrading its analog microwave system to digital. It carries three public radio services shared among various stations but will be upgraded to carry up to nine program services, each FM equipped to broadcast two supplementary channels. Harris is helping JPR install Intraplex STL HD systems to stack multiple audio services over existing T1 lines. The conversions will take place over 15 months, with completion in spring 2008. ...

And **Backyard Broadcasting** purchased OMT's iMediaTouch radio automation software for two stations in Olean, N.Y. The installation marks the 11th and 12th radio stations that have installed iMediaTouch out of the 30 Backyard outlets in South Dakota, Indiana, Mississippi, New York and Pennsylvania. Tom Atkins is vice president and director of engineering for Backyard Broadcasting.



Ron Kramer of Jefferson Public Radio, second from left, with Harris representatives Chris Pannell, Deb Huttenburg and Hal Kneller.



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FIRST PERSON

# A Little Red Radio: The AA4, Perhaps?

*My Even More Minimal Radio and How It Changed My Life*

by Charles S. Fitch

I wrote in the Jan. 3 RW about "Remembering the All-American Five," which you can read under the Milestones tab at radioworld.com.

Writing that article brought to mind another memory.

Many radio stalwarts begin personal sagas with a line like, "It all started at a 5,000-watt daytimer in Lower Loc de Flambeau, Wisconsin." But for me it started even earlier, before the tower and the power, with a little red radio.

When I was 4, my sister Leila graduated from Forest Park High School, age 17, a classmate of Spiro Agnew. Almost overnight she went from being a student with an allowance of 25 cents per week to a woman with a good job as a telephone operator.

With her first paycheck, after paying her tuition to law school, she bought many of the things a teenage girl would want including a little red art deco Airline radio for her room. Airline was the radio appliance brand of Montgomery Ward and most of these units were made for it by RCA.

No sooner had she brought it home and

sound came out of it did I notice the radio. Worse, I was captivated. Like a phantom, I confiscated that radio when no one was

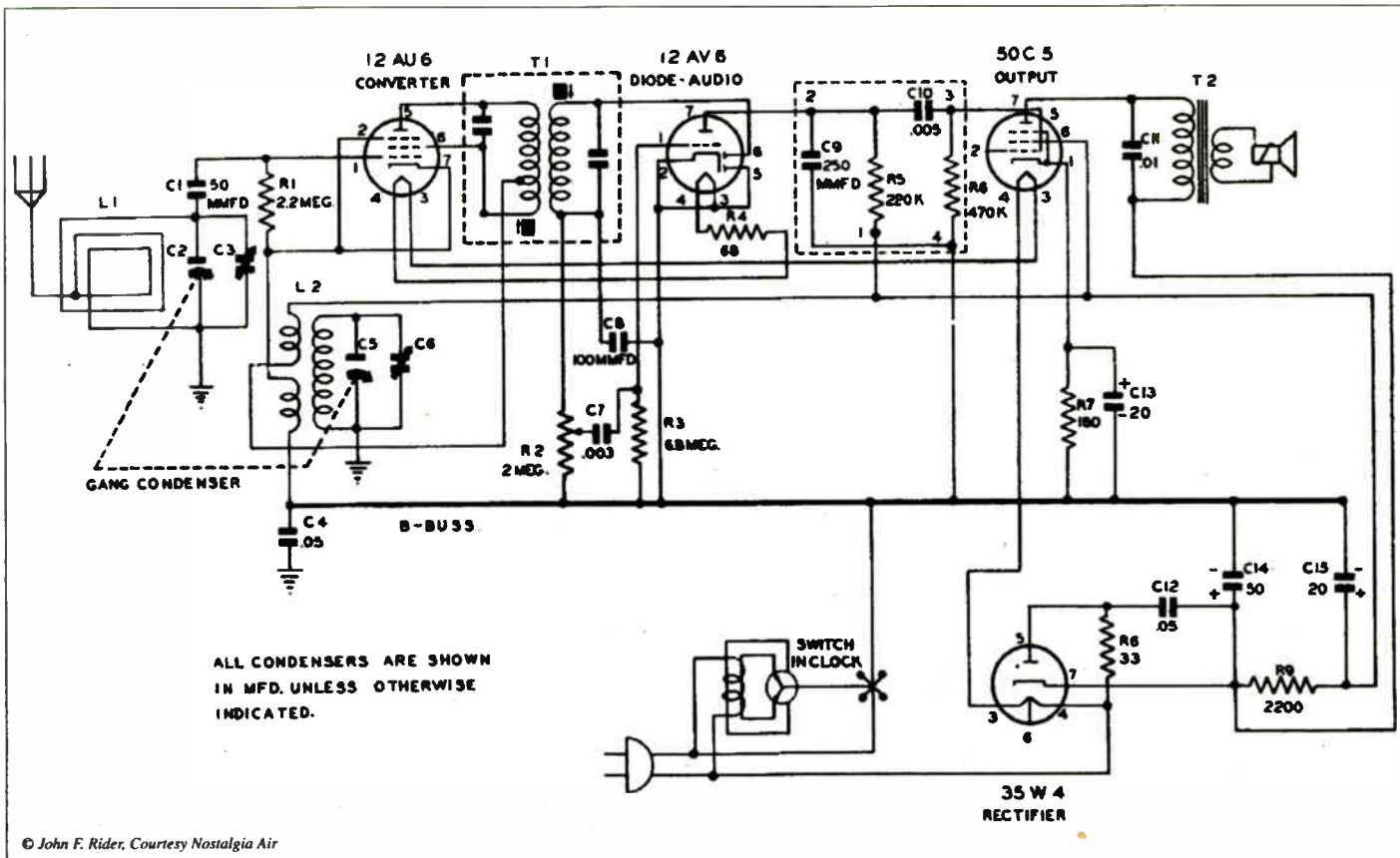
looking and took it to my room.

Obviously, Leila noticed within minutes and complained to my mother that

cleaner but is usable now.

This radio was meant to be even more cost-effective and minimal than the AA5 and had only four tubes — the AA4, perhaps?

With only one real RF tube and no AGC, sensitivity is poor. Even after



© John F. Rider, Courtesy Nostalgia Air

This schematic is for the clock-radio version of my radio. In place of the clock I just have an on/off switch.

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"little Charles has taken my new radio."

My mom had had six normal children by the time she had me at 47; she was tired of raising children, especially a precocious, fledging tech geek with kleptomaniac tendencies.

She turned my rearing over to my brothers and sisters who immediately set me out in traffic; but that's another story.

My mom's response to the purloining of the radio: "If it will keep him out of our hair, just let him have it and I'll make it up to you."

Within hours of zooming up and down the dial for the first time, I decided that whatever it took to make that voice come out of this box, I wanted to be part of it. The rest is history, or at least my history.

**Companion**

That radio and I became inseparable. It was on whenever I was in the bedroom. Actually it was mine all the way through high school, when it gave up its life, or at least the bare chassis, to become an IF strip in a shortwave project.

In my maudlin seniority, I have pined a bit for the comfort of that little red companion and started watching eBay for that model. Eureka and serendipity, a few weeks back and not only the same model but a radio in the exact same fire-engine red as mine.

Now it's here. Worse for its travels through time, the radio needed a new line cord, main multi-section electrolytic and one tube. Amazingly it appears that all were originals; only one of these was bad. The volume control needed an overnight bath in



An old friend is back on my end table after a 55-year odyssey.

peaking up, this one is as deaf as the original that sat beside my bed in Baltimore in 1951. At night I was lucky to get maybe four stations, WCAO, WCBM, WBAL and WFBR. Occasionally if I turned up the volume, I could get the Class IV stations that were running 250 watts, WITH and WWIN.

On the radio in the early 1950s, the networks already were starting to scale down in the shadow of the coming of TV. Still, the "Lux Radio Theater" and the "City Service" music program were on and exciting listening. "Suspense" and Gene Autry were Sunday favorites.

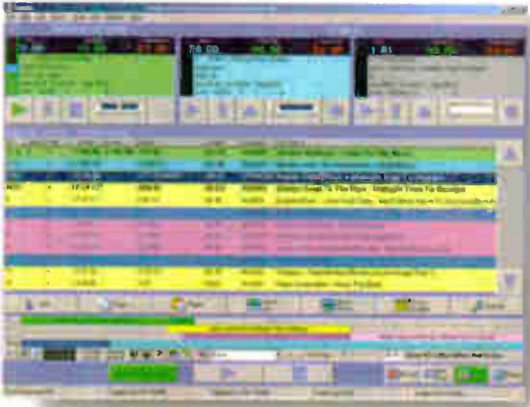
Neither the times nor the programs of that era will come out of this latest radio's speaker, but somehow, Rush seems to have more panache now when I turn him on here in Hartford.

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

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## Radio Automation



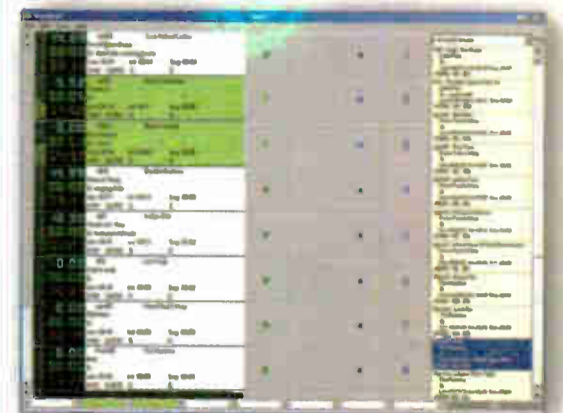
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## Instant Audio



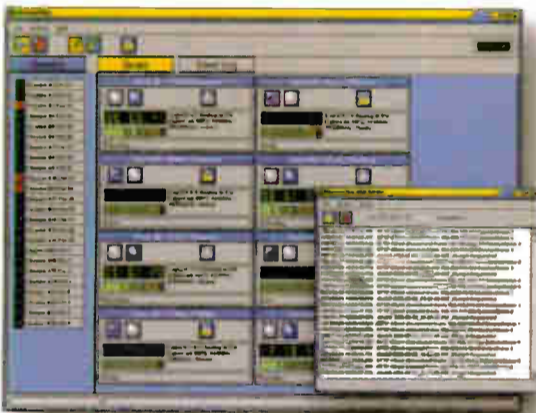
**Stinger** - Instant Access to 288 'rapid-fire' audio files.

## Digital Cart Player



**WaveCart** - the original on-screen cart machine replacement.

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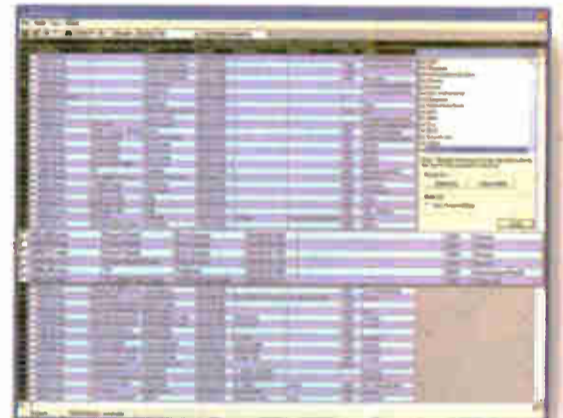
**SkimmerPlus** - skimming and audio logging with web playback.

## Complete Systems



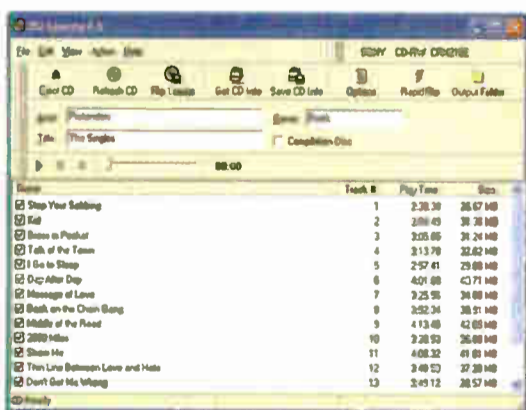
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# 'Dr. Tom' Helps You to Understand

Research Exec Wins 2007 'Mal' Beville Award, Moves From ABC Radio Networks to ESPN

by Donna Halper

Accurate audience research matters.

For broadcasters, ratings data can affect a station's choice of formats, which announcers get raises and how much a station can charge for commercials.

The National Association of Broadcasters, along with the Broadcast Education Association, offers an annual award to a person who has contributed the most to broadcast research. This year the winner of the Hugh Malcolm Beville Jr. Award is Dr. Thomas Evans, until recently the senior vice president of research for ABC Radio Networks.

In early April, Evans moved to ESPN, where he was named vice president, digital and cross media measurement. ESPN is 80 percent owned by ABC Inc.

The Beville award is named after a man whose career in audience research spanned five decades, who wrote one of the most important books on the subject, "Audience Ratings: Radio, Television, Cable."

Evans has carved out an equally impressive career over 30 years. In his



Dr. Tom Evans

recent post, "Dr. Tom," as he is often called, was accountable for research activities within ABC Radio Networks and worked with ABC Radio management at the 70+ ABC-owned radio stations. He fills a newly created position at ESPN, where he will focus on

research programs to support digital media growth.

Since receiving his Ph.D. from Syracuse University in 1986, Evans has worked as director of research for radio networks at NBC — the company where Mal Beville did some of his groundbreaking work — director of research for Mutual Broadcasting and vice president of research for such companies as Westwood One, Arbitron and Nielsen Media Research. He joined ABC in 1998.

## What it means

These days, Evans sees an industry in transition. The way research was done when he was starting out has undergone a number of changes in a relatively short time.

The biggest change is the role of computers and the Internet, he said. "We now have the ability to access data and process it faster. It used to take weeks to analyze data; now it can be done in a day. We used to have to do it all manually. I used to type the data onto the spreadsheets."

But while it is much easier to obtain and exchange information now, there is also a downside.

"Unfortunately sometimes that can lead to information overload — so much is available, it can be overwhelming." And it can be misinterpreted. Whether information is being used by agencies, programmers or people in the media, Dr. Tom wants it to be used correctly. In the rush to tell the story, he said, "people quote the figures, but they don't always understand what the data means or how the results were derived."

Not many journalists or program directors receive training in how research is done. They may not know about survey design, how the sample was derived or how the data was collected and by whom.

That lack of understanding can lead to erroneous conclusions, which is why Evans devotes a lot of time to education, giving talks those who will be using the research so they will be able to evaluate the information and use it wisely.

It was not that long ago when even those who knew something about research were limited in how they could apply it. Advertising agencies received the ratings, buyers chose the station with the best numbers in a given demographic and they purchased the ads.

But these days, broadcasters and advertisers are asking more complicated questions. Evans speaks about how the industry is moving away from simply measuring "transmissions" to thinking more about "receptions" — just because people heard the station, that doesn't mean they were paying attention to it.

"Advertisers don't just want to know how long people listen. They want to know if people remember the commercials they heard." And in a world where an increasing number now listen to Spanish or other ethnic radio formats, advertisers who may not speak that language seek research that will tell them what is unique about how that audience listens, and how best to reach them.

Advertisers also want to know more about how much impact the new technologies are having on the audience's listening habits.

## Previous Recipients

- 1989 William S. Rubens
- 1990 Gale Metzger and Gerald Glasser
- 1991 Frank Stanton
- 1992 Bill Schrank
- 1993 Mel Goldberg
- 1994 David Poltrack
- 1995 Harvey Spiegel
- 1996 Bill McClenaghan
- 1997 Dr. Bradley Greenberg
- 1998 Tom McClendon
- 2000 Dr. James E. Fletcher
- 2001 Terry Drucker
- 2002 Gary Chapman
- 2003 John Dimling
- 2004 David Kennedy
- 2005 Ceril Shagrin
- 2006 Jerry Lee

"They could be listening online, listening to satellite, podcasting, listening on their cellphone. Audio is being received in so many different ways." Advertisers want to know if their ad will get exposure across all these media and how effective that exposure will be.

"Everyone is concerned with accountability; they want to know what they got for their money."

## Connected

For researchers, that means developing new strategies (and new software) to collect and analyze data more effectively. The old methods — like having listeners fill out diaries — no longer fit with today's media landscape, but coming up with a better way is still an ongoing process. Among the challenges is how to adequately measure Internet listening.


Measuring podcasts is also in transition. "Currently, we just measure downloads. But that doesn't mean people really listened to what they downloaded. And if they did listen, how many times did they listen?"

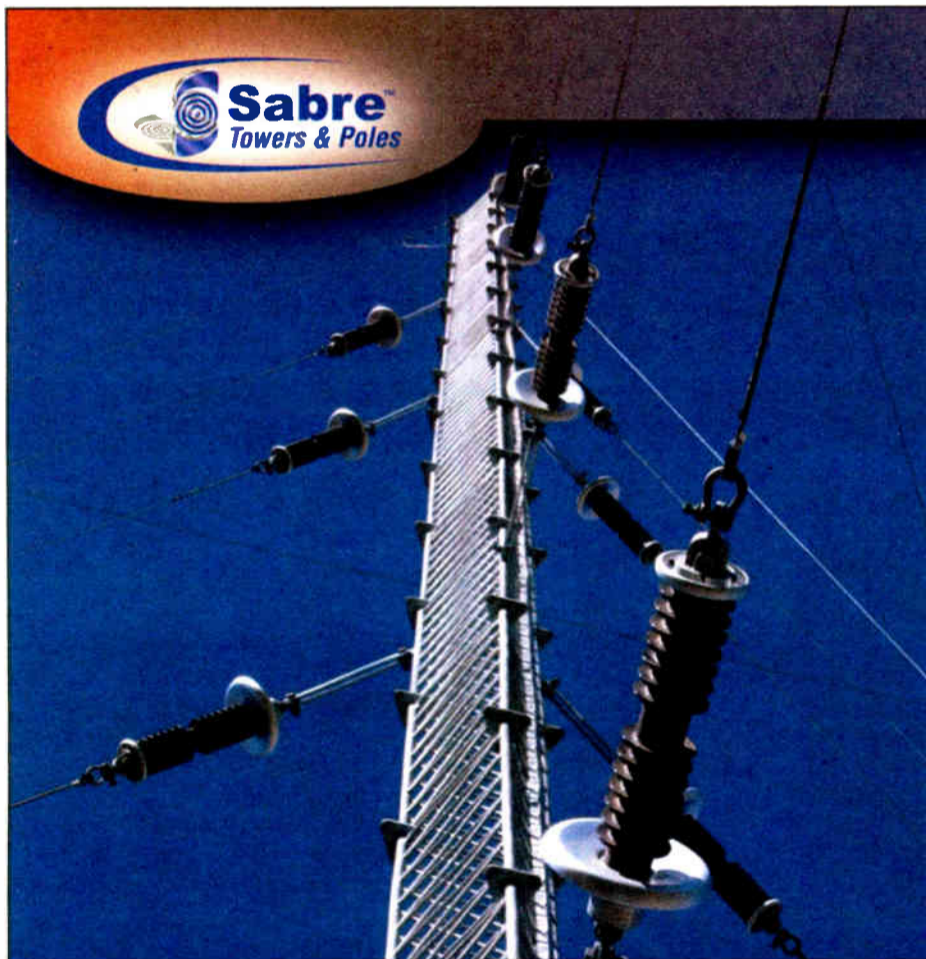
Evans is at the forefront of getting these questions answered. Widely respected for his knowledge of how to obtain quality research, he serves on the board of directors of the Advertising Research Foundation, where he has been the chair of the Radio Council (which, as an acknowledgement of the many ways people listen, has recently been renamed the Audio Council).

At the ARF, Chief Research Officer Joe Plummer, said, "Tom knows more about measuring radio audiences than anyone I know. And not just how big the audience is — who they are, and why they listen. He is a real treasure to our industry."

NAB Vice President of Research and Information David Gunzerath agrees. In his six years in that position, Gunzerath has come to know Evans's work firsthand, as they have served on committees together. It was Gunzerath who informed Evans he had won the Beville Award.

"Everyone recognizes Dr. Tom's great leadership skills. He has steered us through some turbulent times, and has made many contributions to improving the quality of audience research."

"When he told me I had won," Evans recalls, "I was humbled, because some of the people I admire the most have won this award. Jerry Lee, who won it last year, is a close friend. And some of the other people who won are people I looked up to and admired when I was starting out." 



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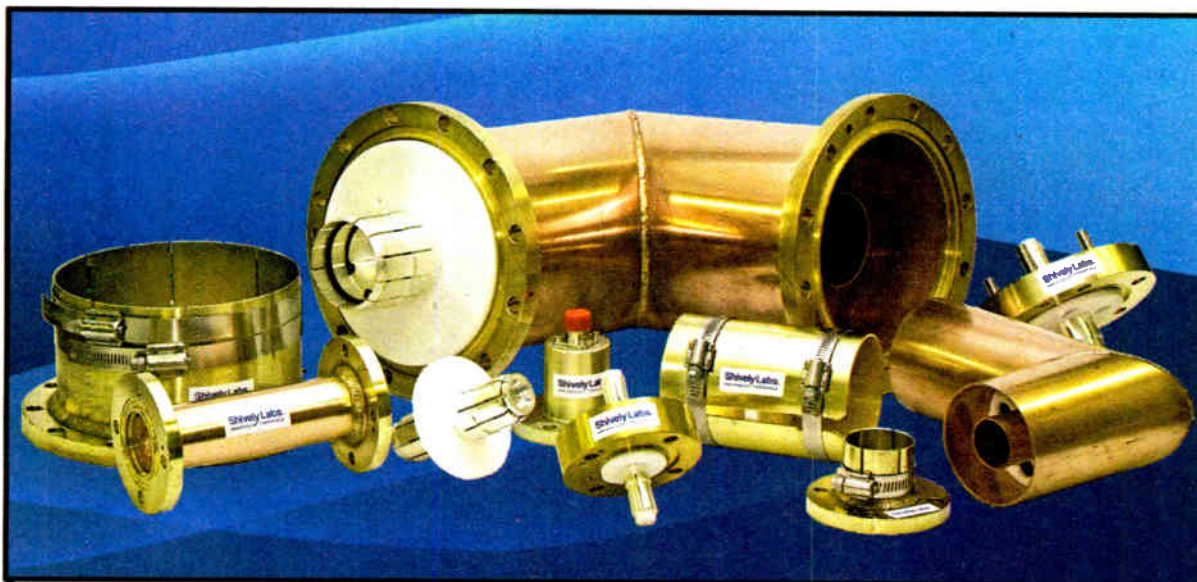
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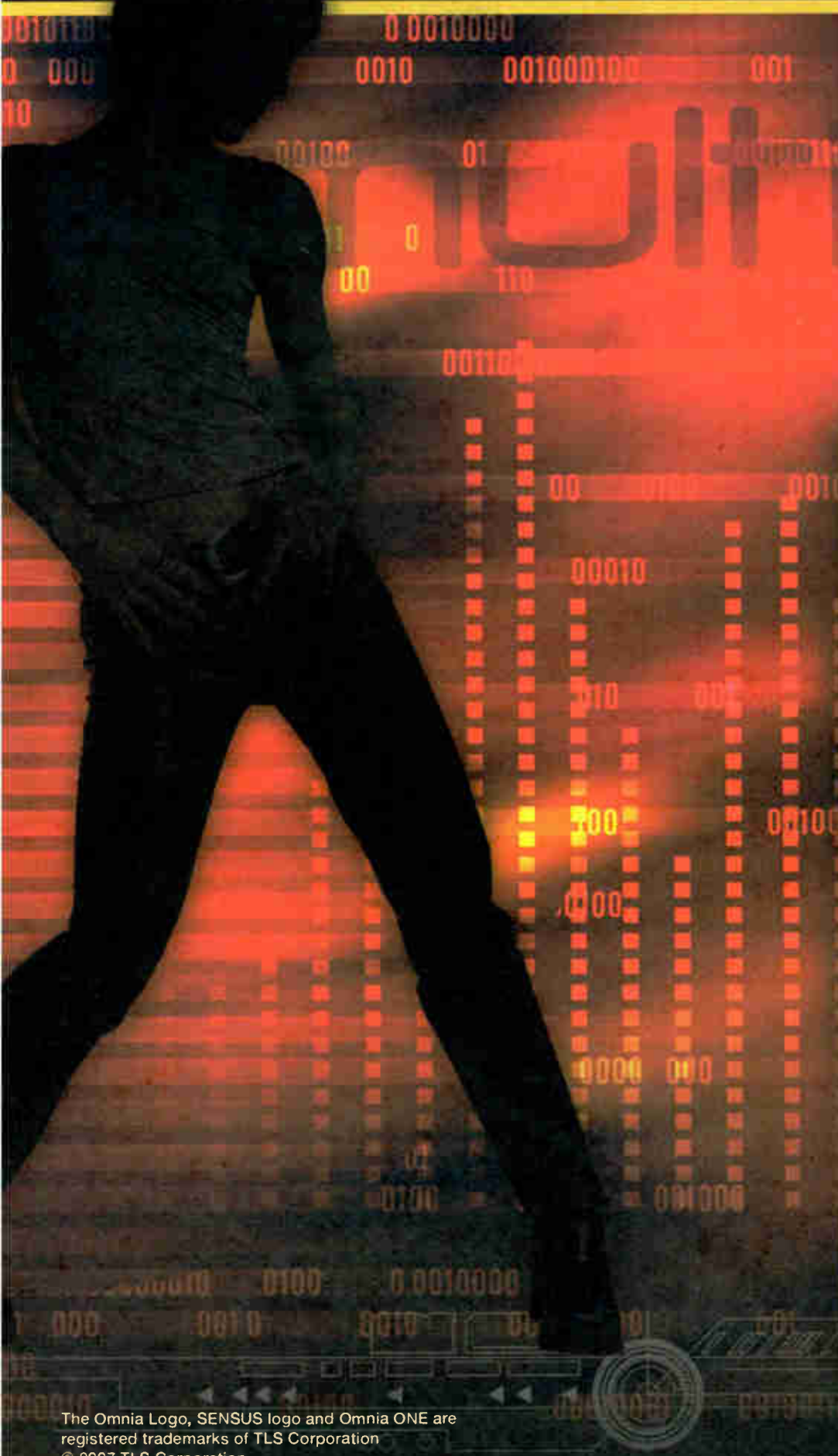


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Omnia ONE



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- » Final limiting optimized for the HD codec, using feedback limiters for the lower two bands and feedforward for the upper two bands
- » Sensus codec conditioning technology
- » Time aligned, dynamically flat, perfect reconstruction crossovers
- » Selectable phase rotator
- » Analog, AES3, and Livewire I/O
- » Automatic input failover on loss of audio
- » Ethernet, RS-232, and GPIO for remote control



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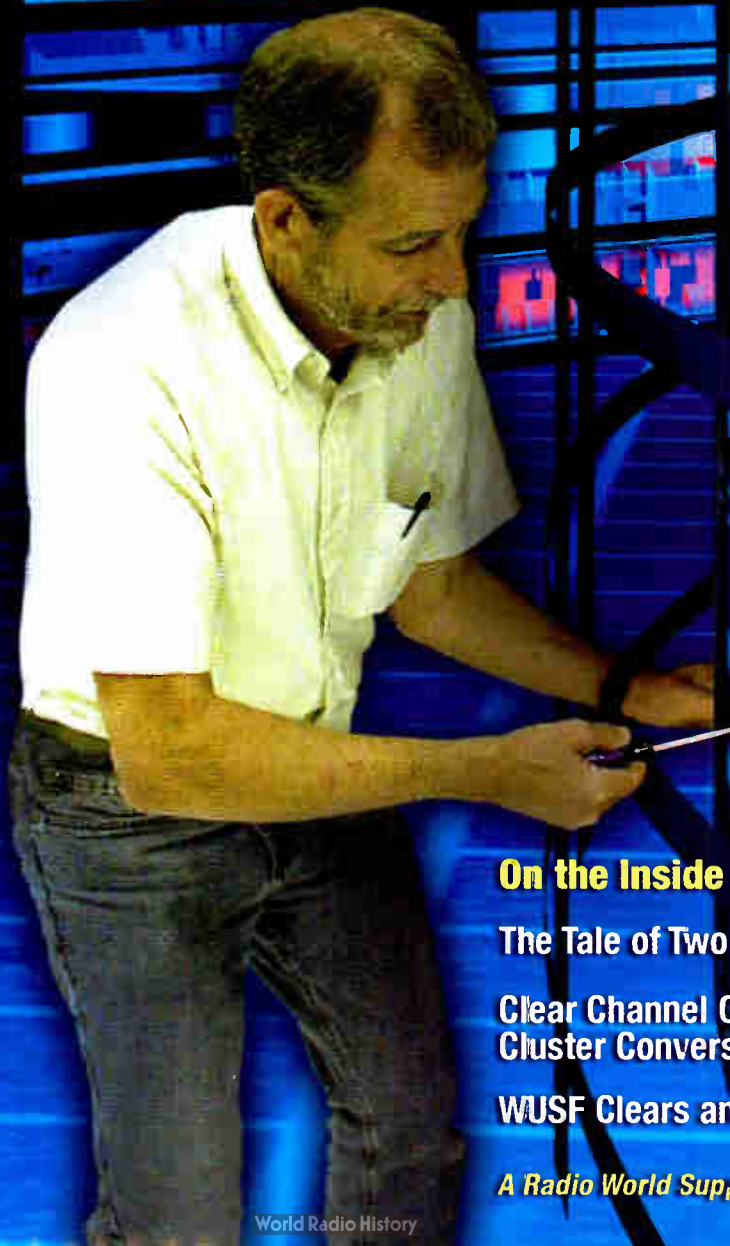
HD Radio is a trademark of Ibiquity Digital Corp.

tech specs



# HD RADIO INSTALLED

*A Special Report from Radio World Newspaper*



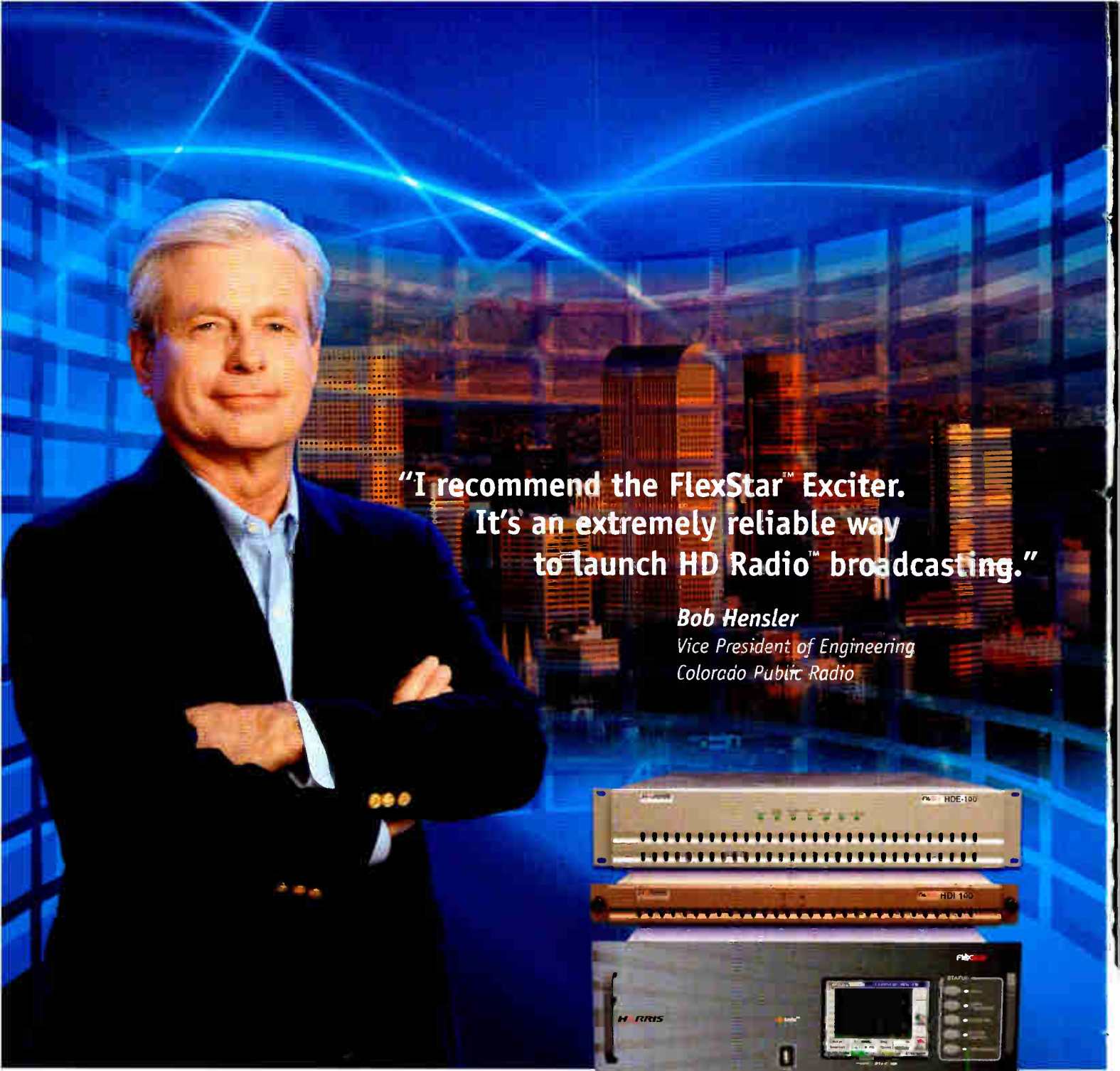
## **On the Inside**

**The Tale of Two HD Radio Facilities:**

**Clear Channel Conducts an Intense Cluster Conversion in Cleveland**

**WUSF Clears an HD Trail Early**

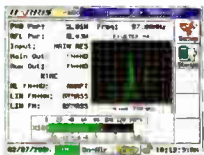
***A Radio World Supplement • April 25, 2007***



**"I recommend the FlexStar™ Exciter. It's an extremely reliable way to launch HD Radio™ broadcasting."**

**Bob Hensler**  
*Vice President of Engineering  
Colorado Public Radio*

**FlexStar™** HDI-100 Importer HDE-100 Exporter HDX-FM/HD Exciter **Managing Content. Delivering Results.**



**Real Time Spectral Display**  
*This exclusive Harris feature provides easy verification of FCC mask compliance.*

"We've found Harris' new Exciter, along with the Importer and Exporter, to be very flexible and reliable. There are more inputs on this Exciter than any other brand, allowing flexibility and minimal downtime. Plus, Harris is the first to include iBiquity's Engine Architecture which gives us a simplified, more reliable installation. With the help of Harris, we now provide more streams and channels to the Denver population without adding transmission sites. I recommend the Harris FlexStar family to other radio groups. It's as easy as new technology can be to operate and helps us accomplish our goals."



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# WUSF in Tampa Clears An HD Radio Trail Early

From Digital Radio to Conditional Access, Univ. of South Florida Station Is an Early Adopter

By Tom McGinley

The University of South Florida's premier classical and NPR radio service jumped into HD very early.

In the fall of 2002, General Manager JoAnn Urofsky and Chief Engineer Mike O'Shea launched their plan to make WUSF(FM) the first station in Florida — and the first public station in the nation — to add HD Radio. Their motivation to become an early adopter was not the allure of "new tech" but the opportunity to provide more to their listeners.

"WUSF's philosophy regarding technology is to be an industry leader that uses technolo-



WUSF(FM) Station Manager Tom Dollenmayer, General Manager JoAnn Urofsky and Chief Engineer Mike O'Shea (from left) got behind HD Radio early. Dollenmayer holds a Kenwood KDC-MP228, O'Shea has the Boston Acoustics Receptor HD.

WUSF funded its entire \$150,000 investment for HD conversion with money it had been accumulating on its own. Because the station did not have to finance anything from outside sources and was adding to existing systems, it was able to buy what it needed without a competitive bidding process.

## EARLY LIMITATIONS

Besides the risk of spending considerable money on a new technology completely untested in the consumer marketplace, early adopters like WUSF have had to face the vagaries of first-generation hardware solutions.

The only method to add HD digital to the main analog carrier was high-level combining into a common antenna. Since then other options have emerged, and Chief Engineer Mike O'Shea laments the early limitation: "I would not be high-level combining my digital and analog if I could do it over — and I may. I would love to have an interleaved antenna for HD. Right now, if I am on my backup transmitter I have no HD."

Despite the downside risks, Dollenmayer still considers moving forward to have been well worth it. "Investing in HD Radio early has allowed us to be a leader in HD Radio technology and to lead the charge in our market. The majority of stations in our market are now HD. I have to think that we had something to do with how rapidly HD was deployed in Tampa Bay."

## MORE CHANNELS, MORE CHOICES

In addition to implementing HD for the main channel classical music format, WUSF was quick to add multichannel service in the fall of 2005 when it first became available.

"WUSF is using HD2 to bring programming that has been requested by our audience and is new to the Tampa Bay market," Dollenmayer said. "WUSF 89.7-2 is an all-news and infor-

continues on pg 4

## Omnia.8X for Multicast

If you're multicasting, or plan to do so, the new Omnia.8X is a tool that will make life easier — eight times easier, to be exact!

Omnia.8X puts eight stereo three-band Omnia audio processors into a single, networked chassis. Why buy multiple boxes? All you need is one Omnia.8X to give all of your HD Radio multicasts and Internet streams the clean, smooth, full sound your listeners crave.

Omnia.8X will help dramatically improve the sound of your bit-reduced audio with the power, punch and purity of Omnia audio processing. Omnia.8X works ahead of audio coders to condition and enhance audio for HD Radio, Internet and satellite broadcasting.

Each of the eight Omnia audio processors has three bands of Automatic Gain Control plus Wideband AGC, Omnia's look-ahead final limiter and Bass Enhancement controls, plus factory presets that make it easy to get your audio streams up and running quickly.



Omnia.8X isn't limited to improving only coded audio, though. You can also use it to process headphone feeds, apply multi-band level control to codec or phone feeds, send processed audio streams from a studio complex to multiple transmitter sites, or process in-studio musical performances and commercial production on-demand.

Omnia.8X is also ready for broadcasting's networked future. It employs the Livewire standard for sharing professional networked audio over Ethernet; connect your Omnia.8X directly to your Axia IP-Audio Network — a single CAT-6 cable is all that's needed for all eight channels of stereo I/O and remote control.

Don't have an Axia network yet? Pair Omnia.8X with an Axia AES/EBU or Analog Audio Node for use as a standalone, high-density audio processor.

Contact Omnia Audio at (216) 241-7225 or visit [www.OmniaAudio.com](http://www.OmniaAudio.com).

Product information is provided by suppliers



### The StrongeST Link For HD Radio

A fully featured STL solution, APT's WorldNet Oslo enables transport of multiple feeds of high-quality near-lossless audio to HD Radio gear at the transmitter. Offering flexibility in both primary and secondary paths, it offers synchronous (T1 or E1) or packetized (IP) transport over leased lines, microwave, fiber or spread spectrum. T1/E1 transport cards support two circuits, drop and insert and cross-connect functions with no added hardware; it offers the ability to add IP and RS-232 data for PAD, RBDS, remote control or station LAN extensions.

As well as uncompressed linear audio and J.57 companding, the unit supports 16- or 24-bit Enhanced apt-X offering cascade-resilient, near-lossless audio quality with under 2 ms delay. WorldNet Oslo is card-based expandable and offers redundant power supplies, "hot-swappable" cards, automatic back-up functionality and DSP-based architecture for 24/7/365 reliability.

Settings can be managed remotely using the Codec Management System software for configuration, control and fault monitoring.

Contact APT at (800) 955-APTX or visit [www.aptx.com](http://www.aptx.com).

### Logitek at WUSF(FM)

Logitek's Mosaic console systems were selected by WUSF to handle audio routing and mixing requirements for their operation.

The Mosaic is an advanced control surface for Logitek's Audio Engine router, which handles analog and digital I/O and offers a variety of functions including dynamics processing, delays, up to 24 mix-minus busses and advanced scripting functions for one-button event triggering such as scene changes. Mosaic consoles are available in a number of frame sizes to accommodate user needs and space requirements in the studio.

Consoles feature rugged Penny & Giles faders, flexible monitor controls, color LCD screens on each module with 16-character source names for easy identification and programmable softkeys for easy operator control.

Contact Logitek at (800) 231-5870 or visit [www.logitekaudio.com](http://www.logitekaudio.com).

Product information is provided by suppliers



*WUSF continued from pg 3*

mation station featuring shows from NPR — 'Fresh Air,' 'Talk of the Nation,' 'News & Notes,' 'The Diane Rehm Show' etc. — Public Radio International and American Public Media. Some programming is simulcast from our main channel; however most programming is unique to the station."

The HD-2 service employs Gig Brown, a full-time program manager who makes sure that the content is fresh and promos are up to date. He also voice-tracks the breaks for the channel.

WUSF recently joined a collaborative effort to test a new system being developed for supplemental HD channels called conditional access. The technology will permit special encoded programming in the extended hybrid mode region to enable controlled use of its content in the form of a subscription service.

NDS developed the system in partnership with Harris Corp., Ibiquity Digital and NPR Labs. The group is beta-testing conditional access on WUSF under special temporary authority on HD3 at a data rate of 25 kbps. Conditional access promises to offer a new revenue-generating option for HD stations.

WUSF is splitting the currently allocated HD data rate of 96 kbps in half, 48 for HD1 and 48 for HD2; this has become common practice among stations multicasting with one extra channel. The HD3 is in the extended hybrid region and adds another 25 kbps.

### BEST ENGINEERING PRACTICES

Chief Engineer O'Shea recommends that stations contemplating HD conversion engage in careful planning.

Various methods are now available to launch HD transmissions, including high-level, split-level, single transmitter linear, common anten-

***I believe it's time for Ibiquity to bite the bullet and help the HD broadcaster to sell this product.***

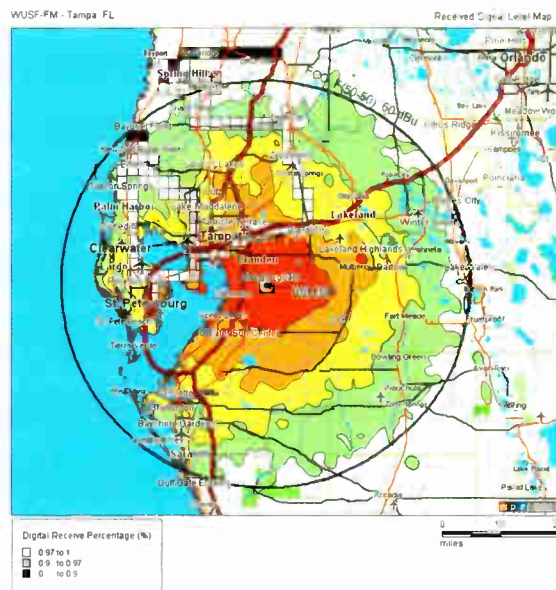
— Mike O'Shea

na, separate and interleaved antennas and dual-feed antenna systems. Individual circumstances need to be evaluated closely.

"Today there are other ways that are more efficient ... One should consider the power bill. If your station is going to upgrade both the analog as well as add HD, consider your options

that will provide redundancy. A lower ERP during a failure is better than no ERP." He recommends buyers discuss this with their transmitter suppliers.

The WUSF equipment infrastructure from studio to transmitter already was in good "digital-ready" condition and could support HD



A coverage map by NPR Labs shows WUSF's digital coverage.

Radio without a lot of additional updating.

O'Shea describes the WUSF equipment layout: "At the studio we have Logitek Numix and Mosaic digital consoles in the on-air room and three production rooms using their Audio Engines. We will be rebuilding two more rooms with Logitek equipment in our news department this spring/summer. When this is completed the studio will be totally digital."

All of the WUSF HD-related equipment is at the transmitter site. O'Shea described the STL chain: "We have two ways to send the audio to our transmitter site. The primary is a Harris Intraplex T1 STL that has two audio cards, one for main/HD1 and the other for HD2. It also has a LAN card for use with remote control, a Burk RDS encoder and for HD PAD.

"The backup STL is a Harris CD Link that can only support main/HD1 audio," he continued. "Should there be a failure with the T1, the Intraplex alarm circuitry will send an alarm to the Burk remote control that pages me, as well as command a Titus 3-DRX audio switcher

*continues on pg 6*

*Logitek Congratulates*


# WUSF On Your Landmark HD Development Tests!



**Mosaic**

*Where art meets technology*

WUSF is leading the way in advancing the state of FM HD broadcasting with its advanced HD3 testing and IBOC broadcasting. We're pleased to have been chosen as the console supplier for this progressive public radio station. Our Mosaic digital consoles are ideal for multicast environments and are 5.1 ready, providing the flexibility and versatile operation needed by the broadcasters of today... and tomorrow.

  
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*WUSF continued from pg 4*

that will switch to the backup STL to secure main/HD1 transmission automatically. I then can Remote Desktop in to another computer at the transmitter site via DSL that provides HD2 via a 128 kbps mono Web stream and command another switcher. Broadcast Tools SS2.1, to take this computer instead of the T1. This switcher feeds the Harris Flexstar Importer for HD2 audio."

The WUSF exciter and transmitters are all made by Harris. "The analog transmitter is an HT-30K that is high-level combined with a Z12HD transmitter. The combiner is made by ERI and sends the reject power to an Altronics reject load. The processor is an Orban 8400 HD/FM. The HD exciter is a Harris Dexstar. The primary antenna is an eight-bay made by SWR," O'Shea said.

"I also have a back-up Harris FM20K analog transmitter and a back-up ERI 12-bay antenna and transmission line."

## RELIABLE

Station manager and chief engineer give their HD equipment performance track record high marks.

"Except for the failure of the pre-correction filter about six months ago, the HD transmit-

ter and associated equipment has been very reliable," says O'Shea. Dollenmayer agrees: "HD Radio transmission equipment has been very reliable. Most issues we have encountered are with software implementation or upgrades. It can be a challenge keeping everything compatible — automation, importer, exporter, etc. It seems the standard is always changing as the technology continues to develop rapidly."

Before they had a chance to evaluate the real coverage capability of HD themselves, neither thought it would be as robust as analog. O'Shea confirms in his experience that so far, HD coverage does not reliably extend beyond the primary 1 mV/m contour as far as analog. "HD is not as robust as analog," he says.

Dollenmayer is a bit more optimistic in his assessment: "I have had the opportunity to drive most of our listening area with my



*One of five production rooms/studios.*

I spend most of my time listening to only HD2 stations in our market.

"WUSF has the basic JVC unit in our HD demo vehicle and it is a good radio for an all-in-one unit," he continued. "The downside to the JVC is that you can't set a preset button for multicast (HD2) channels. The Boston has

***This is an easier sell when I can stop on almost any station in Tampa Bay, on the FM dial, and show them all the channels they are missing.***

*— Tom Dollenmayer*

Kenwood mobile unit and have been pleasantly surprised. It is much more robust than I would have expected. Keep in mind that we are in an area of completely flat terrain."

## HD RADIO PLAYOFFS

In the beginning, early HD adopters like WUSF had trouble finding an HD radio to monitor their HD transmissions.

The Kenwood mobile receivers were among the first publicly marketed HD radios. The first tabletop was the Boston Acoustics Receiver. In the past year, more models have appeared and WUSF has been evaluating many of them actively.

"I have had the opportunity to serve on the Multicast Receiver Team with NPR Labs and have been able to see and use the Polk, Boston, Kenwood, JVC and Sangean units," Dollenmayer said. "I personally have a Kenwood car unit and a Boston HD Receiver at home and work. The Kenwood is flexible in that the head unit can have almost anything attached to it including HD. Reception is great and sound quality is good as well. It is fairly intuitive to use and I have not had to read the manual to make it work.

"The big plus of the Kenwood is it allows you to set a preset for an HD2 channel, which

been a great unit and is very easy to operate. It has great sound, but could maybe use a more powerful amplifier. The Boston can sometimes get swallowed up in a larger room. Strengths of the Boston are RDS, large PAD display and the ability to use the included dipole antenna or an outdoor antenna connected via an F connector. All in all, the Boston has tremendous utility and sound for a clock radio."

## GROWING HD LISTENING

One of the jokes about the HD rollout heard among naysayers is that only employees of HD stations are buying HD radios. According to WUSF, a growing number of listeners would disagree.

"For the past year I have received approximately three calls a week from listeners of WUSF concerning HD technology and more importantly just where they can purchase the radios," O'Shea said. "This is a result of our marketing the program offering on what we call WUSF2."

Dollenmayer said that during the most recent pledge drive, several members expressed interest in HD2.

"Here is one comment: 'I've been listening to WUSF 89.7-2 streaming on the Web. Can't

*continues on pg 10*



## The World's Most Advanced HD Radio Exciter

Harris Corp., Broadcast Communications Division, is once again pleased to be in the forefront of HD Radio development by participating in the Conditional Access testing at WUSF(FM), Tampa.

Harris worked with NPR to provide equipment and software for the first "Tomorrow Radio" multicast broadcasts. Harris provided the first linearized transmitters for IBOC testing on both AM and FM. Harris also brought the first HD Radio exciter to market, and is now pleased to present the latest available technology with the FlexStar HDx. FlexStar clearly outperforms the competition and offers solid additional features.

HD Radio is a platform that will develop over time. Choosing your technology partner is critical. Harris has proven time and time again to be the leader in HD Radio. Go with the winner!

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*Product information is provided by suppliers*

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APT's WorldCast Eclipse is the ultimate in flexibility and choice offering IP, X.21/V.35 and ISDN interfaces and a selection of popular coding algorithms including Enhanced apt-X, MPEG Layer 2/3, MPEG 4 AAC, G.711 and G.722

All the features you expect from a professional broadcast codec are supplied as standard: analog and AES/EBU I/Os, adjustable silence detection, alarm ports, contact closures, speed dials, embedded auxiliary data and many more...

Configuration and control of the WorldCast Eclipse is straight-forward and simple thanks to APT's powerful and intuitive Codec Management System (CMS). Offering extensive real-time management of multiple codec units, the CMS enables alarm monitoring, logging and performance monitoring as well as configurable user and audio profiles.

To see the full functionality of CMS, download a trial version from [www.aptx.com](http://www.aptx.com).



Also Available:



### **WorldCast Horizon**

*Bidirectional stereo audio codec offering Enhanced apt-X over IP*



### **WorldCast Meridian**

*Multi-algorithm audio codec with both IP & X.21/V.35 interfaces*



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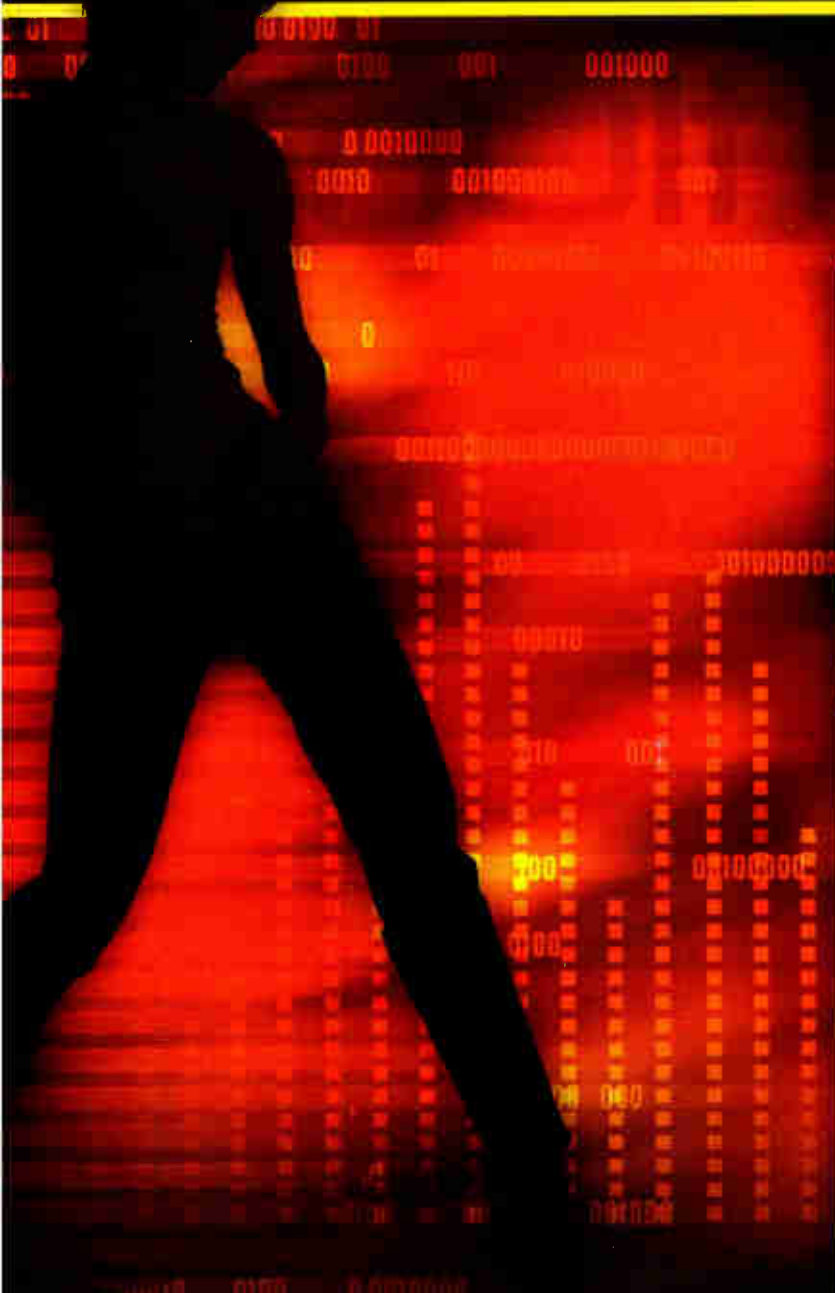
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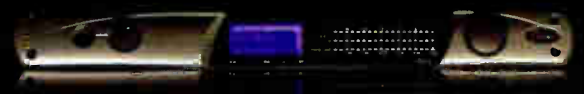
World Radio History



# Omnia ONE



- » Wideband gain rider, four-band AGC, and look-ahead final limiting
- » Final limiting optimized for the HD codec, using feedback limiters for the lower two bands and feedforward for the upper two bands
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- » Selectable phase rotator
- » Analog, AES3, and Livewire I/O
- » Automatic input failover on loss of audio
- » Ethernet, RS-232, and GPIO for remote control



tech specs

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# multi **cast**

LIKE YOU  
MEAN IT

Digital broadcasting has tremendous potential—the potential to sound really awful if the coding process sucks all the life out of your sound. Meet Omnia ONE: the ONE box that pre-conditions your audio to minimize the audible effects of bit-reduction.

How can ONE small box make such a huge difference? New SENSUS™ technology (developed in collaboration with the coding experts at Telos) monitors content and dynamically optimizes processing for the target encoder. The result? Fewer coding artifacts for smooth and clean multicasts.

HD Radio™ isn't the only bit-reduced stream that can benefit from Omnia ONE. Satcasting, netcasting, cellcasting—anyone producing audio for coded channels can benefit from the audience-grabbing sound that's made Omnia the first choice of broadcasters everywhere.

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## The Jobs Others Can't Handle

Everything about WUSF(FM) illustrates its commitment to quality, including programming, signal, facilities and a top-notch professional staff. The entire crew at Balsys Wood Arts sincerely appreciates them allowing us to be a part of that image by providing custom furniture for all of their new studios.

Balsys specializes in custom designs for unconventional room dimensions and configurations, as well as free form and curved shapes. Balsys craftsmen are also specialists in working with exotic woods and inlays, as well as carbon fiber.

Simply put by one of our satisfied customers, "Balsys gets the jobs that others can't handle."

Contact Balsys at (407) 654-7611 or visit [www.balsys.com](http://www.balsys.com).



## Renaissance FM HD Broadcast Circulator

Renaissance Electronics Corp. is a manufacturer of RF and microwave sub-systems and components for the avionics, defense, industrial, medical, wireless and space industries.

Whether it is circulators, isolators, coaxial switches, power combiners, power dividers, switch matrices, transmitter combiners, receiver multi-couplers, wireless transceivers, integrated assemblies or your own special configuration, Renaissance provides you products from a company that is technology-driven and customer-focused.

The 3A1NBV FM HD Broadcast Circulator is an inexpensive solution that does not require forced air cooling. The Circulator can be mounted conveniently at any location and the load can be sized to address any power level up to 1,500 watts CW. The low insertion loss (.1dB) and small size provide the most attractive solution to HD FM broadcast isolation issues available.

Contact Renaissance Electronics at (978) 772-7774 or visit [www.rec-usa.com](http://www.rec-usa.com).

Product information is provided by suppliers

WUSF continued from pg 6

wait to get an HD radio." Here is another comment from a new member: "Since you've added the HD2 schedule for the station, I feel compelled to pledge. I love all the added programming. I pretty much listen to WUSF 24/7 and do not switch around to other radio stations anymore."

WUSF is getting out the word about its new HD services in a variety of ways. Dollenmayer said.

"We use cross-promotion with our main analog station and press releases. We read HD2 promos almost hourly on our analog station to whet the appetite of the listener. We have also used our Web site at [wusf.org](http://wusf.org). HD2 has program schedules there and we offer a Web stream in almost any format imaginable. We also have a Volkswagen Touareg with an HD wrap to draw attention and demo HD Radio to listeners."

## HD POTPOURRI

What about FMeXtra, the new technology that uses existing FM SCA spectrum for digitally modulated programming as a possible competitor to HD Radio?

"With 1,100 stations committed to HD, I think the FMeXtra technology is maybe a little too late," O'Shea said. With regard to surround sound on HD, he says WUSF is contemplating adding production capability for it in the near future: "WUSF is making some changes in our production equipment to begin to prepare for surround sound. It is my hope that we will be able to bring our listeners live performances of classical music and jazz in surround sound." He hopes to provide that service within the next two years.

Everyone has had an opinion about what the true "killer app" might be for HD Radio. Dollenmayer and O'Shea agree on their choices: "I believe it's the multicast capability — 48 hours a day of programming — on one frequency," engineer O'Shea says. "To quote NPR's Mike Starling, it's not so much about quality, it's about more choices. It's the same reason why the vast majority of TV viewers get their programs from cable or dish and they do so for more programming choices. The benefit of HD is that it's free except for the price of the radio."

Manager Dollenmayer agreed. "Surround and other features are great, but the true killer app is multicasting. After I demo HD Radio to listeners, they are usually headed to the store or Web to get a radio. This is an easier sell when I can stop on almost any station in Tampa Bay, on the FM dial, and show them all the channels they are missing."

## THE BIG CHALLENGE

The HD Radio rollout is still in its infancy. If it is going to ultimately succeed, the mass audience needs to find out about it and millions of HD receivers will have to be sold. Marketing the product is still Job #1.

"At present there is a severe lack of marketing on the part of Ibiquity," O'Shea said. "It has



O'Shea with the HD Radio conditional access equipment test rack which holds, from top, a Harris NeuStar processor, Ibiquity test exciter auxiliary unit, Harris Importer, Netgear network switch, NDS Protector and NDS Initiator.

been left to the broadcaster to introduce this technology to their listeners. I believe it's time for Ibiquity to bite the bullet and help the HD broadcaster to sell this product. I have some ideas on this but they aren't for free."

Dollenmayer emphasized that marketing is the key.

"It might be a good idea to not leave the marketing up to stations, but to get a minimal national campaign going." The HD Digital Radio Alliance, he says, has "done a good job of getting things rolling," but he'd like to see it use other media besides radio.

"Everyone in the general public that I talk to has no idea that HD Radio is even out there. Then, when I demo my radio for them they are amazed and everyone says, 'How come I have not heard of this before?'" HD Radio, he said, is "the best kept secret out there in new technology." ■

The author is technical advisor to Radio World and director of engineering/manager of information systems for CBS Radio Seattle.

# Clear Channel Brings HD to Cleveland FMs

*Intensive Conversion Involved Five Stations, Including Four Within a Few Months*

By Scott Fybus

The city that gave the world Alan Freed and the Rock and Roll Hall of Fame can now tune in to five new HD Radio signals on its FM dial, thanks to an intensive HD conversion project at Clear Channel Radio's Cleveland cluster.

The company began planning for the conversion in 2005, says Dan Mettler, Clear Channel senior vice president for engineering.

"We planned one way, and then everything changed because the available hardware changed," Mettler said.

The first of Clear Channel's Cleveland stations to make the leap into HD, signing on in late 2005, was top 40 "Kiss" WAKS(FM), which is licensed to Akron but serves the Cleveland market from a tower shared with the company's big AM, WTAM at 1100 kHz.

At WAKS, Mettler and Clear Channel's local engineering team opted for the space combining approach, mounting a separate antenna on the tower for the digital signal and using a standalone Broadcast Electronics FMI 106 transmitter for the signal.

"One of the things we learned was that the patterns are never going to be quite the same as the main antenna," Mettler says of the digital signal from WAKS.

***We were really getting stacked up ... we were doing a new HD installation every 30 to 45 days.***

— Dave Szucs

So when it came time to convert the other four FMs in the cluster to HD Radio during 2006, Clear Channel went in a different direction, taking advantage of some newly released transmitters from Continental and BE.

"What we originally planned to do in 2005 wasn't what we ended up doing in 2006, since manufacturers had come along with low-level common-amplification tube transmitters," Mettler said.

Each of the four remaining stations — country WGAR(FM), heritage rocker WMMS(FM), oldies "Majic" WMJI(FM) and hot AC "Mix" WMVX(FM) — was at a different location in the tower farm south of Cleveland.

Two of the stations, WGAR and WMMS, received identical BE FMI 21T transmitters for their new combined analog/HD transmission systems. WMJI, which is grandfathered at

higher power than the others, received a BE FMI 30T, and WMVX went with Continental's 816HD-20 transmitter, which incorporates a Nautel M50 HD exciter.

## NEW MODELS

In several of the installations, Clear Channel found itself on the cutting edge. Mettler says WGAR's transmitter was the first BE HD tube transmitter the company had shipped, while the WMJI transmitter was the very first BE HD Radio transmitter with more than 21 kW of output power. The Continental at WMVX, meanwhile, was the sixth of that model to go on the air.

"The BE transmitter is their standard analog transmitter rebiased to do HD," Mettler said, "so the guys are very familiar with it if they've worked with the analog transmitters."

That's a skill the Cleveland engineering team had in ample supply, since most of the stations had recently replaced their older analog transmitters with newer BE analog transmitters.

"Those four- or five-year-old transmitters have become good backup transmitters," Mettler said.

One advantage to the combined transmitters came on each station's tower, where the stations were largely able to keep using their existing

transmission line and antennas. Only WMMS had to replace an antenna, choosing a new ERI model, and since the old antenna had gone up in 1978, that wasn't a difficult decision.

On the other hand, the studio-transmitter signal pathway needed to be upgraded at each site. From Clear Channel's cluster studio in the Cleveland suburb of Independence, there's line of sight to only one of the tower sites, that of WMJI.

As a result, each of the other FMs used a Harris Intraplex STL over a T1 — but that bandwidth was entirely spoken for by the existing main-channel audio. As a result, an additional T1 circuit was installed at each of the sites for HD multicast audio and other data needs.

"One of the T1s is dedicated with 23 time-slots for main-channel digital audio," said Dave Szucs, director of engineering for Clear

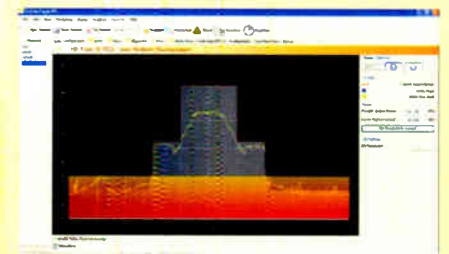


*Dave Szucs, director of engineering for Clear Channel Cleveland, and Mike Camarato, assistant director of engineering, at the WGAR tower site.*

Channel Cleveland, "while the other is for backhauling, the LAN Bridge (which carries HD2 audio, RDS and PAD data) and IP connectivity."

At WMJI, a Moseley LANLink HS was brought in for RDS and PAD data, while a Moseley SL9004Q digital STL carries audio

*continues on pg 12*



## Audemat-Aztec: Products for HD

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*Product information is provided by suppliers*

*Cleveland* continued from pg 11

for the main channel and HD2 multicast as well as telemetry.

### HOMETOWN PROCESSING

All HD channels are using 48 kbps bandwidth each. The stations are not currently broadcasting HD3. DaySequerra M4 tuners monitor HD Radio signals; audio gear at the transmitter sites includes Behringer A/D converters for equipment that is not AES-capable. Test gear includes the Ward-Beck Audio Bit Buddy and Splitter.

Omnia processors—manufactured in Cleveland—are the devices of choice for the analog and HD1 signals. Each of the stations uses an Omnia-6 to process its analog audio and a separate Omnia-6EXi for its HD1 audio.

“The Clear Channel standard is always to use a second processor for HD audio,” Mettler said. For processing on the HD2 subchannels, WMJI is using the new Omnia One.

The other stations, which send their HD2 audio over IP through their LAN bridges, use the Orban PC 1100 multicast processor, with the additional goal of saving space in what suddenly became a crowded server room at the studio complex.

“The biggest change (at the studio) was the additional server space and audio servers we needed for HD2,” Mettler said.

On the studio side, Clear Channel Cleveland uses a Prophet NexGen Digital 2006 automation and audio playout system. Consoles are Harris AirWave 20 digital boards feeding analog outputs to Intraplex 353 cards for A/D con-

versions; air mics are Shure SM7. ElectroVoice RE27N/D or AKG C414-ULS depending on the station.

Aphex 320A Compellers process audio before the STL and a Behringer MDX2600 compressor provides a “pseudo air feed” for talent headphones.

Production studios have Mackie Digital 8 Bus mixers, Pro Tools LE 7 and DigiDesign Digi 002 Rack; production’s mics are the Rode NT2 and Neumann TLM 103. The cluster has an SAS 64000 Audio Router.

Clear Channel faced another challenge once the multicast streams were on the air: the FCC’s November 2006 mandate that HD2 channels carry EAS alerts and tests.

“We had to scramble pretty quickly,” Mettler says, praising the Broadcast Tools ADCS III switchers that the stations all installed. The devices switch from their main AES digital input to an analog input (fed by the EAS encoder) when EAS is activated, continuing to output an AES digital stream and requiring no operator intervention.

The HD2 signals from Clear Channel Cleveland run entirely automated for now, with formats ranging from classic country on WGAR to classic alternative on WMMS to

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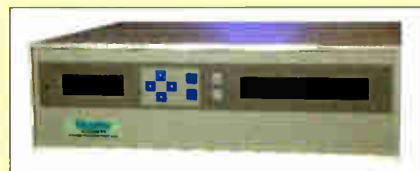
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AAA on WMVX to "KiWi Radio" on WAKS, a top 40 service that plays young-skewing hits for children.

Once Clear Channel had picked the equipment it was using for its HD conversions, the actual buildouts happened in quick succession during the summer of 2006.

### LESSONS IN A TIGHT TIMEFRAME

"We were really getting stacked up," Szucs recalls, "because the manufacturers were trying to get the stuff out the doors as fast as they could, so we were doing a new HD installation every 30 to 45 days."

Careful planning was a must, to get old analog gear out and coordinate the work needed to get the new HD boxes in, all while keeping an analog signal on the air from each site.

"We basically had the rigs ready in 24 hours from delivery," said Mike Camarato, assistant director of engineering for the cluster. "We had the movers all ready, HVAC crews in place."

Szucs and Camarato say the need for improved HVAC has been an important lesson from their installations. At WGAR, for instance, the heat generated by the digital transmitter required them to add three additional tons of air conditioning to the existing two-ton system.

To provide some degree of redundancy during the installations, Clear Channel turned to an emergency roll-around rack it maintains with a frequency-agile 1 kW Crown FM transmitter, which would have served as a spare if need be.

With the new transmitters in place, Szucs and Camarato then had to tune them up, a task they say turned out to be more of a challenge in the digital era. "Not everyone has a \$25,000 analyzer sitting around," Camarato observed.

The stations now use Audemat-Aztec GoldenEagle HD modulation monitors and have access to Clear Channel's shared corporate engineering resources.

Another new reality of the digital age appears to be reduced tube life in the new transmitters.

"The efficiencies are not what analog would be," Szucs said. He and Camarato estimated that the Continental transmitter is running at about 46 percent efficiency, while the BEs make about 58 percent, which also explains the need

for more cooling at the sites.

The move to HD Radio has also complicated what were already some fairly complex delay issues at the Clear Channel stations.

### NEW DELAY ISSUES

The company introduced profanity delays at its stations after the Janet Jackson incident and related fines; so air talent in Cleveland already were accustomed to working off a separately-processed pre-delay feed instead of an air monitor.

But for WMMS, there's an additional factor to contend with: The station is also the flagship for the Cleveland Browns football team, and in

*continues on pg 14*

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Don Danko, VP of engineering and operations for Cincinnati Public Radio, reports, "This receiver is loaded with options that make it helpful in the complete implementation and integration of HD Radio broadcasting at any station."

Contact the company at (914) 946-9595 or visit [www.ada.net](http://www.ada.net).

*Product information is provided by suppliers*

**Cleveland** continued from pg 13

Cleveland, you don't take any chances where Browns fans are concerned. So WMMS turns off the eight-second HD Radio delay when the team is playing, sacrificing a smooth transition from analog to HD to avoid disrupting the tradition of turning down the sound on the TV and listening to the radio call of the game. Instead, WMMS syncs its analog audio as closely as possible to the analog cable TV feed.

Szucs says listeners call when the analog feed isn't synchronized properly with the TV coverage. And he says they're starting to call when any of the HD signals are off the air.

"If we have issues with our oldies format (on WMJ's HD-2), I get calls," he says.

The stations are still learning about how well their HD Radio signals get out to listeners, too.

"Early on, my hopes were that the digital would extend as far as the analog and give us some coverage in trouble areas," Szucs said.

"and that, we're not seeing. You need a pretty robust analog signal to get an HD signal," he says of today's receivers.

For broadcasters still considering making the HD conversion, Mettler says they're in a good position, because they can take advantage of the experience the early adopters have accumulated. "Bleeding edge is not necessarily good," Mettler said. "To be first out of the gate is not always best."

Szucs says HD broadcasters can't underestimate the importance of good data connections between the studio and the transmitter site.

"It's very important you have stable IP connectivity," he said.

Early planning is also a key factor, because different choices among the variety of HD transmission methods will lead to different site requirements once installation begins.

"You have to know what kind of amplification you want to use, because that will figure in to your HVAC and power requirements," as well as different requirements for transmission line and antennas, Camarato said.

His careful planning at the Cleveland sites led to a corporate honor. Camarato this spring was named Clear Channel's engineer of the year for large-market stations in the central region.

"I'm very surprised and humbled by the selection," Camarato said.

*Scott Fybus is a frequent RW contributor and writes the column Travels With Scott. ■*

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# Digital Radio Rules, Dude!

*The Overdue FCC Action Signals Full Speed Ahead for IBOC*

It's been a long time coming, but the FCC's recent approval of (almost) final rules for U.S. digital radio is being welcomed widely by the industry.

There was no real surprise or drama to the Second Report & Order, and perhaps its most notable attribute is the ratification of what has become an interim status quo for broadcasters, while approving almost everything broadcasters were hoping to see included.

As expected — and as forecast here as far back as 2003 — there will be no mandatory conversion to IBOC, so broadcasters can proceed to implement IBOC at their own pace (or not at all).

More important, the rules codify into standard practice some important elements that had been allowed previously, but which required notification or approval under interim rules, i.e., FM-IBOC multicasting, datacasting, dual-antenna operation and operating in Extended Hybrid mode.

## Major change

For those heavily engaged with the day-to-day of IBOC conversion of late, it might bear recollection that multicasting was not even on the table when the interim rules were issued in 2002. (You might also remember this column's repeated calls for such flexibility in IBOC application, without which it was felt that the success of the format would be severely threatened.)

Thus this rule represents a major regulatory change, even though during the five years between the First and Second R&O, multicasting has been incorporated in the NRSC-5-A standard, and meanwhile become commonplace among IBOC broadcasts, as well as a being standard feature in current IBOC receivers.

On the other hand, Extended Hybrid operation has *not* yet been widely implemented by broadcasters, and perhaps now it will be. This should substantially help

FM broadcasters configure their digital multiplexes, providing even greater flexibility with which to assign payload (up to 146 kbps) among multiple audio and data services.

Note that Extended Hybrid operation can provide over 50 percent increase in digital capacity for FM-IBOC, which is proportionally more than any eventual All-Digital operation would incrementally add, and it does so without significantly affecting existing analog service. (In fact, the Second R&O explicitly prohibits broadcasters from switching to all-digital operations.)

Thus Extended Hybrid mode may become the sweet spot for analog/digital transitional operation, and could soon become the typical operating mode for FM-IBOC digital broadcasting.

Note also that the new rules offer almost complete freedom for broadcasters in their allocation of this payload among audio and data services, including the ability to offer bandwidth for sale to third parties (with some business constraints).

The new rules also clarify that IBOC may be used, where feasible, on FM translators, boosters and LPFM stations, which had been an uncertain area. This should stimulate the availability of broadcast equipment products specifically targeting such applications soon.

## AM unchained

Probably the biggest substantive change implemented by these rules is the allowance of nighttime IBOC operation for AM broadcasters, which had been nearly totally disallowed under the interim rules.

While some question the wisdom of this, it likely will encourage more AM broadcasters to convert to IBOC, and this could stimulate the long-awaited renaissance of the senior broadcast band. (It could also have the effect of increasing listener complaints, and it appears the FCC is

gearing up for this possibility as well.)

Under optimum conditions, the audio quality improvement of AM-IBOC over analog AM is impressive, and will likely not be lost on existing users of AM. (Neither will the addition of metadata, which has never been practical for AM stations to provide in the analog world.) Whether these improvements will drive significant numbers of *new* listeners to the band remains to be seen, of course.

These advances will not come without some pain, however, including the reduction in analog bandwidth, the elimination of C-QUAM stereo for the few operations that might still be using it, and the likelihood of additional interference to long-distance nighttime reception. Whether a net benefit to the AM band results will also take some time to determine, but at least now this process can begin in earnest.

## Trickle-down effects

There are a few indirect effects that could result from the FCC's action here.

## The Big Picture



Photo: Gary Hayes, BBC

by Skip Pizzi

IBOC technology as the sole U.S. digital radio format.

Thus the lukewarm level of digital radio receiver introductions to date may experience a shift to a more substantial growth rate over the next several years.

Although year-to-year growth of available IBOC receiver models is already relatively strong, there is still a long way to go, and the milestone of leading manufacturers like Sony and Panasonic offering a broad spectrum of IBOC products has yet to be achieved. If this now occurs, it should bolster consumer confidence in the format,

## The FCC dismissed pending Petitions for Reconsideration and Rulemaking that questioned the selection of Ibiquity's IBOC technology as the sole U.S. digital radio format.

One is that consumer electronics equipment manufacturers will now have one less excuse to hold back from developing IBOC products, now that final rules are in place. The FCC's digital radio proceeding further underscores this assurance with its First Order on Reconsideration, which dismisses previously pending Petitions for Reconsideration and Rulemaking that questioned the selection of Ibiquity's

which in turn could add to the IBOC uptake rate significantly.

Added competition and economies of scale in the receiver market also should force prices downward, further stimulating consumer adoption. Combined with the expected introduction of portable IBOC receivers soon, IBOC penetration may begin to become significant.

Another area that may be improved by the new rules is the simple factor of consumer awareness. News on the regulatory front often generates significant coverage in mainstream press, and every little bit can help increase the low awareness levels among consumers for digital terrestrial radio in the country.

It will also be interesting to see if increased notice comes to IBOC from broadcasters and regulators outside the United States as a result of the commission's action.

Finally, if worst-case scenarios play out on the current Internet radio music-royalty and satellite radio merger fronts, U.S. terrestrial digital radio might also indirectly benefit, so the growth of receiver availability and consumer awareness may come at a particularly opportune time.

## On the other hand

There are some areas where the Second R&O adds or clarifies constraints to broadcasters.

These include the requirement that the IBOC main program service (MPS) must remain freely available and be "of at least comparable audio quality" to the analog signal. The latter is not likely to be a problem for AM broadcasters, but could be for FM, and one wonders how it would actually be determined or enforced.

The inclusion of this requirement is See RULES, page 27 ►

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# Rules

► Continued from page 26

probably intended — at least conceptually — to prevent broadcasters from co-opting IBOC service into an unrelated business opportunity, and to keep IBOC as a step forward for traditional broadcasting and its general audience, while allowing incremental growth, within reason, into other new areas.

Multicast streams also are now clarified to be subject to all the same regulatory requirements as main channels in terms of programming and operational rules (including EAS, station- and sponsorship-identification, political broadcasting and indecency regulations).

While this was the likely expectation in the minds of most broadcasters all along, the actual existence of this rule may now stimulate a more real consideration of multicast streams as serious business, so they will no longer be treated as a novelty or experimental offering — as has sometimes been the case.

## Still TBD

The FCC has left open a few areas of digital radio regulation for possible further rulemaking.

These include rules surrounding subscription radio offerings, and the option of additional public interest requirements for multicast services. An NPRM seeking comment on these two areas was issued along with the Second R&O.

## Extended Hybrid mode may become the sweet spot for analog/digital transitional operation.

The latter issue was also noted in partial dissents on the Second R&O by Commissioners Adelstein and Copps, who stated that they would have preferred more encouragements or requirements in the rules for broadcasters to use multicast services to increase localism, diversity and other public-interest content.

Also deferred was any decision on content protection for copyrighted material (i.e., published music) broadcast on IBOC services, or any rules surrounding consumers' downstream use of such material recorded off-air by listeners, which the RIAA has favored. The commission felt such deferral was appropriate given that these issues are still under debate in other industry and governmental venues.

So while true and fully final IBOC rules are still pending, most broadcasters have found a lot to like in the commission's recent digital radio actions, and feel they've been well worth waiting for.

The FCC's action is a big green light for IBOC and particularly for its application in a flexible form, which should provide it with the most favorable climate in which to succeed. This should help stoke the slowly accelerating U.S. digital radio engine and potentially kick it into the next gear.

Skip Pizzi is contributing editor of *Radio World*. Comment on this or any article to [radioworld@imaspub.com](mailto:radioworld@imaspub.com).

## MARKET PLACE

### AP Has Dedicated 16-Channel Analyzer

Audio Precision is offering the APx586. The company calls it the world's first dedicated 16-channel audio analyzer.

The unit is aimed at manufacturers of automotive amplifiers and other multichannel devices who need to test more than eight independent channels. It features 16 input channels and eight output channels for signal analysis. It expands on the company's eight-channel model APx585.

Audio Precision also announced version 2.0 of its APx500 Series Measurement Software, which it says is twice as fast as v1.0 and has new automated tests for CEA-2006 and EIA/CEA-490-A, additional filters and better monitors.

The company said the APx586 takes advantage of the flexible architecture of APx V2.0 software to provide a lower cost per channel and faster testing speeds.

The APx586 includes APx500 Measurement Software v2.0.

For information visit [www.ap.com](http://www.ap.com).



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## SUPPLY SIDE

## APT: Surround And apt-X Live

Supply Side is an occasional conversation with suppliers in the news. RW spoke with APT Commercial Director Jon McClintock.

You rolled out apt-X Live last fall. What is it and why might radio be interested?

apt-X Live is the latest algorithm from APT's stable. It concentrates on our core strengths, low delay and acoustic integrity; and it adds increased channel density to the feature set.

It has an 8:1 compression ratio, which

in effect means a 15 kHz stereo signal over 128 kilobits per second — be it ISDN, or 2 x timeslots on a T1, or an IP network. Acoustically it sounds excellent; and this has been substantiated by independent blind listening tests, where it performed favorably compared to PCM. Delay-wise, it has an encode/decode latency of 1.9 milliseconds.

For stations, apt-X Live is ideal for real-time applications where they need to



be connected for remotes, STLs and studio-to-studio networking. We also know it will assist live performance events where analog wireless mics may become

redundant due to the impending spectrum squeeze.

Another application is embedding 16 channels into an AES3 stream for HDTV applications. Current technology is limited to eight with Dolby E.

APT has made changes in its staff and offices here.

The U.S. and Canada are great markets for APT and to service the needs of the broadcasters we recently opened offices in both Boston and Florida.

Kevin Campbell, who was APT's



Kevin Campbell

European Sales Manager, has moved to Boston and brings a depth of application knowledge and commercial acumen for broadcasters who are considering investing in codecs for HD or traditional FM/AM links.

In Florida, we were very lucky in securing the services of Ted Nahil, who brings a wealth of knowledge, experience and respect to the APT product line. Ted has worked both sides of the fence, as a user and a technology provider, and understands the challenges to both.

You recently took an order for 20 WorldNet Oslos to use in a pilot surround sound project with the European Broadcasting Union. What's going on with 5.1 for radio?

Surround sound for radio is going to be a hot topic over the next five to 10 years.

HD Radio and DAB were really incremental improvements to FM. For a listener to immerse themselves in a 5.1 program will be a fundamental improvement on the listening experience.

The EBU is investing now in 5.1 to share content within the 50 member public service broadcasters in Europe. The pilot project has decreed that Enhanced apt-X is the algorithm of choice for sharing content and the WorldNet Oslo is the architecture to house the algorithm.

The emission standards will be the usual suspects, i.e. Dolby, DTS or SRS. Where we are involved is the movement of content from source, i.e. remotes, through to the station and then onto the transmission site. Using Enhanced apt-X will retain the spectral imaging — an issue that becomes more important with multi-channel — and continue to ensure acoustic integrity.



Ted Nahil

The EBU also has made recommendations concerning audio over IP that involve Enhanced apt-X?

The EBU has been active to ensure that the issue of multiple algorithms, both compression and bonding, and lack of compatibility which littered the broadcast industry for ISDN is not repeated for IP.

They're working with manufacturers to agree on a series of standards. Enhanced apt-X has been decreed as an Optional Algorithm, which is a tremendous validation for APT.

What else should U.S. radio buyers look for from APT at spring NAB?

I think the issue that is high on the broadcasters' agenda today is audio over IP.

APT has been very active in this field for several years and offers a range of products from a simple stereo 1 U unit, the WorldCast Horizon, up to the highly sophisticated WorldNet Oslo, which offers multiple audio channels and several levels of redundancy in a modular format.

We will be launching new products that support several algorithms and transport protocols, controlled via a highly intuitive and versatile GUI.

For information about APT products call (800) 955-APT-X or visit www.aptx.com.



# Meet The New Innkeepers (they're a very functional family)

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For starters, we've combined the features of the innkeeper 1 and the innkeeper 1x into a single hybrid that's more than the sum of its parts. As with the original, the new innkeeper 1x is a full-featured phone line interface which uses a proprietary dual-convergence echo canceller algorithm. It's designed to achieve excellent separation without any setup, and without sending a noise burst down the line. Plus, we've added an RS-232 connector for remote control applications and made them globally-compliant.

For remote control, we've now got two compatible products.

The Guest Module 1 gives you remote access to the on-hook/ off-hook and dial features of the innkeeper 1x series digital hybrids, using an 8 pin RJ45 modular cable.

The RIU-IP interface contains a web server which allows you to send and receive control data through your web browser. It can be connected to your computer NIC card for direct control, to a switch or hub for network control, or to an ethernet port with internet access for control from anywhere in the world.

Innkeeper 1x is more than a facelift. More than an upgraded feature set. It's a comprehensive, streamlined hybrid environment that gives you the tools you need to control it from anywhere. Visit us on the web or give us a call to learn more about innkeeper 1x.

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## Internet Radio: Potential and Perils

by Ken R. Deutsch

"It's all opportunities. Scratch the peril," said Russell Banz, vice president of new media for Bonneville International.

He was speaking of the upside of the new interactive world where radio meets the Internet. "The reality is that there has never been so much for broadcasters to look forward to with this new landscape," he said. "We in radio have these brands that people know and trust. We have the audiences and all these emerging technologies are just ways of delivering content when people want it and how they want it."

Banz was one of several speakers assembled for a "Radio-TV Values and Finance" seminar in New York, hosted by Kagan Research.

He said that in this particular card game, radio owners are sitting in the seat of strength.

"Let's say there is a start-up company out there," he said. "They have some interesting content, but the first thing they try to do is find a broadcaster so they can form a partnership. I get phone calls from Internet companies all the time. The only things they lack are an audience, a brand or marketing."

One benefit the Internet offers broadcasters is accountability to advertisers, which has been a notable topic among radio management in recent years.

"There are some Web analytic solutions



Russell Banz: 'It doesn't matter what the device is; it's the content that makes the difference.'

and ad serving solutions that give us credibility," Banz said. "But one caveat: While some people think the Internet is the holy grail for accountability, there is still click fraud, so we have to be a little careful."

Mobile video also is something radio broadcasters are facing for the first time.

"Radio can now be more visual," he said. "You can make rich, interactive streaming with images that correlate with the audio streams which can now be ported to mobile devices. It doesn't matter what the device is; it's the content that makes the difference."

John Blackledge, senior analyst and vice president of radio, TV and outdoor

for JP Morgan Chase, offered thoughts on recapturing ad dollars that have migrated to the Internet.

"If radio broadcasters can leverage their local brands and content, they can begin driving traffic to their Web sites and create a destination for the listener," he said. "Then the broadcaster can begin to siphon



Tim Reynolds: 'These are not traditional advertisers.'

some dollars back towards radio. It's about creating a solid listening environment, driving traffic to the site and then monetizing the audience."

Tim Reynolds, another Kagan participant, is director of interactive media for Meredith Broadcasting, which owns several TV stations and one radio station.

"We put together a 'convergence package' with broadcast and Internet combined," he said. "We can sell these to hos-

pitals and doctors, almost like a medical directory. These are not traditional advertisers. We never called on cardiologists or medical imaging firms before. We also have created packages with spots over the air and on our Internet site for home improvement people like roofers, siding companies and mortgage brokers. By only

**A strong Internet selling point is accountability, with some caveats.**

taking one advertiser in each category, it makes the campaign more powerful."

Like Banz, Reynolds mentioned that a strong Internet selling point is accountability.

"I can measure it down to the click level," he said. "We can see how many times an ad was served up, how many people clicked on it, and I can even run a 'register to win' contest to create a potential customer database. If I have a furniture store in Hartford, we can have a contest to give away a living-room makeover. We could even have listeners uploading pictures of their own horrible living rooms and telling us why they deserve to win."

"When it comes to the Internet," Banz said, "the only peril I see is if you do nothing."

Ken R. Deutsch is a former broadcaster from the potted palm era.

### The Pie Expands'

"After taking knocks from upstart digital media, local broadcasters are starting to receive sizeable benefits from the next wave of new media development."

That was the lead in a post-event summary of the Kagan Research Radio/TV Values & Finance Summit provided by the company.

"Kagan Research forecasts that radio and TV stations will generate \$1.7 billion in 2007 revenue from online sources, which will deliver double-digit growth in the years ahead. That covers station-owned Web sites, multicast channels in digital broadcasting, podcasting and station content monetized on third-party platforms, including budding wireless broadband media."

It quoted Border Media Partners President/CEO Tom Castro saying, "The pie expands. It's not a zero sum game" anymore.

Excluding online/digital, though, TV stations' \$44.9 billion in 2006 total ad billings and radio stations' \$20 billion revenue "ride a seesaw of ups-and-downs based on election and Olympic years," Kagan wrote.

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## BOOK REVIEW

# His Golden Era of Radio Was 1972

*Marc Fisher Thinks the Industry Would Be Better Off By Returning to Another Time*

by Peter King

The story begins on a Long Island beach. A 12-year-old boy, walking with transistor radio in hand, listens to Gilbert O'Sullivan's "whiney ballad," "Alone Again Naturally."

It's enough for any self-respecting young man to twist the dial ... but wait! He's listening to WABC, the country's number-one top 40 station, and this is 1972. He stays tuned, because the next song might be a great one — maybe "Me and Mrs. Jones" by Billy Paul.

This is what top 40 radio was all about, something for everyone. Day in and out, American radio listeners, male, female, younger, older, would do what young Marc Fisher did that day. They kept listening.

More than three decades later, it's a different ballgame.

Some say commercial radio has become too corporate and over-researched. Others say radio has no choice because the money involved is so huge, that few want to take on-air risks any more, whether it involves a particular personality or an untried song or artist.

This is the story Fisher tells in his new book, "Something in the Air: Radio, Rock, and the Revolution That Shaped a Generation."

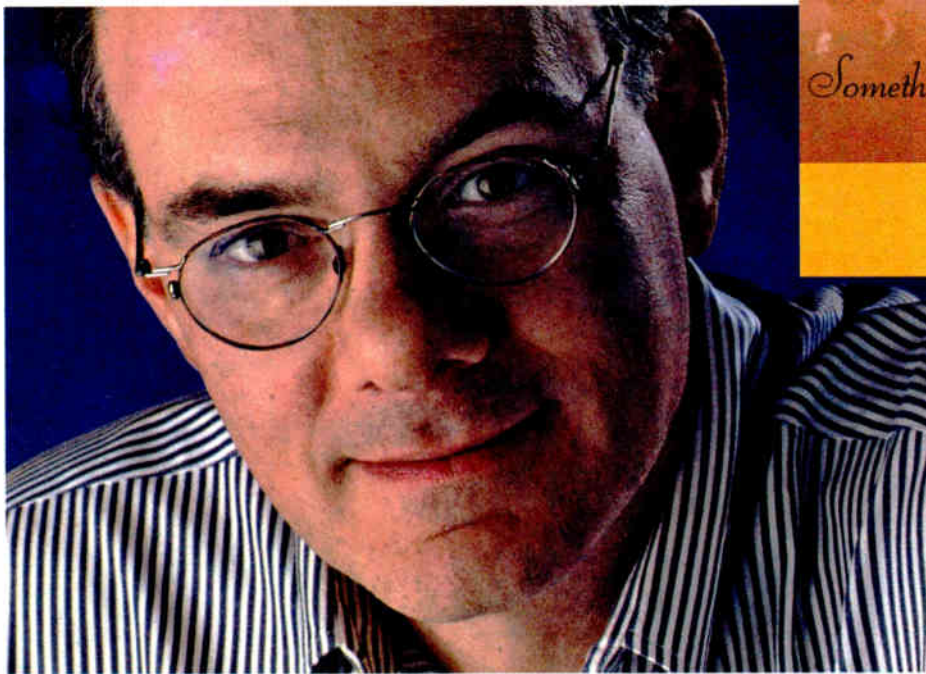
## Beyond top 40

Fisher, who covers radio for the Washington Post and whose work has appeared in other publications, says the book started as a look at the evolution of top 40 but became much more.

It's not an encyclopedic history, rather a collection of snapshots, stories and characters that illustrate the big picture of radio's revolution and evolution, through top 40, black radio, FM, AOR and Underground, the near-death and rebirth of

AM and the rise of talk radio. Fisher takes us from the 1950s through the age of consultants, consolidation and satellite radio.

He spoke with scores of industry greats, air talent and executives, including



Marc Fisher

Lee Abrams, Bruce Morrow, Rick Dees, Cathy Hughes, George Michael, Ruth Meyer, Rachel Donahue and others. While not all appear in the book, their influence is evident.

Fisher found less obvious choices, like pioneering West Coast DJ Hunter Hancock (Fisher says it was Hancock and not Alan Freed who was the first white DJ to play black music on the radio during the 1950s); Bob Fass, WBAI(FM)'s free-form radio pioneer; and WLNG(FM) Long Island owner/programmer Paul Sidney, whose "mom and pop" station

defies all current programming sense and makes consultants cringe.

He writes extensively about legendary early talkers like Jean Shepherd, a career non-conformist who, Fisher says, set the stage for the "morning

zoos" of the '80s and '90s, and modern talkers like Glenn Beck, Don Geronimo and Tom Leykis.

Curiously, Fisher says Shepherd, who left radio in 1977 and is most familiar today as the narrator/creator of the movie "A Christmas Story," became a major part of his book because so many others talked of how listening to Shepherd inspired their careers.

Geronimo, Leykis and others learned from Shepherd's example of storytelling and engaging the audience. Fisher told RW that like Shepherd, these personalities are "spirits that have the gumption to speak from their heart or deep inside themselves and connect with listeners by revealing themselves in very personal ways, and that's a large part of what Shepherd did."

For up-and-coming radio talent, "Something In the Air" is a marvelous lesson in radio's roots. From the 1950s through the early '80s, there was room for almost every genre of music. Mid-'60s playlists included diverse names such as the Beatles and Rolling Stones, the Supremes and Four Tops, Frank Sinatra and Herb Alpert, played back to back. Consultants of later years might call such combinations a train wreck, but the "Jack" format has seen some success with a similar formula.

Fisher says the combination of "sweet" (middle of the road), rock and black music put everyone together, "much in the way the old era of three TV channels did," says Fisher. "Not everyone liked the same shows but we all kind of had to be in the same place." And there were certain songs you were willing to sit through because the next one might be a great one.

## Over-leveraged

But the book is as much a critique of today's radio conundrum as it is a history lesson.

These days, the author says, "We can have whatever we want, make our own radio station, download our own playlists, and that's a wonderful choice to have, but

it's sort of counterintuitive because it tends to be very limiting. What we fill out iPods with is the stuff we know we like. And we have fewer opportunities to expose ourselves to new stuff.

"The creative genius of radio was that we let the DJs lead us into something new."

The chapter on Paul Sidney's WLNG(FM), a throwback to the days when "radio felt much more connect-

ed to communities it served," is telling. Here is community radio taken to the max — swap shops, train wreck music segues and all. Fisher writes of how WLNG has gone with wall-to-wall coverage during major storms or stories that affected its listeners (e.g., the TWA Flight 800 crash).

He contrasts that with the oft-related story of a Clear Channel cluster in Minot, N.D., where no "live" person was reachable after a late-night train accident that spewed dangerous chemicals into the air and threatened the city.

Ironically, Fisher feels, technology is part of what threatens radio. Satellite distribution and syndication, research and deregulation have contributed to the sameness and helped kill off localism as over-leveraged companies try to cut costs.

## Testing

One of Fisher's most interesting stories, at least for someone who hasn't sat in on a listener test session, is about a research event he attended for Washington oldies station WBIG(FM) in which 110 people basically determined which songs would be kept in the station's rotation.

Many staples, especially Motown songs, didn't test well. Station programmer Steve Allan lamented that the format is dying, "not because people don't want to hear the music, but because once you hit 45, American business doesn't believe you're going to spend any money."

Sure enough, the station dropped the format for a different approach that includes a few '60s classics — well-researched, no doubt.

Were there real surprises in researching his book? Fisher was delighted to find Los Angeles legend Hunter Hancock, who shared his life story, which he'd written but never published. In fact, Hancock retired from the business in the late 1960s after being told he had only a year to live. Fisher caught up with him 35 years later.

Some who made a living in radio were less than passionate about the medium.

"I found one great radio figure after another who looked down on it as a less-important medium," Fisher said, "and I wish they didn't feel that way, because radio plays a much more intimate role in Americans' lives than even people in the industry believe."

As he promotes his book, Fisher says, people long to tell him their own radio stories: the play-by-play guy they liked, the DJs they grew up with as they did their homework.

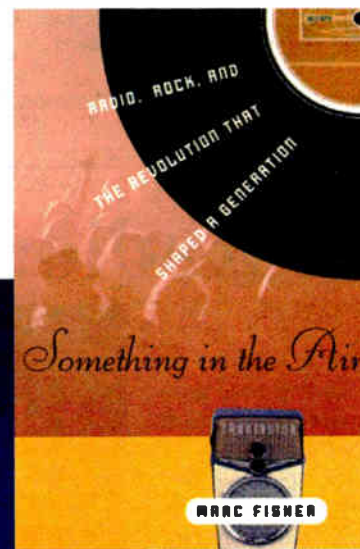


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*In more than a half century you've never turned down a technical challenge. Thank you, Mr. King.*



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# Online Copyrights: Here We Go Again

*New Rates Set Off Furor, Appeals;  
Public Radio Is Vocally Opposed*

by Craig Johnston

Yogi Berra's "It's not over until it's over" has been quoted more times than McDonald's has flipped a burger. But the ol' Yankee catcher could have been describing the turmoil raised by new music royalty rates announced for Webcasters in March.

Those new rates represent a skyrocketing increase over their prior copyright royalty obligations.

Webcasters small and large have been quick to scream that the new rates will

cause them certain bankruptcy. The rates are retroactive to the beginning of 2006, so some of those Webcasters already face multi-million dollar obligations.

## Pennies add up

Before looking at the predicted plight of those Webcasters, remember two things that happened in 2002, the last time a copyright body set rates for Webcasters:

First, there was the same hue and cry predicting the end to Internet radio.

Second, Congress rode to the rescue.

(For those who like to read the end of the book first: Responding to all the shouting in 2002, several elected officials stepped into the process. Like parents holding two siblings by the napes of their necks and ordering them to get along, the representatives gave the parties one last chance to negotiate a settlement, warning them that otherwise Congress was going to do it for them.)

Fearing Congress' solution might be worse, agreements were reached that based payments on a percentage of the Webcasters' revenue. Congress and the Copyright Office then codified those agreements.)

The new rates, beginning at \$.0008 charged for each listener to each song

play, may not seem to amount to much. However, for Webcasters that have been successful at attracting Internet listeners, those fractional pennies add up quickly.

According to calculations in Radio and Internet Newsletter, AOL Music had an average of 210,694 listeners for November 2006. Based on the music played that month, AOL retroactively owes \$1.65 million in sound recording royalties. Projected over all of 2006, that's over \$20 million. Even to a multi-billion-dollar parent company like Time Warner, \$20 million is likely to get somebody's attention.

Smaller Webcasters aren't going to be owing \$20 million, but many have little or no income at all and still face sizable royalty obligations. Erick Murtland, owner and operator of Hot Wired Radio, which started in May of last year, said he now averages 500 listeners and plays 16 songs an hour.

Though his 2006 royalty liabilities are relatively small — he started around mid-year and grew his audience from zero — if those listener and song-play numbers continued 24 hours a day through this year, his 2007 royalty bill will come to over \$75,000.

**For the small  
Webcaster ... it's just  
almost not even  
possible to generate  
enough to keep up  
with the royalty rates  
that they're asking for.**

— Erick Murtland

"The numbers don't add up," said Murtland. "For the small Webcaster to be able to generate enough ad revenue, whether it be in the stream or on their Web site, it's just almost not even possible to generate enough to keep up with the royalty rates that they're asking for."

Many terrestrial radio stations streaming a simulcast of their over-the-air signals fall somewhere between those of AOL and the small Webcaster. Their listener numbers may be bigger than Murtland's, but ad revenue from the simulcast portion of the stream is paltry. Many broadcasters have had to remove over-the-air ads from the simulcast stream because the commercials' talent fees can multiply when Webcast.

Public stations, with no advertising revenue, have been particularly hard-hit with the new Webcasting royalties. Many have said they will have to suspend Webcasting operations if the rates go unchanged.

Even an Internet radio station with almost no listeners at all is liable for a \$500 nonrefundable minimum fee, per channel, to be paid at the beginning of each calendar year.

There's one more type of music Webcaster whose royalty liabilities, based on that \$500 per channel fee, make all of the above look like chump change. Free service Pandora has 300 million registered users, each of whom can create up

See RATES, page 33 ▶

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# Rates

► Continued from page 32

to 100 unique channels of streaming music. RAIN calculated Pandora's 2006 royalty liabilities at around \$2 billion.

## No guarantee

So if these music copyright royalty rates seem to make no business sense to small, medium or large Webcasters, how could the CRB defend them? In their hundred-plus-page ruling, the judges address this directly:

"It must be emphasized that, in reaching a determination, the Copyright Royalty Judges cannot guarantee a profitable business to every market entrant. Indeed, the normal free market processes typically weed out those entities that have poor business models or are inefficient.

"To allow inefficient market participants to continue to use as much music as they want and for as long a time period as they want without compensating copyright owners on the same basis as more efficient market participants trivializes the property rights of copyright owners."

John Simon, executive director of SoundExchange, the organization assigned to collect royalties from online radio and distribute them to labels and artists, told Radio World, "We want to see Webcasters thrive. If they grow, we grow."

Simon noted that the CRB followed the letter of the law, which is to establish what agreement a willing buyer and willing seller would arrive at.

"Further, it's difficult to see an industry in trouble when audiences are flocking to Internet radio by the millions, revenue was up 1,000 percent over 2003-2006 and hundreds of new services have come online over the past few years."

Though SoundExchange in some sense speaks for performing artists who split the royalties collected with the recording companies, artists themselves have been little heard in press coverage of the issue.

Jay Jay French of Twister Sister told Radio World: "With the shrinking royal-

Copyright Year	Royalty Rates per-play/per-listener
2006	\$0.0008
2007	\$0.0011
2008	\$0.0014
2009	\$0.0018
2010	\$0.0019

ties from the usual sources, the ever expanding digital universe is apparently becoming the future and, before our very eyes, it is here now.

"I wholeheartedly support all organizations who endeavor to collect and account to all the hard-working artists whose material is exploited. I applaud

these new royalty increases as they scratch the surface of the new world order."

## Appeals

So if Yogi is right, what happens next?

By late March the CRB had agreed to hear motions from a number of Internet radio outlets who participated in the rate-setting process. This also happened back in 2002, and as a result, that rate-setting body cut many of the rates in half. Still, Webcasters pursued further relief through Congress. Will that happen again?

At the March 7 hearing of the U.S. House of Representative Subcommittee on Telecommunications and the Internet, Chairman Edward Markey, Democrat from Massachusetts, made clear that new rates were on his radar.

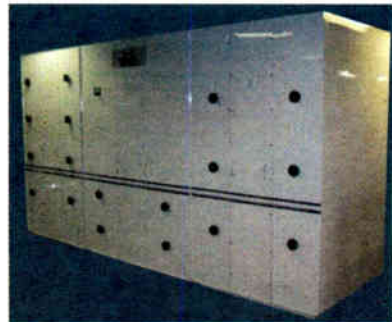
"Previously small Internet radio

providers were able to pay a percentage of revenues to cover royalty payments," he said. "The decision by the Copyright Royalty Board ... represents a body blow to many nascent Internet radio broadcasters, and further exacerbates the marketplace imbalance between what different industries pay.

"It makes little sense to me for the smallest players to pay proportionately the largest royalty fee," Markey continued. "This decision runs the risk of hurting not only fledgling entrepreneurs, but also the online radio services of public broadcasters and smaller commercial stations."

Will CRB's pitch land in the catcher's mitt for a strike? Or will Congress or the courts pass this particular ball? Stay tuned, because this one really isn't likely to be over until it's over. ●

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# 'Air'

► Continued from page 30

"Those voices made an enormous emotional impact on them and are still in peoples' heads 20, 30, 40 years later."

Fisher says if more people took that emotional connection to heart, perhaps we'd see more freedom given to today's personalities in the hopes of making magic happen again.

The author concludes that the outcome of radio's battles against iPods, satellite and "sameness" depend on its ability to change, to rekindle creativity in all of its formats and develop new talent — difficult to do, when so many small-market stations are satellite-driven or automated.

"A return to another time is necessary in order for radio to jump into the future," Fisher writes.

"Something in the Air" is a 400-page hardcover published by Random House; retail price \$27.95.

Peter King is an Orlando-based staff correspondent for CBS News Radio and an unabashed fan of '60s and '70s top-40 radio and its personalities (especially WABC's George Michael). ●

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# How to Help High Schools

by Mark Lapidus

Hundreds of high schoolers gathered around the morning show. They listened intently to the lecture being delivered about holiday drinking and driving.

Because of the subject matter and the possibility of TV cameras covering the event, an administrator had excused the youngsters from class and told them to go hear the program. Attendance was mandatory but not such a drag; many of the kids were fans of the show.

After the speeches, the morning show team got the mad rush from the crowd to sign autographs and just to talk.

Sure enough, on the 5 o'clock news

that day, there was the morning show delivering fatal statistics about drinking and driving. The kids had been rapt with attention and the school came off as being on the cutting edge of keeping their children safe.

Activities of this nature are a win for everyone.

The kids win because they might actually learn something that will keep them from hurting themselves or others. The school wins because it's viewed as an institution that cares — and it's showing so by action rather than words.

The radio station is a big winner because it has performed a great community service and has been amply recognized for

it through media coverage. And it touched many kids who are listeners or who may become listeners as they get older.

Since it's obvious that school promotions generally are beneficial for radio stations, why don't stations execute more of them?

Because they require planning, good connections and a meaningful program. Also, few schools these days will open their doors for you just because you want to show up.

If you'd like a few conceptual starters on how you can do more with schools — which for the most part are suspicious of publicity-seeking media outlets like radio stations — read on.

## Promo Power



by Mark Lapidus

*A Drinking and Driving Program* — Want your morning show to pull off the story above? It begins by creating a committee of concerned agencies in your area that are committed to preventing drinking and driving.

This might consist of a non-profit like MADD, local law enforcement, a fire department and an auto club. Have a meeting to discuss ways to drive (s'cuse the pun) an on-air public service campaign prior to what could be a major potential drinking-and-driving time period: prom season, winter break, school out for summer.

The PSAs hit the cons of drinking and

**Now that we've got so many HD channels, there's no reason not to bring high school shows back. Put them on your HD signal.**

driving and then promote the appearances the morning show will make with these groups at high schools, malls, anywhere teenagers congregate.

It's best if the non-profit group makes the initial contact with the public school system to suggest the program. Once a school is willing to participate, others will follow more easily.

The final step is to contact a TV station to see if one of their anchors might want to join you in the crusade. If you're unable to find a TV partner, have the non-profit make contact requesting coverage.

*The High School Newspaper Connection* — High school newspapers are in need of content. High school reporters are in need of training and experience. You can help with both.

Invite each school's chief student editor and photographer to join your station's new High School Editorial Board. This group will be invited to the radio stations once each quarter when your morning show is interviewing a celebrity. Most celebrities are happy to spend 10 minutes with a group of high school student reporters. The kids will ask questions and take pictures of the celeb. Most likely these will be front-page stories in every high school paper in your area.

After the stories are complete, invite the kids back. Let them critique each other's

See SCHOOL, page 35 ►

# OMNIRAX

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"The Omnirax design makes these studios incredible for talent and operators on both sides of the console."

"Our furniture from you not only fit into our budget and timeline, it was very well constructed and looked beautiful. I expect to be outfitting many more facilities with Omnirax..."

"I was impressed with the exceptional care given packaging for shipment. A few very large and potentially fragile components made it cross-country completely unscathed"

"I wholeheartedly recommend Omnirax to everyone."



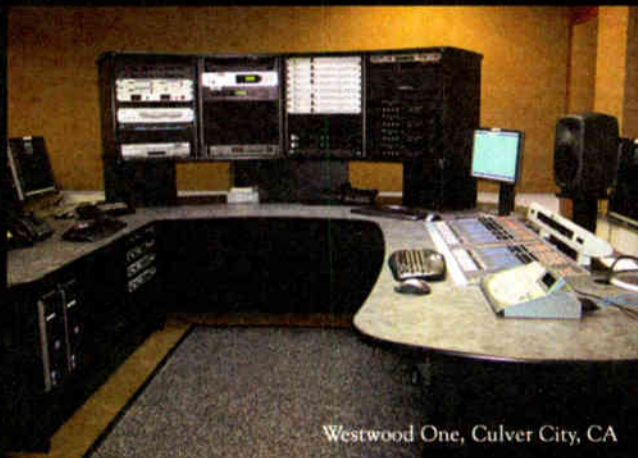
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## Nominees for National Radio Hall of Fame

The National Radio Hall of Fame named its 2007 nominees for induction. The hall is based at The Museum of Broadcast Communications in Chicago.

Bruce DuMont is president.

Winners will be inducted during a radio broadcast in November, produced and distributed by ABC Radio.

Here are the nominees with biographical text as provided by the National Radio Hall of Fame:

### Network or Syndicated — Contemporary

- Art Bell, founder and a longtime host of the paranormal-themed radio program "Coast to Coast AM," distributed by Premiere Radio Networks.
- Bob Kingsley, host of "Bob Kingsley's Country Top 40," the number one national weekly music show in any format, syndicated by Jones Radio Network.
- Marian McPartland, a gifted musician and host of "Marian McPartland's Piano Jazz," which aired on National Public Radio for more than 25 years.
- Dr. Laura Schlessinger, a no-nonsense cultural commentator since 1974, whose show is distributed by Geoff Rich and can also be heard on XM Satellite Radio.

### Network or Syndicated — Pioneer

- Jimmy Durante (deceased), legendary vaudevillian turned 1940s radio comedian and singer known for his mangled English and raspy voice.
- "The Great Gildersleeve," comedy series that starred Harold Peary and Willard Waterman alongside a strong ensemble cast.
- Phil Harris and Alice Faye (deceased), the husband-and-wife comedy team that portrayed a zany egotistical band leader and his film star wife.
- "Lum & Abner," an American radio comedy created by life-long friends Chet Lauck and Norris Goff (deceased), which aired from 1932 to 1954 and was known for its low-key, rural wit.

### Local or Regional — Contemporary

- Jerry Coleman, the former New York Yankee infielder and the long-time voice of the San Diego Padres on XPRS/San Diego.
- Bob Grant, controversial talk radio legend, formerly with WABC and WOR/New York.
- Ronn Owens, versatile host on KGO/San Francisco since 1975, who was named one of the 25 greatest radio talk show hosts of all time by Talkers Magazine.
- Donnie Simpson, a long-time radio personality and the host of "The Donnie Simpson Morning Show" on WPGC/Washington, D.C., since 1993.

### Local or Regional — Pioneer

- Bob Collins (deceased), a fixture on WGN/Chicago for over 25 years, and a top-rated, much-loved morning show host from 1986 until his death in 2000.
- Dan Ingram, rock radio pioneer on WABC/New York and eventually WCBS(FM), considered by some as the best top-40 DJ of all time.
- Bob Sievers, the legendary morning

announcer on WOWO/Fort Wayne, Ind., who helped start the station while still in high school and spent almost 50 years on the air.

- Rufus Thomas (deceased), a professional entertainer since the mid-1930s, who made his mark as a deejay on WDIA/Memphis, one of the few black-owned stations of his era, starting in 1951.

Ballots will be mailed in May to radio executives, broadcast historians and NRHOF members; winners will be announced in August.

## School

► Continued from page 34

stories and have your program director coach them in better ways to conduct an interview. If you have a Web photographer on staff, she could meet separately with the student photographers to discuss their shots.

Tape the "press conference" and use the best on the air or your Web site.

*The High School Radio Show Now in HD!* — There was a time when many radio stations used to offer high school students the chance to host an hour a week about their school. Because of the competitive nature of the business, there a few

high school shows left on the air.

Now that we've got so many HD channels broadcasting, there's no reason not to bring these kinds of shows back. Put them on your HD signal.

This is another small way to spread the word about HD Radio and offer the students practice on the air. If their friends and families don't have HD Radios, they may be encouraged to purchase them or — since many HD signals are streaming — to listen online.

You can make a difference in molding the future — for kids, as well as for gains in the 18–34 ratings. Set yourself up for success with your first high school promotion and no doubt many more will follow.

*The author is president of Lapidus Media. E-mail mlapidus@cox.net.*

The cash-machine formerly known as RevenueSuite returns to the airwaves as Google AdSense for Audio.

RevenueSuite, a source of additional income for radio stations, promises to be even more so in this incarnation as AdSense™ for Audio, thanks to the power of Google technology. And when you combine that with the industry's most innovative station automation products — SS32™ and Maestro™ — you'll understand why hundreds of stations in markets of every size are starting to talk about the future of radio stations with renewed optimism.

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SMALL-MARKET BROADCASTER

# Ownership: You Are Always in Sales

*Concluding Thoughts for the Prospective  
New Small-Market Radio Owner*

In the first two articles of this three-part series, I presented factors to consider when looking for a radio station to buy and additional items relative to financing the deal.

Assuming you've gotten that far, the really tough part comes next: How to run the station and make enough money doing it to keep it.

## Operational Lesson #1: It's the commercials, stupid!

This is essential and basic but often overlooked by new owners, who can quickly become ex-owners.

Broadcasting operates in the "public interest, convenience and necessity" and it will pay you to remember that (especially in a small town, but more about that later). But sales — and collections — are what pay the bills. "No lights, no public interest" is my motto.

As owner, you are a sales guy. A sales guy (men and women both). Regardless of whether you carry a list (of clients), you are constantly selling the station — to your friends, acquaintances, contest winners, local charities, local businessmen and women, etc., etc., etc.

Forget about Led Zeppelin. Forget about who's louder, you or the new FM rocker down the street. Concentrate on being the nicest station in town to your



listeners and clients.

I tell all of my staff people (who, by the way, are also *all sales guys!*): "We are *always* the easiest station in town to do business with."

This is not to say that you need to fall over and kiss the shoes of the person who wants a hundred spots for \$19.95. There will be people with whom you simply cannot afford to do business. Fine.

But you, as station owner and community representative, must cultivate every single potential client in your market. If you cringe at the thought of doing that, you may wish to think about going back to sitting behind the mike or wher-

ever, because you are going to have a rough time with the ownership thing.

Also remember, in a small market (and even most medium markets), 70 to 80 percent of your sales will come from the mom-and-pop business down the street. They know nothing about Arbitron or CPMs. They want advertising — and a lot of times, you have to convince them that they really do want it — for only one reason: to help them grow their business.

If you design a campaign for them that does that, you'll have a client for life.

operated business, so run it like one. Program to your community. Sell to local businesses.

## All the other stuff

OK, OK, this is not *all* the other stuff, because I want to write a book someday and need to save something for that.

If you know someone who owns his or her own business, ask if you can sit down and pick his/her brain.

Take an accounting course at your local community college. You will need to be able to decipher the financial records you get from the seller. (And if you don't get reasonable financials — something better than scribbles on a napkin — take a walk or pay no more than salvage or "stick" value for the station.)

Research the market. And take your spouse with you when you do. This should include driving around, particularly in the CBD during business hours. Look for commercial activity, types of cars driven around. You can get a great feel for a town just by cruising around and stopping in a café for a cup of coffee.

Accurately assess your financial situation. If you are young and have few commitments, you can tolerate more risk than a 50-year-old with three kids in college.

You must plan on several months (maybe a year, if a catastrophe like 9/11 happens) of negative cash flow. Can you live with that, emotionally and financially?

Once you obtain your dream, you have to feed it daily. It helps to be a jack of all trades, but don't overdo it. If you're nursing the transmitter back to

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**Forget about Led Zeppelin. Forget about who's louder, you or the FM rocker down the street. Concentrate on being the nicest station in town to listeners and clients.**

You may eventually grow into needing "The Book" in order to get agency money, but in the beginning, don't worry that you don't subscribe to a ratings service. Concentrate instead on putting people into your client's parking lot.

## Operational Lesson #2: Voice tracking

This also is a simple one: Don't. But I will expand on that thought. My standalone AM (full-time 1 kW) in Corpus Christi, Texas has a sports/talk format. We go local/live for a call in show every morning and afternoon. We air every local/regional sporting event we can, around 200 games a year, and we produce them all.

We produce a local high school sports review each Saturday using local high school journalism students. We go to a satellite feed in between all of this, so I suppose that could be considered a form of tracking; but the idea here is that you have to give your local audience a reason to listen to you.

You are not Clear Channel if you've read this far; you (presumably) do not have an affiliate station in Dallas or Chicago from which to draw talent anyway, so why mess with tracking? What you will have is a locally owned and

health all night, it'll be tough to put on the sales hat the next day. On the other hand, if you have extra time, doing some of your own upkeep is fun (did I really write that?) and saves money.

In spite of the Paperwork Reduction Act the politicians brag about, there is a ton of paperwork involved in running your own deal. And some of it comes with big fines for non-compliance (employee taxes, for instance). It is possible to do your own; I do mine, though I also enjoy having bamboo shoots driven up under my fingernails. However you handle this chore, it's imperative to do it.

And finally: Go do it! Owning a radio station is, by far, the most fun I have ever had at work. I cut the occasional spot, work on the transmitter, write sales pitches, meet and greet clients and listeners when I can and just, in general, "work the station." I can hear the results of my efforts every day.

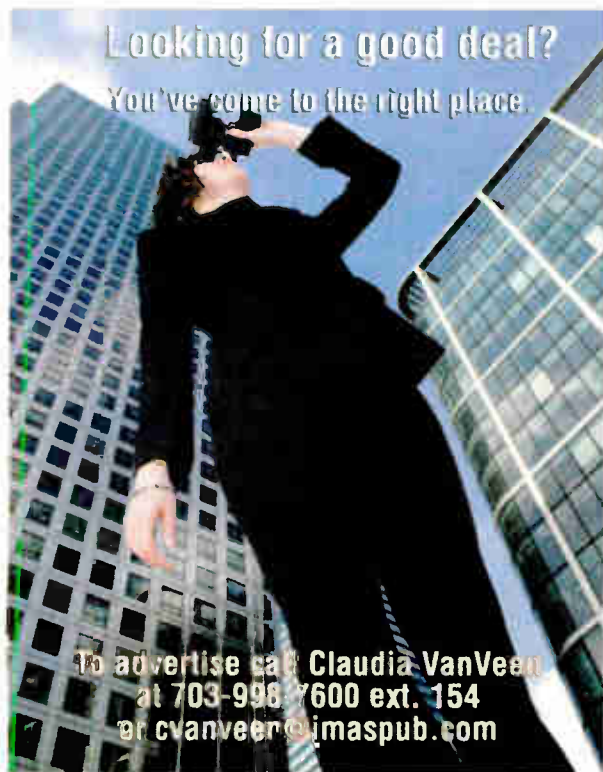
You are a local broadcaster. *And*, an owner.

*The articles in this series can be found at radioworld.com.*

*Jim Withers owns and operates KSIX(AM) in Corpus Christi, Texas. Reach him at (314) 345-1030 or by e-mail to [jim@koplpar.com](mailto:jim@koplpar.com).*

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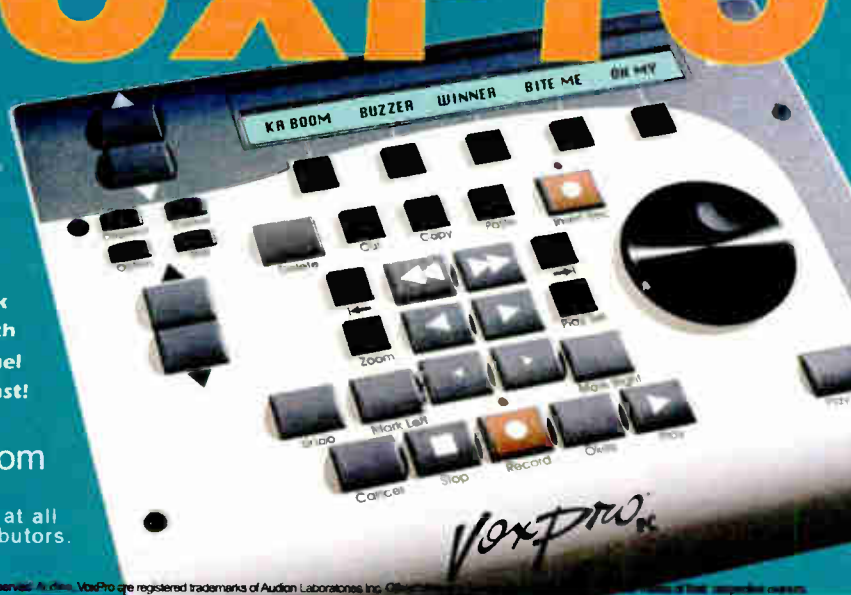
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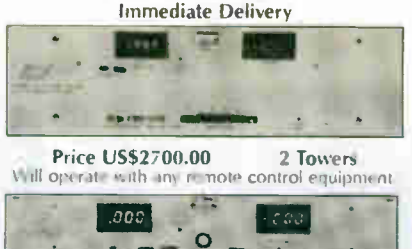
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## Isenberg Talks to Teens In Chicagoland

How many radio programs include a report from Hollywood and a discussion of the Torah reading?

The "Midwest NCSY Radio Hour" airs Sunday afternoons on WEEF(AM), a 1 kW Polnet Communications station at 1430 kHz in Highland Park, Ill.

The live program is described as a blend of Jewish music, interviews and call-ins. The target audience is teens in the Orthodox Union's NCSY youth program, parents and friends. Another niche is membership of the Jewish Student Union Clubs, a companion program to NCSY in public high schools.

Organizers hope to reach listeners as far as Kansas, Ohio and Canada through its online podcast at [www.midwestncsy.org](http://www.midwestncsy.org).

NCSY is the National Conference of Synagogue Youth, a Jewish youth movement. Moshe Isenberg, associate regional director of NCSY Midwest, developed the concept. A Chicago native, he had appeared as a guest on Rabbi Eliezer Dimarsky's Russian-language outreach program on sister station WKTA(AM).

"Moshe responded to questions in English, which were then translated into Russian by the rabbi," the programmers state in their publicity materials. "All of a sudden, attendance by Russian-speaking teens jumped considerably at NCSY events."

Isenberg launched an English-speaking program, buying time on WEEF, which airs ethnic and multilingual programs. The show does not include spots; organizers seek sponsorships for each program.

("No long-winded rabbis on this program," the show summary states. "The segment conducted by Rabbi Meir Wexler from Kansas City, Kan., lasts no more than one minute.")



Mo Isenberg hosts the 'Midwest NCSY Radio Hour.' It airs Sundays on WEEF(AM) in Illinois and is available as a podcast.

## Eye-Catching Ads for Galaxy

As a medium, radio has a history of pushing boundaries. That said, few radio stations would use a genocidal dictator to promote its musical ingenuity.

Galaxy 92 in Athens, Greece, however, recently launched a new campaign with the tagline "I Moysiki Den Einai Dogma," which translates as "The music is not dogmatic," a sentiment reflected in the atypical images of Mao Zedong, Josef Stalin and Adolph Hitler.

The campaign, which consists of print advertisements in newspapers and magazines, as well as banners on the Galaxy 92 Web site, began in February 2007.

Mao is shown wearing KISS makeup with the tagline "Hard Rock is the real



Cultural Revolution." Stalin wears rockabilly mutton chops and a pompadour to declare "I bless America for Rock 'n' Roll." And Hitler is shown with an afro, stating "Black people are the future of music."

The ad campaign was devised by Lowe Athens based on a concept originated by the station. The "I Moysiki Den Einai Dogma" slogan has been in use at Galaxy 92 since January 2006.

"The general public has reacted in a positive way [to the campaign], but the international advertising community has been very enthusiastic," said Omiros Orfanidis, program director of Galaxy 92. "Quite a few of our listeners have contacted us asking us to send them JPEGs for printing, as well as wallpapers for their desktops."

Galaxy 92, launched in 1989, airs a foreign hit music format. Orfanidis said the station slogan and campaign reflect the variety of music the station plays.

"We do not discriminate on any style of music, in other words we play anything from Shakira to Oasis, from Céline Dion to Duran Duran, from Gnarl Barkley to Reamonn," Orfanidis said.

— T. Carter Ross

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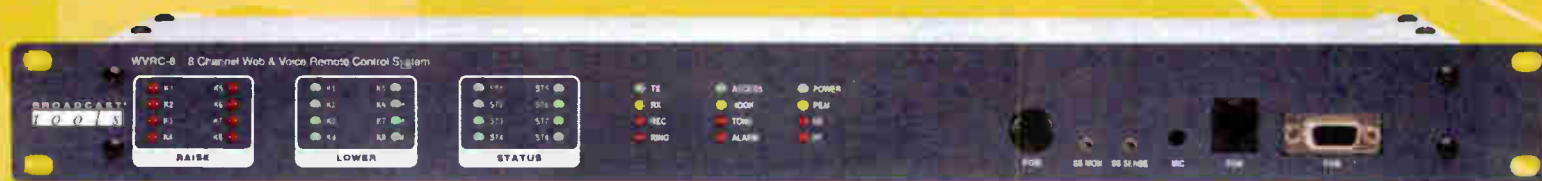
**Sign-up Today!**

### PEOPLE NEWS



Gil Roy, pictured with wife Diana at a dinner recognizing his 50 years in radio. Roy is thought to be the only person to have announced on all the stations in the Albany, N.Y.-area, including WTRY(FM) and WOKO(AM), except for WBZZ(FM), which recently came on in Malta. He is heard on WGY(AM) and WABY(AM) and is network voice for The Alive Network of WHAZ(AM) and four Capital Region FMs. Additionally, he is associated broker and chief residential appraiser for the Capital Region Division of RealtyUSA.

# Remote Control



## WVRC-8 8 Channel Web & Voice Remote Control System

The WVRC-8 provides a cost-effective, one rack-unit solution for web based and/or recordable voice response dial-up transmitter site control. The WVRC-8 was designed from a users point of view, so all of the basic functionality you need is included to control your site equipment, while including the accessories other manufacturers consider optional. Each analog, status, silence sensor and power failure input can be configured to email up to four individual email addresses, allowing different input alarms to be routed to different email recipients. The WVRC-8 is equipped with a browser based 100-event program scheduler for relay control and alarm muting, along with an 8192 event alarm logger. The user can also elect a sound effect to play when an out of tolerance alarm is generated. We have also provided SNMP capabilities to allow multiple units to be monitored with any SNMP manager software package. The WVRC-

8 is equipped with eight high-resolution analog (telemetry) channels, while each of the eight optically isolated status channels may be configured for 5 to 24vdc wet or dry (contact closures) status monitoring. The eight control channels are equipped with independent SPST one-amp relays for each raise/on and lower/off function. These relays may be latched, unlatched or momentarily closed. The WVRC-8 is supplied with spoken words and phrases in English, while the user is free to record words and phrases in their language. In addition, the WVRC-8 may be programmed for dial-up operation via HyperTerminal, while the Java applet programming can be performed using your favorite web browser. System expansion may be accomplished by cascading multiple WVRC-8's on the same telephone line and/or Ethernet switch. Future external add-on products may be attached via the BT-Link expansion port.



## WRC-4 Web Based Remote Control

The tiny TOOLS WRC-4 is a fresh approach to remote site monitoring and control or providing an inexpensive solution to Internet enabling your present remote control system. The WRC-4, combined with web access and your favorite web browser, brings you the following features, all available in this small, but powerful tiny TOOL: A powerful built-in web-server with non-volatile memory; 10/100baseT Ethernet port; four channels each of high resolution telemetry inputs with a large monitoring range; optically-isolated status (contact closures or external voltages) inputs; normally open dry one amp relays; open collector outputs; front panel status indicators, a single front panel temperature sensor and 4-email notification addresses. The WRC-4 is also SNMP enabled. The WRC-4 has been carefully RFI proofed, while including the accessories other manufacturers consider optional. The WRC-4 is supplied with plug-in euroblock screw terminals and loaded with a generic web page that may be edited by the end user. The WRC-4 works with either dynamic or static IP addresses (when used with a dynamic IP, an inexpensive cable or DSL router may be required). Multiple WRC-4s may be used with a user provided Ethernet hub. The WRC-4 may be set on a desktop, mounted on a wall or up to four units mounted on the RA-1, Rack-Able mounting shelf.



## AVR-8 Voice Remote Control

The AVR-8 is a voice remote control system that automatically reports changes detected on any of its eight digital inputs to a remote telephone and/or pager. After speaking a greeting message that may identify the source of the call, the AVR-8 then speaks a unique message for each input change. Each message comes factory programmed, but may easily be re-recorded with your own customized messages. After reporting, the AVR-8 allows you to give it commands through your telephone keypad. Functions include telling the AVR-8 to report on the input state of any of the eight digital inputs, commanding the AVR-8 to pulse any one of its four relays for 750 ms and/or turning any one of the relays on or off. When a relay command is given, the AVR-8 speaks the relay 'name' followed by the 'on' or 'off' message. For instance, commanding relay 4 ON causes the AVR-8 to turn the relay on and then report "Relay 4 ... is on." As with the greeting and input messages, the relay 'name', 'on' and 'off' messages may be re-recorded if desired.

In addition to initiating a call out when inputs change, the AVR-8 monitors its telephone line to receive a call-in from a remote location. When a call is received, the AVR-8 speaks a greeting message, and is then ready to receive and execute commands to report on its inputs, change to its relay outputs or turn on an audio input to the telephone line.



## VAD-2 Voice/Pager Auto Dialer with Silence Sensor

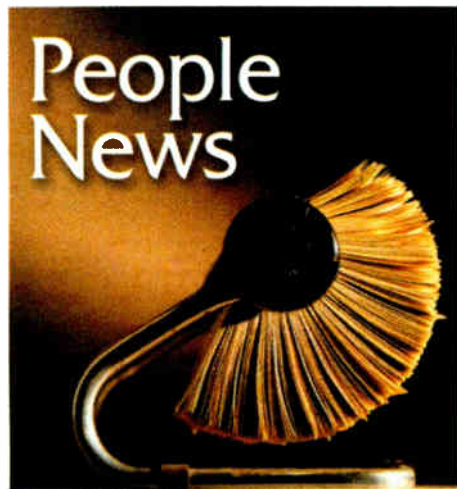
The tiny TOOLS VAD-2 is a user programmable two-input with integrated stereo silence sensor, multi-number voice/pager auto dialer, designed for dial out voice message notification. The VAD-2 has two dry contact inputs and stereo silence sensor, which, when tripped, will sequentially dial up to four different phone numbers and play back a user recorded message corresponding to the tripped input. The VAD-2 is also equipped with two SPST one amp relays for the control of external equipment. The VAD-2 can store up to four 32 digit phone numbers and one 32 digit pager phone number which may be associated with any of the two inputs and/or stereo silence sensor. The VAD-2 is capable of remote or local configuration and message recording with a total recording time of 16 seconds. The two SPST relays may be programmed for momentary, latching or tone duration operation. The VAD-2 may be set on a desktop, mounted on a wall or up to four units mounted on the RA-1, Rack-Able mounting shelf.



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Sirius Satellite Radio cofounder **Robert Briskman** was awarded the 2007 American Institute of Aeronautics and Astronautics Aerospace Communications Award, to be presented at the AIAA International Communications Satellite Systems Conference in Seoul, South Korea on April 12. ... **Jeffrey Smith** joined Sirius as manager of broadcast maintenance engineering, based out of its New York facility. He had been with Nassau Broadcasting.



Jeff Smith

**Robert Hailey** joined Balsys as senior project engineer. He was chief engineer for WLCC(AM)/WMGG(AM) in Tampa, Fla.

**American Women in Radio and Television** named **Lucinda Hutter Cavell** its Outstanding Female Engineer of the Year, in partnership with the **Society of Broadcast Engineers**. Cavell is director of broadcast engineering for Sprint Nextel.



Lucinda Hutter Cavell



K.J. Singh

**K.J. Singh** was named station engineer for **Greater Media New Jersey**. He had been IT systems administrator for Biztech Solutions Inc.

**Buckley Broadcasting** Chief Engineer **Scott Baron** was elected president of SBE Chapter 14.

**Chuck Bullett** accepted a position with **Communications Engineering Inc.** as a senior design engineer. He had been corporate director of engineering for Red Zebra Broadcasting.

**Sam Lawson** joined **GreenStone Media** as west coast chief engineer. He had been a network engineer with Premiere Radio Networks in Los Angeles for the last seven years. ... **Nancy Vaeth-DuBroff** replaced **Edie Hilliard** as GreenStone Media's executive vice president and chief operating officer. Hilliard, who had been EVP/COO, joined the board.

**Megahertz Broadcast Systems** appointed **Joseph Owens** to the position of project engineer. He worked for organizations including ING Barings, GTE Government Services/General Dynamics and the U.S. Army Information Systems Command; and also served as a radio engineer for WBFM(FM)/WSNW(AM).



Joseph Owens

**Wheatstone** added **Jeffrey Keith** as lead audio processing engineer for its Vorsis division. Keith joined the company from Telos/Omnia, where he served as project manager and later director of engineering.



Jeff Keith



John Lackness

**SCMS** appointed **John Lackness** as southwest representative for broadcast products. He worked for Marti/Broadcast Electronics and founded Texas-based engineering and broadcast equipment supply company Converse RF.

**Lincoln Financial Media** appointed **John Dimick** as the LFM Radio Division's vice president, programming and operations. The appointment marks his return to the company, having served as operations manager of LFM's San Diego cluster from 1998-2004.

**Premiere Radio Networks** promoted **Trevor Oliver** to senior vice president of operations. He had been vice president.



Trevor Oliver

**Axia Audio** expanded its customer support department with the addition of **Milos Nemcik**. He

had served as chief engineer at KCPR(FM) in San Luis Obispo, Calif., and most recently at Clear Channel's Central Coast, Calif., cluster.

**LBA Technology** named **Jerry Brown** president. He had held the position of vice president of sales for LBA Group since 2005.

**John Hesano** was promoted to vice president and general sales manager of Eastman Radio, part of the **Katz Radio Group**. He joined Katz in 1992 as an account executive, and in 2001 was promoted to his most recent position, vice president and director of sales for Katz Radio. **Sari Fruitbne-Shaw** replaced Hesano in the position of VP/DOS. She had been senior account executive.

**Entravision** promoted the general managers of its Los Angeles, Las Vegas, Tampa, Fla. and Laredo, Texas, stations to the position of vice president. The company says the executives, **Karl Meyer** (Los Angeles), **Chris Roman** (Las Vegas), **Lilly Gonzalez** (Tampa) and **Terry Elena Ordaz** (Laredo), started their careers with Entravision within the last five years.

Radio producer and writer **Ben Adair** was named managing editor of "Weekend America" by **American Public Media**. He created and hosted KPCC(FM)'s "Pacific Drift," a public radio show covering arts and culture in Southern California.

**Reggie Rouse** was promoted to vice president of urban programming for **CBS Radio**. He continues as program director for Atlanta's WVEE(FM) and WAOK(AM).

**AZCAR Technologies** appointed **Gavin Schutz** executive vice president of AZCAR

Media Strategies, a new division. He had been executive vice president and CTO of Ascent Media Group and was a founder of Four Media Co. ... **David Otey** joined AZCAR USA. He is familiar to engineers from his past role as national SBE frequency coordination director. He recently left SignaSys, where he'd been involved with Sprint Nextel's training program for broadcasters affected by relocation of 2 GHz Broadcast Auxiliary Services.

**Westwood One** promoted **Todd Alan** to vice president, affiliate sales entertainment division. He had been senior director.

**ABC Radio Networks** says **John Rosso** took on the additional role of heading up its Digital Media division. As senior vice president of affiliate relations and digital media, he also continues to oversee affiliate relations. ... **T.J. Lambert** is now in charge of affiliation efforts for ABC Radio Networks general market programs and services, as well as oversight of the Commercial Clearance Department. These responsibilities are in addition to his duties as vice president, affiliate relations for ESPN, ABC Music Radio, "American Country Countdown" with Kix Brooks and ABC Radio International.

**Digidesign** appointed **Kyle Ritland** worldwide public relations manager. Prior to joining the company he had been director of public relations at Loud Technologies.



Kyle Ritland

**Salem Communications Corp.** named **John Butler** national program director for news/talk programming. He most recently served as vice president of broadcast media for Z Comm.

**Long Island Radio Group** hired **Shawn Novatt** as its Internet program director. Prior to this position, Novatt was the executive producer of the WOR Morning Show at WOR(AM) in New York.

**Aaron "Cappy" Cappotelli**, producer/co-host of the morning show on Clear Channel's KDMX(FM) in Dallas, was let go, the Star-Telegram newspaper reported. The show received national attention earlier for posting a decoy profile page on MySpace.com to lure online predators, though that was not reported as related to his release. Co-host Tony Zazza remains with the station.

**Danager** created and filled a director of sales position, naming **Kevin Burk**. He recently served as territory manager with Diageo Canada.

**Thomas Marcher** was appointed sales director of **Klotz Digital Asia**. He comes to the company from DIS Thailand, where he served as area sales manager responsible for Asia-Pacific markets.

**ERI** appointed **Bob Groome** to the new position of radio account manager, western region. He had been domestic sales manager for Jampro/RF Systems Inc.

**Dolby Laboratories** named **John A. Carey** vice president, worldwide sales and marketing, for its Professional Division. Before joining Dolby, Carey was director of business development, professional audio, for DTS Inc.

**Arbitron** appointed **Dr. Pat Pellegrini** to the position of vice president, research, new product development. He comes to the company from his role as senior vice president of research at TNS Media Research in New York, where he was responsible for developing and expanding digital return path audience measurement services.

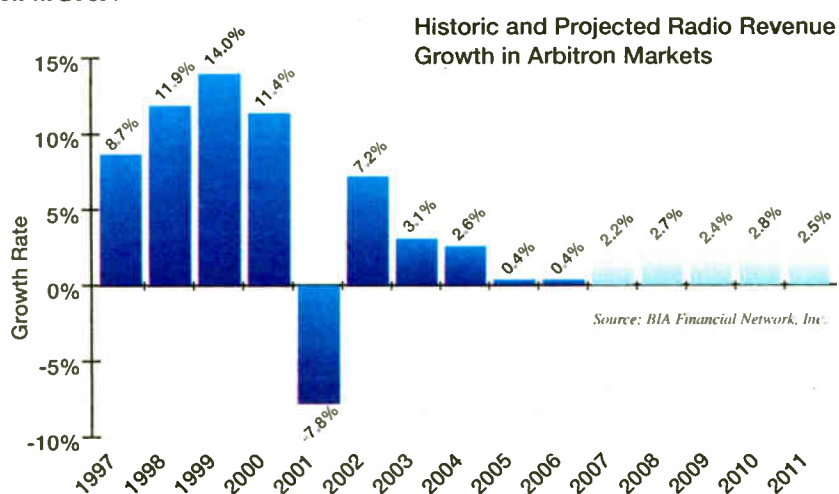
NASB member **World Christian Broadcasting** appointed **Gayle Crowe** as VP, programming. He succeeds **Dale Ward**, WCB's longtime executive producer, who passed away in October.

## BIA: 'Horizon Appears Brighter'

Radio will rebound a bit from its revenue slump and see growth of 2.2 percent this year, according to an estimate from BIA Financial Network.

The research firm believes our industry experienced growth of only 0.4 percent last year, the second year in a row of less than 1 percent growth.

According to BIAfn's quarterly "Investing In Radio Market Report," U.S. commercial radio ended 2006 year with \$18.1 billion in income, compared to \$18 billion in 2005.



Vice President Dr. Mark R. Fratrick said in the company summary, "As the radio industry continues to adjust to its competitive role within the entertainment industry we still see a slight improvement in radio industry growth. The growth we have recently seen has primarily been in the mid-level and small markets and should continue, as these markets have responded better to the competitive challenges facing the radio industry."

Radio transactions jumped up last year, the first time in six years that they were above \$22 billion, finishing at \$22.9 billion, and the number of stations transacted leaped to 2,100 from 877 the year before.

"The high level is connected to the announced privatization of Clear Channel Communications, but even without that sale it demonstrates overall that the industry is considered a smart investment in the long term," BIAfn stated, saying the current period is one of strategic repositioning for many owners.

"Many groups are exiting and entering markets and regions where they feel they can increase station values," Fratrick stated. "It's also a demonstration that industry participants feel competent they can generate future growth."





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## ◆ READER'S FORUM ◆

### The VMSK Delusion

Shame on you, Radio World. You just helped Hal Walker fool a new generation of readers with the dubious VMSK technology ("High-Definition Expanded Radio," RW Online, March 2).

First off, this so-called system isn't even an FM SCA — it's more of an IBOC/IBAC thing. Did you even bother to look at its own Web site ([www.vmsk.org/FMSCA.pdf](http://www.vmsk.org/FMSCA.pdf))? The spectrum clearly shows the VMSK signal on only one side of the standard FM modulated carrier. This is physically impossible with a true FM SCA system.

Moreover, VMSK is a delusion. It was debunked years ago by Phil Karn of Qualcomm, among others. Must-read [analysis] includes <http://people.qualcomm.com/karn/papers/vmsk>.

VMSK puts virtually all of the energy in the carrier so that the data-bearing signal is "in the grass." Of course, it is useless at this level. Unfortunately, along the way, small investors have lost a lot of money through the various shell companies involved (Pegasus Data Systems, AlphaCom and now this).

Radio World has done a disservice to its readers, many of whom do not have the technical acumen to determine what is a perpetual motion machine and what is not. That's not their fault — broadcasting is more about content than technology — but it is even more reason for technical editors to [exercise] proper due diligence before giving such claims front-page attention.

Derek Kumar  
Digital Radio Express Inc.  
Milpitas, Calif.

### HD Radio: DOA?

Holland Cooke definitely shows tremendous insight into what we see happening more and more in radio these days ("Is HD Radio Dead on Arrival?" March 1). Programmers (and the executives with their hands on the purse strings) are going to need to take a more active role in imaging and branding their stations, or continue to suffer from a loss of audience to other forms of media and media delivery.

No longer can broadcasters expect to

add to their bottom line without putting some new creative life into their HD programming. For too many years now, innovative programmers have had their hands tied, not even able to get a "new paint job" for their stations, while bureaucrats continue to demand higher ratings and revenue, cutting their budgets at the same time.

HD Radio must put forth an interesting, exciting and innovative sound if it expects the audience to listen and support HD in the future.

Tony Griffin  
President  
Tony Griffin Productions  
Dallas

Perhaps if there were more than a very limited handful of HD Radio receivers available for more than \$200 each, they would sell more. There seems to be availability of various receivers for the European DAB, but not U.S. HD Radio.

If I were to buy one, I don't necessarily want to pay \$200 or \$300 for a glorified clock radio for my nightstand!

Mark Krotz  
Mesa, Ariz.

### Remember Your Roots

I would like to thank the readers who responded to my article ("Early Roots of Seattle's Stereo 89," Dec. 6). The article did not receive adequate praise from the staff of the current "C-89.5 Worldwide" because of how time has changed since 1975 operations, but it did deeply touch many former students who played a tremendous part of this program's upbringing.

It also was an especially heartwarming read for KNHC founder Lawrence Adams, who turns a modest 67 this September, now retired with wife Joyce and residing in our state's capital city of Olympia.

Larry, on behalf of the past and present from Nathan Hale High School: We love you, thank you and are indebted to you for being the integral force with engineer Gene Arnold in creating such a superior classroom.

Tim Shook  
Production Mgr.  
Key Peninsula Web Radio  
Gig Harbor, Wash.

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**Jeffrey M. Andrulonis, CRMC**  
President/CEO  
Colonial Radio Group Inc.  
Mainesburg, Pa.



Shown: Heil PR 30. Large-Diameter Dynamic With Hum-Bucking Coil and Built-in Shock Mount

## GUEST COMMENTARY

# There's More to IBOC Than You Think

## Ultra Narrow Band Modulation Offers Bandwidth Efficiencies Critics Say Are Impossible

by H.R. Walker

The following commentary was written in response to the letter on the facing page by Derek Kumar, which originally was published on radioworld.com.

Those who keep looking back at the past are likely to be run over by those running into the future. History shows many things that "could not be done" were done anyway.

There is a story going around (unconfirmed) that Carson, a brilliant Bell Labs scientist, once published a paper that said FM was a useless scheme worse than AM and would never amount to anything. One should never be too sure of hasty conclusions.

IBOC as conceived today is more or less limited to audio, but there are TV applications in the wings as well. (Example: Dotcast). Digital radio and digital TV are still in the growth stages.

The principle players at the moment are Ibiquity, Sirius and XM. These offer enticing audio packages for listeners with various tastes.

The total package content of these digital radio systems is limited by the modulation method used and the bandwidth available. Newer modulation methods with higher bandwidth efficiencies may soon change all this. The present methods are limited in a fight between bandwidth efficiency and the signal level required to get a good digital bit error rate. Future methods are being devised to

solve this limitation.

### New mod methods

The present IBOC methods are only infant steps. There are several new modulation methods under development at various laboratories around the globe that promise to change all this by offering excellent signal-to-noise performance with previously unheard-of bandwidth efficiencies.

**The present IBOC methods are only infant steps. There are several modulation methods under development that offer excellent signal-to-noise performance with previously unheard-of bandwidth efficiencies.**

For example, Ultra Narrow Band modulation now in cable TV, microwave and FM-IBOC trials offers bandwidth efficiencies so high that critics cry, "You can't do that." Nevertheless, it is being done, in full FCC compliance.

Present equipment is transmitting 10 Mbps via a single frequency spectral line without useful sidebands. Ten megabits per second is adequate for an HDTV channel using MPEG4 compression. Needless to say, this is many times the bit rates in use by Dotcast, Sirius, XM and Ibiquity.

Compression Technologies, Aerotelevis, Photron Sciences and possibly others

have announced projects underway using new technologies with broadcasters, cable TV networks and satellite links, both in the U.S. and abroad.

An example of new methods is the system under development in China that allows H264 video to be added to an AM broadcast carrier. This method, which combines phase and amplitude modulation, is to be disclosed at WMSCI 2007 in Orlando, Fla., this July.

Five or six technical papers have been published per year for the last seven years or so on new modulation methods.

Some are not applicable to IBOC. There are numerous patents on file, both published and issued.

### UNB

There are several different UNB methods in operation. The controversy over UNB has to do with the spectrum. The spectrum consists of two parts, an Ultra Narrow Band phase-modulated signal plus some broadband AM sideband products. The proponents claim to use only the PM portion for digital data. The AM portion in their view is useless, as limiters and phase detectors are used.

The FCC says you must get rid of that

AM sideband portion or you cannot use these modulation methods. So the proponents remove the AM sidebands and have no trouble using the methods in practice.


On the other hand, there are those working with the technology who say if the AM has no effect, why not add AM on top of the PM and obtain another channel of information? This was demonstrated in 1998 at a wireless conference in Santa Clara, Calif. Several papers have been published on doing this. The Chinese method mentioned apparently does this with the AM being the principal carrier and the PM incidental.

On an engineering basis it is said that the bumblebee cannot possibly fly but the bumblebee does not know this and flies anyway. So it is with UNB: The critics say you can't do that, but the users do it anyway. The critics admit it is being done and it does meet FCC regulations, but they insist it just does not function the way the proponents claim.

If there is a dark cloud in the future for the new IBOC methods, it is not technology but rather time and money. Meeting FCC requirements is the easy part. Getting through standards committees, etc., can take forever.

Then there is still the problem of commercial acceptance. It is not easy to change minds in the established commercial world.

There may be a better mousetrap, but the user must be convinced, the users in this case being both the broadcasters and the consumers. Investors will ask just how profitable the previous methods were, and will the new methods be more so. New technology of this type is a deep-pockets problem and not something for the small-time player.

H.R. Walker is CEO of Pegasus Data Systems and inventor of several UNB methods. 

## ◆ READER'S FORUM ◆

### Lack of Research

I found your article to be quenching to my portable-HD-Radio-thirsty mind ("Desperately Seeking Portable HD," March 27, 2006). Have there been any more recent developments?

Seattle radio station. I ended up crushing it under my heel a week later due to reception, if you can call it that. I figured I would spare some other poor soul the same misery.

I have a hard time with the lack of R&D being spent on this. There is an article ([www.i4u.com/article145.html](http://www.i4u.com/article145.html)) about a prototype a year ago, but I can't seem to

white soup brand have slumped in recent years. Maybe this will help.

I've certainly lost my share of these zoning battles. I thought I'd pass along this souvenir campaign sticker that was distributed at a Fulton County, Ga., board hearing. About 50 neighbors showed up, all wearing the thing stuck to their coats.

Had I been able to speak to the group in advance, I'd have explained that the next most likely use for the property, after towers, was as a home to a sewage treatment plant because a large high-pressure sewer — yes, that's just what it sounds like; don't hit it with the backhoe! — runs across the site. I think I'd have peeled off a few neighbors with that little revelation. But it was not to be. In what our general counsel described as a "close vote," we lost that one 7-0.

I was only able to explain that scenario to the small assemblage of sticker-wearing opponents outside the courthouse after the hearing. Next time I'll leaflet the neighborhood ahead of time with my scaremongering.

Along that same line, one of the crazier strategies I've seen was in Amarillo, Texas, where there was a piece of land at the edge of town advertising that it was to become the "Home of the World's Largest Rattlesnake Farm."



Campaign sticker distributed at the Georgia zoning board hearing

These were professionally painted 4-by-8-foot signs with a big, coiled snake in the middle. I believe the intent was to motivate the nearby property owners to sell at a reasonable price. How'd you like to have that next door? The assembled property was well suited to retail development, and I think that was the plan all along.

Frank McCoy  
EVP, Engineering  
American Media Services  
Charleston, S.C.

### Does it not seem conducive to radio conglomerates to throw a little money at R&D?

I, for one, would shell out for one of these, even if the battery held a max charge of one hour and took two hours to recharge. They could be marketed to bus and mass transit commuters, whose choices are to listen to the same MP3s, read a book or try to ignore that one unsavory passenger day in and day out.

There were 103.2 million passenger boardings on Seattle Metro in 2006. At a conservative average of 10 minutes per trip, that translates to a pool of over 17 million hours of potential listening time per year! I purchased a portable analog unit that I tried to use in downtown Seattle, which is within one mile of every

find anything more recent. Does it not seem conducive to radio conglomerates to throw a little money in that direction? What is wrong with this picture?

Derek D. McLeod  
Seattle

### Zoning War Stories

Thanks for printing my Campbell's Soup tower tip story ("Soup and the Fall Radius of Towers," March 1) and sharing reader reactions. Sales of the old red-and-

◆ READER'S FORUM ◆

**As It Happened**

I was intrigued by two articles in the March 1 issue: "Soup and the Fall Radius of Towers" and "Familiar Towers Fall at Last," both addressing the issue of falling towers.

After reading both articles, I did a quick Internet search for "WOR Tower Video" and instantly came up with video of the WOR towers falling. Either [http://keyetv.com/topstories/local\\_story\\_011124211.html](http://keyetv.com/topstories/local_story_011124211.html) or [www.youtube.com/watch?v=8vOdyQoCyqo](http://www.youtube.com/watch?v=8vOdyQoCyqo) give impressive demonstrations from helicopter and ground of how a tower really falls.

Dan Harder  
Denver

**Withholding Information**

I am replying to your product evaluation, "Accurian Tabletop Gets High Marks," in the March 14 issue.

After reading this description of the physical attributes of this radio, I am disappointed there is no mention whatsoever of the digital or analog audio quality of actual AM or FM broadcast stations, both music and voice quality. Also lacking are comments regarding distance from local AM or FM towers, how often the radio switches back to analog and how far from the transmitter the HD signal is available.

Data in addition to "FM reception was impressive at my location" would be of more value if the author provided a chart of quantity and quality of HD-FM and HD-2. Also totally lacking was any mention of AM reception, analog or HD.

I used this radio twice at my local RadioShack and received no HD stations of the four available, nor could I get an HD lock on a 50 kW AM HD station. I would like to read more data (in engineering units) of this radio before I plunk down my \$199.

John Pavlica  
Toledo, Ohio

*Author Ed Hollis replies: Thank you for asking about the specific qualities of the Accurian HD Radio's audio and receiver performance. My evaluation is that the unit is good considering the price I paid for this desktop unit. Subjectively, it sounds great to me and reception is better than other desktop HD Radios I've tried.*

*Reception of HD Radio signals is improved with an external (outside) antenna. The Accurian ships with a passive*

*dipole antenna for FM and a loop antenna for AM. These passive antennas are your best bet for good reception of HD Radio signals and should be mounted outside a building.*

**The Republic of Tower Heights**

I read with great interest, and more amusement, Burt Fisher's letter (*Reader's Forum*, March 28). I wonder what "public service" his Internet connection gives him, or for that matter anyone?

I agree ham radio is a hobby that sometimes has a public service aspect. It seems to me Burt is far more concerned with "the neighbors."

When I bought the land on which I built

**I named my subdivision Tower Heights, and listed as a covenant that anyone building [there] had to erect a tower of no less than 100 feet in height!**

my home many years ago, I first checked to see if there were any covenants against antennas. Had there been any, I would not have bought the land. There were none, as it was farmland.

My good friend John Voigt, K9GBO, and I bought 50 acres, which we then subdivided so each of us could have what we wanted. When I went to file the purchase and subsequent division of land with my county, I was told I could name my subdivision if I wished and also register any restrictions or covenants. So I thought for a moment, and named my subdivision Tower Heights, and listed as a covenant that anyone building in the subdivision had to erect a tower of no less than 100 feet in height!

And in full compliance with my covenant, I have dutifully built a 130-foot tower which I use on the 160 meter band.

The only wasteland I see here is between Burt's ears.

Jerry Arnold, K9AF  
Terre Haute, Ind.

**There's a New Pink Lady in Town**

Kudos to Heil Sound for combining creative marketing and good will with the release of its Pink Pearl PR-20 dynamic microphone. In an equipment industry known for having low profit margins, it's gratifying to see this kind of offering.

The mic is emblazoned with the pink breast cancer awareness ribbon on a pink, pearlescent finish; a percentage of proceeds from the sale of Heil Pink Pearl microphones will be donated to The Susan G. Komen Breast Cancer Foundation for the purpose of raising the awareness of breast health and breast cancer.

Bob Heil and his wife Sarah have been personally affected by breast cancer; Sarah's mother is a 15-year survivor. The idea for the Pink Pearl was conceived after Heil Sound built a white pearl PR 20 for Cyndi Lauper. "Our National Sales Manager Chip Margelli said we should make a pink one. His mother is also a survivor," said Heil. "From there, I started working with the Susan G. Komen Foundation and they gave us permission to pursue the project." Within the first month of availability, there are more than a dozen users of the Pink Pearl PR 20 "with more and more joining in each week," said Heil.

Heil adds the mic is sure to be hit with the ladies. "I truly believe that every woman in radio who learns about and understands what the Pink Pearl project is about, will become a member of the 'Pink Ladies Society' at Heil Sound," he said. "Sarah and I are truly blessed and honored to be able to bring this worthy project to our industry."

— RW



Denise Plante of Denver's 'Murphy and Denise Show' is the first radio personality to adopt the Heil Pink Pearl as her primary on-air microphone.

**Where Is the 'Killer App' for AMs?**

Skip Pizzi, thanks for the excellent summary of HD's status ("An HD Radio Deployment Scorecard," March 14).

I am the director of engineering for two AM stations in Baltimore. To quote your article: "HD Radio also needs to emerge from the shadows of interim rules. Let's hope the long-awaited final rules for the format will be on the books before another year passes. This is of particular importance for HD AM, where much uncertainty remains."

I have heard from two major equipment vendors that although HD would be authorized for nighttime operation, which is great for HD-1, there still is no authorization for HD-2, day or night. And none is expected for at least one year. Is this true? Please address the plight of AMs looking for their "Killer App."

And in the interest of being fair and balanced, a question for the FCC: Why

should FM's, which already have wide bandwidth, stereo and no fading at night, receive permission for two additional channels (HD-2 & HD-3), while AMs receive no additional channels?

With only 5 percent HD receiver saturation, and no timetable for even one additional channel for AM broadcasters, what is the incentive for an AM station to reduce audio bandwidth (rolloff to 5 kHz on analog) to 95 percent of its current listeners at this time?

Michael Fast  
Director of Engineering  
M-10 Broadcasting  
Baltimore

**Correction**

The review of the RadioShack Accurian HD Radio in the March 14 issue (page 20) reported that the radio decodes RDS signals; it does not. The radio decodes Program-Associated Data in the digital stream.

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