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OPINION

GSS Tests Digital Alerts In Mississippi

Company Hopes to Expand Subcarrier-Based First Responder System

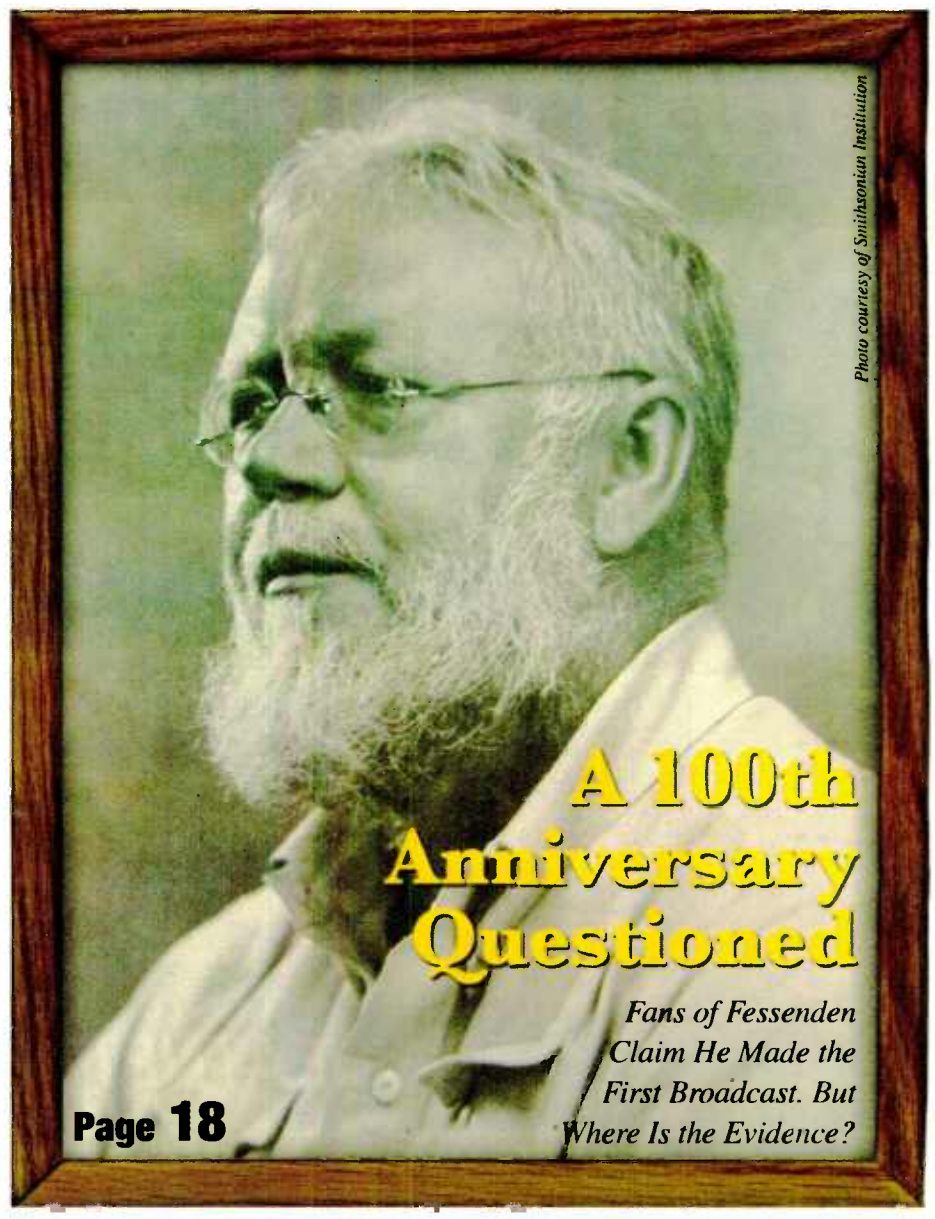
by Randy J. Stine

JACKSON, Miss. A digital emergency alert system tested in Mississippi uses FM frequencies to send text messages to first responders. It could also one day provide hazard warnings for the general public nationally.

Global Security Systems has been testing its GSSNet All-Hazards Digital Alert System for a statewide assessment of the Federal Emergency Management Agency's DEAS, delivering EAS text messages via FM radio signals to cell phones of test participants.

The company says it developed the single-point to multi-point messaging system for redundant distribution of EAS messages in the event that first responders' radios and cell phones become clogged with traffic because of heavy use during times of crisis. GSS would like to see its system adopted nationally. It hopes to have the system installed in 50 cities by the end

See ALERT, page 8 ▶



NEWSWATCH

Noncom Ratings Get Equal Footing

NEW YORK Arbitron will include non-commercial ratings in its local market ratings reports beginning with the fall survey. This would be the first time commercial and non-commercial data will be side-by-side in the research that all stations see.

Currently, noncommercial data has been in certain products such as Arbitron's Maximi$er and Media Professional respondent level data services and in the special public radio service marketed by the Radio Research Consortium. Non-commercial stations are also reported in Arbitron's national radio ratings services such as Nationwide and the National/Regional Database.

Arbitron Postpones Satcaster Ratings ...

While the audience research firm had hoped to begin reporting ratings for individual satellite radio channels, that has been delayed until sometime next year. Arbitron is still refining the rules for crediting satellite entries.

Among matters it must finalize is how to handle diary entries that could be assigned to either satellite or over-the-air stations, such as when a listener writes "NFL Football" or "Major League Baseball."

... And Ponders HD-R Reporting

And Arbitron is still working out how to report HD Radio main and multicast channel information. But the firm said it would begin collecting HD Radio facilities information starting with the winter 2007 survey.

"Arbitron will continue to review diaries for early indications of how consumers will identify and report HD Radio," it stated. "In PPM markets in 2007, encoded HD Radio stations will be reported in the PPM Analysis Tool."

FCC Establishes Safety, Security Bureau

WASHINGTON The FCC has elevated its Office of Homeland Security to a bureau, a long-planned move.

Functions relating to EAS move to the new entity, called the Public Safety and Homeland Security Bureau.

The bureau is supposed to address matters of public safety, homeland security, and emergency management and preparedness. It brings together public safety functions that had been dispersed among other bureaus and offices. It's organized into three divisions: policy, public communications outreach and operations and communications systems analysis.

Chairman Kevin Martin said the bureau would assume responsibility for completing the 800 MHz re-banding process and resolving any related interference issues.

Commissioner Michael Copps said the bureau should have opened right after the terror attacks of 2001 but he's glad to see its launch.

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Rehr Ready to Get Assertive for Radio

Assertive Tone Marks Comments From NAB CEO at His First Fall Show

by Leslie Stimson

DALLAS David Rehr is no longer "the beer guy."

As he walked the halls of the Hilton Anatole in Dallas, the NAB president/CEO seemed at ease at his first NAB Radio Show and after 10 months on the job.

Echoing themes he laid out during the spring convention, David Rehr urged broadcasters to go on the offensive, tell their story to Wall Street and embrace change in order to compete. At the same time, he pledged that NAB will continue to press the case for radio in Congress and at the FCC.

He shone a light on HD Radio, satellite and Internet radio and declared that terrestrial radio "will beat" those competitors.

Here's a roundup of news from the convention. More are found later in this section and on pages 26-32 in the HD Radio News section.

REHR PUTS SATELLITE, INTERNET RADIO ON NOTICE

In the months he has been at the helm of NAB, Rehr has experienced "the energy and dedication" of many radio broadcasters. That work ethic will be helpful as the industry faces change, he said as he opened the convention.

"Change can be uncomfortable. But change is good. It is part of every vibrant business."

He noted that radio always has faced changes as it rose to meet challenges from competitors such as TV, LPs, cassette tapes and — his favorite — eight-tracks. Now the competition is from CDs and iPods.

To satellite and Internet radio, he said, "We will beat you — as we have beaten those change agents in the past."

He said it's notable that FM adaptors for iPods are now being sold. "Listeners want local content and connection."

In order to capitalize on the trend, the trade group is widening its reach to new platforms, including personal media devices. "Our future is local radio on every gadget — computer, cell phone, PDA and those yet to be invented," said Rehr.

To help this effort, the NAB Board created a Technology Advocacy Committee to foster adoption of new technologies to advance radio and TV.

"Manufacturers of new personal media devices recognize that local radio is a basic necessity. Many of Apple's iPod competitors are producing MP3 players with FM tuners," Rehr said.

"It is no accident that Microsoft has included an FM tuner in its just-launched portable media player, Zune. Manufacturers understand that a mobile device that can't receive local radio is missing something fundamental and extremely valuable."

... AND CALLS FOR FM MOD RECALL

Rehr also called on the satellite radio companies to "voluntarily withdraw and replace all noncompliant satellite radio devices in circulation."

In letters to Nate Davis, president and chief operating officer of XM Satellite Radio, and Mel Karmazin, chief executive officer of Sirius Satellite Radio, Rehr said, "Broadcasters were heartened by your decisive actions to suspend production of noncompliant receivers with FM transmitters, pending FCC review."

Yet now that the commission has approved the manufacture of redesigned devices, he urged the satcasters "to take the next logical step of voluntarily withdrawing and replacing all noncompliant receivers already in circulation, to resolve existing interference to terrestrial radio service."

A study of wireless devices used to transmit audio signals from satellite radio devices and MP3 players to in-dash car radios showed that 13 of 17 devices exceeded field strength limits set by the FCC, as reported earlier. Furthermore, six of the noncompliant devices exceeded strength limits by 2,000 percent and one by 20,000 percent, according to the study, commissioned by NAB.

Rehr also cited an NPR Labs study that indicated 30 to 50 percent of detected personal FM modulators exceed the FCC's Part 15 emission limits.

The satcasters have been reluctant to issue a recall of their devices, saying not all of the FM modulators interfering with terrestrial stations are theirs and that their devices are not a safety hazard. One receiver source said such a recall would inconvenience consumers who paid for the devices in order to help broadcast listeners.

'WONDERFUL JOB'

New Commissioner Robert McDowell quipped at the FCC Breakfast, "Be kind to your interns, because one day they may grow up to regulate you." McDowell was explaining his background, which included a stint at WTOP(AM), Washington as an intern.

He said being at the FCC "is a wonderful job" and he's "relearning media issues." He had been on the job 120 days when he spoke in Dallas.

INDECENCY GETTING 'MURKIER'

NAB Joint Board Chair Bruce Reese, president and CEO of Bonneville, got a big laugh during the FCC breakfast when he pointedly asked commissioners about indecency, though he didn't get much in the way of answers.

"When do we get more clarity?" Reese asked. "What is it that we can't say?"

Commissioner Robert McDowell joked, "I'll choose my words carefully so I don't have to fine myself." He said he has not yet had to rule on an indecency case and meets with the Enforcement Bureau weekly to get up to speed on the issue.

Until Congress "evens out the playing field, we still have our job to do," the new commissioner said. He also took note of a "coarsening of society" that's reflected on TV and radio, yet said he's mindful of the balance with the First Amendment.

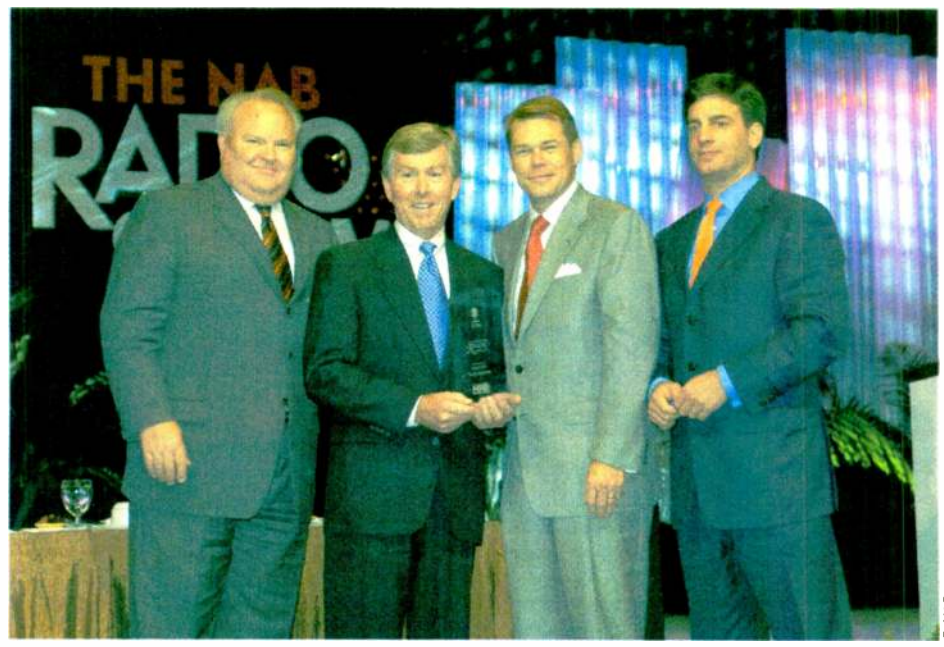
He concluded: "It's not an easy answer. Hopefully we'll be thoughtful and give you an answer." Indecency "continues to be a priority" for Chairman Kevin Martin, McDowell added.

Commissioner Jonathan Adelstein said the issue "is fraught with difficulty for us." When he came to the commission, "there was virtually no enforcement" of broadcast indecency rules, yet now "the pendulum may have swung too far the other way."

Examples he's heard from broadcasters, such as not airing a World War II documentary, concern him. Such examples leave him "confused, which is probably not a good sign for all of you."

"We can't tell you in advance what you can and cannot do. That would be censor-

See NAB RADIO, page 6 ▶



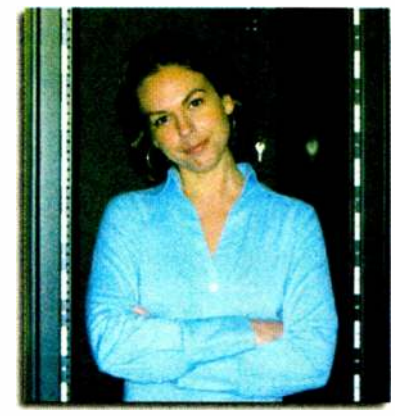
© NAB

From left: Bruce Reese, David Kennedy, David Rehr and David Field. Kennedy, the former president/CEO of Susquehanna, was honored with the National Radio Award.

I Want a Fabulous Studio!

While Traditional Accessories Are Important, Facility Design Would Benefit From a Woman's Touch

From the Associate Editor



Kelly M. Brooks

It may be a man's world. But does it have to be a man's studio?

I've seen a lot of studio facilities in my day. Okay, three: NPR, XM and WAMU (FM). But they all had one thing in common: They were clearly designed by males.

In September, we featured our annual Studio Furniture & Design Buyer's Guide, which showcases racks, cabinetry and other accoutrements for your facility. But categories such as Feng Shui, Aromatherapy and Color Scheme were conspicuously absent. How are we to encourage our young women to embrace radio engineering if the studio environment is so … blah? Just as a woman can make a home, so too can she make a studio. A touch of quality goes a long way.

Take SoundSuede sound diffusers by Acoustical Solutions, for example, which utilize a "suede fabric." A suede fabric may cut it for you guys, but show me a woman who wouldn't prefer *genuine* suede sound diffusers. You say it would cost too much? Just charge it!

I should note the company redeems itself by offering said diffusers in more than 100 colors. I trust that critical autumnal shades such as rust, sage, auburn and tangerine are on that list.

Put the 'treat' in window treatment

A wise woman (my mother) once told me, "When it comes to construction, women have a right to premium materials and unlimited funds." The following excerpt from a user report is an example of a typical studio design offering: "Countertops for the furniture have a nice piece of oak trim with a smooth radius capable of standing up to the beating of a working studio. The support for the counters comes from the steel corner posts."

Nice piece of oak trim? Support from steel corner posts? Okay, but any woman will confirm: If you want a sturdy countertop that will truly take the beatings of a working studio, granite or concrete are the only ways to go. Maybe Corian in a pinch. My editor tells me many suppliers offer those options, so maybe they're getting the message.

The Irving Stripe Drape

Photo courtesy of iStockphoto.com / Alan Johnson

Lavender would be an ideal essential oil to circulate throughout the studio. It is a good treatment for cuts, asthma and oily skin, all broadcast studio no-no's.

One could even argue that conventional studio design discriminates against women. Okay, that may be a stretch, but how are female personnel supposed to perform at maximum capacity if the materials on which they work are not optimum? You show up to a workspace with awesome countertops, kicky barstools and a leather banquette, and the workday starts to look up.

Such design schemes include this one: "The furniture sits in a corner facing the talk studio. The previous furniture arrangement was near the windows, which often reflected an uncomfortable glare. The new arrangement allows the board operator to view the talent in the talk studio clearly without trouble."

That's all fine and good, but what about a woman's Chi? According to Furniture.com, "the Chi, or energy of one's environment, should be balanced so it can flow freely and effortlessly, like fresh air. Visualize water flowing through your home to get the image. Chi enters and leaves rooms through windows and doors; it should *never* become stuck, stagnant, depleted or too concentrated." That's just common sense.

If your station has a problem with glare, don't let management take it out on your Chi. Suggest some fun curtains instead. I like the Irving Stripe Drape from Pottery Barn (*www.potterybarn.com*), which specifically touts a dense textural weave of herringbone cotton, and a full lining for privacy and light filtration.

Photo courtesy of iStockphoto.com / Cecilia Lim

Color scheme is a suggested addition to the Radio World Buyer's Guide categories.

In addition to throwing a woman's Chi out of whack, simply sticking the furniture in a corner away from the window is management's way of keeping women in the corner. And under the guise of glare defense, no less! Just keep 'em in the corner, and keep 'em working — that's what your station is saying by denying you fabulous window treatments.

Breathe in the confidence

Common features in racks and other furniture that houses equipment are proper air-cooling and ventilation. Radio stations are always so worried about the equipment! What about the staff's ventilation? What about the staff's air? With all the advancements made in aromatherapy in the last decade, your station's failure to enhance stale, re-circulated air with scents that can revitalize the mind and combat fatigue is tantamount to a slap in the face.

Hey, management: Instead of worrying so much about cabling and acoustics, worry about providing the essential oils that could aerate throughout the studio, fighting such workplace nemeses as irritability, grief, anger and depression; and nourishing positive qualities like confidence, memory and concentration. I recommend one of my fave sites, *www.aromaweb.com*, for more information.

Leave it to a woman to recognize the importance of olfactory remedies over acoustics when it comes to the well-being of her studio.

Paul McLane is away.

Now the Hard Part: Programming HD2

by Leslie Stimson

Deep Tracks, Eclectic Chill-Out, Christian Contemporary, Café Jazz & Blues, and New/Future Country are some of the formats, brand extensions and repurposed content stations have rolled out for their supplemental digital channels.

While supporters say the programming is innovative and sufficiently different to attract new and younger listeners, other industry experts say the formats are too safe, not much different than what's available on satellite radio and not fresh enough to appeal to hip youth.

Stations are trying to develop compelling content for the multicast channels at a time when HD Radio awareness among consumers is low and while there's no competition for audience on the new channels among radio groups.

Younger people who love music can be great HD2 programmers, but it can be hard to overcome current format habits, according to panelists at an NAB Radio Show session about programming the supplemental digital channels.

Participants on the stage and programmers in the audience picked apart current HD2 offerings and had a frank discussion about what's working.

Clear Channel Radio's Eric Siebert, vice president for content/research/development, explained how his company has developed formats for 75 HD2 channels.

"As you develop HD programming, you need to set the bar higher," said Siebert. His department created a "Format Lab" with the goal of creating new and compelling content, material that is better than what's on traditional radio or on satellite radio.

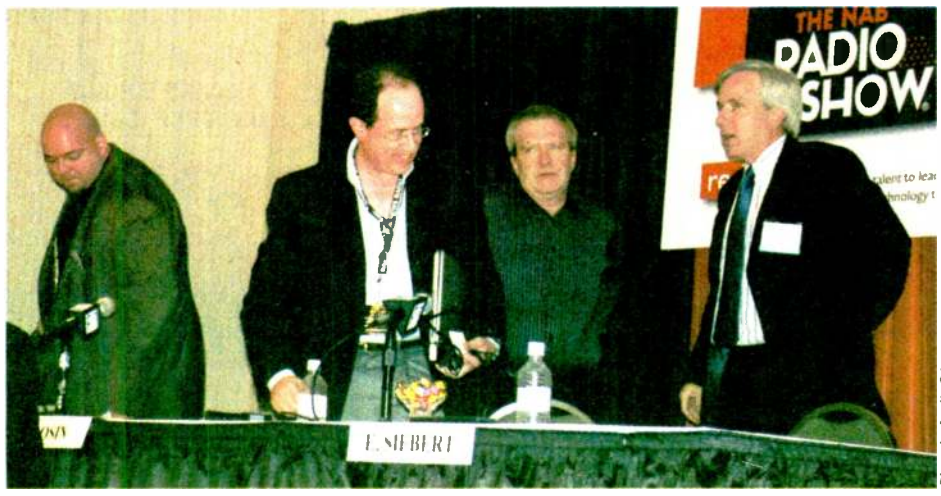


Photo by Leslie Stimson

Mark Pennington, Larry Rosin, Greater Media's Buzz McKnight and Eric Siebert, from left, chat after their session.

The high bar

Clear Channel has 200 people — some full-time and many part-time, "non-radio" employees — working on the project. The company hoped to release new HD2 formats in 18 more markets by the end of October.

Approximately 207 stations were using the product for their HD2 channels in early September. Clear Channel Radio also develops content for cellular radio; the company has a deal with Motorola to include some Clear Channel programming on iRadio phones.

The Format Lab is also developing content for the Internet, and programming deals for more cellular systems and in-vehicle systems are in the works, he said.

Siebert urged programmers to devote the time, resources and funding needed to program the HD2 channels right, "or don't do it at all. Focus on measuring and compensating your best people so that they do a good job."

The company regularly grades its programmers with a scorecard on certain criteria to ensure they keep doing a good job, he said.

[To hear its streams, visit *clearchannelmusic.com/formatlab.*]

As Siebert played the good cop, Larry Rosin countered with blunt words.

Rosin, president and co-founder of Edison Media Research, said there's a "huge lack of awareness" that HD Radio exists and he characterized much of the side channel programming that's available as similar to music on cable TV, with "under-funded and under-programmed stations."

The 25-54 rut

"We are so trained to program 25–54 that many early HD2 formats are hitting this range because we're so used to it," said Rosin, who added that commercial radio seems to have decided mainly on a classic country format for many multicast channels.

He is eager for the commercial-free nature of the HD Digital Radio Alliance formats end, which he thinks would happen by the end of 2007; HD2 channels then can really compete with their formats. Supplemental channels currently operate under experimental authorizations from the FCC; commercials are not permitted to air and would require commission action (see related story in HD Radio News section).

Formats settled on by alliance members aren't necessarily what are best for each market, but rather what would avoid angering all of the alliance members in a market.

"I think the alliance was necessary to get started, but in many ways it's a fiasco," Rosin said. "Competition is a good thing," and hopefully, after the supplemental channels air commercials, "HD becomes the Wild, Wild West."

One non-commercial programmer said privately to Radio World that the marketing aspects of the alliance should be separated from the programming angle, in order to foster more creative HD2 programming. Current formats "may not have enough zip to get the job done" and entice listeners, particularly younger ones, to buy digital radios.

Rosin's solution to better formats? Co-brand radio stations with a well-known brand like Ben & Jerry's ice cream. What would mean more to listeners, he asked attendees: a format named "Vineyard Soft Triple A" or "Ben & Jerry's"? The programming wouldn't constitute a 24/7 advertisement, but rather a branded station with programming that listeners could identify with, Rosin said.

Programmers for the new channels should be young, he said. Radio has aged and has failed to cultivate new listeners.

"If I was emperor of HD, I would not trust any programmers over the age of 30. If you made me king of HD I would find kids who are into music and set them loose."

Meanwhile, Greater Media's Mark Pennington focused on the mechanics of young talent dreaming up new formats. He is the program director for RIFF2, Greater Media Detroit's multicast channel to WRIF(FM).

'On shuffle'

His station is trying to appeal to 18-24 year old males.

"We decided to strip away the elements of the old model of programming," said Pennington, whose station is playing a mixture of indie rock, hip hop, punk, metal and local music. The audience is used to listening to their music on shuffle on personal music players, "so this format doesn't sound weird to them," he said.

Greater Media tries to incorporate the lifestyle of its listeners as it picks the content, which focuses on video games, iPod, the Internet and DVDs. It doesn't try to sell listeners concert tickets, for example, but rather staffers go into clubs and hand out flyers because that's where listeners are, he said.

He sees the HD2 channels as music and talent incubators. "It's hard to find good DJs anymore. Without the pressure, I think we can do that," Pennington said, referring to the temporarily commercial-free aspect of HD2. Songs "that might be scary on the main channel" can be tried out first on RIFF2, he said.

He also recommends streaming HD2 channels so listeners can hear the music before they're asked to buy a radio.

Questions from programmers in the audience ranged from how scratchy and raw the new music should sound, to whether a station should choose a format for its HD2 channel that's very different from the main channel, assuming the new format is missing in the market. The panelists said yes.

Pennington acknowledged that finding time to develop an HD2 format can be difficult if one is programming two or three stations already; but he warned attendees not to take the easy path and let the HD2 responsibilities slide to the back burner.

Rosin added that programmers need to realize that teens are listening to radio on several devices, and should program for that. "If we only think we'll reach them on the car radio or on the radio in their room, we're sorely mistaken."

While radio doesn't do much audience research now on the 18–24 market, he said, the Arbitron Portable Personal Meter will measure younger ages.

NAB Radio

▶ Continued from page 3

ship," said Adelstein, who added, "Our precedents are starting to get murkier."

FCC INSPECTOR TO PROBE 'SUPPRESSED' REPORTS

An undertone of the FCC breakfast was the existence of mysterious ownership reports that Sen. Barbara Boxer, D-Calif. produced during and shortly after the renomination hearing for Chairman Martin. Boxer said the reports had been suppressed by the agency.

Answering on another topic, Adelstein joked about "disappearing studies," but the topic was otherwise avoided at the session.

Martin has asked the agency's inspector general to investigate how two papers on radio and TV ownership came to be suppressed. The first paper, on TV ownership, was revealed during Martin's renomination hearing. While attendees were in Dallas, Boxer in Washington cited a second study, on radio ownership. Both papers have now been posted on the FCC's Web site.

In a letter to Boxer, Martin reiterated that he had not been chairman when the papers were written; he had never seen them; and he did not know why they had not been published.

The "Review of the Radio Industry" from 2003 shows the number of radio station owners had declined due to consolidation.

Martin told Boxer that information from both studies would be included in the pending media ownership review proceeding.

In a statement, former Chairman Michael Powell said he was unaware of the studies and that not all such documents at the commission are published.

A Powell assistant told the Associated Press that Powell did not order the document to be destroyed, as an ex-FCC staffer has alleged.

COMMERCE COMMITTEE SENDS MARTIN RENOMINATION TO SENATE

In Washington during the show, the Senate Commerce Committee passed and sent to the full Senate the renomination of Martin as FCC chairman and the nomination of John Kneuer as head of the National Telecommunications and Information Administration.

ATTENDANCE DOWN FROM PHILLY, SAN DIEGO

NAB said official registered attendance for the Radio Show in Dallas was 3,099. This number does not include R&R Convention registrants.

The Dallas figure was off 16 percent from last year's final of 3,705 in Philadelphia. There were approximately 3,500 attendees at the 2004 show in San Diego and 3,900 in Philly in 2003.

RADIO SHOW IN CHARLOTTE NEXT YEAR

Next year's NAB Radio Show will be held Sept. 26–28 in Charlotte, N.C. The trade association was promoting next year's destination at a booth on the exhibit hall; employees handed out "Charlotte Blend" samples of Dean & DeLuca coffee.

FRITTS LOVES BEING 'SMALL BUSINESS OWNER'

After 23 years at the helm of NAB, Eddie Fritts launched The Fritts Group in March. He's also looking to buy broadcast stations.

Fritts is chairman of the group, which is registered with Congress to lobby on behalf of such clients as CBS, Ion Media Networks (formerly Paxson Communications) and News Corp., as well as EarthLink, Vonage and GoDaddy.

Also on board from NAB are Lisa Keller, formerly Fritts' executive assistant at the association; Kathy Ramsey, formerly executive vice president of public affairs at NAB; and John Lively, who was director of Senate government relations at the trade association.

Attending the Radio Show, Fritts represented another client, Global Security Systems.

In an interview with Radio World, Fritts described his shop as "a typical small business startup." The headquarters are in downtown Washington at Connecticut Ave. and L Street NW; he's looking for a more permanent site.

After some 23 years at NAB, he said he's enjoying what he's doing.

"I love being an entrepreneur and that's what small business is," said Fritts, who also is negotiating to buy radio and TV stations, one individually, two with a group. He would oversee them but hire managers to run the facilities.

Although The Fritts Group was founded in March, business didn't really start until May, he said, saying May to September was a steep curve for the new group. "We're off to a good start, we're excited about where we are. We think we've helped a lot of clients in the short term, and look forward to having long-term relationships."

He expressed satisfaction with the convention. "It's a good Radio Show, there's an uptick about it. And now I actually have time to have a conversation with people, as opposed to just wave at them.

"I didn't go to the spring show this year, but in a way, I feel like I'm with my people because radio is from whence I came."

Internet remotes... there's been talk.

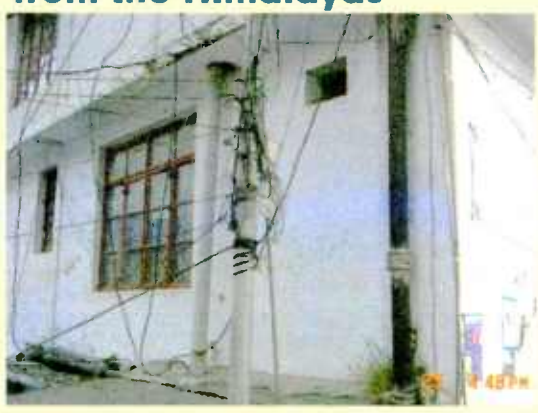
Live from 37,000 Feet—No kidding—Live Broadcast from a Lufthansa flight!

... successfully aired his three hour talk show from a commercial airplane [using ACCESS] at 37,000 feet on a regularly scheduled flight between Frankfurt, Germany and New York, US.

Peter Greenberg—Host of the syndicated radio program Travel Today

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

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
http://remotebroadcasts.blogspot.com

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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COMREX

GSS Sees Devices in Hospitals, Trucks, Schools

At the NAB Radio Show, Global Security Systems said its GSSNet All-Hazards Digital Alert System, which delivers emergency alerts and RDS data over a station's FM subcarrier, is capable of delivering Radio Text Plus as well. RDS proponents say RT+ allows for expanded RDS receiver displays.

The GSSNet system enhances EAS, company representatives said, giving stations a way to complete their public safety obligation and also monetize the system.

Photo by Leslie Stimson

Eddie Fritts, working the show for Global Security Systems.

A familiar face was at the convention representing GSS: former NAB President/CEO Eddie Fritts, who now heads The Fritts Group and represents the company to the public. Fritts, a University of Mississippi graduate, owned stations in the state before he worked at NAB.

He told Radio World the alert system would be compatible with stations transmitting in HD Radio as well. Demoing the system, Fritts showed several devices that can display the text alerts from GSS, including a cell phone, pager, smoke detector, USB stick and a GSS Early Warning Receiver, a battery-operated device the size of a travel alarm.

GSS is marketing the system to non-broadcast users, such as schools, truckers, hospitals, doctors and pharmacies, although stations would still transmit the alerts other companies would receive.

"If you operate a fleet of trucks and you need to send them a message, you can send them all a point-to-multipoint message at one time," said Fritts.

Or, "We could put one [alerting device] in every school room in America. If you have a tornado coming, then you don't have to worry about someone calling the principal, and the principal having to use a PA system," he said.

Using the GSS system, emergency authorities initiate the alert and uplink it to a satellite; the message is downlinked to a station using the GSSNet satellite receiver. The station encodes the message using software and hardware purchased from GSS and transmits the alert over its FM subcarrier to various devices.

The company is shipping product to stations nationally now, Fritts said, concentrating on the small radio groups first. "We've got a long list" of interested stations.

The install doesn't take long, and the equipment doesn't interfere with a station's FM signal, he said.

Robert Adams, GSS president/CEO, and Fritts both worked on helping RDS to gain approval in the United States in 1993.

— Leslie Stimson

Alert

▶ Continued from page 1

of the year.

"FM is ideal for this system because it is a huge platform and we can leverage the redundancy and the safeguards," said Matthew Straeb, vice president of sales and marketing.

The technology firm has created a chip that can be inserted into pagers, smart cell phones, PDAs and similar devices to alert first responders during emergencies, Straeb said.

FM is 'ubiquitous'

GSS, based in Jackson, Miss., uses the existing infrastructure of FM broadcast spectrum, 88 to 108 MHz, to allow text messages to be sent to a designated group of people or to a specific location using GPS.

GSS says it developed the single- to multi-point messaging system for redundant distribution of EAS messages in the event that first responders' radios and cell phones become clogged with traffic during crises.

The system works like this: A satellite receive dish is installed by GSS engineers at the FM transmitter location. The station would receive the alert message from authorities via satellite, with existing communication links providing redundancy. The station also receives GSS-enabled RDS encoder and computer software for the system. The GSS alert messages are encoded and transmitted over a station's FM subcarrier to various devices.

"No other system, whether it's cellular or television, is as ubiquitous as the FM radio band. We can send point-to-multipoint messages within seconds," Straeb said.

The Mississippi Office of Homeland Security conducted the recent test, which included Mississippi Public Broadcasting and individual FM stations. A total of 45 radio stations participated. Broadcasters were provided the necessary equipment through funding provided by the Department of Homeland Security, Straeb said. The equipment remains in use at stations, GSS representatives told Radio World at the NAB Radio Show, where the firm exhibited.

"We use a sideband channel to the main FM carrier, so we do need broadcaster cooperation to make this system work. We think broadcasters will see the need for establishing a reliable emergency alert network and why it should be a high priority," Straeb said.

Digital EAS has gained the attention of lawmakers in Washington, where the federal government is considering an expanded emergency warning system that would work in concert with state, regional and local systems (RW, Sept. 1). Department of Homeland Security and FCC officials are considering several technology platforms as part of the Integrated Public Alert and Warning System, or IPAWS.

Experts say the key to effective warning in this country is using multiple means of delivery in parallel.

"The whole point of IPAWS and its technology platform CAP [Common Alert Protocol] is to build a system-of-systems that blend the strengths and offsets the weaknesses of any signal warning system standing alone," said Art Botterell, manager for the community warning system for Contra Costa County in California.

Botterell said the success of GSSNet or any other new warning offering depends on how well it integrates into a standards-based public warning architecture.

"These days the technology that matters are those that play well with others in the emerging 'warning Internet,'" Botterell said.

Richard Rudman, vice chair for the State of California State Emergency Communications Committee, said, "All

See ALERT, page 10 ▶

We're all talk.

And all action, too.

All talk and no action? That certainly doesn't describe any radio station we've ever seen. With guest interviews, news and traffic feeds, live reports and listener calls to juggle, a talk studio is one of the most active places on the planet. Seconds count, and there's no room for mistakes.

That's why we created Status Symbols® for the Telos TWOx12 Talkshow System. Instead of flashing lights to decipher, there's easy-to-understand picture icons that give talk pros the information they need with just a glance. What caller's next? Who's screened, and who's just holding? With Status Symbols, you'll know instantly. And only Telos has them.

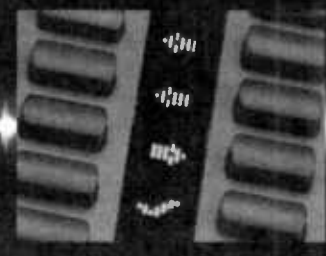
TWOx12 has lots more benefits. Like Digital Dynamic EQ, for uniform caller audio despite less-than-perfect lines. Twin DSP-powered hybrids for quick, no-hassle conferencing. A unique Dual Studio Mode that lets you use your 12-line phone system like dual six-line systems for extra flexibility. And TWOx12 is the world's only talk show system that can work with either POTS or ISDN lines to deliver exceptional caller clarity. Impressive? You'd expect no less from the company that *invented* the digital broadcast hybrid.

Is TWOx12 the perfect union of word and deed? Thousands of broadcasters worldwide think so. Why not see for yourself?

Telos
AUDIO | NETWORKS

12 lines, two digital hybrids, and superior audio performance. Desktop Director controller features handset, speakerphone and headset jack. Drop-in controls available for popular consoles.

New Call Controller has Status Symbols, DTMF pad and recorder controls (like Desktop Director), but lets talent use their favorite wireless phone or any standard handset for call screening.



Status Symbols show exactly what's what. Intuitive icons show calls locked on-the-air, which hybrid they're on, who's next in queue and more. So much better than a panel of blinking LEDs.

Assistant Producer enables talk show production via LAN or WAN. Status Symbols, Caller ID support, instant messaging and caller database are just a few benefits. Supports touchscreens, too.

NEWSWATCH

Enhanced RDS Standard Tested

BELLEVUE, Wash. Compatibility tests were conducted in Washington state as part of an effort to expand RDS displays in receivers.

Broadcast Electronics, Kenwood, Entercom, CBS Radio, Clear Channel and others participated in the tests of an upgraded RDS standard, as did participants from other countries. BE and Kenwood sponsored the tests.

Stations, receiver manufacturers and cell phone makers are interested in the results as they develop products based on the new standard. Kenwood hopes to demo a radio based on RT+ at CES in January.

The meeting of RDS leaders from Europe, Japan and the United States was held in Bellevue, Wash. They tested Radio Text Plus, a standard passed by the RDS Forum in June for tagging specific Radio Text elements under a variety of categories.

Proponents say RT+ builds on the Radio Text standard by adding category codes to existing text streams, creating opportunities to display elements such as song title, artist name, traffic updates and weather readouts.

Marty Hadfield, vice president of engineering for Entercom and co-chair of the NRSC's RBDS Subcommittee, said the RT+ functionality would give stations "the ability to tie purchasing to the information that we're sending out."

Milford Smith, vice president of radio engineering for Greater Media and co-chair of the NRSC's DRB Subcommittee, called RT+ a "great enhancement" that would make RDS more usable.

BE said it made minor field modifications to its RDS generator and The Radio Experience studio application for RT+ testing.

Nokia, broadcaster Westdeutscher Rundfunk (WDR) and the research institute IRT (Institut für Rundfunktechnik) developed the RT+ standard.

Seattle stations owned by Entercom and CBS hosted the broadcasts and used BE's RDS generators to generate RT+. The RDS signals were being picked up by various prototypes supplied by some of the participants.

The stations used The Radio Experience by BE to generate the text displays for both analog FM and HD Radio. Clear Channel supplied an RT+ enabled signal through a local station.

Testing in September included the broadcast of artist, title, album name, station name as well as weather, traffic and stock market information. Each data element is independently identified within the RT+ system.

Change at Top For NPR

WASHINGTON Ken Stern is now chief executive officer at NPR and assumes management leadership of the company. Stern had been executive vice president of the network for seven years.

Kevin Klose, who joined NPR as president and chief executive officer in 1998, will continue as president and as member of the NPR board.

The NPR board approved the decision and cited Stern for playing a key role in NPR's growth in audience, journalism and new media platforms over seven years. Stern has directed the senior management team and overseen NPR's day-to-day operations.

As president, Klose will develop an initiative for NPR and public radio designed to strengthen financial resources.

Both Stern and Klose report to the board. The change was effective Oct. 1.

iPod, Schmipod: Radio Still Strong

CHARLESTON, S.C. Despite various new media available for consumers to receive music and news, only a little more than one in four Americans said they are now listening to the radio less than they did five years ago.

That's according to a survey commissioned by American Media Services, in which about half of participants (51 percent) said their radio listening hasn't changed during the past five years and 21 percent said they are now listening more.

When asked to look ahead five years, only 11 percent said they expect to be listening to the radio less. Nearly three out of four said they expect to listen about the same, and 13 percent said they expect to listen more.

Asked how they learn about new music, 63 percent said by listening to the radio. In comparison, 43 percent said it can be through talking with friends, 41 percent cited watching television, 24 percent cited reviews in newspapers or magazines and 16 percent cited the Internet.

Forty percent of men and 32 percent of women said they have listened to the radio over the Internet; 42 percent of men and 41 percent of women described themselves as likely to listen to radio over the Internet in the future.

American Media Services commissioned the telephone survey of approximately 1,000 adults, conducted by Omnitel in August.

News Roundup

HD MODULES: Another Ibiquity receiver component licensee has developed HD Radio modules to help OEM consumer electronics manufacturers produce lower-priced IBOC products and get them to market quickly. LG Innotek has released two module designs for tabletop and home receivers.

AFTRA now has an online talent review service. The union says for a fee, members can securely post video and audio demos to prospective employers and save the costs of mailing demo tapes.

RADIO WiFi: CFNY(FM), Toronto added a Web site aimed at cell phone and PDA users, timed to take advantage of a WiFi rollout happening in that market. The site offers club and concert listings and text and is available through wireless hotspots on any handheld device that supports a WiFi connection.

BARRY THOMAS is taking the engineering reins at Lincoln Financial Media Co. In early October he became the VP of engineering for its radio division, replacing Tom Giglio. Thomas most recently was with Westwood One Radio Networks.

DONATIONS may still be made to the Broadcast Engineer Relief Fund, established by the SBE and Ennes Trust to benefit families of the broadcast engineers who died at the World Trade Center five years ago. Make check payable to the Ennes Educational Foundation Trust and mail in care of SBE, 9102 N. Meridian St., Ste. 150, Indianapolis, IN 46260. Write "Relief Fund" on the memo line.

JONES/TM is the new name of TM CENTURY, a jingle and station imaging company, is now a wholly owned subsidiary of Jones Media Group Ltd. Jones closed on its purchase of TM Century in September. The Dallas-based production house that was the product of TM Communications and Century 21 Programming is now part of Jones. Neither side disclosed price.

Alert

▶ Continued from page 8

the major warning systems, including GSS, now support Common Alert Protocol. PBS in particular has shown a major commitment to CAP and has done several demonstrations across the country using various PBS stations to relay warnings."

GSS, which supports IPAWS, is working with FEMA and DHS to secure federal monies for further testing of its digital EAS system, Straeb said.

"Our business strategy includes using the entire FM network of over 8,000 FM stations across the United States," Straeb said. "We especially want to concentrate on the Gulf Coast region of the United States and feel our system could someday be used to alert the general public."

Asked about perceived objections from broadcasters, Straeb said, "The FM broadcaster's benefits are station call letters and song/program information broadcast to listeners' car receivers, MP3 players and cell phone appliances in their markets. In the event of an emergency, the information is simulcast on the RDS channel without interference to the audible channel and interruption to the RDS data.

"In other words, you get an analog and digital alert. Since the alerts are in short duration, the FM broadcasters are supporting this application. In particular at the Radio Show, we were told broadcasters not part of a large buying group would benefit since they will be on par with the large-market station technology platforms."

The company uses a standard commercial FM receiver chip that can be inserted into the portable devices. The emergency warning customized integrated circuits sell for $25 each. GSSNet provides a messaging and propriety messaging system that allows secured and encrypted data with layered and targeted messaging.

Global Security Systems is also developing systems to deliver mobile advertising data via wireless devices with the ability to target specific groups of consumers.

The private company, founded in 2003, is a systems integrator, service provider and manufacturer of homeland security and natural disaster first alert systems. In addition to Mississippi it has offices in Louisiana, Florida and Washington.

ENGINEERED WITH A PASSION

Sony's PCM-D1 portable linear PCM recorder

There's never been an audio recorder like the Sony PCM-D1. Musicians have hailed its 96 kHz/24-bit uncompressed audio. Recording professionals love the sound quality of the on-board stereo mics and mic preamps. Bloggers and journalists appreciate the intuitive design. Because the PCM-D1 records WAV files to 4 GB of on-board memory, there are no moving parts and no self-noise for the mics to pick up. You won't worry about running out of power or capacity in the field, thanks to field-replaceable AA batteries and Memory Stick PRO™ High Speed media. Even the case is superb: one millimeter-thick titanium with a finish about ten times harder than aluminum. Reviewers have called the PCM-D1 "impressive," "a gem," and "a home run." We call it a whole new way of audio recording.

Find out more at **www.sony.com/proaudio**.

SONY
PRO AUDIO

"IMPRESSIVE."

"A GEM"

"A HOME RUN"

THE NEW WAY OF BUSINESS™

Workbench

Radio World, October 25, 2006

Past columns are archived at *www.rwonline.com/reference-room*

Put a Tag on That Line

by John Bisset

Jim Bremer, chief engineer for Regent in Redding, Calif., writes, "Thanks for *Workbench*. It's a must-read for me."

He read about adding labeling to UPS systems and had a few thoughts of his own to share. In addition to the date the batteries are replaced, Jim adds the number of batteries and type, like 2 X 12V 7AH. This makes reordering easier.

Jim has another handy use for labels: Put the (current) tech support phone number on each piece of equipment, along with the name on the account. This saves the hassle of finding the manual and discovering that the area code has changed while you forgot to note the new one.

Great ideas! With engineers running in so many directions, all ideas to simplify the process of keeping equipment running are welcome ones.

If you've just taken over a facility, now is the time to get this contact information current. This is especially true for the transmitter. I had a customer call just the other day to see if he could get a copy of the transmitter checkout sheet for his 10-year-old transmitter. BE, like other manufacturers, keeps this documentation on file. If you find this important information missing, call your transmitter manufacturer to get a copy.

While you're at it, inquire about updates or field service bulletins. Not every engineer may be as thorough as you. Get the information now, before you need it.

Jim Bremer can be reached at *regentredding@aol.com.*

★ ★ ★

Speaking of signs and labeling: If you lease space on your tower, it's a good idea to identify the cables going up the tower, and also the antenna location.

In the case of Fig. 1, the sign is posted on the transmitter. You don't have to have 26 RF lines running up your tower to keep everything labeled. The numbered tags shown in Fig. 2 are inexpensive and take only a few minutes to attach. Similar tags are located at the beginning and end of each RF run.

Thanks to Paul Shulins of Greater Media Boston for sharing these ideas.

★ ★ ★

Our next topic is pretty scary. This item was submitted to warn car owners, but let's extend it to any station that owns a remote or news van.

Under the title "What will they think of next," car thieves have found a new way to steal vehicles.

This method is ingenious and requires little effort on the part of the thief. The thief locates the vehicle he wants to steal, then peers through the windshield of the car or truck and writes down the Vehicle Identification Number from the label on the dash. His next step is to go to the local car dealership and request a duplicate key based on the VIN number.

A friend didn't believe this was possible, so she called a dealer and pretended she'd lost her keys. They told her to just bring in the VIN number and they would cut her one on the spot; she could order the keyless device if she wanted.

So we know that at least one car dealer's parts department will make a duplicate key from the VIN number and collect payment from the thief, who will return to your car. He doesn't have to break in, do any damage to the vehicle or draw attention to himself; he simply unlocks the vehicle and drives away to a local chop shop.

It *is* that easy. It's bad enough that cars and trucks are being stolen this way, but when one considers the investment station[illegible]ve in remote vehicles, it's time to fight back.

Until car dealerships get wise to this and develop more secure key-making policies, there's a simple solution. Place a 3x5 card over the VIN number, or better yet use some tape — electrical, duct or medical tape — across the metal label on the dashboard, as seen in Fig. 3.

By law you cannot remove the VIN number, but you can cover it so it can't be viewed through the windshield by a car thief.

See WORKBENCH, page 15 ▶

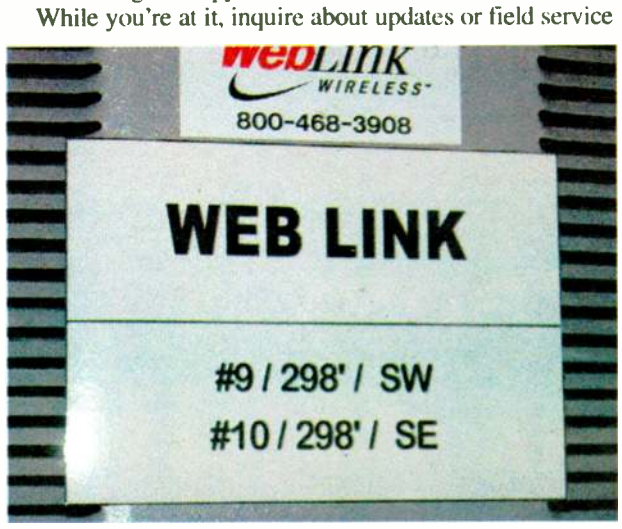


Fig. 1: Post a sign identifying lines and antennas on the transmitter.

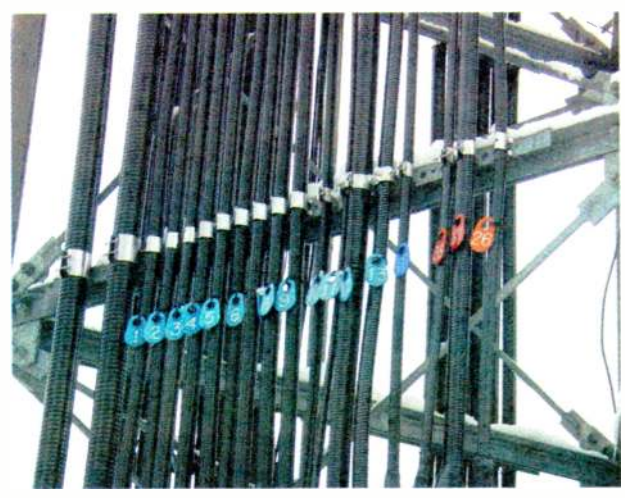


Fig. 2: Tagging coax lines makes identification easier.

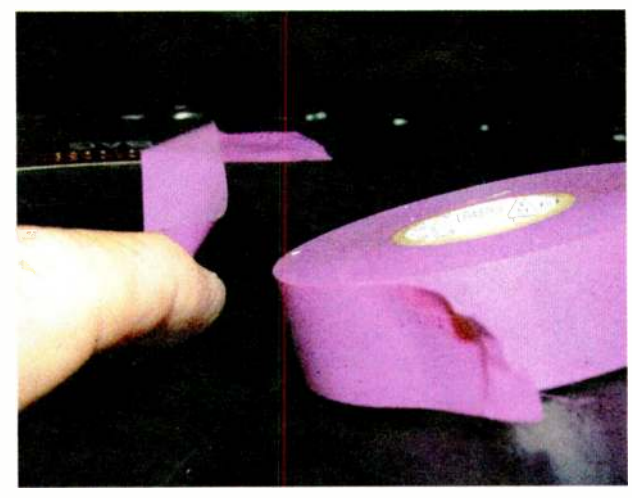
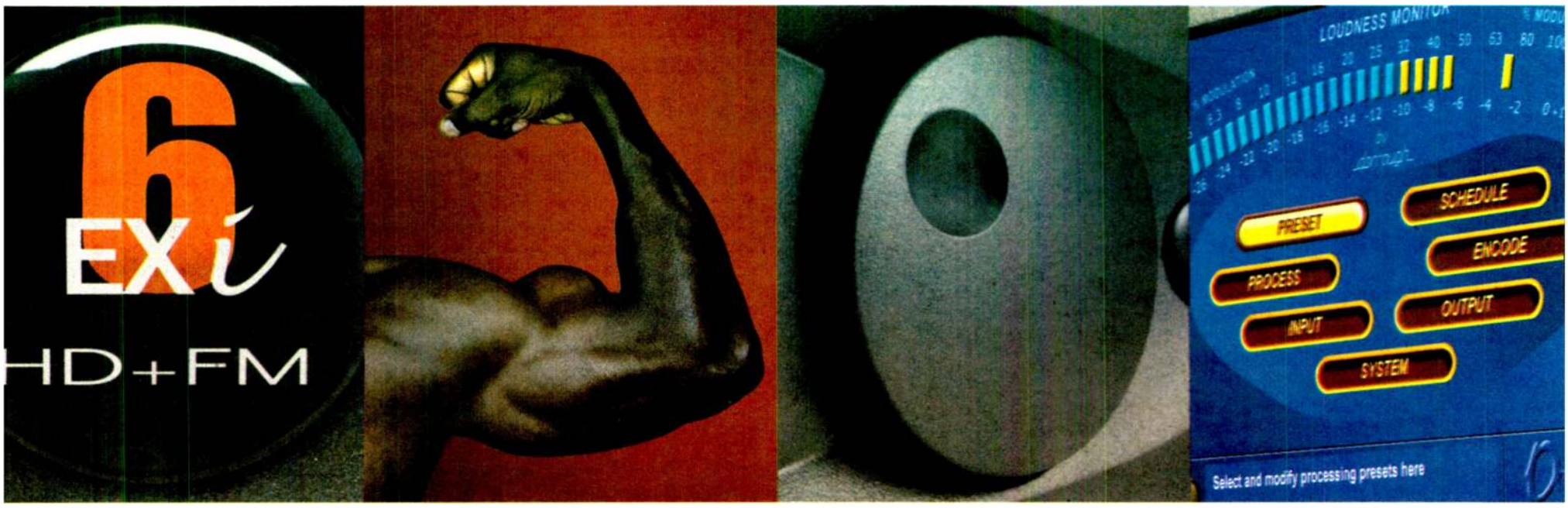


Fig. 3: A small piece of tape, or a card, will keep the VIN from being discovered by thieves.



Omnia 6EX*i*

The Ultimate Upgrade.

Omnia-6 is the standard by which all other processors are measured. In the last few years, thousands of leading stations in the world's top markets have upgraded to Omnia. In fact, Omnia-6 has been so successful that some competitors have just given up; others are mere shadows of their former selves.

So why do broadcasters love Omnia-6? The *sound*. The clean, pure, crystal-clear sound (bone-shakingly loud, if you want) that's become the choice of #1-rated stations in New York, Los Angeles, Tokyo, Paris, London, Rome, Sydney and Beijing. The other guys tried to match its winning sound... and failed. So they've settled instead for trying to copy its innovative features.

Features that Omnia pioneered — like dual, simultaneous processing paths for HD Radio™ and conventional FM at no extra cost. The world's first non-aliasing digital clipping system, with composite clipping for the ultimate in competitive loudness. The high-precision Multi-Band Look-Ahead Limiter (invented by Omnia) for perfect HD Radio processing. The six-band limiter for conventional FM, with adjustable crossovers for surgically-precise control over your signature sound. An integrated Dorrough™ Loudness Meter. And of course, the groundbreaking 96 kHz, 24-bit platform that delivers full 20 kHz bandwidth for HD Radio broadcasts. Always innovating.

Which is why the **new Omnia-6-EX*i*** makes perfect sense. With **integral HD Radio Diversity Delay** that helps digital broadcasters eliminate analog connections to the HD exciter, ensuring independent analog and digital program streams. And the exclusive new **LoIMD Clipper** that actually **suppresses intermodulation distortion** to deliver audio that's cleaner, clearer and more detailed than ever — no matter how aggressive your processing. (If you already own an Omnia-6, don't worry – there's a low-cost upgrade to give your processor full-fledged Omnia-6EX*i* power.)

A lot of muscle? You bet. No wonder the competition is running scared.

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3, 2, 1, Nada: Towers Left Standing

Permit Mix-up Leaves WOR Structures In Place Near the Turnpike a While Longer

by Scott Fybush

It's been a challenging few years for the folks at Buckley Radio's WOR(AM) in New York.

Forced off their longtime transmitter site by the construction of a huge new golf resort in the New Jersey Meadowlands, WOR has overcome various obstacles on the way to building a new site half a mile to the north. To make matters more complicated, during the planning Director of Engineering Tom Ray, who has written about the project in the pages of RW, was overseeing a studio move from the Manhattan building WOR had called home for more than 80 years.

With that project completed and a new transmitter site in Rutherford, N.J., up and running, WOR was ready to celebrate on Sept. 20, when the three towers at the old site in nearby Lyndhurst were to be demolished.

The station's top advertisers and managers were on hand for a client party at the new site to watch the 690-foot towers come down. Camera crews came from most of the New York City TV stations and a veritable SBE meeting of engineers formed up, from almost every broadcast station in town.

An hour before the 10 a.m. demolition, a construction road looking south towards the old towers was lined with tripods, cameras and TV live trucks, poised to capture the last moments of the towers that had sat alongside the New Jersey Turnpike since 1967.

No go

That very proximity ended up halting the demolition at the last moment. As 10 o'clock came and went and the countdown to demolition didn't begin, rumors began spreading that local police had ordered the event canceled. A little before 11 a.m., crews from Northeast Tower returned from the old site, shouting "It's off" to the crowds along the road.

WOR staffers began dismantling the food tent and taking down the station banners. Soon Lyndhurst Police Chief James O'Connor arrived to explain his decision to call off the demolition. Speaking to reporters from several local newspapers, O'Connor said he hadn't learned about the plans until about 8:30 that morning, when he received a call notifying him that explosives were about to be used.

O'Connor says his main worry was for the safety of drivers on the turnpike, the western spur of which runs right alongside the demolition site. "There are thousands of people out here who might see the towers come down and get panicked."

He noted that the towers are within view of the lower Manhattan skyline and that the demolition was to take place just a few days after the fifth anniversary of 9/11. O'Connor said he was afraid drivers would hit the brakes and cause a massive pileup, or might flood emergency phone centers with calls.

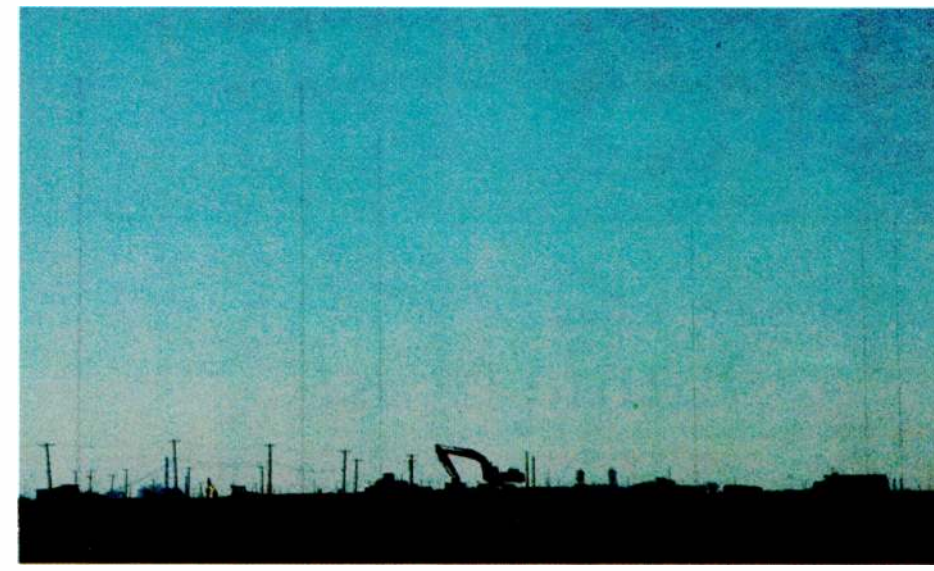

Photo by Scott Fybush

The new towers, left, and the old ones, right, are about a half-mile apart.

WOR management, including station owner Rick Buckley who was on hand for the demolition, were huddling with lawyers by the time O'Connor arrived. Later in the week, Ray said the lack of communication with the Lyndhurst police, while unfortunate, wasn't WOR's fault.

"All our ducks were in a row and quacking," Ray said. He stated that "another party" was responsible for obtaining whatever permits were needed for the demolition but did not state who that was.

Ray said afterwards that the town of Lyndhurst was insisting that a demolition permit be obtained before the towers could come down. O'Connor said no permit would be issued until he'd had a chance to meet with WOR management and representatives of media and other area law-enforcement agencies to coordinate informational efforts.

Station spokesman Paul Siebold said a rescheduled demolition date had not been

See TOWERS, page 15 ▶

Towers

▶ Continued from page 14

set as of late September.

Asked for comment by RW, Jonathan Millman, spokesman for developer Encap, issued this statement: "Due to security concerns, demolition of the WOR Radio towers in Lyndhurst has been postponed. The safety and security of the community is always a top priority for EnCap. EnCap, WOR and the Township of Lyndhurst felt that it was prudent to allow for additional time to ensure all necessary notifications have been made. We will work with local officials to ensure all requirements are met and at that time the radio towers will be torn down as planned."

New York engineers Dennis Graiani, George Marshall, Mark Olkowski and Alex Roman wait for the fall.

Lyndhurst Police Chief James O'Connor speaks to reporters after calling a halt to the demolition.

Workbench

▶ Continued from page 12

[Ed. Note: For an interesting additional discussion of this topic, see this link on the Snopes urban legend site, *www.snopes.com/crime/warnings/vin.asp*. It concludes that the problem exists but disagrees with the suggested solution.]

This tip comes from radio veteran Harold Green. Now retired, Hal spent many years in my native Washington, D.C., first as a union engineer for WRC, then back at the station some 24 years later as the general manager. In between, Hal worked at another AM giant, WMAL, where he filled engineering, programming and eventually general management positions.

I'm proud of engineers like Hal who move into general manager positions. There are not many who make this jump, but those who do offer owners a unique perspective on the job.

Hal Green can be reached at *hlg@usa.net*.

★ ★ ★

Kent Randles, a senior engineer with the Entercom Portland cluster, was looking to add "911" signage to his sites, as described here; but when he types "911 address sign kits" into Google, he gets a link to our Sept. 1 article describing their use. Glad to hear the search engine is linking up to recent Radio World *Workbench* articles.

Here are URLs for several companies that supply such signs:

www.interstate911.com
buythenumbers.net
www.address-sign.com

These "do-it-yourself" sign kits also can be found at rural hardware or farm supply stores, along with the support stakes on which to mount the signs.

John Bisset has worked as a chief engineer and contract engineer for 37 years. He is the northeast regional sales manager for Broadcast Electronics. Reach him at (571) 217-9386 or jbisset@bdcast.com. *Faxed submissions can be sent to (603) 472-4944. Submissions for this column are encouraged, and qualify for SBE recertification credit.*

What a Wireless World It Will Be

Will the Wireless Internet Threaten or Enhance Broadcast Radio?

by Skip Pizzi

Last time we compared Internet radio and HD Radio as future digital platforms for broadcasters, concluding with the caveat that Internet radio's biggest downside — its immobility — might be short-lived. The promise of a broadband wireless Internet future has been hyped for several years, yet in the United States, it remains elusive, just beyond the grasp.

The next year or two will likely put an end to this, as mobile broadband deployments begin in earnest in the U.S. mobility market.

Cordless vs. cellular

It's therefore time to consider what broadband mobile wireless will really be like. There are two basic models, both of which exist in some form today. One is WiFi, which is about as close to a wireless form of wired network as you can get. In its various flavors, WiFi is truly just a last-millimeter extension of an Ethernet network, allowing the same functionality as its wired brethren, but without the wire, over a short distance.

Thus one model of broadband wireless Internet service would simply expand upon WiFi to enable higher bandwidths, longer connection distances and seamless handoff between access points for mobile users.

The other model evolves from cellular data service, which is very different. WiFi is a technology, while wireless telco data is a business. WiFi is inherently unlicensed and intended for private uses, while mobile data is licensed and operated as a for-profit commercial industry. Yes, some companies have set up commercial WiFi hotspots, but generally, these are again equivalent to a pay-as-you-go ISP. Meanwhile some cities have set up free or subsidized municipal WiFi networks.

A semi-apt analogy for this distinction from the consumer's perspective considers WiFi as the *cordless* phone, while wireless data is the *cellular* phone.

Differences abound

While WiFi strictly follows the IEEE family of 802.11 standards, the wireless data environment includes numerous delivery formats such as WAP, GPRS, EDGE, UMTS and EV-DO, each chosen by the wireless telco providing service. There is also no standard browser, screen size or aspect ratio, no standard keyboard or mouse, and limited ability for consumers to change or upgrade their terminals. More important, changing service providers often means a forced changing of terminals in the bargain. (Would the Internet have been as successful in its early days if it had been saddled with these attributes?)

But perhaps the biggest difference between these approaches is that the *content* delivered on wireless data services is telco-controlled, and in a way that is often far more constraining than anything done by the ISPs to which WiFi service typically connects.

From a regulatory perspective, one could say that there is no *network neutrality* on the wireless telco data environment, while the WiFi world is generally indistinguishable from the wired Internet in this respect.

So which business model will the mobile, broadband wireless Internet follow? The net-neutral ISP approach or the wireless data walled garden?

Whither WiMax?

The most likely form of mobile broadband wireless Internet connectivity to follow the WiFi model is called WiMAX, while the wireless telco offerings are lumped under the generic heading of "3G." But even WiMAX may take multiple forms, in that it may be offered in both licensed and unlicensed forms. In the licensed case, who will be the licensees? (Probably telcos.)

The network neutrality issue is critical to radio stations that look to the wireless Internet — either via WiMAX or 3G — as a future service platform.

The network neutrality issue therefore is critical to radio stations that look to the wireless Internet — either via WiMAX or 3G — as a future service platform. First, one bit of good news is that an *audio* service doesn't suffer from the variations in screens and input devices noted above — audio is audio (and generally in stereo) throughout the environment, more or less. But Internet radio services may want to offer some visual metadata to accompany their audio signals, so verifying how this data displays on a wide range of platforms and devices will be required.

Also consider that if the telco-controlled model prevails, extensions to include higher audio quality or surround sound might be difficult to achieve. New codecs or other downloadable plug-ins may be unavailable, and content rights-management may make user experiences painful, if not transparently applied.

The Big Picture

Photo: Gary Hayes, BBC

by Skip Pizzi

More important, if legislation or regulation does not explicitly prohibit it, certain signals might be blocked, or their bandwidth constrained, in any given region. This could allow a radio station's streaming audio signal to be rendered unreceivable in a certain area, based solely on a unilateral decision of the wireless service provider. Of course, this decision might be made because another customer of the wireless telco requested (or paid for) it.

Consider the two-edged sword that might be wielded by radio stations in such a case: A station could arrange for its local wireless telco(s) to block certain out-of-market competitors from delivering their similarly formatted station's signals into the home market — but, of course, stations in other markets could do the same thing. It seems a slippery — and expensive — slope to traverse, and one that may be made moot in the interim by new telecom legislation anyway. Wouldn't it be better to just allow competition on a level — albeit much larger — field?

This is one reason for broadcasters to be interested in the ongoing net-neutrality debate in Congress. It's also a time for close observation of how the U.S. wireless broadband Internet environment will be shaped by the FCC and other market forces. Where these current variables settle will have great influence on the impact of wireless Internet service on the radio industry — for better or for worse.

Skip Pizzi is contributing editor of Radio World.

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Fessenden: World's First Broadcaster?

A Radio History Buff Digs But Finds That Evidence for the Famous Brant Rock Broadcast Is Lacking

by James E. O'Neal

Winter was just starting to make itself felt in New England. It was Dec. 24, a classic dark and stormy night along the Atlantic Seaboard. Radio room operators on ships were busy copying the endless, fuzzy dits and dahs of code from the big brute-force Marconi spark stations of the early 20th century.

Suddenly they heard something else under the code — faint, but definitely audible: a voice. Someone was talking! Listeners couldn't believe it. They hastily summoned relief operators to don headphones and called ship captains to the radio rooms to witness the event.

You may have read that 2006 marks the 100th anniversary of the first broadcast of speech and music. If we believe the Internet and history books, it happened something like the events described above.

But is the story true?

At Brant Rock, Professor Fessenden, a tall, 40-year-old man in business attire, pulled out his pocket watch and looked at it nervously. The appointed time was near. He stroked his beard.

Spread about him in the room were large machines of unusual construction, coils of wire, large condensers, a panel board, motors and a multitude of meters. Fessenden moved to a large knife switch dominating the control panel. He murmured a silent prayer and closed it.

The building lights dimmed as a large motor broke the silence and began to come up to speed. Fessenden looked intently at the motor and the assemblage of belts and pulleys attached to it.

The drive train concluded with a pulley on the shaft of a specially built alternator. The unusual machine connected to all of this picked up speed — 3,000, 5,000, 10,000 rpm. Fessenden felt the floor of the small building shake as the alternator climbed through its "critical" frequencies, smoothing out as it passed each. He assured himself the belts would hold and that the unit would make 20,000 rpm or more without flying apart.

Sometime during my high school or college years in the 1960s, I was told that inventor Reginald Aubrey Fessenden had, in 1906, assembled a primitive AM radiotelephone transmitter and placed it on the air in the evening hours of Dec. 24 at his experimental communications station at Brant Rock, Mass. He transmitted music and speech on that occasion. Thus — the story went — he was the first ever to "broadcast."

Fessenden watched the array of meters and gauges, paying special attention to oil pressure and bearing temperature. This was a one-of-a-kind experimental machine; everything had to be monitored carefully. Finally the requisite speed was reached and everything seemed to be holding.

The professor looked at the indication on the large hot-wire RF ampmeter and double-checked the wavemeter.

It was time.

He stepped to the telephone-type carbon microphone, which was beginning to radiate heat from the amps of antenna current passing through it. He cleared his throat, leaning away from the mic. Then, in his best voice, he uttered a greeting to the world at large, informing anyone who could hear that he was Reginald Aubrey Fessenden and that this was to be a broadcast of speech and music.

He then started an Edison cylinder recording of Handel's "Largo." At the conclusion of the record, the professor opened a Bible and read scripture, describing the birth of Christ. There followed a moment of silence as he motioned his wife and a friend toward the microphone; but they backed away, suddenly frightened. Perhaps they felt the heat radiating from the mic; perhaps it was a case of nerves.

But the show had to go on. Fessenden pulled out his violin and played his next planned piece, "O Holy Night," while singing a chorus loudly enough to be heard over the violin. He then wished everyone a most happy Christmas and advised listeners that he would be transmitting again in one week, on New Year's Eve.

He moved slowly away from the microphone and pulled the knife switch, letting his machinery coast its way back to silence. The only sound that remained was of sleet pelting the building's windows. A faint smell of ozone mixed with hot machine oil filled the air.

Broadcasting had been born.

That's what the history books have proclaimed for decades. It is what I'd like to report as we near the 100th anniversary of that event, so dear to those of us in broadcasting.

Oh, if were it that simple.

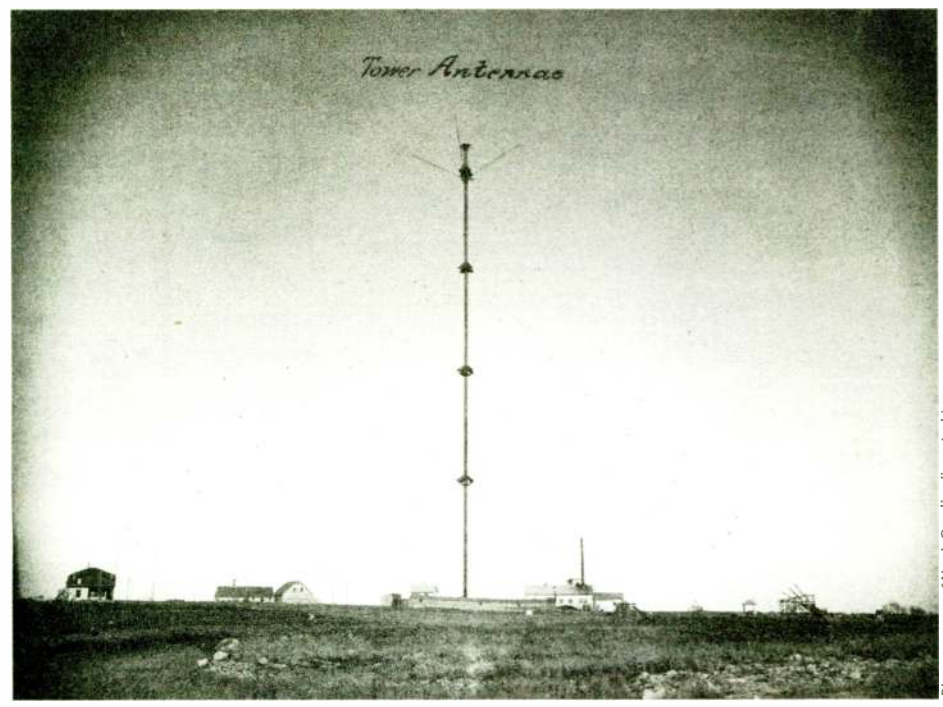

Photo courtesy of North Carolina State Archives

Fessenden had two identical 420-foot towers constructed at his stations in Massachusetts and Scotland. These were probably the first base-insulated guyed vertical radiators. Note the use of insulators to break the guy lines into non-resonant lengths and also the 'umbrella' top loading employed.

Milestone

Earlier this year I was asked to prepare a story commemorating the anniversary. I started the project by reviewing written accounts of the historic event.

I immediately noticed the similarity of all such descriptions: the music selected, the scripture reading, the first recorded case of "mic fright" and the invitation to listen for another such broadcast a week later. In some cases, the account was not attributed. Authors who did offer attribution cited a 1940 biography, "Fessenden: Builder of Tomorrows," penned by his widow Helen.

The events at Brant Rock, if they did occur, would have been a milestone in the history of mankind. In one evening, Fessenden apparently had staged the first radio broadcast and had become the first radio announcer, scriptwriter, disk jockey, program director, staff musician, studio engineer and chief engineer. It is a claim worth substantiating.

(We set aside here the question of whether "broadcasting" can include wired transmission. Today we accept the term to include people sitting in a CATV studio reaching consumers in a wired fashion; if so, Fessenden, De Forest, et. al. are out of the running by at least a decade, because concerts, news and other content were "broadcast" to significant groups of telephone subscribers in the 1880s and 1890s, especially in Europe.)

In the register of historic wireless broadcast events, Christmas Eve 1906 was important. There must be sources or records to corroborate it.

Quiet accomplishment?

So I started digging.

I researched Boston and New York newspapers published during and after the last week of 1906. They yielded nothing. Susan Douglas, writing in her comprehensive history of early radio, "Inventing American Broadcasting 1899–1922," similarly concluded, "There is no record of Fessenden notifying the press, and the demonstration received no newspaper or magazine coverage."

However, the inventor could have had a reason for not inviting press or issuing news releases.

My next step was to conduct a study of Fessenden and his business activities.

The professor, we find, was a supremely self-assured and temperamental individual. He was physically large and had an ego to match. His personality could be described as bombastic, type A, arrogant, insulting and demanding in the extreme. He is said to have told one of his more important employees, several times,

Fessenden

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"Don't try to think, you don't have the brains for it."

This man is not likely to have hidden his accomplishments under a bushel; nor did he do so with other achievements.

Regardless of how he conducted himself in front of workers and business associates, there's little doubt Fessenden was intelligent and gifted. In his lifetime (1866–1932), he was issued hundreds of patents and laid the foundation for many things we take for granted or attribute to others. An example is the principle of the heterodyning of two signals. Fessenden not only set forth the principle, he coined the term "heterodyne." He received a patent for it in 1902.

Fessenden was born in Quebec and migrated to Bermuda at the age of 18 to begin a schoolteacher's career. After a couple of years, he realized that this was not his calling and came to the United States, eventually finding employment with none other than Thomas Edison. He rapidly worked his way through the Menlo Park ranks to the position of chief chemist. Fessenden also held a position as engineering professor at Purdue University in Indiana and what is now the University of Pittsburgh.

For a time he was employed by the U.S. Department of Agriculture's Weather Bureau. It was here that he initiated early experiments in radiotelephony. That job ended in a dispute with his boss over patent rights.

Sometime thereafter he went into partnership with two Pittsburgh businessmen to form the National Electric Signalling Company, NESCO. It constructed several wireless stations, with its main operations at Brant Rock and Machrihanish, Scotland. One objective was to provide reliable transatlantic wireless communication and possibly take business away from undersea cable telegraph services. Brant Rock also served as an experimental laboratory for Fessenden.

It was during his association with NESCO that he achieved one of his goals.

Fessenden did not accept the conventional wisdom that radio waves could be propagated only by "shocking" the ether via a spark discharge across an antenna; he theorized that a continuous or sine wave would be much more efficient and would allow the transmission of speech and music.

There were no vacuum tubes with which to create a continuous oscillation. Fessenden thought creatively and had constructed by General Electric a special high-frequency alternator that could operate substantially above power line frequencies. His first successful machine could operate at 80 kHz and produce a few hundred watts. Amplitude modulation was achieved simply by inserting a carbon microphone in series with the antenna lead.

Through most of his career, Fessenden also was an inveterate writer. He discovered Scientific American early and delighted in submitting manuscripts and letters documenting his work. His submissions for publication became more numerous as he went along. He was a frequent contributor not only to Scientific American but to The Electrician, Electrical Review, Electrical World, Radio News, Science, and Transactions of the American Institute of Electrical Engineers. There are approximately 200 published works penned by Fessenden; these span radio and electrical engineering, but also chemistry, mathematics, economics and history. He even wrote articles for the Christian Science Monitor.

No records

If Fessenden was such a prolific writer and enjoyed "blowing his own horn," where are the printed reports of the Christmas Eve and New Year's Eve broadcasts of 1906? Even lacking contemporary press reports, there must be *some* corroborating evidence to back his story.

According to later accounts, Fessenden a few days before the event had transmitted via radiotelegraph a general call to make sure he had an audience. He wrote 25 years later: "This broadcast was advertised and notified three days in advance of Christmas, the word being telegraphed to the ships of the U.S. Navy and the United Fruit Co., which were equipped with our apparatus that we intended broadcasting speech, music and singing on Christmas Eve and New Year's Eve."

This should be relatively simple to check in the National Archives; but in response to my inquiry the staff reported they have no U.S. naval radio logs from 1906.

Note Fessenden's comment about "stations equipped with our apparatus." In 1906, not all wireless stations were equipped to demodulate AM radiotelephone signals. Just a few years before, the Branley "coherer" had been state of the art for detecting radio signals. This was a small tube filled with a loose mixture of fine metal particles. In the presence of RF, the particles clumped or "cohered," and the resistance of the device drastically decreased. This principle typically was used to close a relay and at the same time activate a "striker" to tap the tube so that clumped particles automatically would be loosened and ready to clump again when the next burst of RF came through. In short, the coherer was a "digital" device and could not demodulate AM.

The coherer was part of the "standard" Marconi wireless installation at that time, thus ruling out reception of Fessenden's radiotelephony at Marconi installations.

(Another available Marconi detector could detect AM: the magnetic detector, or "Maggie." However, it was notable for its lack of sensitivity, so much so that stations had to be practically in line of sight with one another for the "Maggie" to respond.)

The ships Fessenden mentions were using his electrolytic detector, the "baret-

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Fessenden

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ter," or a pirated version of it. This device could demodulate AM. Other wireless stations had this technology; Lee De Forest created his own version, the "spade" detector. He used it in De Forest wireless stations and sold it outright, in violation of Fessenden's patent. (An injunction against De Forest's actions ultimately led to his development of the first triode vacuum tube, the "audion.")

Fessenden accused the U.S. Navy of not only using the baretter without paying him royalties but also of manufacturing knock-off devices.

So we know that on Christmas Eve 1906, U.S. Navy vessels and United Fruit stations were equipped for AM reception; we know too that De Forest stations also could have received Fessenden's transmissions. However my search for logs for such operations was unproductive.

The Hart log

In digging for radio logs from that period, I did study a fascinating document at the Smithsonian Institution. This is a journal or logbook kept for nearly three years by a Francis Hart. It begins on Sept. 6, 1906; the last entry was made on Oct. 3, 1909. Though not a widely known source, it has been mentioned by Susan Douglas and other historians.

Little is known about Hart; but we can deduce that he was an early wireless enthusiast and had a lot of time on his hands to "listen in." He could read code and knew quite a bit about radio. There's no indication he owned a transmitter, so he can't really be called a radio amateur or "ham." Today he would probably be termed an SWL or shortwave listener; in 1906 no one was using shortwaves. It was all 500 kilocycles and below then. Perhaps the best term that can be applied to Hart is DXer.

Hart lived at Sayville, N.Y., about 160 miles from Brant Rock. His journal is a valuable resource, perhaps the only surviving log of wireless activity conducted around the time of Fessenden's radiotelephone work.

The logbook begins with several pages of listings for all known ship and shore wireless stations and gives their two-letter call identifiers; there was no FCC or FRC to issue call signs then. Included are U.S. Navy vessels, De Forest wireless stations, Marconi stations and those of other early adopters of wireless communications, the Standard Oil Company and United Fruit. NESCO's Brant Rock station — identifier "BO" — and the Machrihanish, Scotland station — "LK" — are entered.

Almost every day during the period, Hart started a new entry with a rubber stamp date on the book's sewn-in pages. Most entries are in the form of the identifiers of the commercial stations he hears working each other. Occasionally the identifiers are interspersed with comments about static, radio propagation, the weather and anything timely or unusual that he hears.

It was a strange feeling, wearing the required white gloves and carefully turning through pages that Hart innocently constructed but which have become an interesting and important firsthand look at early radio history.

Nothing there

Hart was listening on Christmas Eve. There are two entries for Dec. 24, 1906. Both are made without commentary. Neither bears the BO identifier.

Ditto the Dec. 31, 1906 entry. He overheard more stations on that New Year's Eve, but they did not include Brant Rock.

As noted, Fessenden's later account of 1906 mentions that he had gone on the air with a "general call" radiotelegraph message three days before Christmas to advise radio operators to be sure to "tune in" BO on Christmas Eve for a program of music and speech. Hart's entries for Dec. 20–24 make no mention of this event either.

Hart could have been guilty of napping, having a meal or perhaps going to the bathroom when Fessenden sent his message. However, if Fessenden had made such a transmission, those who did hear it would, for some time thereafter, have been involved in a general discussion of the message and passing it on to other radio operators. In light of this, it's difficult to believe that Hart could have completely missed hearing not only about the broadcast but about Fessenden's promo.

It's reasonable to assume not everyone with a radio receiver heard the Christmas Eve broadcast. However, what a hot topic it would have been to those who did. It's inconceivable that listeners would remain silent about having been "ear witnesses" to such an event. Yet the Christmas Day entries in Hart's log do not document this. There's nothing out of the ordinary logged from Dec. 25 until well into 1907.

If Fessenden had transmitted special programs of music and speech on Christmas Eve or New Year's Eve, these events would have sparked a tremendously large "buzz" for days thereafter among the community of land and sea radio operators.

Bullet points

But what is truly remarkable about the 1906 story is this: Not only is there no mention in the press at the time; there is also apparently no mention of them for the next 26 years.

Fessenden ended his career with NESCO in 1910 under conditions that were less than ideal. He continued to conduct research, write and invent until his death. In the 1920s we find several written accounts of a "first broadcast" from Brant Rock. But none give the date as 1906; nor is Christmas Eve mentioned.

In 1924, Fessenden was asked by the editor of Radio News magazine, Hugo Gernsback, to write an autobiographical series of articles. The series was titled "The Inventions of Reginald A. Fessenden." It is not an easy read. It begins in January of 1925 with Fessenden discussing the philosophy of invention. With the article, the magazine published what we would call a box of bullet points. These numbered items list the inventions that Fessenden felt were his most important.

The fifth bullet is the entry "Wavechute" — what we know today as a counterpoise or ground plane — and "broadcasting of speech and music — 1907."

Nowhere in this article or in the series of articles is there any mention of Christmas Eve or New Year's Eve broadcasts. Fessenden gives the date as 1907; his "broadcasting" apparently was not done until then.

De Forest

Concurrent with the Fessenden articles, Gernsback also printed a series of biographical articles on Lee De Forest. In the June 1925 issue, the De Forest article states: "But the short transmission of music from the Telharmonium over four blocks to the towers of the *Times* building remains the first *actual* broadcasting incorporating the present connotation of the word ever successfully carried out." (Italics from the original manuscript.)

The Telharmonium was a sort of forerunner to the Hammond organ. It was a musical, mechanical invention by the Cahill brothers, constructed of a number of AC generators, operating at differing frequencies, with outputs selected by a piano-type keyboard. The Cahills had wanted to connect the device to the telephone system and broadcast concerts to subscribers. The phone company was much opposed to any sort of "alien" connection to company lines (no Carterphone Decision yet), and would not grant permission.

The brothers heard about De Forest's success in transmitting music and speech with an "arcphone" type of transmitter early in 1907 and solicited his helping in distributing their musical interludes around the New York City area.

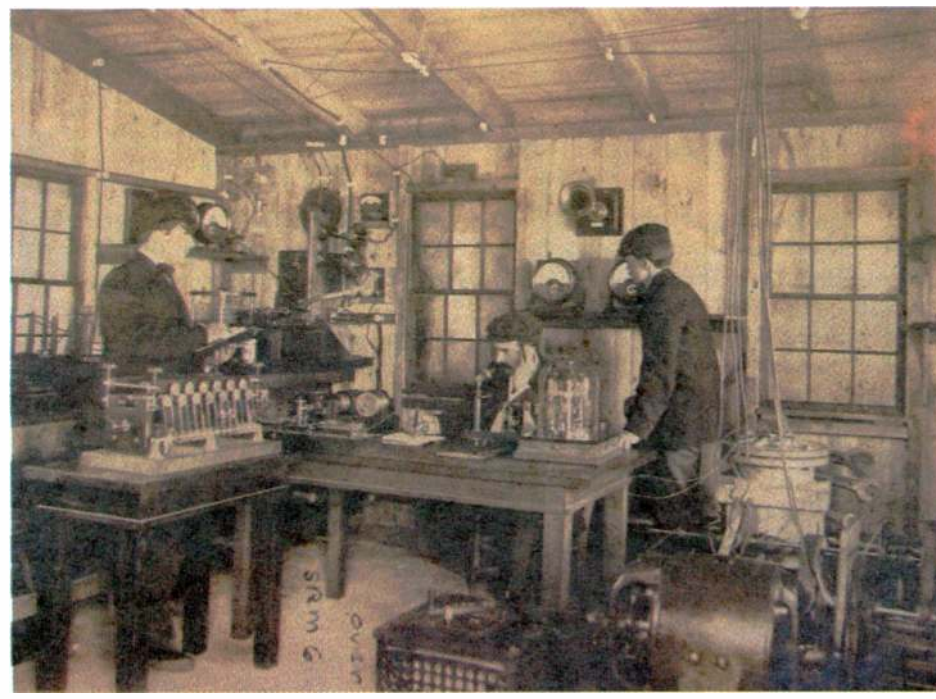
De Forest, in his 1950 autobiography "Father of Radio," says that in late 1906 he designed his "first crude carbon arc transmitter."

"I recall that it was on the last day of that year that (John V. L.) Hogan picked up in the Audion and telephone receiver across the room the first words spoken into a microphone connected to my arc transmitter, then fed from a 220-volt direct-current source. All my radiotelephone work up to 1923 employed this transmitter."

De Forest states that in February of 1907, he was broadcasting with his new transmitter "for the benefit of any wireless operators who might hear it, asking such listeners to telephone my laboratory in the Parker Building." He also set up a similar transmitter in the office of the Cahill Telharmonium Co. at Broadway and 45th Street and fed it from the musical instrument located there.

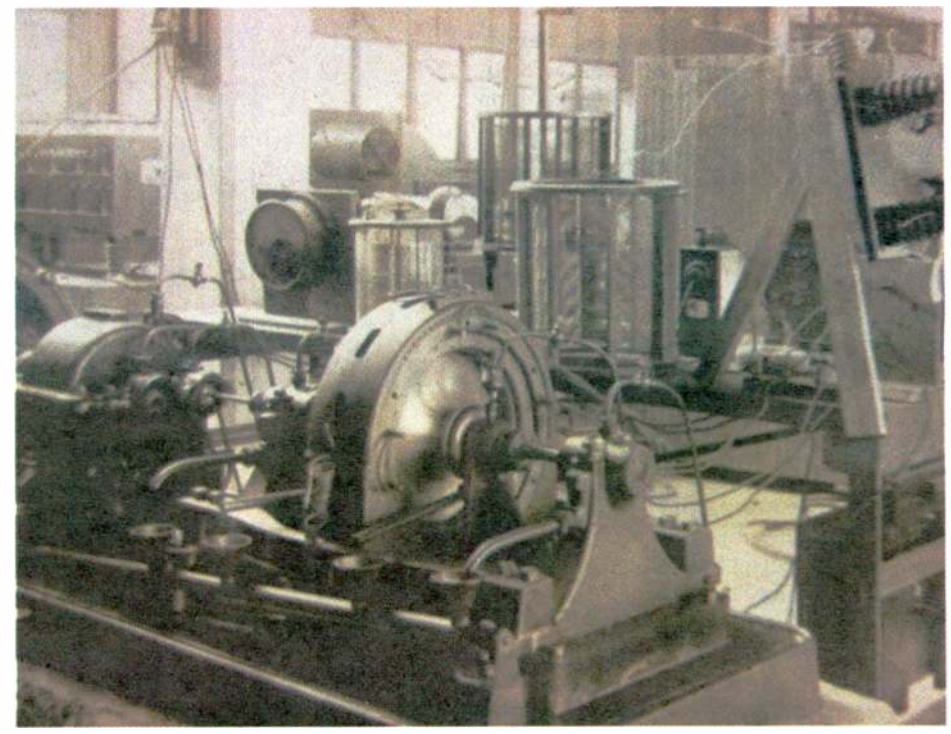
De Forest reported that he was getting reception reports from "sundry wireless men." One of these was George Davis, chief electrician at the Brooklyn Navy

See FESSENDEN, page 22 ▶



Photos courtesy of Smithsonian Institution

Another view of the Brant Rock radio room. The HF alternator, transmission and drive motor are visible at the bottom right. Note the RF transmission line(s) rising vertically from the apparatus, and what appears to be a very early loudspeaker mounted on the wall above the two large meters.



A slightly later model HF alternator. Note the use of a geared transmission in place of the belt-and-pulley system used with the first machines. Also note the elaborate bearing oiling system with the gravity return from the bearings. Bearing lubrication and cooling became increasingly important as power outputs increased and higher frequency operation was achieved.

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Fessenden

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Yard. De Forest said Davis was called in by one of the wireless operators there to put on headphones and listen to the speech and music being received, because "the operator was of the opinion that he had had a little too much beer at the corner and wished to have himself reassured."

Davis heard the same thing and called De Forest's studio. He asked, "Am I drunk or crazy, or are you sending out some talk and music over that wireless of yours?" Davis later became a board member of the Radio Corporation of America.

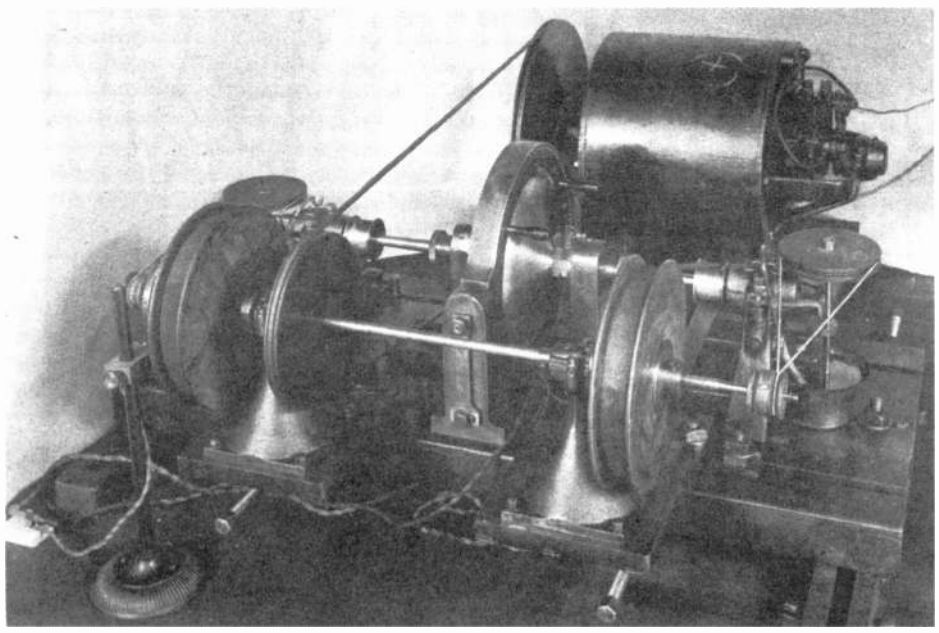
De Forest proclaims in the 1925 Radio News article that he originated the world's first broadcast of speech and music.

"Wireless phone at Jamaica & other must be at Brant Rock, Mass. — phone very clear except for a rasping noise that mingles with the voice & is hard to (?). I managed to get the following & could probably have obtained more, except for 'q' and etc.:

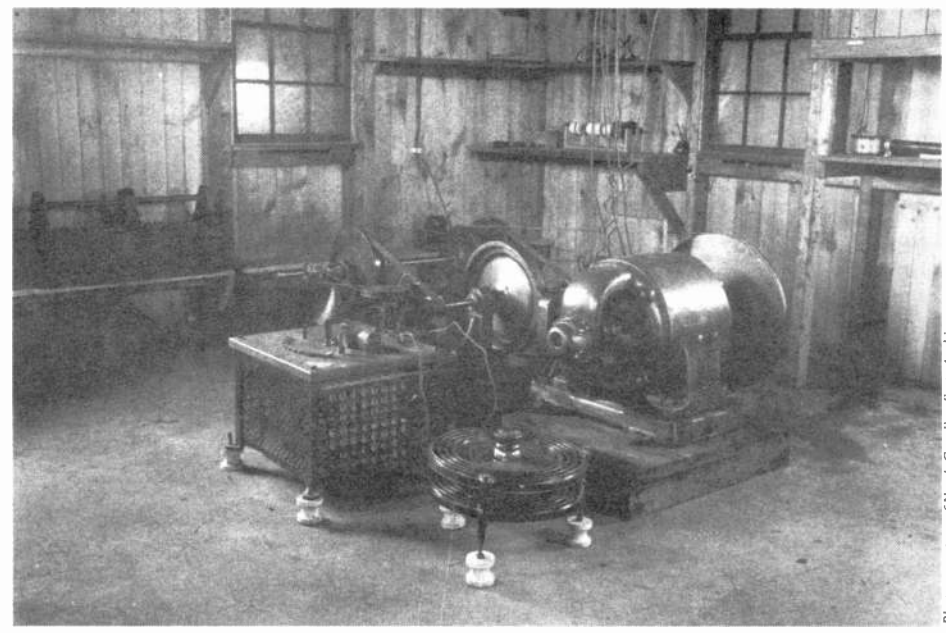
'How's that now'
'Open up a little more.'
'You came in louder than yesterday'

"Could hear music as plain as voice from weaker station but couldn't make out words from other station although they came in fair.

'Go ahead now for 5 mins.'
'We're all right if you will only, go ahead now.'"



An early high-frequency alternator used by Fessenden. It is possible that this is the machine used for the Dec. 21 radiotelephony technology demonstration. Note the vertical shaft devices at the left and right. These appear to be belt-driven oil pumps. Ordinary twisted-pair lamp cord is used as transmission line.



A view of the 'transmitter room' at Brant Rock. The high-frequency alternator is visible between the drive motor and belt 'transmission' arrangement for increasing shaft speed. The perforated box at the left of the alternator may be a starting rheostat for the drive motor.

Photos courtesy of North Carolina State Archives

Of course, inventors often dispute who was first. As the Fessenden and De Forest articles span multiple issues of Radio News, we may assume Fessenden would have seen the De Forest claim and taken it to task in the form of a letter to the editor. But Fessenden never rebuts De Forest's claim to priority in any of the subsequent issues.

The Navy Yard was not the only place where De Forest radiotelephone transmissions were being received. Francis Hart was hearing them too and made the following entry in his log on March 20, 1907.

"Music at 5:27 from de Forest's — good 3rd time."

This is the first indication in Hart's log of the reception of any speech or music. On May 9 of that year he wrote:

"De Forest's blooming telephony buzz raised the deuce with the L.W. & everything else."

LW was the identifier of the Navy ship the *Washington*.

Unlike Fessenden's purported broadcast, the De Forest radio broadcasts were noted in the press. The New York Tribune reported on May 15, 1907, "There is music in the air about the roof of the Hotel Normandy these days. A good deal of it is being collected by Lee de Forest's wireless telephone, ready for distribution to possible purchasers."

Hart doesn't report hearing Fessenden's radiotelephone transmissions until early in 1908. On Feb. 11 that year, he logged:

The evidence presented by the Hart log indicates that while he could — and indeed did — hear Fessenden transmitting speech and music, he did not hear any such transmissions on Christmas Eve or New Year's Eve, 1906.

Newspaper clippings

There is a voluminous collection of Fessenden material in the North Carolina State Archives: letters, memos, photographs and magazine and newspaper clippings. I sampled that collection. Three newspaper clippings that were part of the Fessenden estate bear special notice.

The first clipping is dated Aug. 7, 1924 and appeared in the Long Island Daily Press. It is in the form of a letter to editor. A David Hardenbrook in Jamaica, N.Y., wrote on Aug. 5 in response to an article published the previous day regarding the first radio broadcast.

He states that the credit is generally given "to Reginald A. Fessenden, the eminent scientist and inventor of more radio patents which are in use than any other inventor." He continues, "Also, Jamaica will go down in history for the first long distance broadcasting from Brant Rock, Mass. in 1907, by Dr. Fessenden."

Reader Hardenbrook says he found a book in the Jamaica library by a Dr. Goldsmith, "Radio Telephony," that states that "broadcasting was performed as far as Jamaica, where a mast of 180 feet high was used."

Hardenbrook went on to say he had learned that Fessenden lived in Boston and went to see him. The visitor apparently was treated cordially and noted that Fessenden was working on a new invention called the pherescope, Fessenden's term for a television. The visitor spent enough time with Fessenden to be fully briefed on Fessenden's life history and major accomplishments.

Hardenbrook concludes his letter with a mention of John V. L. Hogan, another early wireless pioneer, who had worked as a boy for De Forest. Hardenbrook wrote that in a book compiled by Ehrick Hausmann, Hogan gave Fessenden credit for broadcasting speech and music to Jamaica, N.Y., in 1907.

If a broadcast did take place in 1906, Fessenden apparently did not inform Hardenbrook during his visit. There is no follow-up to Hardenbrook's letter to set the matter straight.

Along with the Long Island Daily Press clipping is a front-page story clipping from the Fergus (Canada) News-Record of April 29, 1926, titled "Great Inventor Spent Boyhood In Fergus." This story about Fessenden is one of the "local boy makes good" genre and notes that Fessenden had made 300 inventions including the wireless telephone, the "heterodyne principal" (sic), relay wireless and "the first broadcasting in 1907."

The material in this article all appears to have been supplied by Fessenden. There is no follow-up "letter to the editor" in the files indicating a correction of the date by Fessenden.

A third clipping in the Fessenden collection is from the Nov. 6, 1927 Boston Sunday Globe. The story is the feature article in the radio section of the newspaper and puts Fessenden front and center, with a picture of him at his Chestnut Hills home near Boston. He is shown with one of his latest inventions, "the talking violin."

The article states that "Few people, however, realize that another man, also of Yankee descent, invented a wireless telephone and that his broadcasting station — first in the world — was at Brant Rock, near Marshfield." The article continues, "Twenty years have passed since the station was erected at Brant Rock." Give that article was published in 1927, that also would put Fessenden's radiotelephone work in 1907, not 1906.

Based on Fessenden's Radio News article and these newspaper clippings, a strong case is made for 1907 as the date for his first attempts at broadcasting. Neither Christmas Eve nor New Year's Eve are mentioned.

So when does 1906 enter the picture?

The 1932 letter

It appears the legendary date stems from a letter written by Fessenden from his home in Bermuda in 1932, about five months before his death. The letter is dated Jan. 29, 1932 and is in the Smithsonian's Clark Collection.

It was addressed to S. M. Kintner, a former associate of his, then vice president of the Westinghouse Electric and Mfg. Co. In it, Fessenden discusses several of his inventions before going into detail his broadcasting activities. This is apparently in response to a question asked earlier by Kintner.

Fessenden first refers to a demonstration of the transmission of speech and music in a "program given to Dr. Kennelly, Prof. Elihu Thompson, the engineers of Western Electric and A.T. &T. and other companies, and the editors of several of the New York papers..."

Although Fessenden does not mention a date, this is an obvious reference to a public demonstration of radiotelephony conducted on Dec. 21, 1906 between Brant Rock and another NESCO station in Plymouth, Mass.

Indeed, this could well qualify as the first broadcast of speech and music; however, it was intended only to demonstrate the capabilities of Fessenden's apparatus to an invited audience. Fessenden addresses this in his letter to Kintner by stating, "By broadcasting I suppose that you do not mean the transmission of speech, music and singing to other stations of the same firm which is sending but to receiving stations operated by other firms than the sending station, and also programs advertised or notified in advance." He makes the distinction between a technical demonstration and an actual attempt at reaching the "masses" via the airwaves.

Fessenden continues: "If, however, you do not call this a broadcast, then the program sent out Christmas Eve and New Year's Eve, 1906 would be the first broadcast. This broadcast was advertised and notified three days in advance of Christmas, the word being telegraphed to the ships of the U.S. Navy and the United Fruit Co., which were equipped with our apparatus that we intended broadcasting speech, music and singing on Christmas Eve and New Year's Eve.

See FESSENDEN, page 24 ▶

Tried and Trusted for Over 34 Years – Inovonics Processors

Inovonics

Inovonics 261 – AGC Compressor/Limiter

Inovonics introduces this simple-to-use utility dynamics processor. Use the 261 to normalize and control audio levels in your all-digital or mixed-signal plant. Combining three audio processing functions of gated, gain-riding AGC; program dynamic range compression; and final peak control, the all-digital 261 can configured to provide a single basic function independently, or to utilize all processing options for comprehensive program audio control. 48-bit internal processing ensures excellent clarity and response. Talk to your sales rep today about this or any other Inovonics purchase!!

FEATURES:
- All-digital design using DSP technology
- 48-bit internal processing
- 16/24-bit I/O
- Accepts analog and digital program inputs
- Provides analog and digital outputs simultaneously
- Menu-driven setup utilizes LCD display
- Rear-panel tallies enable remote alarm indication

261-00 List $1,150.00 LowestPrice@bswusa.com OR CALL: 1-800-426-8434

Inovonics 264 – Quad Leveler

This Inovonics AGC processor boasts four separate and independent channels of analog audio gain control, which can be used separately for microphone leveling or similar mono applications, or selectively linked for dual-stereo or split mono/stereo program control. Its unique combination of peak and average response to program dynamics gives you the gain-riding advantage of an intelligent AGC coupled with the tight peak control of a fast limiter. This normalizes the average-to-peak ratios of diverse audio sources, giving a consistent level of subjective loudness without using excessive, ear-fatiguing compression.

FEATURES:
- Four independent channels easily configured as 4 mono, 2 stereo, or 1 stereo and 2 mono
- Establishes fixed average/peak ratio without overly compressing program dynamics
- Class D (PWM) technology for stable and transparent operation
- Program-controlled and fully automatic operation
- Alarm tally outputs for remote indication of program source problems
- Simple and straightforward design

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Behringer 12-Channel Rackmount Mixer

NEW!!

This versatile 12-channel rackmount mixer boasts 8 studio-grade mic preamps renowned for ultra-low noise and transparent audio quality, and also features a 24-bit digital stereo FX processor with 100 presets, switchable +48 V phantom power for condenser microphones, and 2-band EQ with Clip LED for each channel. It's versatile enough for studio mixing or can be added to your remote truck. Other features include 2 aux sends per channel: 1 pre fader for monitoring applications, 1 post fader for internal FX or as external send; CD/tape inputs assignable to main mix or control room/phones outputs; and separate control room, phones and stereo CD/tape outputs.

RX1202FX List $249.99 LowestPrice only $199.99!

Professional. Flexible. Multi-Talented.

Numark CD and MP3 Player with Balanced XLR Outputs

This rackmountable CD player gives you incredible music playback in a variety of applications It plays standard audio CDs and MP3 CDs and provides buffered memory protection for consistent music playback. It sports a solid EQ section and features balanced XLR outputs, stereo RCA and digital S/PDIF outputs for versatile connectivity. All for BSW's low price of only $199.95!!

FEATURES:
- Buffered Instant Start
- Ability to create seamless loops from both CDs and MP3 discs
- Easy-to-read, backlit LCD that includes text display
- Pitch bend capability via the jog wheel
- Supports continuous playback and is track sequence programmable

MP102 List $399.00 LowestPrice only $199.95!

JBL Control1-Pro

JBL performance housed in a compact monitor, the new Control 1 Pro features a professional crossover network coupled with professional drivers making it ideal for near-field audio applications. The Control 1 Pros updated crossover network design provides steeper crossover slopes for exceptional sonic performance and improved consistency throughout the listening area. The (now) included wallmount bracket enables the unit to be secured against a wall or other flat surface. Features: 150 watts power handling capability 5 25" woofer, .75" tweeter. Sold as pair.

NEW!! JBL

CONTROL1-PRO List $196.00

LowestPrice only $159.99 pair!

Two A-T Headphones at 60% OFF!!

audio-technica

The Audio-Technica ATH-M40 headphone offers bullet-proof durability in a sealed-ear format. It offers an amazing wide frequency response of 5 Hz-28 kHz with large 40 mm drivers with neodymium magnets for maximum sound. In addition, its adjustable cushioned headband, 180° rotating earpads, lightweight design and a hard-wired 1/4" connector make it excellent for long days in the studio. 60 ohms impedance. Get BSW's 2 pack and save!!

ATHM40FS-2PK List $300.00

LowestPrice 2 for only $119!

The Ultimate Pop Filter For Your RE20

BSW

RE20 Pop Filter

The BSW RePop is the ultimate pop filter—made specifically for the Electro Voice RE20 microphone. The fine mesh metal screen diminishes undesirable P-Popping while keeping the integrity of the hi-end frequency response. The RePop clamps easily and securely to the microphone and will also work in conjunction with the EV 309 shockmount. The RePop is a BSW innovation!

REPOP List $59.95 LowestPrice only $39.95!

Electro-Voice RE20

Ev

Do we really have to sell you on the RE20? A favorite of broadcasters worldwide, it's simply built to last forever and sounds great on the air. Patented Variable-D design reduces proximity effect.

RE20 List $798.00 LowestPrice only $399!

The Electro-Voice 309/A is the RE20 suspension shockmount.

309A LowestPrice only $99!

Marantz PMD660 Handheld Flash Recorder

marantz

The PMD660 recorder lets you record hours of MP3 audio on a single Compact Flash card (or as uncompressed 16-bit .wav files) and easily transfer to your computer via USB. You can even edit in the unit itself – use simple cut-and-paste editing. Virtual tracks let you compare edits and provide interview segments of varying durations. Onboard mics for stereo recording, or XLR inputs and mini-jack line I/O. A best-seller at BSW!!

PMD660 List $649.99

LowestPrice only $499!

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Lowest Prices on everything at: www.bswusa.com

Same Day Shipping
BSW stocks a huge warehouse of products. If we have it in stock, we'll ship it the same day. Just order by 7:00 PM Eastern Time.

Free Shipping on Most Web orders over $189
Most web orders over $189 get FREE ground service delivery to the contiguous 48 states. Excludes heavy or oversized items.

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Our sales professionals have real-world broadcast and studio experience to offer expert help with your equipment purchase. RW_102506

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1-800-426-8434

Fessenden

▶ Continued from page 22

"The program on Christmas Eve was as follows," he went on. "First a short speech by me saying what we were going to do, then some phonograph music. You will find a photograph showing the phonograph used in the article in the Transactions of the American Institute above referenced to and also in the American Telephone Journal, the music on the phonograph being Handel's 'Largo.' Then came a violin solo by me, being a composition by Gounod called 'O, Holy Night,' and ending up with the words 'Adore and be still' which I sang one verse of, in addition to playing the violin, though the singing, of course was not very good. Then came the Bible text, 'Glory to God in the highest and on earth peace to men of good will,' and we finally wound up by wishing them a Merry Christmas and then saying that we proposed to broadcast again New Year's Eve."

Fessenden goes on to say that the New Year's Eve broadcast was similar to the Christmas Eve transmission, with different music and someone else singing. He concludes the letter with mention of reception of the Christmas Eve program from as far away as Norfolk, Va., and from "some places down in the West Indies" for the New Year's Eve broadcast. Fessenden invites Kintner to "check the logs of U.S. war vessels and United Fruit vessels."

The account and dates given in this letter are extracted by Helen Fessenden and appear, lightly edited, in Chapter 15 of her 1940 biography of her late husband.

It would appear that the Kintner letter is the origin of the 1906 Christmas Eve broadcast story. Nothing appears in the press or in Fessenden papers I've examined that mention this broadcast prior to January of 1932.

Fessenden's health had begun to fail by this time, which could cast doubt on the veracity of his statements.

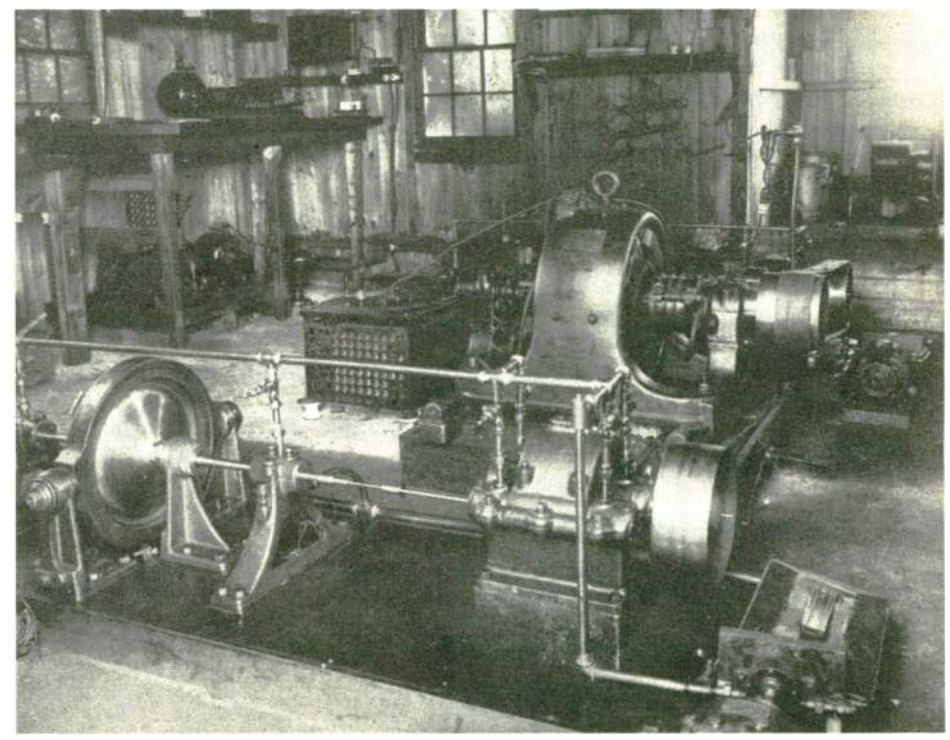
(Interesting too is his comment on "a composition by Gounod called 'O Holy Night.'" That work was not composed by Gounod. The music was by Adolphe C. Adam and the words supplied by Placide Cappeau; the translation to English was by John S. Dwight. Gounod is known for his "Ave Maria." Why this discrepancy has not been questioned by Fessenden biographers is unclear.)

Meanwhile, October of 1931 saw the launch of Broadcasting magazine, today's Broadcasting & Cable. December of that year would have been the 25th anniversary of the Fessenden broadcast; we'd expect a publication dedicated to broadcasting news to note the event. There were two issues published in December; neither contains mention of the 25th anniversary of broadcasting or of Fessenden. The second issue does contain a fairly long article about Marconi.

A search of other radio-related magazines from December 1931 fails to turn up any mention of a 25th anniversary commemoration.

Photos courtesy of North Carolina State Archives

Fessenden with his staff at Brant Rock. It is clear who's boss.



The Brant Rock 'transmitter room' with a later model, high-frequency alternator in the foreground. The motor immediately behind the alternator apparently can be connected to either of two alternators by shifting the drive belt. It is connected to a second machine not completely visible. Note the elaborate bearing oiling system for the visible alternator.

Pioneer debate

Is there anything that might strengthen Fessenden's "deathbed" claim?

In the Smithsonian's George H. Clark Collection is a memorandum written by Clark that captures opinions from John V. L. Hogan, H. E. Hallborg and Authur Van Dyck, all radio pioneers, as to what methodology was used and what year the Fessenden Christmas Eve and New Year's Eve broadcasts took place. The memo is dated Dec. 16, 1936.

Van Dyck thought Fessenden had used "multiple arc" and a water-cooled microphone. He adds that it was possible an alternator had been used. No date is given.

Hogan is certain that an alternator was used and "the date might have been 1906."

Hallborg expresses his certainty that an alternator was used along with a water-cooled microphone and that the date was 1906.

Clark sums up the issue by saying, "Thus it is well assured that it was an alternator; also that it was a water-cooled microphone that was used. The date 1906 is confirmed by my records, but *must be finally checked*" (my emphasis).

There is no indication that Clark managed to verify the date to satisfaction.

Dec. 21 demonstration

There is another angle in this story that may shed some light.

NESCO was formed as a moneymaking organization with an eye toward establishing a transatlantic communication service. Fessenden served as its chief scientist and manager while two Pittsburgh businessmen bankrolled the operation.

Early in its existence, Fessenden erected two nearly identical radiotelegraph facilities, those at Brant Rock and Machrihanish. Each was equipped with spark wireless transmitters and each had an identical 420-foot vertical antenna — the first insulated-base, series-fed vertical radiators.

Construction was finished in 1906 and testing commenced. Things were looking good until a windstorm toppled the Machrihanish antenna on Dec. 6. This apparently was the result of failure to follow procedures in attaching guy lines.

The Machrihanish facility was never rebuilt.

See FESSENDEN, page 25 ▶

Fessenden

▶ Continued from page 24

The collapse of the antenna, occurring as it did in the first week of December, must have played heavily on Fessenden. The demise of the Scotland station changed the business model of NESCO and it was up to Fessenden to devise another plan to keep the company in business. (He earlier had made a case to his business partners to try to market equipment, but that proposal did not tempt them.)

Fessenden had been touting his radiotelephony as an adjunct to wired telephone service and on Dec. 11, he issued his invitation to engineering heads from Bell, Western Electric and others to attend a demonstration on Dec. 21 of his system of radiotelephony.

This demonstration did take place and was well documented by Fessenden, unlike the supposed Christmas Eve event. His first reporting appears in the Jan. 19, 1907 Scientific American. He mentions some of the dignitaries present, describes the equipment, references his past work in radiotelephony and describes the transmission of both speech and phonograph records.

The Christmas Eve event would have taken place just days after the demo. But Fessenden does not report it.

He writes again about his work in 1908 for the American Institute of Electrical Engineers. This report was published again that year in the Annual Report of the Board of Regents of The Smithsonian Institution. This is a comprehensive description of virtually everything Fessenden had accomplished along the lines of wireless telephony, includes many pictures and spans more than 30 pages of text.

There is not one word about the Christmas Eve and New Year's "broadcasts."

What happened?

At this point, all surviving evidence points to the conclusion that Fessenden's 1906 Christmas Eve broadcast did not happen.

I really wanted to believe that Fessenden did what was claimed. Given the resources available to him in terms of an operational high-frequency alternator, methodology for AM modulation technology and an antenna system, he certainly could have done the broadcast. His Dec. 21, 1906 demonstrations proved that he could transmit speech and music. However, all evidence points to the Christmas Eve event as being a contrived story.

Fessenden was no "shrinking violet." He was proud of his accomplishments, almost continuously writing about them for publication. He loved to blow his own horn.

Had he made these seminal and historical transmissions, he would have made sure the world knew about them in detail, at the time they happened. He would not have waited a quarter of a century, and only months before he died, to do so.

Now we enter into conjecture. Is it possible that in the last months of his life, Fessenden recalled the Dec. 21, 1906 demonstration of his system, unintentionally spread it into Christmas Eve and embellished it "just a bit?" This time Fessenden was not writing a letter to a magazine or newspaper editor. It was his assumption that only Kintner would read it. He could have had no idea that eight years later, his wife would reproduce a copy he retained and that this would be the basis for a wonderful tale about the first chapter in broadcasting. Or perhaps he wasn't concerned with the history books and what he revealed to Kintner was the product of a tired body and mind. Or our speculation may be wrong and some other explanation can be found for the utter lack of contemporary documentation to justify Fessenden's claim to history.

Conclusion

Let us summarize our reasons to doubt:

No press reports at the time, or for a quarter-century after. No mention for decades by an inventor who knew how to promote himself and wrote hundreds of articles about his work. No mention in a contemporary log and no known logs elsewhere, whether official naval logs or otherwise. No commemorations 25 years later. No challenge to De Forest's published competing claim. No followup to Clark's finding that the year needed to be verified; no consensus as to the date among the group cited by Clark. No mention of 1906 once the year 1907 began to be cited.

Any one of these objections can be explained away. Taken together, they form a powerful counterargument.

The question of the year also might be considered a minor discrepancy except that the evidence seems to point to De Forest being first with what we would consider broadcasts in the spring of 1907.

Fessenden was a great man. It is not my desire to discredit his many accomplishments. However, it appears his claim to this particular historic "first" hangs on a single letter penned late in his life, which laid out a story that has been parroted many times since. This should not guarantee automatic entrance into the "broadcasting hall of fame" and the title of world's first broadcaster.

Perhaps somewhere out there, locked in a trunk, is a diary kept by Fessenden or one of his associates. Perhaps the Brant Rock station log survives in a second-hand bookstore. I leave it to future historians to find such evidence and prove me wrong.

The author acknowledges the assistance of Elliot Sivowitch, Smithsonian Institution curator (retired); Hal Wallace, Smithsonian Institution curator; Jane Johnson, librarian, Charlotte (N.C.) Public Library; Jim Haynes, retired engineer and educator; and his wife Pamela O'Neal, who worked with him in plowing through Fessenden files and writings. He also thanks the staff members of the Smithsonian's Archives Center and the North Carolina State Archives.

HD Radio News

Digital News From Dallas

Page 30

Radio World | Covering Radio's Digital Transition | October 25, 2006

The State of a Digital Union

Alliance to Stations: Don't Slack Off On Your HD Radio Momentum

by Leslie Stimson

Radio needs to continue to adapt in order to compete with iPods, MP3 players and satellite radio. More HD Radios in the hands of consumers will help terrestrial radio reach its goal, but only if stations support the rollout.

That was the overriding message from proponents to attendees in the session "HD Radio: State of the Union" during the NAB Radio Show.

Competition will only get more intense as more players rush to get mobile audio technology into the market, said President/CEO Robert Struble, noting that Microsoft's just introduced portable media player (Zune) that includes an FM tuner, mobile television is getting traction in Korea and WiMax mobile Internet technology is up and coming.

"Kids today grew up with the Internet. They want what they want when they want it," said Struble. "Radio cannot meet these expectations without digital quality."

If multicasting is the first "killer app" for HD Radio, then navigation and traffic reports are second, he said. In 12 to 18 months the industry will see an instant traffic button; record and time-shifting capabilities; a buy button; and conditional access on HD Radios, he predicted.

1,000 stations

HD Radio will be in cell phones, iPods, eTablets and smart phones. "You can monetize that and extend your reach," he said.

Key to that development is reducing the current receiver chip size and its power consumption.

Seeding radios in the marketplace is critical to the rollout, said Struble and HD Digital Radio Alliance President/CEO Peter Ferarra. They also announced that 1,000 stations have gone on the air with the technology.

Struble called the pace of the rollout "startling" and said by the first quarter of next year, the rollout will be complete in the top 100 markets, with more than 700 alliance stations broadcasting in digital and analog.

Asked in an interview what the alliance is going to do for stations in smaller markets, Struble acknowledged the initial push is in large markets and said, "We're working on it. We're mindful of the concerns of smaller broadcasters and we're trying to come up with creative ways to address it." During the convention, NAB President/CEO David Rehr cited the importance of digital radio in small markets.

Ferarra reminded attendees they don't need to be a member of the alliance to use the on-air promos for HD Radio.

The multicast formats agreed to by alliance members are unique to each market, he said. "Antitrust lawyers tell me we can cooperate for an initial period for launch." Asked for comment by RW, an attorney later confirmed this, describing an antitrust exemption for new technologies.

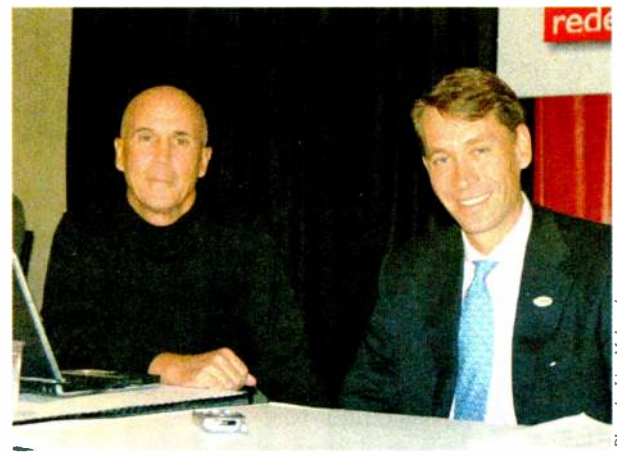


Photo by Lisa McIntosh

Peter Ferarra and Robert Struble prepare for their session.

Ferarra was asked by an attendee if stations should worry about audience fragmentation when the HD2 channels are no longer commercial-free. "We won't voluntarily do things that cannibalize what we've achieved," he replied. "If we do it smartly, HD Radio will be a success. If we fall back on old habits and slice the baloney really thin, this won't work as a business model. We need to be competitive, but competitive and smart."

Receiver prices drop

As more people buy HD Radios, more retailers will stock the units and, eventually, more automakers will participate, said Ferarra.

And prices will come down. Struble said an aftermarket JVC receiver price is now $199, down from $299, and could be below

See STATE OF HD, page 30 ▶

ACTIVATE HD Radio Locally in YOUR Market

✓ Activate this checklist:

Marketing

- ☐ **Put an HD Radio on display** in your lobby with signage – information explaining HD Radio, pointing consumers to participating retailers and providing HD2 channel guides so visitors can "discover what's between the stations"
- ☐ **Add HD Radio information to your web sites** (home pages particularly) – either drive visitors to HDRadio.com or provide detailed info (How it sounds, How it works, Where to buy, Product info, etc.)
- ☐ **Include HD Radio on all your advertising** and promotional materials (print, billboard, TV, on-line, sponsorships, on-site events, etc.)
- ☐ **Use trade advertising opportunities** to reinforce your HD2 channels and "all you need is a new radio" messaging
- ☐ **Give participating retailer gift cards** away in contests (on-air, listening clubs, on-line, etc.)
- ☐ **Run the HD Radio spots and promos** of your HD2 channels on your hold button and in your lobby
- ☐ **Provide HD Radio listening station** for listeners to sample HD Radio at auto shows, expos, home shows and other local events
- ☐ **Ensure your AM stations are engaged** in the HD Radio campaign (the Alliance does not book AM advertising, but your AM programmers are welcome to run the AM specific spots/promos from AreYouDefYet.com)
- ☐ **Execute Local Market Station Promotions**
  - On-air give-a-ways
  - Remote broadcasts and events
  - Listening posts and sampling
  - Co-promotions with partners

Public Relations

- ☐ **Pitch local press stories** about your HD2 channels, the programmers behind the curtain and the exciting new programming choices
- ☐ **Pitch local TV and print publications** to showcase HD Radios for holiday gift giving

Employee Relations

- ☐ **Update your employees with a HD Radio progress report** (Alliance messaging, product information, retailer information, HD2 channel information and share the excitement this technology brings to the radio business)
- ☐ **Provide your sales staff with HD Radio materials** for their media kits to educate customers about HD Radio (particularly automotive customers)
- ☐ **Add HD Radio to your staff and department meeting agendas**, asking "What are we doing to promote HD Radio this week and next?"

Promotional Tips From the Alliance

Radio World's HD Radio™ Scoreboard

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

HD RADIO AT ENTERCOM COMMUNICATIONS

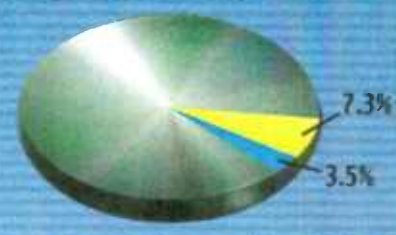
Market	Station	Freq.	Main Format	On the Air?	HD2 Format
Boston, MA	WAAF(FM)	107.3	Rock	y	Live Rock
Boston, MA	WMKK(FM)	93.7	AC	y	Rhythmic AC
Buffalo-Niagara Falls, NY	WKSE(FM)	98.5	CHR	y	Comedy
Buffalo-Niagara Falls, NY	WLKK(FM)	107.7	Clsc Rock	y	Live Rock
Denver-Boulder, CO	KALC(FM)	105.9	Hot AC	y	Comedy
Denver-Boulder, CO	KOSI(FM)	101.1	Lite Rock	y	Blues
Denver-Boulder, CO	KQMT(FM)	99.5	Prgvs/ClRck	y	Live Rock
Indianapolis, IN	WNTR(FM)	107.9	Adult Hits	y	Blues
Indianapolis, IN	WZPL(FM)	99.5	CHR	y	Comedy
Kansas City, MO-KS	KQRC(FM)	98.9	AOR	y	Live Rock
Kansas City, MO-KS	KRBZ(FM)	96.5	Rock	y	Comedy
Kansas City, MO-KS	KUDL(FM)	98.1	Lite AC	y	Classical
Kansas City, MO-KS	KYYS(FM)	99.7	Clsc Rock	y	Deep Tracks
Kansas City, MO-KS	WDAF(FM)	106.5	Country	y	Smooth Jazz
Madison, WI	WMMM(FM)	105.5	AAA	y	TBD
Memphis, TN	WMBZ(FM)	94.1	Hot AC	y	Comedy
Memphis, TN	WRVR(FM)	104.5	AC	y	Blues
Milwaukee-Racine, WI	WMYX(FM)	99.1	Hot AC	y	Blues
Milwaukee-Racine, WI	WXSS(FM)	103.7	CHR	y	Comedy
Portland, OR	KGON(FM)	92.3	Clsc Rock	y	Live Rock
Portland, OR	KNRK(FM)	94.7	Modern Rock	y	Deep Tracks
Portland, OR	KRSK(FM)	105.1	Hot AC	y	Rhythmic AC
Portland, OR	KWJJ(FM)	99.5	Country	y	Blues
Portland, OR	KYCH(FM)	97.1	Charlie	y	Urban AC
Rochester, NY	WBZA(FM)	98.9	Clsc Hits	y	Blues
Sacramento, CA	KDND(FM)	107.9	CHR	y	Comedy
Sacramento, CA	KRXQ(FM)	98.5	AOR	y	Live Rock
Sacramento, CA	KSEG(FM)	96.9	Clsc Rock	y	Deep Tracks
Sacramento, CA	KWOD(FM)	106.5	Alternative	y	Blues
Seattle-Tacoma, WA	KBSG(FM)	97.3	Oldies	y	Urban AC
Seattle-Tacoma, WA	KISW(FM)	99.9	Rock	y	Live Rock
Seattle-Tacoma, WA	KKWF(FM)	100.7	Country	y	Comedy
Seattle-Tacoma, WA	KMTT(FM)	103.7	Adult Rock	y	Blues
Seattle-Tacoma, WA	KNDD(FM)	107.7	Alternative	y	International Hits

The HD Radio Bottom Line

Total Licensed: 1,475
On the Air: 1,000

Last Month
Total Licensed: 1,475
On the Air: 936

Market Penetration
United States
13,748 AM & FM Stations
(excludes LPFMs)



Number of FM Stations Multicasting: 378

Last Month: 355

You think *we* have a lot to say? You should hear our clients.

When we asked our clients which Element features they liked best — well, you see the results. And this is the *edited* version. (Good thing we bought two pages.)

Go (con)figure • The folks at MPR say they really love being able to configure their Elements and keep tabs on their entire Axia network using standard Web browsers. You can set up and administer an entire building full of consoles from the comfort of your own office (where there's plenty of Cheetos and Pepsi). Put an Internet gateway in your Axia network and you can even log into Element remotely, from home or anywhere else there's a Net connection. Great for handling those 6 P.M. Sunday "help me!" phone calls from the new weekend jock.

Who are these guys? • Why buy a console from Axia? Element was designed by Mike Dosch and his team of ex-PR&E renegades (who know a bit about consoles). And Axia is a division of Telos, the DSP experts.

Screen play • Element lets you 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 wanna bet he bought his monitors on sale?) Hook up a VGA projector and make a Meter Wall!

Perfect timing • You can't have too much time. That's why Element's control display contains **four different chronometers** to help keep talent in sync: a digital time-of-day readout that you can slave to an NTP (Network Time Protocol) server, an elapsed-time event timer, a countdown timer talent can set for any interval they choose... and there's also that big, honkin' analog clock right in the center of the screen (Big Ben chimes not included). We wanted to make it even bigger, but our screen designers charge us by the pixel.

Where's Waldo? • Hide-and-seek is a pretty fun game. But not when when you're in a hurry, and definitely not when you're on the air. So every Element fader comes with a big, **bold** 10-character LED display right above it to show talent, at a glance, exactly what source is assigned to that fader. If it's music from a digital playout system provided by one of our partners, the display can even show the title or artist of the song that's active. Talent tells us that these displays are at the perfect angle for either sit-down or stand-up studios.

Options • Clients say they love Element's uncluttered worksurface. We kept it clean by placing an "Options" key over each fader to give instant access to all the advanced goodies. It makes customizing settings easier than selling fudge cake to Dom DeLuise.

Black velvet • What's 100 mm. long, silky smooth, goes up and down all day and **lasts forever**? Our super-quality conductive-plastic faders, of course. (You have a filthy mind, mister. Shame on you.) We sourced the most durable, reliable, premium faders and switches for Element. And we added extra touches, like the custom-molded plastic bezels that protect on/off switches from accidental activation and impact. Because we know how rough jocks can be on equipment — some of us were (jocks, not rough). And because we also know there's nothing more embarrassing than a sudden case of *broadcastus interruptus*.

Audio cards • Well, *um*, there actually aren't any. Not in Element, or anywhere else in an Axia network. Why not? Think about this: your production guy spends hours crafting exciting, finely-tuned bits of broadcast magic, only to filter them through a card sitting in a noisy, RF-filled PC. It's like washing a wedding dress in the Hudson River. Not only that, broadcast audio cards are *expensive*. And they only work in *PCI slots*... how many of those are you seeing on new PCs? The **Axia IP-Audio Driver** installs on any Windows® PC to send and receive pure digital audio right through the PC's Ethernet port — no sound card required. You get better, cleaner PC audio that's sharable right to the network. And you save tons of cash on sound cards, and on the audio inputs you would have needed for that PC card audio — more than enough to buy that cool new network tester you've been lusting after.

Great Phones • We wanted the phones on Element to work like an extension of the board-ops themselves. Unfortunately, talent objected to having Ethernet ports implanted in their skulls, so we came up with the next best thing. 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 it really clicks with the Telos Series 2101, TWOx12, or the new NX-12, which connects four hybrids plus control with a *single Ethernet cable*. Status Symbols™ (those cool little information icons) tell talent at a glance whether a line is in use, busy, pre-screened, locked on air, etc. You can even dial the phone right from the board using the integrated keypad.

Fried Chicken • Conductive aluminum bullnose is connected to a 40-kilovolt storage capacitor* that can be activated with a GPIO closure. Set up a hotline remote trigger for the PD to give the jocks a little 'positive feedback!'

Shown: 20-position Element, nicely equipped, $16,557.00 U.S. MSRP. Not shown but available: 4-, 8-, 12-, 16-, 24- and 28-position Element. Dual exhaust and whitewalls optional at extra cost.

Element

Meter reader • LED program meters? How very 1990's. Element's SVGA display has lots of room for timers, meters, annunciators (*there's* a five-dollar word) and more — enough to show meters for all four main buses at once. Reboot the console to 5.1 surround mode and the light show is even cooler. Any more bling and those fast 'n furious types'll want it for their dashboards.

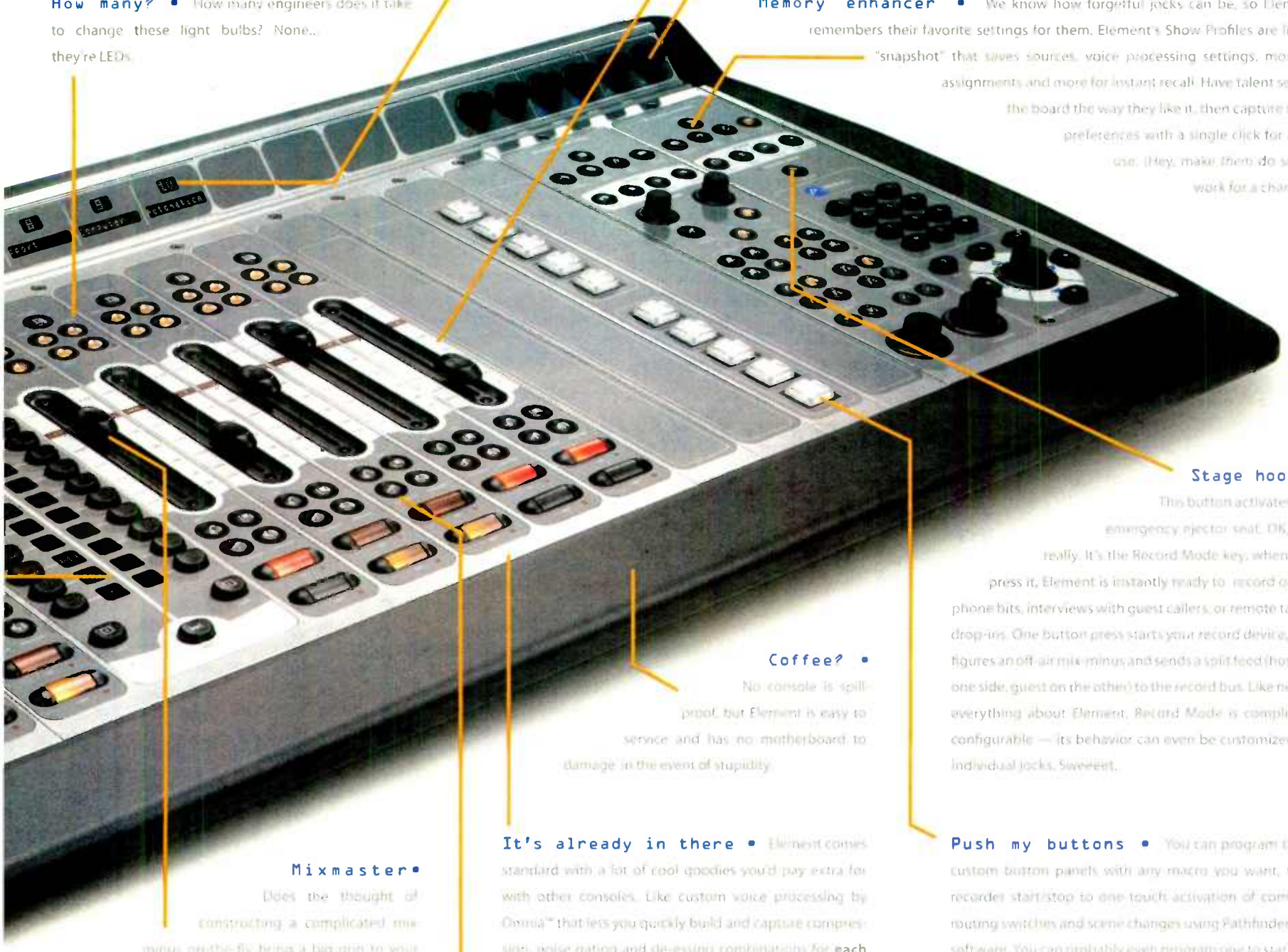
Status Symbols • There are those icons again. (We're in love with icons. It's the Telos way.) These Status Symbols alert talent to phone lines ringing, mix-minuses minusing, talkback channels talking, etc. They can even display fader numbers, like you see here. Just one more way Element makes it easy for talent to do a fast, clean show.

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

Swap meet • Element modules are easy to hot-swap. Remove two screws and a cable or two, and they're out. In fact, you can hot-swap the **entire console** — unplug it and the audio keeps going, because mixing is done in an external Studio Engine.

Can I play with your knobs? • Twist 'em, push 'em, make 'em click. Element comes standard with some pretty powerful production features, like per fader EQ, voice processing and aux sends and returns. 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.)

Memory enhancer • We know how forgetful jocks can be, so 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. 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.)



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. Sweeeet.

Coffee? •
No console is spill-proof, but Element is easy to service and has no motherboard to damage in the event of stupidity.

Mixmaster •
Does the thought of constructing a complicated mix-minus on-the-fly bring a big grin to your face? If so, you're excused. (Masochism 101 is down the hall). But if you hate building mix-minuses manually as much as we do, you'll love the fact that Element does them for you. No more using all your buses for a four-person call-in; no more scrambling to set up clean feeds for last-minute interviews. When you put remote codecs or phone calls on the air, Element **automagically** figures out who should hear what and gives it to 'em — as many custom mix-minuses as you have buses.

It's already in there • Element comes standard with a lot of cool goodies you'd pay extra for with other consoles. Like custom voice processing by Omnia™ that lets you 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. (There's even a secret "Big Balls" setting that makes wimpy interns sound like John Leader. A fifth of Chivas to the first guy who finds it.)

Push my buttons • You can program these custom button panels with any macro you want, from recorder start/stop to one-touch activation of complex routing switches and scene changes using PathfinderPC™ software. You can probably even program one to start the coffee machine (black, no sugar, thank you).

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.

AXIA
A TELOS COMPANY

www.AxiaAudio.com

HD-R Grows, Competitors Multiply

by Leslie Stimson

A year ago at this show, there was no alliance, few stations were multicasting and HD Radio receivers were available in only one category: aftermarket auto. Retailers like Amazon and RadioShack were not yet selling IBOC radios.

Now dozens of HD Radios are available, several of them for below $199, and prices could drop farther by year-end, proponents say.

Approximately 1,000 stations are on the air with a digital signal and more than 378 are multicasting.

Sangean has two multicast-capable HD Radio products coming out this winter. A Sangean HD Radio component tuner is one of three HD-R receivers available for $99 from Ibiquity through its special broadcaster promotion program.

Photos by Leslie Stimson

RadioShack's Accurian tabletop radios were slated to be available in October.

Yet some things remain the same: proponents aim for more, and even less expensive, radios to convince more consumers to buy; stronger sales would persuade more automakers to install the radios.

Broadcasters still are being encouraged by proponents to promote their digital service, and now have more tools thanks to the alliance.

At same time, radio faces more competition as other technologies for delivering entertainment vie for space alongside radio in the dashboard and the cell phone.

These were among the topics of interest in digital radio at the NAB Radio Show.

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STATIONS CAN BUY PROMOTIONAL HD-R RECEIVERS AT COST

To help stations promote HD Radio, Ibiquity Digital has a special receiver price program for broadcasters. Ibiquity is having three radios manufactured — a car converter, tabletop and home tuner — for as low as $99 plus $14 shipping and handling per unit.

All of the units will be multicast capable.

Struble told Radio World that if the radios were sold at retail, their price would be $200 to $300 each.

"We're doing this at cost ... what we can buy it for from the manufacturers."

Ibiquity Digital President/CEO Robert Struble said the radios would be ready to ship to broadcasters in November, allowing the units to be used as giveaways in the holiday season. Broadcasters can sign up for the receiver program at *www.ibiquity.com.*

South Korean-based Kiryung Electronics is manufacturing the car converter and tabletop radio for Directed Electronics, which also offers several devices for Sirius Satellite Radio. Directed also recently acquired Polk Audio.

Sangean is manufacturing the home tuner.

The car connect adapter requires consists of a "hideaway box" that connects to the car's in-dash receiver using an RF cable, or an auxiliary audio input if there's one available. The unit has a small controller that can attach to the dash or lay on a flat surface in the car. The product will list for $199.

The tabletop radio is a 120V unit with

State of HD

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that by the end of the year. RadioShack expects to release its own branded HD Radio this year for $199 and Tivoli projects coming out with its first HD Radio in 2007, he said. Tweeter is running Sunday newspaper inserts touting HD Radio and the alliance is helping to fund that.

Ibiquity also announced a receiver deal for broadcasters (see story above).

"We're moving at a pretty good speed from Detroit standards," said Ferarra. He acknowledged the long lead time involved after an automaker commits to including an HD Radio in the car. "Even if they fast-track it and everything goes perfectly, it's 18 to 24 months until the consumer sees it."

Hours before the Dallas session, XM Satellite Radio Chairman Gary Parsons told a financial conference in New York that IBOC proponents have a real struggle on their hands because there's no way for terrestrial radio to compensate automakers for including HD Radios in their vehicles.

Referencing this in a general sense, an attendee asked Ferarra whether the big three U.S. automakers are as committed to installing IBOC radios in cars as BMW is. Ferarra said he thinks "the financial woes of those companies are exacerbating the challenge" but doesn't believe it's "insurmountable."

Struble said the "tipping point" for HD Radio likely will be in 2009 or 2010.

"The time will come that receiver manufacturers will make all HD Radios. Whether that's two to three years out, it's hard to tell," said Struble. But he cautioned that the conversion "is not an overnight thing. There's a billion radios in this country. The average family has eight or nine radios. If Peter's alliance stops next week, we won't sell HD Radios.

"This is an extended battle," he said, estimating that it could be at 2012 or 2013 before 100 million HD Radios are sold, for roughly 50 percent market penetration.

Nine OEMs have committed to manufacturing a total of nearly 50 HD-R auto receivers, he said.

Struble said the HD-R car converters due out this fall are a way to bridge the gap and get HD-R in cars now. The converters, Struble said, will attach with Velcro onto the dash and allow consumers to experience digital radio without ripping up their dashboard.

Ferrara said the devices are similar to the old FM car converters. "As a sales rep in Washington I remember spending my weekends hooking up FM converters so people could hear the station I worked for," he said.

More than 500 regional consumer electronics stores have begun stocking HD Radios since the alliance was started in January, said Ferarra.

He acknowledged more needs to be done, saying the group would like to get Best Buy and Circuit City to stock the radios. He's made several trips to the Minneapolis and Richmond headquarters of those companies on that quest. "We need to agree on price," he said.

The story is the same with Wal-Mart; the price of HD Radios had to come down before that retailer would be interested, he said.

Struble and Ferarra urged stations to talk up HD Radio at every opportunity, on-air and face-to-face with their local automakers and retailers. They also passed out a booklet with suggested promotion tips.

Show

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two detached speakers. External AM and FM antennas are provided. The radio will list for just under $250.

The component tuner connects to existing home audio system via line-level aux input. External AM and FM antennas provided. The product will list for $299.

REHR URGES ADOPTION, EMPHASIZES SMALL MARKETS

In a speech opening the show, NAB President/CEO David Rehr called for all broadcasters, including small-market stations, to work to speed the adoption of HD Radio receivers into the marketplace.

Why is digital radio important for small markets? Lenders, he said, need to know that station management is staying current.

"If your lender believes we are in a dinosaur business, the next time you seek financial assistance — it will cost you more to obtain — or you might not get it," said Rehr.

Rehr called on the FCC to act on the permanent authorization for IBOC, especially AM nighttime and multicasting authority. Of multicasting, he said: "Those who manufacture HD Radios don't consider it an experiment. Broadcasters don't consider it an experiment. And the FCC should no longer consider it an experiment."

ADELSTEIN: RULES 'HOPEFULLY IMMINENT'

Speaking of final IBOC rules, Commissioner Jonathan Adelstein told attendees at the FCC Breakfast that discussions about public interest obligations for the HD2 channels are still holding up the agency's final authorization for multicasting.

He said much the same thing a year ago at the convention, although the makeup of the commission has changed in that time.

Asked by moderator NAB Joint Board Chair Bruce Reese, who is president and CEO of Bonneville, when broadcasters could expect to see final rules, Adelstein said, "Hopefully, it's imminent. HD Radio moving forward is critical. We need to give radio the tools to compete with the diversity you see on satellite radio."

Determining the public interest obligations for digital radio "is somewhat tricky. As new opportunities come up we want to make sure public interested are protected on the digital streams as well as on the existing streams," said Adelstein. "It's been out there for awhile that there will be an NPRM," a Notice of Proposed Rulemaking.

New Commissioner Robert McDowell said, "I get impatient about how slowly the commission acts. Perhaps an NPRM is the way to go," although he said there are still discussions on that point.

He suggested that perhaps, as with something as "nascent" as HD Radio, "I think we can defer" a public interest obligation discussion.

"It may be that it flourishes on its own without a government mandate, but I'm happy to look at something further."

Reese quipped, "I haven't talked to anybody in the business who thought we didn't have to pay attention to public service obligations … Maybe we should stop until we're told we have to" by the commission. That drew a big laugh from the audience.

NO KIND OF SPOTS ALLOWED ON HD2

During the breakfast, an attorney who represents noncom stations asked whether it's okay to air underwriting announcements on the multicast channels. "I get calls from people who think HD Radio is restricted because the rules aren't out," he said.

Airing regular ads is not permitted as a condition of the experimental authorization under which these channels are now granted.

Audio Division Bureau Chief Peter Doyle, sitting in the audience, said normally underwriting announcements wouldn't be allowed under experimental authorization either, although he said right now, "There's no commission pushback on underwriting for second channels." It's in the rules, but the commission isn't enforcing that, he said.

"We'll clarify" what is allowed and what is not, in the rules, he said.

PUBLIC INTEREST?

What kind of public interest questions regarding multicast channels might the FCC discuss?

A source close to the issue told Radio World the dialogue could include questions about whether obligations attach to every bit stream, whether subscription services should be allowed and if so, to what extent. This source characterized discussions as "amorphous."

Ibiquity President/CEO Robert Struble said he believes two items planned for approval by the commission are AM nighttime and multicasting. "Every indication we have is those things are not controversial and will be approved."

STRUBLE: SOME ON-AIR DIGITAL A CONCERN

Struble cautioned attendees to pay attention to the technical quality of their main digital and supplemental channels. In some cases, he told a programming session, on-air performance on their digital channels "is becoming concerning."

Stations need to time-align the analog and the digital, he said. "If you don't, the consumer experience will be bad." Time alignment is needed to make the blend between the digital and analog signals in the receiver "seamless" to the listener.

Keying in on HD2 channels, Struble said in some cases, station employees are

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Show

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not maintaining the attention to quality on supplemental channels as they do with the main.

"They go up. They go down. There've been a few reviews that say, 'I like HD Radio but it's not always there.' That will kill us. We'd rather have you not be on the air than go on the air with an inferior product."

CONTINENTAL LENSA TO BUILD, SELL HD-R AM, FM EXCITERS

A fifth company is now making HD Radio exciters.

Continental Lensa has signed an Ibiquity license to manufacture and market HD Radio exciters for AM and FM broadcasters; the company is also the first outside of North America to make IBOC transmission gear.

Continental Lensa President Marcos Caballero told Radio World he expects an HD Radio product line to be available in 2007.

The company has been talking to Ibiquity about making an exciter since 2003 and demoed its first HD Radio system the next year, he said.

Continental Lensa is based in Santiago, Chile and has a factory in Sao Paulo, Brazil. It hopes to sell HD Radio exciters to customers in that country, as well as elsewhere in South America. Caballero cited Chile, Ecuador, Paraguay and Mexico as sales targets.

Caballero and Struble said Brazil has an organization akin to the alliance. That group plans to help 100 stations go on the air with HD Radio within six months. Struble said 20 IBOC stations are on in that country. The country has the world's seventh-largest population, according to various sources.

Ibiquity Business Vice President, Broadcast Business Development Scott Stull said the news of another exciter supplier would attract more receiver and car manufacturers, as well as more RF manufacturers, as HD Radio spreads beyond a U.S-based platform.

Elsewhere, HD Radio "has been pegged as the digital radio standard in Nigeria," said Struble. Testing is taking place in France, Switzerland, Poland, the Ukraine and the Philippines. Stations are going on-air with HD Radio in Mexico; and Canada, which has some Eureka-147 stations, is reviewing other digital systems, including IBOC, he said.

HOW WILL WIMAX, iPODS AFFECT ROLLOUT?

What could stall the HD-R rollout?

According to a study from Bridge Ratings, Internet radio and other wireless technologies have the potential to challenge the rise of HD Radio in the car, especially among early adopters.

"Internet radio will greatly benefit from pervasive WiMax or Wide-Area Wireless Access, which will bring Internet Radio to portable devices, including car radios by 2008," states Bridge.

RW asked Struble about competition from Internet radio, WiMax and iPods.

Regarding iPods he said, "That's much more of an issue for radio itself, not necessarily for HD Radio. I think it's very significant that iPod is going to be in lots of cars and people are going to have 10,000 tracks in their trunk. That's more competition for broadcasters, but I would argue that's an additional motivation to more quickly adopt HD Radio because you need the digital technology to compete" with that.

Regarding WiMax, he cited threats from DVB-H, Zune and MediaFLO, a system that delivers multimedia to cell phones, and predicted that digital competition that radio sees for its listeners will only increase, not decrease.

"Whether its WiMax or any of these new technologies, they're all gunning for a very, very successful business, which is out-of-home information and entertainment.

"Our view continues to be: Radio has a fabulous position which it has built up over decades, but to believe that they can maintain that position using analog technology — that's not going to be possible. You've got to upgrade to be able to compete."

STATIONS CONFUSE LISTENERS

Programmer Mark Kassof posted an HD Radio "Yellow Alert" on his Web site in response to his recent survey about consumer confusion regarding the technology.

In May, his company found a lack of familiarity with HD-R. Now, "we find that 5 percent of all 18–64s think they're listening to HD; but they can't be because they haven't purchased an HD-capable radio."

Kassof, president of Mark Kassof & Co., believes stations that have converted and are running on-air promos for IBOC are causing confusion because they're not explaining to listeners that they need a new radio to hear the digital.

And misinformed listeners are not impressed with what they think is HD Radio. "Nearly half (46 percent) tell us it is 'about the same' as regular FM."

The situation can be turned around if stations start communicating what HD Radio is, its benefits and how to get it, he said. The findings are based on 752 telephone interviews completed just before the NAB Radio Show.

photo credit: HoldThatNote.com

Studio Sessions

Product Guide Inside

Radio World — Resource for Radio On-Air, Production and Recording — October 25, 2006

PRODUCT EVALUATION

Barix Enables Real-Time Audio Over IP

Instreamer Converts Digital, Analog to MP3 Stream; Exstreamer Converts MP3 To Digital, Analog

by Mark Greenhouse

In the technology department, my home is generously appointed. It's an electronic entertainment playground made possible by a mishmash of convoluted controls, tangles of wires and a half-dozen or so button-heavy oblique devices that require rote memorization. Cables are everywhere — some hidden, some bundled, most just a knotty mass stuffed behind my furniture or bulging noticeably beneath my rugs.

At my house, one does not simply sit down and turn on the TV.

Barix AG of Zurich, Switzerland addresses this familiar scenario in a miniscule, elegant way with its Instreamer-100 and Exstreamer-100 audio encoding products. These devices are based on TCP/IP (Internet protocol) and include an Ethernet connection to communicate over local networks and Internet with the ability to be managed by a standard Web browser.

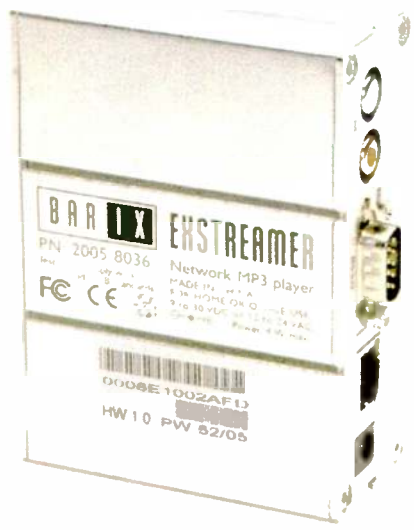
Useful in both point-to-point applications at a single plant, and point-to-multipoint needs of a chain of facilities, the Barix Instreamer and Exstreamer hardware platforms "offer a reliable way of distributing real-time and on-demand audio over standard IP network infrastructures for a variety of audio applications," claims Johannes Rietschel, CEO of Barix.

Distributed

With these streaming components, audio can be distributed as easily between rooms in a building as between buildings across international borders and oceans.

Using embedded stand-alone technology, the Instreamer-100 replaces a Mac, PC and audio encoding software. After converting analog and digital audio from sources such as tape players, tuners, digital disc players, turntables, audio preamps and computer audio into a mono or stereo MP3 stream, this data is then inserted into a network that is neatly distributed via Ethernet Cat-5 cables.

Instreamer-100



Exstreamer-100

If you have a new building, these Ethernet wires are likely to be already run through the walls to each room of your facility. In existing buildings, these devices can be introduced at convenient points of an established network. The Instreamer has an integrated livestream Web server that acts like an Internet radio server and can serve streams by standard HTTP.

Audio equipment connection to the Instreamer is made simple by its providing stereo female RCA jacks for analog gear, and S/PDIF coax and optical connectors for digital equipment. It also can communicate with additional audio devices via onboard serial and IR ports. Supported bit rates are 32 kbps to 192 kbps with sample rates from 16 kHz to 48 kHz. The Instreamer is not vulnerable to viruses, worms or network dropouts that can plague encoding computers.

When many destinations are required, a "switch," or network router, (inexpensive and easily available, just like the one you would use in your home) is the point of entry onto the network. I also can access each of the audio streams via the RS-232 serial ports located on the device.

If only one audio destination is required, the switch can be bypassed and a Cat-5 cable is used from the output of the Instreamer to a computer destination. The receiving computer would then simply launch an MP3 player such as Winamp or Windows Media Player, and the audio can be directed to speakers.

One Barix Instreamer is capable of providing up to six simultaneous http MP3 streams. If more than six streams are required, one method of increasing the number of listeners is to incorporate the free, downloadable SHOUTcast and Icecast servers, both supported by an Instreamer sporting firmware version 1.14 or newer.

You can predetermine the IP address or allow the Instreamer to detect one for you; it has a headphone jack on the front panel that examines the switch and announces an available address in a firm, friendly female voice. Write it down, type it into the address bar of your browser, and a network configuration page pops up with a few simple fields to fill.

For live broadcasting, the Instreamer eliminates the need for a computer. The audio can be streamed out directly to the Internet via a network router, and is

See BARIX, page 35 ▶

Product Capsule:

Barix Instreamer and Exstreamer Audio Decoding Units

Thumbs Up

- ✓ Easy installation
- ✓ Replaces expensive satellite dishes and leased dedicated lines (such as ISDNs require)
- ✓ Reliable; impervious to viruses, worms and network dropout
- ✓ Centralized management and monitoring

Thumbs Down

- ✓ Maximum of six simultaneous http MP3 streams per Instreamer

PRICE: Instreamer, $395; Exstreamer (amplified), $395

CONTACT: *Barix Technology Inc. in Minnesota at (866) 815-0866 or visit* www.barix.com

PRODUCT EVALUATION

ATH-PRO700 SV: 'Built for Muscle'

by Doug McLeod

Let's face it, some headphones are built like Rocky and some like Tiny Tim. Trouble is, while Rocky might have had the muscle, nobody ever accused him of an excess of refinement. And Tiny Tim might be able to warble those high-frequency notes but can he take the hard-knock life of a radio studio? I doubt it.

The challenge, then, is to find a set of "cans" that can thrive through the inevitable abuse of daily radio station and remote use and still deliver a decent sound.

Audio-Technica's ATH-PRO700 SV Headphones

Audio-Technica has a solid, if not world-class, performer in the ATH-PRO700. Originally designed for club DJs, these 'phones can do a lot of audio heavy lifting. They can take a lot of volume and will undoubtedly survive far better than the human ear when they do. The box even carries a warning: "Do not use while driving; avoid extended play at very high volume."

They're not kidding, either.

Bring the noise

The ATH-PRO700 SV is designed to be a listening world of its own. The circumaural design envelops the ears and is effective at keeping away ambient sound. A set of high-powered 53 mm neodymium drivers, coupled with the unit's 3,500 milliwatt maximum input capacity, means a lot of sound can pass through these headphones. A broad frequency response range of 5–33,000 Hz means these headphones have the juice to handle just about any level and type of audio you may care to run through them.

In fact, they handle so much so effortlessly that some might be tempted to crank the PRO700s up way too loud, which is extremely detrimental to the hearing — hence the warning on the box.

Audio-Technica has provided the PRO700 with the obligatory set of club DJ features: folding for storage, one-sided exit for its coiled cable and rotating earpieces for one-ear monitoring and cuing. The 1/8-inch plug screws into a 1/4-inch adaptor. The cable is wound of oxygen-free copper (OFC) and should outlast most of the DJs who will use it. A vinyl carrying case is included.

How much can the PRO700s handle? I'm afraid to find out. I gave them a good workout, though, and variety was a key ingredient in my testing.

I began with a Phoenix-area band called Undertoe. These three old rockers play nothing but high-energy instrumentals, sort of Dick Dale and the Deltones on triple espresso. Their soaring guitar sound can probably shatter glass. Their album "Real Men Don't Sing" contains some searing, screaming high-register work by lead guitarist Dan Gallagher. Some smaller studio speakers don't like that sound with any kind of volume, but those riffs fairly smoked in the PRO700s. They also let the driving bass punch through.

Most of all, it was a comfortable listen. I paid attention to the volume, of course, but there was none of the fatigue that some headphones produce as a by-product of rock and roll.

Because life is not all rock and roll, I tried out the PRO700s on other distinctive music and here the only shortcoming — a subjective one — appeared. These headphones are built for muscle, not finesse. You may not find the richness you expect from some recordings that will be better heard with higher-end headphones.

I listened to Irish flutist James Galway playing with The Chieftains on the sentimental Scots stalwart, "Over The Sea To Sky." It's a lament that is guaranteed to start any good Highlander weeping into his Talisker but more important, it provides a broad outing for a set of headphones.

On this cut, those big drivers dealt nicely with the thump and bang of a variety of unusual Gaelic instruments such as Uilleann pipes, tiompan and bohdran, but I didn't get the haunting "feel" of Galway's poetic flute. It was not so much the lack of high-end reproduction as the way the PRO700s didn't let the music "breathe."

Some headphones reproduce so exactly that all of a player's shadings as well as the depth induced by artful reverb make a piece of music a breathless listening experience. I didn't get that sensation with this music on the PRO700s.

Immersive in noise

I gave the headset a crack at classical music, too. Considering that the target market for these headphones is radio DJs and club jocks, I may thus be the only person in the history of headphones who will ever listen to classical with these particular cans.

The PRO700s performed much the same as with the Galway piece. They handled any level of material cleanly, including the quieter passages, and were unchallenged by sudden changes in volume. Strings came through uncolored but the rich ensemble playing of a full symphony orchestra never had that near-concert-hall presence that some headphones provide.

After that potpourri of musical tests, the human voice is a walk in the park for the PRO700s. These headphones can handle any type of speech at any level of volume without breathing hard. Nothing I threw at them created the slightest issue.

The PRO700s were meant for loud music and speech. They were designed for immersive listening in noisy environments and for that, I would recommend them without hesitation. As far as the more challenging types of music, there's a significant price difference between the headphones that excel in that environment and the husky yet comfortable PRO700s.

Although the U.S. MSRP is $279, I found prices as low as $169 on the Internet. At that price point, they're a terrific buy. Just watch the temptation to crank up the volume because these babies can handle it far better than your ears can.

Doug McLeod is a longtime major league play-by-play announcer. He also voices local, regional and national commercials from his studio in Scottsdale, Ariz.

It was a comfortable listen. I paid attention to the volume, of course, but there was none of the fatigue that some headphones produce as a by-product of rock and roll.

Product Capsule:
Audio-Technica ATH-PRO700 SV Headphones

Thumbs Up

- ✓ Excellent isolation for immersive listening
- ✓ Circumaural design surprisingly comfortable
- ✓ Handles a lot of volume effortlessly
- ✓ Should handle rigors of club and studio wear
- ✓ Excellent value

Thumbs Down

- ✓ Doesn't provide full, rich depth of audiophile headphones

PRICE: MSRP $279

CONTACT: *Audio-Technica in Ohio at (330) 686-2600 or visit* www.audio-technica.com.

Barix

▶ Continued from page 33

configurable through a local or remote Web interface. This allows businesses to avoid substantial costs incurred using satellite or leased-line (ISDN) technologies.

Listen

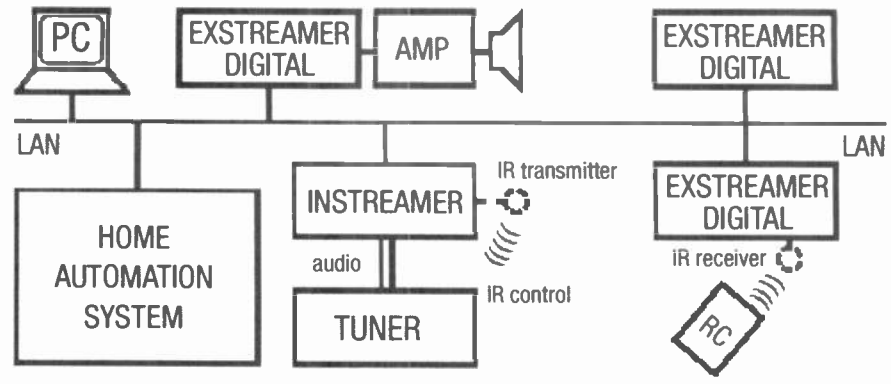
Okay, I've got the audio converted to data and transferred to the Cat-5 cable and onto the network; now how do I get to hear the music in my house? Barix's Exstreamer-100 finishes the journey.

This device is an intelligent network-based audio decoder that pulls digital audio (via that Cat-5 cable coming out of the Instreamer) from an IP network and converts it to analog audio — the box usefully proffering familiar stereo RCA female jacks and S/PDIF coax and optical digital connectors onboard the box. Hook up one Exstreamer to each pair of powered speakers and you're done.

Do you have ceiling and soffitt-mounted speakers that aren't self-powered? The Extreamer-100 version includes two 20-watt amplifiers in each unit to power them.

The Barix Exstreamer can be operated with an infrared (IR) remote control by utilizing the Barix IR Remote. The IR Remote lets IR commands be sent through your local network for home automation and control purposes. It is an Ethernet gateway that also offers IR output capability, allowing transmission of IR commands to IR controllable devices. With this embeddable IR Remote technology, it becomes possible to Web-enable almost any IR remote-controlled product, as well as many devices that allow management via serial control interfaces.

The IR Remote supports all common IR frequencies and codes as well as baseband (demodulated) transmission and reception (mainly for embedded or SONY S-Link/Control A1 II applications), and it transmits and receives all codes. Interfacing with home control software is easy through UDP, TCP, cgi and web-based Ethernet interfaces.



Block diagram showing how the Instreamer and Exstreamer work.

Mark Greenhouse is a broadcast/recording technician with National Public Radio in Washington. Reach him at mark@markgreenhouse.com.

PRODUCT GUIDE

Evolutions: Studios Operate Solo, Yet Share Resources

Wheatstone describes the combination of its E-6 Surface, E-series Studio Satellite and E-series Network Switch as a cost-effective networked audio system, which the company has dubbed the Evolutions Series.

Wheatstone E-Series Control Surface

Studios can operate independently but share resources and mixes through the E-series Network Switch, without traffic limitations, audio latency or machine control delays, the company says.

The E-6 Surface features event recall, both bus-minus and mix-minus and four aux mixers, all of which have dedicated talkback systems. The E-6 also has four monitor outputs and standard EQ, dynamics, panning and mic processing, simultaneously, on each channel. It supports multiple arrays of programmable input channel and master panel switches for functions such as phone, intercom, salvos or machine commands.

The E-6 drives a VGA screen directly, providing real-time graphic displays, production tools and setup screens. Security is protected by multilevel pass codes.

For more information, contact Wheatstone in North Carolina at (252) 638-7000 or visit www.wheatstone.com.

PRODUCT EVALUATION

Magix Offers 'Surprising' Audio Software

Audio Cleaning Lab 11 Fits Audio Import, Cleaning, Organizing Into a $40 Package

by Ken R.

I admit that I am an audio restoration snob.

For 10 years I've used CEDAR noise reduction and de-click modules as part of my SADiE hardware/software system. Many professionals consider these to be the best British imports since the Beatles, and I probably spent $20,000 on the initial gear and upgrades over the years.

When I was assigned to write a review of a $40 German software package that claims to restore old vinyl records and tapes, I had low expectations. This would be like comparing Pamela Anderson to a small reptile. Well, let me apologize at this time to Magix for greatly underestimating its Audio Cleaning Lab 11. While not without its faults, this is an amazing starter product that handles many tasks well.

Full disclosure: Part of the cost of SADiE/CEDAR is the turnkey high-performance PC needed to run it. Magix Audio Cleaning Lab 11 is software-only.

'Ambitious' audio restoration

When I installed the Magix software on my PC from the CD-ROM, the process was automatic and took only a few minutes. I read a bit of the on-screen tutorial and watched two demonstration videos that were included and decided to dive in.

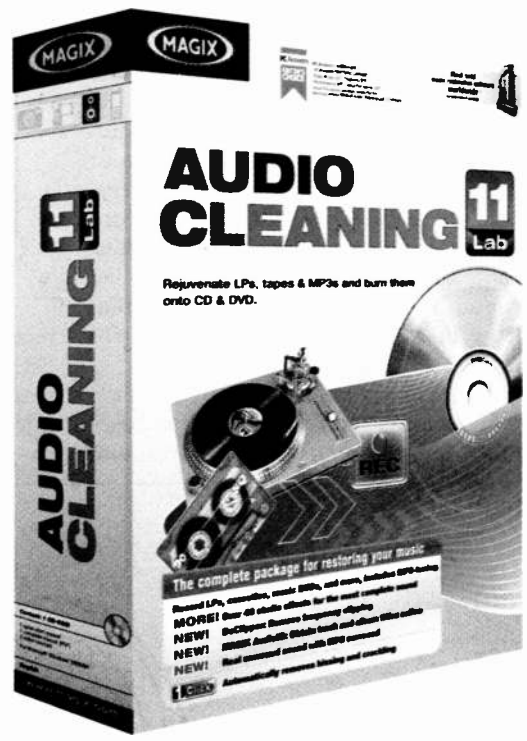
Previously I had prepared a CD containing five pieces of the worst test audio I could find, including hopelessly scratchy records, hissy jingle tapes and even a hunk of audio that was badly overmodulated. Bring it on, Magix.

The Magix software divides each project into three steps: 1) importing audio, 2) cleaning and organizing and 3) burning the new version to CD or DVD.

Audio Cleaning Lab 11 allows simple audio importation from CD or from any analog source. The user can choose to process the entire project at once or work on individual sections by clicking Object FX, which is what I chose.

Taking this action rolls down a clever menu, which on the left side features restoration modules for de-clicking pops and spikes, de-crackling vinyl background noise and de-noising or de-hissing tapes. Each offers a factory pre-set or a horizontal fader for manual tweaking. This side of the menu also allowed me to play with the speed of a song, or to change the length without affecting the speed.

The right side of the drop-down menu has mastering tools that include stereo separation, equalization, compression and even reverb. There are simple editing and track re-ordering functions, the ability to use compatible plug-ins and even surround sound capability — pretty ambitious for a little $40 package.



But does it work?

My first challenge was to remove scratches from a record album. The de-click and de-crackle sliders did the job in real time and did it well, without creating annoying artifacts common in many budget audio restoration packages.

Next I tackled some jingles with heavy hiss between the cuts. By fiddling with the de-hiss and de-noise faders in various combinations I was able to make an enormous improvement in the sound with a minimum of disruption of the underlying audio.

My attempt to remove overmodulation distortion was somewhat less successful, but it still helped. Overall, the quality of these cleaning modules was good.

When I poked around a bit more, I found de-essing controls; a "brilliance" knob, which helps put back lost harmonic frequencies; and a way to add track title information for CD burning. One of the most helpful and intuitive tools is the normalizer. I right-clicked on a section of my project, left-clicked this function and instantly that piece of audio was level-maximized for mastering.

Magix Audio Cleaning Lab 11 omits some elegant features found in high-end systems such as Pro Tools and SADiE. For example, I found a limited choice of reverb styles here, but by right-clicking, I could edit these to come up with something a little more useable. The Soundcloner feature allowed me to import spatial reverb characteristics from one file to another. Again, rather sophisticated for a low-cost package.

Some of the mousing is klugey. It would be nice if the cursor changed functions when placed over different areas of the screen. The manual suggests that the user save all processing instructions within a project before burning to CD so the software doesn't have to perform them all at once. Some of the processes are destructive, meaning once a choice is made, one is stuck with it unless the original audio segment is reloaded and spliced in.

I never found the "undo" function, but later learned that it is accessed by hitting "control/x." This would have saved me a lot of teeth-gnashing — probably my fault for spending insufficient manual time.

Am I ready to give up my SADiE? Not quite. But if I were a young production guy or girl starting out on a budget, I would grab this software with both hands.

Magix makes other audio products including Samplitude V8 Professional ($1,099) and Sequoia V8 ($3,000) for the more demanding user. Also check out the company's other packages for playing and archiving music, editing movies and arranging pictures.

Ken R. is a former DJ and TV director who, as a public service, stays away from all broadcast facilities. Contact him at ken@kenr.com.

Product Capsule: Magix Audio Cleaning Lab 11

Thumbs Up

- ✓ Tons of features
- ✓ 'All-in-one' package for importing audio, repairing and arranging it and mastering a CD
- ✓ Surprising array of restoration tools not found in most editing packages
- ✓ Low cost

Thumbs Down

- ✓ Not as flexible as high-priced systems in its parameters and options
- ✓ Operation clunky and non-intuitive in some sections, though 'one-click' options help
- ✓ Some features not top-of-the-line

PRICE: $40

CONTACT: *Magix Entertainment Corp. in Miami at (305) 642-6300 or visit* www.magix.com.

PRODUCT GUIDE

OneConnect Links Nautel Transmitters to GSC3000

Burk Technology and Nautel say the Burk OneConnect for Nautel V5 and V10 transmitters is shipping, and all backorders have been released.

The OneConnect lets broadcasters connect the V5 or V10 directly to the Burk GSC3000 broadcast facility remote control system and gain access to remote control parameters without external parallel wiring or additional wiring interfaces and command relay units.

Burk OneConnect

OneConnect offers a user interface for monitoring and controlling the transmitter from a PC. The GSC3000's Lynx 5 software has meters, controls and indicators for each remote control channel monitored by OneConnect. The company says configuration is not necessary, as labels, calibration and screen properties are prepackaged and ready to use. Users also can edit the user interface or create new monitoring and control screens using the software's Custom Views feature.

V5/V10 monitoring and control features include individual management of power modules, individual fan speed and internal temperature monitoring, DC current and voltage monitoring, IPA module RF metering, and management of power meters, alarms and power level presets.

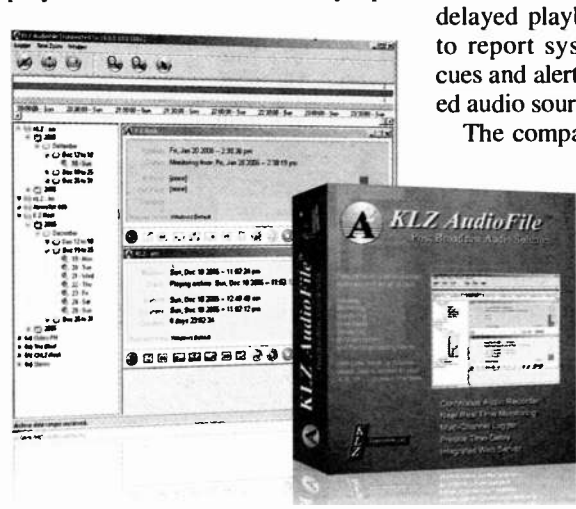
For more information, contact Burk Technology in Massachusetts at (800) 255-8090 or visit www.burk.com.

AudioFile Has Three Modes of Operation

The AudioFile system from KLZ Innovations consists of three primary programs: Server, Player and Monitor.

The AudioFile Server continually records multiple audio sources, which can be played independently at a specific delay. Audio is recorded in linear PCM format at 48 kHz sampling and automatically archived as MP3 audio. When equipped with an I/O interface, delays also can be applied to GPIs to accommodate automatic local insertions or alternate program material.

AudioFile Player works in three modes: Monitor, Skim and Archive. The Player can be installed on computers with LAN, WAN or Internet access to the server. Multiple players can be simultaneously opened without affecting the recorder or the time delayed playback. AudioFile Monitor serves to report system status continually. Visual cues and alerts display concerns with connected audio sources.



The company says the Player and Monitor operate at a lower priority. If too many users access an AudioFile Server concurrently, they may hear audio dropouts due to bandwidth limitations. These dropouts are not part of the audio being recorded or delayed audio playback.

Contact KLZ Innovations in Canada at (800) 334-9640 or visit www.klz.com.

Broadcast Software

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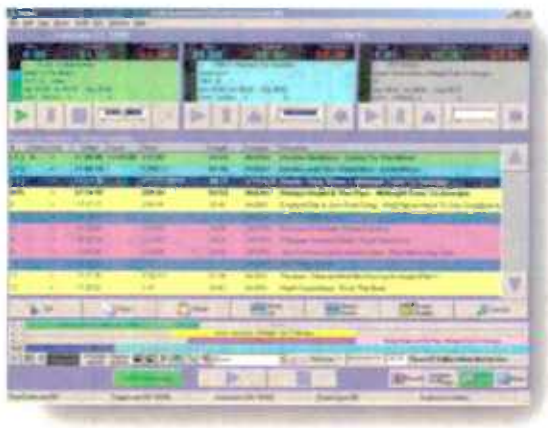
Radio Automation



Simian - radio automation and digital playout system.

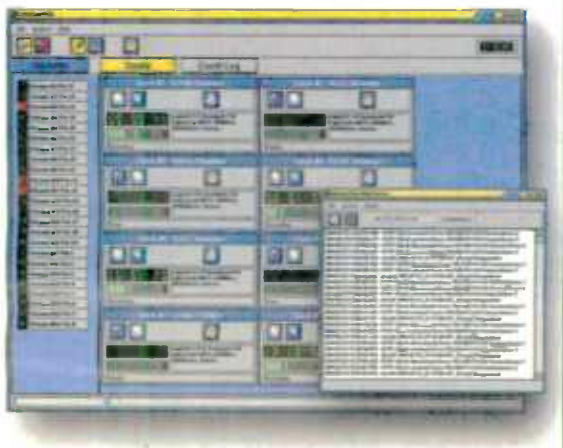
Instant Audio

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

Digital Cart Player

WaveCart - the original on-screen cart machine replacement.

Audio Logging

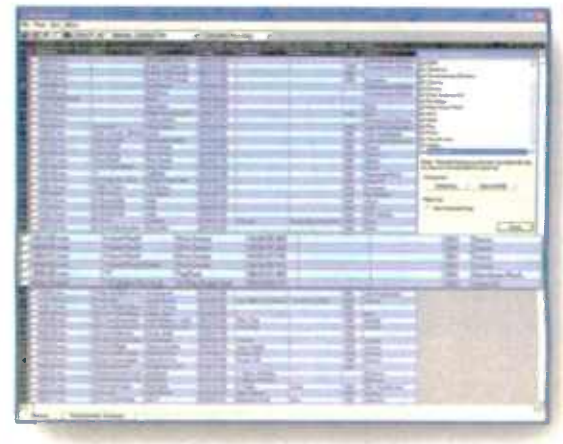


SkimmerPlus - skimming and audio logging with web playback.

Complete Systems

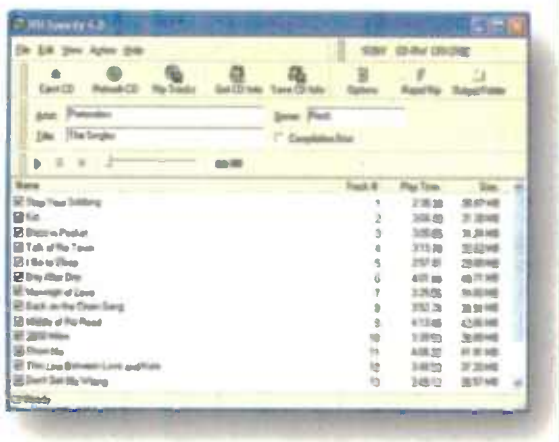
Systems - fully configured with hardware, software and music.

Music Library



MusicStore - select from over 48,000 ready-to-play songs.

CD Ripping



Speedy - fast CD ripping with automatic file tagging.

Sound Cards

AudioScience - professional sound cards built for broadcast.

Remote Control

Trigger & Relay Kits - for GPI/O and satellite operation.

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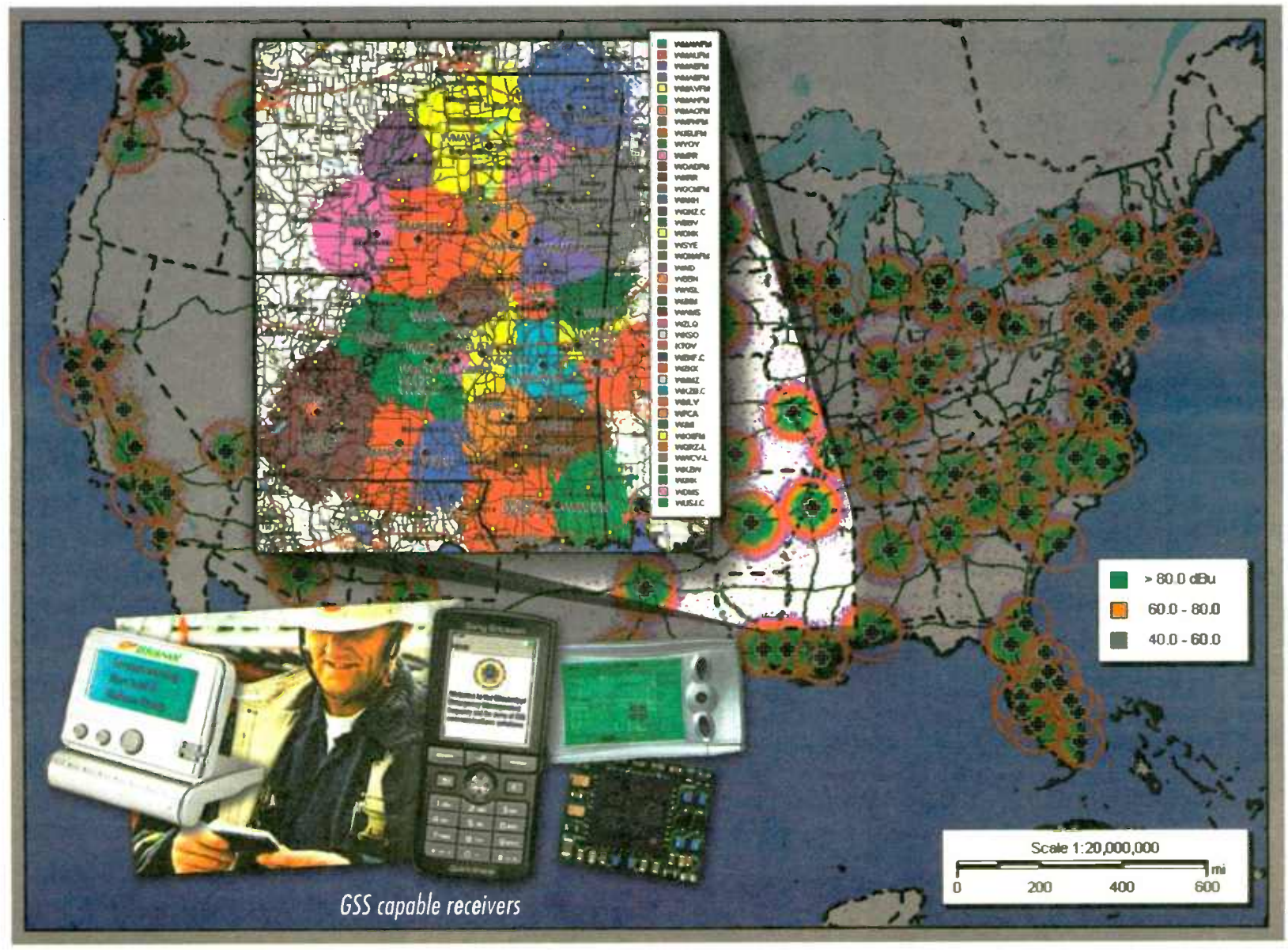

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USER REPORT

BE Accommodates Complex Infrastructure

Stations Like AVNet, Integrated CD Ripper, AVScheduler Features of AudioVault, VaultXpress

by Gene Kuntz
Operations Manager
WITZ(AM-FM)
WQKZ(FM)

JASPER, Ind. WITZ(AM-FM) is a live simulcast station that splits for Rush Limbaugh on the AM Monday through Friday. WITZ(FM) is a live operation that used music on hard-drive overnight. During the day we were playing commercials on cart and music on CD players. WQKZ(FM) is automated using Jones CD Country format. We also carry St. Louis Cardinals baseball, which we automate. We had an outdated automation system that no longer had tech support and we badly needed an upgrade.

WITZ and WQKZ started installation of our VaultXpress system from **Broadcast Electronics** in January of 2006. We have three AVAir machines and two AVProd machines that are networked together. Before we chose an automation system I did a lot of research. Our station infrastructure is complex and we do a lot of different things.

Synchronicity

I wanted an automation system that had great tech support; that would integrate with DeltaFlex logging and billing software, which we already had in place; and that also would work with MusicMaster music scheduling software, which we were going to start using with our new automation system. Backup also was important. I wanted everything we dubbed into the system to be on every hard drive. The AVNFServer feature automatically synchronizes audio cuts to each workstation.

It also was important to me to have Broadcast Electronics quote the entire system with Dell Computers pre-loaded with AudioVault software for a complete package. That way if we had problems we only had to deal with AudioVault and not with our computer supplier too.

Our morning and afternoon show hosts on WITZ have to do a lot of taping of network feeds, which air at various times. I needed a system that could capture these feeds automatically and drop them into files for on-air playback when needed. The AVNet feature of VaultXpress allows us to do this.

AVScheduler allows us to import and compile music and traffic logs, and export as-played logs for reconciliation. If we need to add commercials to a log that has already been exported we can do that, re-export the log to AVAir and the new commercials show up and are ready to play.

The Integrated CD ripper provides MPEG support to rip songs and long-form programs into your AudioVault system. We had a lot of music already on hard drive from a previous system. All we had to do was import them to AudioVault, rename the files and all of our music was there.

VaultXpress allows us to run multiple cuts on a single cart. By utilizing specific start and stop dates for each cut we never play a cut that is out of date. This works well for commercial inventory. There are basically unlimited cut numbers that can be used. We set aside a specific series of numbers for things like PSAs, promos, liners, news and sports cuts so they can be found easily.

The tech support we receive from AudioVault is great. We are constantly fine-tuning the software to make it perform the way we want it to. We usually call and someone will call us back and work us through our problems. So far they have been able to make our AudioVault system do exactly what we want it to do.

Chris James, computer programmer and air personality on WITZ/WQKZ, uses the stations' AudioVault/VaultXpress system.

With AVAir we can display 15 different "tabs" for on-air use. The board operators can drag and drop from these categories into one of six cart decks on the AVAir machine for playback. We have even set up "hot keys" (F1 through F6) that start each deck from the keyboard. A mouse also can be used. Once your decks are loaded with music or commercials, you can start the first deck and have each of the following decks start automatically.

I needed a system that could capture these feeds automatically and drop them into files for on-air playback when needed.

AVAir can be used in automated or live-assist mode and can be toggled back and forth at the announcer's discretion. If someone calls in sick you can voice-track their shift, put it in automation mode and go on about your business. We haven't used this feature yet but I know it's there if I need to use it.

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

USER REPORT

NexGen Eases Podcasts, Forewarns of Failure

by Bill Cahill
Regional Vice President of Programming
Clear Channel Richmond

RICHMOND, Va. It's impressive to see a studio software system evolve into an all-encompassing product. **Prophet Systems**' NexGen was always great with voice tracking and outside market wan casting; added features have given more time back to us programmers and producers, and a cutting-edge product to our listeners and advertisers. Even more important, NexGen is expanding along with the expanded platforms we now offer.

NexGen is no longer just a digital radio studio. It's become the central hub for information, entertainment and commercial delivery to many platforms. In Richmond, Va., less than 50 percent of what NexGen now does for us is traditional "radio" broadcasting. It's no longer six radio stations and a network in Richmond. Now NexGen feeds 17 platforms, including six station streams, and four HD2 channels. We expect more platforms to develop in the next year with NexGen controlling them all.

Prophet's NexGen System

Features, functionality

NexGen also connects to our Web sites so listeners can not only hear our streaming audio, but view links or flash animation for our advertisers. NexGen prepares and exports podcasts to our site, and sends what songs we've played to our sites.

The system also facilitates one of the most requested features by our sales team, MP3s for clients. We right-click on any spot in the system and save it as an MP3, and then just e-mail it to a client. Or we can save it on a CD.

Not only can we create podcasts of our broadcasts for listeners, they can be scheduled for creation in advance. Several breaks can be linked together, subtracting out music segments or commercials automatically. Automatic leveling keeps all connected segments at the same volume. Having NewGen create podcasts is a real time-saver.

The main station and the streaming stations really interact now. We can set up NexGen so our streaming station automatically has the same number of stopsets as the main station each hour. The Block Fill feature works well. If you listen online you can't tell where the stream breaks away.

Plus you can do anything on the streaming station that you can on your main station. So, if you have a ball game that can't legally be streamed, you can run other programming instead on your streaming station. You can fill your online commercial breaks with spots or songs. The streaming capabilities of NexGen are advanced.

We can choose from many alerts and backups options. Many times we've had to delete a log, including the voice tracks, because the wrong commercial log was loaded, the commercials were accidentally double-loaded or we made some other mistake. Now we can make backups as we go along and restore them if a problem develops.

The voicetracks are named in such a way that they are easy to find, in case we need to rebuild a log. If we move a voicetrack, it turns yellow, warning us that we might now be introducing the wrong song.

There are many other safeguards. If a commercial is missing, I get an e-mail 90 minutes before the failure. If a program doesn't record properly in the digital reel-to-reel section of the program, I get an e-mail on that too. If there's dead air for any reason, I get a phone call.

NexGen continues to add alert options. You don't have to make use of all of them, but there is a growing list of notifications you can get by e-mail or phone call. Getting the alert *before* the problem develops on the air makes life a lot easier for many departments of the station.

One of the challenges with having multiple platforms is that we only have so many ears. The HD2 stations run beautifully, just like any other platform, with all the e-mail alerts and phone alerts in place in case we've loaded something wrong or any other issue comes up. We haven't had any dead air on our HD2 channels thanks to the easy set up and operation of NexGen.

Additionally, I have heard of several new features coming soon, and platforms like cell phone delivery of our audio and more features are on the way.

For more information, including pricing, contact Prophet Systems in Nebraska at (308) 284-3007 or visit www.prophet-sys.com.

USER REPORT

Bustos Installs Simian, Skimmer

by Felipe Chavez
Vice President of Technology
Bustos Media

SACRAMENTO, Calif. Bustos Media chose **BSI**'s Simian to be the standard automation system for its owned and operated properties, as well as the preferred choice for its 50+ affiliated stations.

Our relationship with BSI started several years ago when our company was in the early planning stages and a standardized automation platform was needed. Our goal was to research and find an affordable yet powerful and robust automation solution that could be deployed quickly. Some of our most critical installations have been completed in one week from the time we order to the time we installed.

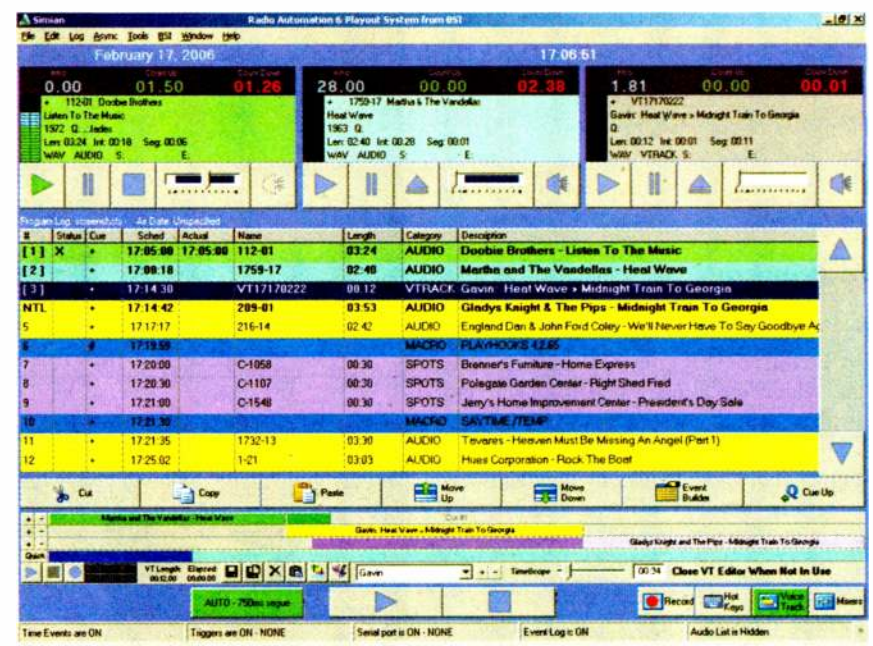
We have approximately 150 workstations using BSI automation and production software. The fact that none of the hardware is proprietary has been helpful when things don't go as planned; sometimes a trip to the computer store is all we need to keep our stations on the air.

We recently installed the multichannel Skimmer Plus system in each of our markets, which allows us to go back in time six months and listen to any minute of any date of any station using our browser.

Student feedback

I am a certified BSI Power User, having graduated one of BSI's regular training sessions held near the company's headquarters in Eugene, Ore

These were conceived as a weekend seminar covering "just the basics," but have evolved into week-long sessions with each new release adding features and advanced functionality. The software is consistently being developed; a new version is nearing completion now and will see public release soon.



Simian's program log details a track's length, scheduled air time and actual air time.

Reliability has been a key part of the product development cycle with an emphasis on in-house programming carried out in the United States, with direct access to the customer-facing tech team helping drive new functionality and program optimization. Many features are as the result of customer feedback and suggestions during the advanced Power User sessions, and from the 1,400 or so posts on the active user forum.

New features include support for international weather for the automatic temperature announcements; added functionality for Web broadcasters and useful tools for broadcasters airing ball games with floating breaks, finishes and the possibility of rain-outs.

Customers at the last training session were shown how to voice-track and do remotes utilizing a DSL connection on the Internet using the new software version.

BSI has written and optimized its own audio engine, common to its broadcast software. This ensures a minimal path between user interface and sound card improving latency and allowing tricks like time stretch and squeeze without changing the pitch and supporting more audio file formats that would natively be possible.

The audio engine also has allowed BSI to use dynamic database updates without additional software or the need for an external database — something that's been particularly useful with innovations such as ContentDepot.

For more information, including pricing, contact BSI in Oregon at (888) BSI-USA1 (274-8721) or visit www.bsiusa.com.

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USER REPORT

Google RevenueSuite Manages Income

by Murry Camper
IT Systems Administrator
Access.1

TYLER-LONGVIEW, Texas When Access.1 first looked at the SS32, **Google**'s station automation system, it was the income-generating features of RevenueSuite that initially got us most excited. After looking hard at the competing automation systems on the market, choosing the SS32 and RevenueSuite for all six of our Tyler-Longview stations seemed like a no-brainer.

No other system, our team decided, offered anything close to the financial benefits of RevenueSuite, and we liked seeing those new revenues dropping to our bottom line. It was when we decided to install the system in our Shreveport, La., and Atlantic City, N.J., stations that we were reminded of SS32's ease of use.

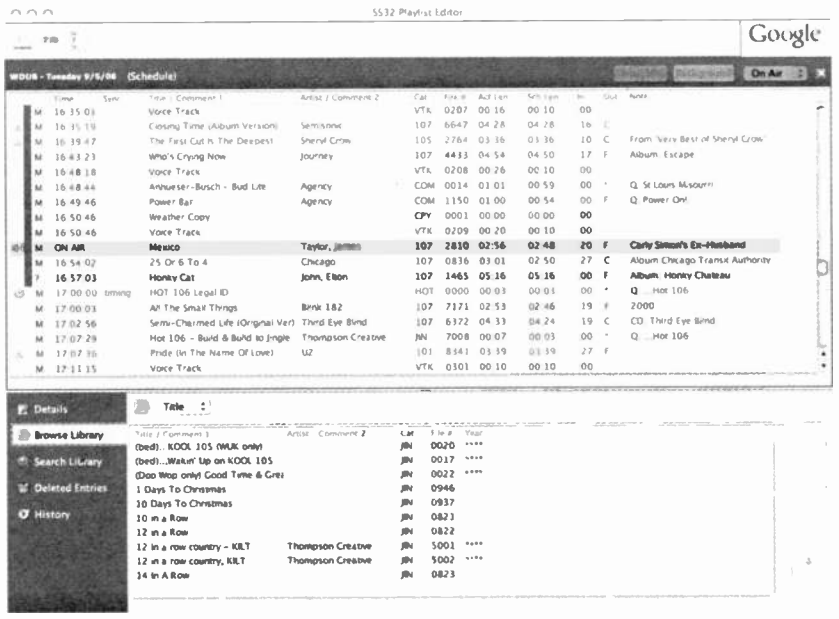
The DJ test

From an IT standpoint, we had liked SS32's flexibility as a system. We recognized that it could mold nicely into the way we were accustomed to doing things.

As the system was being installed in Shreveport and Atlantic City, I found myself watching the staff to determine how well the transition was going. It would not be uncommon for confusion and tension to develop as people got used to the new screens, software and equipment. From years in radio, I knew I should first be looking at the DJs. In any given radio station, if there are going to be problems with a system, DJs will provide the first signs of trouble — like canaries in a coal mine.

I began to notice that, after some initial hesitation, they were actually taking to the SS32 well, particularly to its touchscreen. As soon as they figured out it was much faster than using a mouse to make selections, they made those screens their preferred method of navigation through the program. Within days, every DJ on the staff was using the touchscreens and ignoring the mouse entirely.

I also noticed how they liked being able to make changes on the fly, and quickly locate songs, automate commercials and set up Hot Keys. With Voice Tracker, for example, our on-air talent can provide the audio for any number of stations within the system without leaving their computers. Air talent can be in the KTAL(FM) studio, for example, and cross-voice-track KDKS(FM) just down the hall. Program directors and engineers like that feature because it means there are fewer people running around the control and production rooms during the day.



A popular SS32 feature is the Insert Screen. The ability to insert music in seconds has made request shows simple to produce.

Another popular SS32 feature is the Insert Screen. The ability to insert music in seconds has made request shows simple to produce. You can play a request from a listener within 10 seconds of his call. In our marketplace, that's a big advantage. Listeners like being told right away that you have the song and that it's available almost immediately. DJs also like knowing the last time a piece was played. That lets them plan better spacing of popular songs, and keeps our programming fresh.

Trim Label Convert is a great SS32 feature. It lets staff personnel record audio from any onsite or even offsite computer, again minimizing the traffic going into and out of the control room when a change has to be made. This makes for greater staff efficiency even in cramped quarters.

Expanding the program

Based upon our experience, I can think of just one thing I'd like Google to add to this great system. That would be a wave editor. Trim Label Convert cannot adjust waveforms, so it would be helpful to have that feature someday in the future.

We're looking forward to some of the features being released this fall. We understand there's a new scheduling component that allows log changes made anywhere inside or outside of the station to be instantly displayed in the control room. That's a huge improvement. Knowing that SS32 is adopting the industry-standard SQL database platform gives us further confidence that the SS32 is the right choice for us.

Access.1's marketing manager in Tyler-Longview, Rick Guest, was involved in introducing the system to the Shreveport stations. He said, "As soon as our Shreveport staff saw how easy SS32 makes it to broadcast from our studios, with such an intuitive interface and touchscreen convenience, they had little hesitation in moving ahead. Even better was when I was able to tell them about the revenue gains we were already getting from RevenueSuite in our Tyler operations."

Rick says the most popular SS32 feature at the moment in Atlantic City is being able to do remote broadcasting by calling into the station at a specific time. The system lets the remote person take over the station without an onsite person. The air talent like being able to run programs without having to interface with a board-op.

Bottom line on the SS32: it's been a learning experience for us here at Access.1, but a positive one, as well. The RevenueSuite income is everything we could have hoped for and the operating ease is getting rave reviews.

For more information, including pricing, contact Google in Dallas at (972) 620-2211 or visit www.dmarc.net.

TECH UPDATE

D.A.V.I.D. Has Applications On a la Carte Basis

D.A.V.I.D. Systems says it is pushing its theme of "radio across multiple platforms" by offering a new suite of media solutions.

The applications facilitate workflows to generate content for the Web, HD Radio, RBDS and podcasting without staff increases, and can be selected on an a la carte basis. Each application is built as a module that can be inserted individually into an existing air chain, or combined with other D.A.V.I.D. modules to build a customized system.

Examples include publishing the playlist on the station's Web site, Emergency Alert System message generation, automated new media detection and distribution, and background database synchronization with remote sites.

Additionally, the company says, as a result of analyzing the workflow of a major radio news organization, it plans to release contact management functionality within its non-proprietary database that already includes graphics, text files and video in addition to audio. Producers and reporters will be able to link files with individuals and organizations.

For more information, including pricing, contact D.A.V.I.D. Systems in Virginia at (888) 374-3040 or visit www.davidsystems.us.

USER REPORT

OMT iMediaLogger a Must for WPSR

by Dave Hertel
Facilities Engineer
WPSR(FM)

EVANSVILLE, Ind. When I heard that the school corporation was building a new multimillion-dollar trade center, my first thought was regarding what kind of automation system we would be able to implement. Sure the studios are important, but in today's age the most important part of the system is the one solution that can stand alone and do anything necessary for our day-to-day operations.

After a few years of downloading and working with different demos of automation systems I finally decided on OMT's iMediaTouch system. My next challenge in the process of picking an automation system was persuading Mike Reiniga, the teacher and general manager of our station, to approve my choice. Given his experience with OMT's QuicPix software, the persuasion was easy. The station had been using the QuicPix live assist and automation software for six years and had few complaints.

Made to order

After a few weeks of working with Ron Paley at OMT, I had a system that any engineer or teacher at a student-run radio station would desire. It included a total of four production computers: one in the control room, one for both production rooms and one in the newsroom. On top of being capable of handling production in all four studios, the production rooms and newsroom computers both have the on-air software to be used as backups in case of an emergency.

These studios also have been used for training the students before allowing them into the main on-air control room for live broadcasts.

One of the most important features for our station is the system's VoiceTrack module. With the particular arrangement at WPSR, we were able to

Dave Hertel and WPSR's iMediaTouch.

voice-track in every studio, making this a suitable setup for teachers and students to hold training sessions and program the student's shows. With more than 50 students involved in programming, the voice-tracking module has helped maintain our on-air schedule.

The last "must" feature was OMT's iMediaLogger software. Our general manager wanted a way to capture the microphones in all our control rooms without having to deal with the mess of cassette tapes or mini disks. iMediaLogger worked well for this purpose.

OMT had set up the school with a suitable system for our situation. Once we placed the order, I received a call a few weeks later from one of the technicians at OMT saying the machines were ready and wanted to know when we needed them. At that point we didn't even have the new floor plan, power grid or furniture in place. Finally the construction was done and we received our system shortly after.

Each box was labeled as to which room it belonged, which made for an easy setup. In no more than four days of mounting computers, laying out the keyboards, monitors and mouses, running network cables and wiring up the audio connections, we had the system making noise. I had never had a six-computer automation system go in so easily, or for that matter a double computer system.

After a couple days of playing around with the iMediaTouch On-Air, Production and VoiceTrack modules, I felt pretty good about the user functionality of the programs, in particular the on-air software. Everything is accessible, organized and functions solidly.

The Production module is a friendly program with its split-screen organization. Not only does it allow for easy importing, it also allows the operator to export any cut from any folder in the automation database. Managing the database is easy with the drag-and-drop feature, which allows moving or copying of cuts from one folder to another.

The VoiceTrack module is like pulling an air-shift, except easier. If the jocks aren't satisfied with the placing of something, they can drag the cut around to wherever they want it. If the jocks want a music bed or sound effects, they click on it as they would in a regular air shift.

The iMediaLogger digital logger tops off the system. It captures a timed event or an event from a closure, which we use to skim the microphone channels. The software saves the skim files to its own Web page, accessible from any computer in the building, allowing our students to copy off their own air checks when desired.

We had OMT send one of its field technicians down to check out the setup of the system and train our GM and secretary. Questions were answered in the five days the technician spent with us, and even our secretary was able to play music back on the on-air software, find music, rip new songs into the database, voice-track, make logs and use a music scheduler for the first time in her life.

For more information, contact OMT in Canada at (888) 665-0501 or visit www.imediatouch.com.

TECH UPDATE

Digital Juke Box Supports Quad, 5.1, 7.1

The **Digital Juke Box** automation system supports Windows XP and works on computers with 512 MB memory and a Windows sound card. Users can record to MP3, WAV OGG and WMA files. In addition to mono and stereo playback, it supports playback of Quad, 5.1 and 7.1.

Modes of operation include "Total Walk Away" on-air automation, Jock Assist and Satellite Format. Cart rack buttons enable instant-play audio. Features include voice-tracker and music scheduling, as well as artist and title protection and dayparting. There are 52 music categories.

Additional highlights include a CD ripper, on-screen weather that updates twice hourly and a network news time shifter. The company charges $999 for the software and $400 per year for support. The first year of support is free.

Digital Juke Box also offers free Internet voice-track software, and says its products are available for download on the company Web site.

For more information, including pricing, contact Digital Juke Box at (888) ONAIR99 (662-4899) or visit www.digitaljukebox.com.

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USER REPORT

DAD Eases Audio Delivery, Playback

Chicago Public Radio Likes the ENCO System's Modularity and Utilities Such as Dropbox, Gateway

by Drew Bodker
Digital Audio Specialist
WBEZ Chicago Public Radio

CHICAGO When I arrived at Chicago Public Radio a little over a year ago, the station was just beginning the process of replacing its broadcast platform. Discussions between the IT and engineering departments with staff and vendors were a daily occurrence. What did this new system need to do? What functionality would we gain by choosing option X? What functionality would we loose?

After careful consideration and much research, we decided that **ENCO**'s Digital Audio Delivery, or DAD, system was the hands-down best option for our organization. We were able to maintain a work flow that was close enough to what our on-air staff and producers were used to while adding back-end functionality that eliminated most of the manual upkeep and maintenance the old system required.

The first thing that stuck out as a major selling point was how modular the system was. Each computer could be designed for a specific function. From basic workstations to backroom powerhouses, we were able to pick and choose from a list of options.

Chicago Public Radio is unusual in that not one hour of programming is automated. ENCO's list of utilities made it easy for our content providers and on-air staff to deliver audio to the system and play it back with ease. Creation and modification of playlists is a breeze. Organization of on-air audio is simple and automatic. I am still impressed by how flexible the DAD system is while maintaining the reliability we demand.

Accessing DAD's files

One of the major design features we wanted to incorporate into the new system was to provide a way for staff and content providers to deliver audio with out having to access the actual DAD interface. This allowed us to keep costs down by not having to purchase a full system for every user and also limited the number of people that required training to on-air staff and board operators. This was accomplished by using the ENCO utility called Dropbox.

Dropbox essentially is a network folder that is continually scanned for new material. When a new file is found it is ingested into the DAD database automatically. It also can be converted to/from multiple formats, normalized and placed into the appropriate organizational unit by using a predefined rule set in the Dropbox config file.

We were incredibly happy that Dropbox made it so easy to deliver audio to the new system. However, we wanted to avoid installing the DAD software on every computer in the facility, so we needed a way for staff to access the files in the DAD database remotely. The ENCO utility WebLib provided this functionality.

WebLib looks directly at the DAD database or a copy thereof, and provides a simple, searchable interface from any computer in the station. We have our WebLib system configured to point to a copy of our main library, which has a different delete schedule. The difference in delete schedules allows for access to files that are no longer needed for broadcast. We also have the WebLib library include a PCM and MP3 copy of most every file to give users an option when downloading.

Copying the on-air library, converting formats and defining delete schedules are done through the application called Gateway.

The Gateway utility is a robust and powerful application for broadcast. It uses a rule-based system for transferring any amount of audio data from one location to another. The entire background operations system of Chicago Public Radio is handled by Gateway (a 7 MB utility). Audio can be moved between libraries, from the general network to a Dropbox location, from a defined FTP/remote network location to local storage. It is simple, powerful and reliable.

The author (right) stands with WBEZ IT Director Dmitry Shub and the station's DAD.

The Gateway function lets audio move between libraries, from the general network to a Dropbox location, from a defined FTP/remote network location to local storage.

Technical support is important to us: if we chose the DAD system we'd have to have access to the support we needed. We have not been disappointed. Shane Toven and Matt Walther were (and still are) incredibly helpful during the initial setup and implementation of the DAD system.

The combination of preproduction by Chicago Public Radio staff and ENCO's design team led to a broadcast platform that suits our organization. Its flexibility and reliability provide the range of solutions necessary for a station of our size.

For more information, contact ENCO in Michigan at (800) ENCOSYS (362-6797) or visit www.enco.com.

TECH UPDATE

GSelector: One Library for Several Stations

The GSelector multistation music scheduling system from **RCS** is a demand-based, goal-driven software program that facilitates the creation of new HD stations. The supplier says it allows broadcasters to have more control over multiple channels.

GSelector is controlled based on the goals a station has for its music, and allows adjustments to the "natural demand" of each song, artist or attribute such as tempo, theme, sound code or other goals as needed.

One music library can serve several stations. GSelector's cross-station protection keeps the same songs from playing simultaneously on different stations, and the system offers reports on what it did to resolve conflicts on each station. Its Audio Analyzer identifies song tempo, run time, intro posts, BPM and mood and energy.

GSelector's "demand sliders" help users to make improvements. The system automatically adjusts the music library so a station achieves the desired song rotations, and provides immediate indications on the effect of those changes. Additionally, it lets users upload research scores in order to improve sound.

For more information, contact RCS in New York at (914) 428-4600 or visit www.rcsworks.com.

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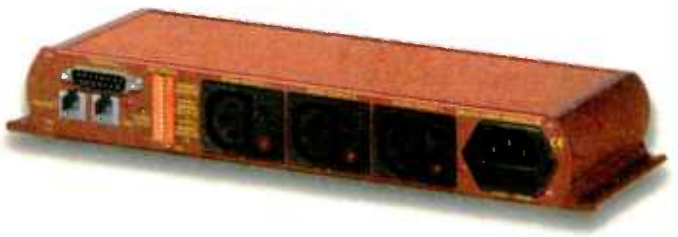

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USER REPORT

Pristine's CDS32 Stands Up to Katrina

System Enabled WSHO to Broadcast Remotely 24/7 From Three States During Hurricane Evacuation

by William Ainsworth
Owner/Station Manager
WSHO(AM)

NEW ORLEANS WSHO Radio is an AM station licensed to broadcast out of New Orleans. In August 2005, we had just realized our long-term goal and the dream of every independent station owner: a new state-of-the-art, digital-ready studio located in the heart of the city's Central Business District. In designing our new studios, we chose **Pristine Systems**' CDS32 as our automation system.

Several years earlier we had weaned our seasoned baby-boomer staff off of carts, dragging them kicking and screaming into the computer age with George Thomas' CartWorks System, the precursor to the CDS. The ease of use, low maintenance and long-term reliability we experienced with CartWorks engendered our confidence to incorporate the CDS into our new studios. Thomas personally made a visit to New Orleans to make sure the transitions went smoothly.

The CDS32 music-on-hard-drive system offers simultaneous play and record functionality for recording phone calls, spots and satellite programs. It has a button that lets you switch from automation to manual, and user-adjustable trip points and volume control for each cut. The SmartPromo feature automatically enhances the playback of your music log.

City in ruins

On the night of Aug. 25, 2005, we moved staff and turned on the new system for the first time. It worked without fail; we did not lose so much as an hour of airtime. We celebrated, but with a circumspect eye on the Gulf and the fast-approaching Category 5 hurricane named Katrina. The disruption that comes with building a new studio under a demanding timeline and moving the station's location now seems miniscule compared to the chaos that was soon to follow.

As Katrina bore down on the Louisiana coast and a mandatory evacuation was ordered, we abandoned plans to house staff members in the hotel across the street. Safety was paramount. We all headed north with little more than the clothes on our backs and Katrina hot on our trail.

On the morning of Aug. 29, the eye of the storm brushed by the west side of the city. Our station Web cam, hastily focused on Canal Street from our studio window as we prepared to flee, transmitted its last picture at 6:32 a.m. Management waited out the storm in Popularville, Miss. — in hindsight, not one of our better decisions; the eye that had just missed New Orleans passed right over us.

Once winds diminished, we went straight to the car radio to see if we still had a signal. We were met with silence. We listened closer — could we at least hear the carrier? The consensus was mixed. Feeling blessed just to be alive but lacking food and water, we made our way along ravaged I-10 and two days later found ourselves safely ensconced in the mountains of North Carolina.

We began the Herculean task of tracking down our scattered staff. Cell phone call after cell phone call failed — 504 area codes were not functional — and these were the only contact numbers we had. And even if they were found and safety confirmed, could we even consider remote broadcasting? It was obvious from the news coverage we would not be home for a while. We had to find out if our towers had survived and what damage had been incurred at the studio site.

Owner/Station Manager Bill Ainsworth and WSHO's CDS32 System

This was a job for our intrepid engineer, Mike Patton, who had weathered the storm in Baton Rouge, La., about 250 miles up river from New Orleans. As soon as roads became passable, Patton made his way to our transmitter site, braving flooding, aggressive law enforcement officials anxious to block off their respective parishes, looters, random gunshots and a shattered New Orleans community lacking fresh water, food, electricity, telephone service and all other amenities of civilization.

Just after crossing the Mississippi River bridge he was met by two welcoming beacons flashing brightly throughout the incomprehensible darkness of a city devoid of all infrastructure. They were our towers — they were still up and our gas generator had triggered just as planned. If our studios in downtown New Orleans were undamaged, we could possibly be back in business.

Patton made his way to the station as we, horrified, watched the retail section of our building in flames on CNN. Patton was able to confirm that there was virtually no damage inside the studio and all of our computers were in tact. However, our satellite dish on the roof was destroyed and the STL connection with our transmitter was down. Was this a manageable situation if we could get electricity to the studios?

Back in business

It took over a week to find our staff, who had landed throughout Georgia, North Carolina and Tennessee. We came up with a plan to broadcast, relying heavily on the Internet and in particular on our new Pristine CDS32.

As some sort of order was restored in New Orleans, downtown was the first to get power. Our engineer was there to get us online immediately and repair the STL connection to our transmitter. From a laptop in North Carolina, were now able to operate the station through a VNC Internet connection, pulling whatever regular programming we could from ministry Web sites.

Our morning announcer was able to buy a laptop from Good Will in Tennessee. It worked. He could do his shift, struggling with a landline connection until we could get DSL service set up at his temporary rural housing.

In the midst of this catastrophe, we were able to broadcast remotely with a limited staff and the Pristine CDS32 24-7 from three states throughout a grueling evacuation period that lasted over six weeks. Our major problem at that point were the erratic power outages in New Orleans and a second major hurricane, Rita, that took us offline for several days. Every time power was lost, we had to find some brave soul still in New Orleans to make his way up to our studios and turn the computers back on.

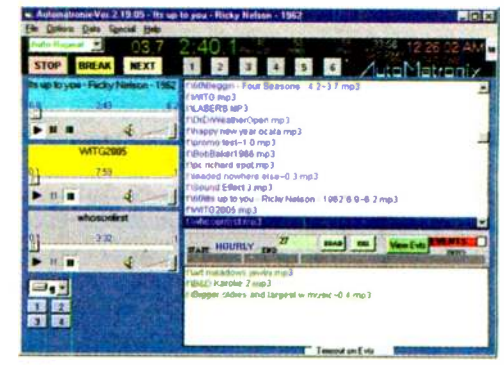
Two events allowed us to survive this ordeal. The first was fortuitous; we moved the station two days before the storm hit. Our old building was severely damaged and has not reopened.

The second was a well-considered purchasing decision made in connection with that move. We chose Pristine's dependable, flexible CDS32 as the automation system for our new studios, which allowed us to coordinate operations from three locations several hundred miles apart over an extensive period of time for a seamless broadcast. We could provide valuable information not only to listeners who remained in the city, but also to evacuees listening on the Internet. In more than 10 years of broadcasting, we feel confident that our best decision to date was the installation of our Pristine automation system.

For more information, contact Pristine Systems in California at (310) 831-2234 or visit www.pristinesys.com.

TECH UPDATE

Automatronix Streams From Net, Plays Files Within Files



JT Communications says it has added features to its Automatronix music/event scheduling system for PCs, such as the ability to stream data from the Internet and play files within files, sending and receiving of RS-232 data for external or internal control, and support for ASF and OGG file formats.

Existing features of the system include manual, live-assist, play-once, repeat and random modes of operation; on-the-fly playlist generation; and a free file tagger program that does not require proprietary data and allows the operator to maintain file playback with conventional players as a backup. The tagger program lets music files be tagged for intro/overlap times.

Also featured are independent hot keys that can be operated simultaneously; hot keys can be started, stopped and paused in case of accidental operator start.

A Live Mic button enables independent mic control.

Program log generation logs all files played. The playlist generator program lets MP3s be edited on the fly. Users can change, add and remove playlists, formats and songs while operating. The timed recorder program records live satellite feeds at pre-programmed times.

Programmable controls include an audio dim function for hot keys and voiceovers; "bumpometers" that allow master adjustment of overlap times and voiceovers so operators can adjust tightness between segues and voiceoevers; and four directory/file quick access buttons for rapid song/event entry.

Highlights include poor file detection in all modes, which "kicks out" bad file anomalies.

For more information, including pricing, contact JT Communications in Florida at (352) 236-0744 or visit www.jtcomms.com.

USER REPORT

Radio-Assist Eases News Edits, Delivery

by Dean Field
Director of Network Engineering
Sporting News Radio

NORTHBROOK, Ill. When it comes to sports media, Sporting News is a pioneer. We started out as a magazine in 1886. It has flourished ever since and is the oldest sports publication in the United States.

Over the past 120 years, however, Sporting News has morphed into a major provider of sports news and now includes a Web site, online bookstore and radio station. We cover just about every sport you can think of, including football (college and pro), soccer, basketball (college and pro), baseball, NASCAR and golf, among others.

Our network radio division, founded in 2001, is Sporting News Radio Network. We operate a satellite-uplinked sports network on a 24/7 basis and focus on the newsmakers of the sporting world, as well as sports flash updates of active games.

We can be found on several hundred radio stations in the United States and have three owned-and-operated stations in New York, Boston and Los Angeles. We also feed Armed Forces Radio and XM Satellite Radio.

Sporting News Radio's Dean Field says Radio-Assist 'provides us with an all-in-one software package for operating our network, from acquisition to production to on-air.'

Modules

We have been using Netia's Radio-Assist for more than four years because it provides us with an all-in-one software package for operating our network, from acquisition to production to on-air. This makes the evaluation, editing and delivery of our news less-time consuming.

Although we manually record interviews with our hosts and the various sports figures they interview, we use the Radio-Assist Feed-In/Feed-Plan to record audio from games and many other sources. It allows us to make a daily schedule of automatic recordings of any external audio to be used on our affiliate network or operated stations.

Our producers use a calendar built into the module to define each recording in advance with the name of the station, date, time, length and any other identifiers. The module also allows us automatically to record our own audio, so we can edit and play back portions of it.

We use the Import module of Radio-Assist to take any audio files or CDs we receive and move them into the system without having to go through a noise-adding analog record process. Our operators simply prepare a list of files or cuts they want to import, click a mouse to run the import and the files become available within our data library.

We also take advantage of the Export module, which copies pre-selected sounds of any length and stores them onto our file system or on a burned CD, primarily to offer players and coaches we interview copies of the interviews.

We use the Look Up module of Radio-Assist to search quickly for files in our extensive media database, using such search criteria as a host, guest or team name. For example, if we get breaking news about a certain team, we can look up past information about them and quickly incorporate it into a news segment for our listeners.

Another benefit of the Look Up module is that it allows us to access databases reciprocally from our sister stations in Boston and Los Angeles, pre-list items from those databases, and pull the content for our Chicago facility or push it to the other sites.

We use Radio-Assist's Web Dispatcher, which automatically converts and publishes our audio news and metadata onto our partner Web sites for audio-on-demand subscribers. Subscribers to the service can access certain audio clips and other material from our network. This function, however, is handled primarily through our partners.

Although we benefit from all of the Radio-Assist functions we use at Sporting News Radio, my personal favorites are the Stretch function and the Jingle packages.

Stretch modifies the length of a sound in real time with no distortion, so it's easy for us to make an interview fit a certain spot. The Jingle packages allow us to preset common audio cuts for each show and change them quickly between shows.

For more information, including pricing, contact Netia in New Jersey at (888) 207-2480 or visit www.netia.net.

USER REPORT

Lightning Prompts Xtreme Installation

KOTE Likes the Cost as Well as Scheduling, Editing, Voice-Tracking Features of Arrakis Systems' Xtreme

by Steve Niemeyer
Owner, Midwest Radio Management
GM, KOTE(FM) for Niemeyer Communications

EUREKA, Kan. Arrakis Systems calls its Digital Xtreme "the bridge," and it is just that: a bridge between your board, computer and audio chain and then back again. Xtreme enables you to change the way you're doing things and step into programming control on a simple user interface that has kept Arrakis products in control rooms and studios for years.

From the DL series to Xtreme, Arrakis has continued to follow the needs of the programmer, production and on-air talents. Xtreme costs $100 a month so users are not tied down for years by costly bundled packages until they are paid off, leaving them with five-year-old equipment and a monthly "support" contract.

The bridge has two USB audio codec Windows record cards, so special sound cards, file conversion tools or proprietary audio extensions are not necessary.

Struck out

I installed Xtreme in our studios after a lightning strike ripped through our audio chain, taking with it three of my five audio cards from another manufacturer.

There was no running to town for a replacement sound card. The solution was to combine the three machines to get one that would produce some audio to keep us on the air. It was time to get something new installed, get over the learning curve and get it on the air. I gave myself two weeks to make it happen.

Then I realized because of the file format from the old system, I had no audio to convert over to a new system, and our traffic software was bundled with the old system. I turned to the Arrakis Digilink 3 and 4. I went online and ran across the Xtreme link, and after doing a little homework, I was excited to learn that it was only $100 a month.

I took Arrakis' advice and downloaded Digilink free, and started playing with the program, dropping in MP3s and WAV files; it also can handle MP2s. I built a play list and soon was playing tunes. But the functionality of Xtreme was not fully realized until I was playing with the system set up and running in the back room. I found out that Arrakis support is key. My questions have always been addressed and solved with a phone call.

The system interfaces with almost all traffic software, and has an easy operator interface and approach to handling files. If you are running in-house programming, 24-hour satellite or any combination of the two, Xtreme can support your sound. The original 10 audio categories have been expanded to 25 allowing complete control by custom assigning each category in a music template. Or you can use one of the templates included in the software, both of which will overstuff the clocks so you don't have to worry about missing carts effecting your hour.

You can schedule seven days in advance, and take advantage of the voice-tracking option on the same screen. The editing tool has been reworked with the packaged Xtreme Editor. The on-air screen is divided so you can search the audio directory, and watch what is happening on air at the same time.

The directory database can be searched by cart number, song title, artist or length. Dropping in requests is done with the mouse. You have access to 10 jingle pages with a total of 300 recorded events. It is suitable for jingles, weather beds, frequently played commercials or sounders and on-the-fly programming.

The Arrakis Xtreme music library can be with a simple network, and allows you to edit or add new files with a quick copy/paste. If you already have editing software, just create the event, assign it a cart number and a name, and drop it into the Arrakis folder. All you need to get on-air is an off-the-shelf dedicated computer with a clean version of Windows XP.

'Xtreme is suitable for jingles, weather beds, frequently played commercials or sounders and on-the-fly programming,' said Niemeyer.

This software is a radio station in a package, featuring on-air, production, scheduling and logging capabilities. It is suitable for hard-disk audio-based live or automated radio stations. Xtreme includes features such as over-scheduling, drop events, timed events and auto fill and other features required to meet air schedules. It can be custom-designed and changed to keep up with your station's demands.

For more information, including pricing, contact Arrakis Systems in Colorado at (970) 461-0730 or visit www.arrakis-systems.com.

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Schafer 8-channel stereo console, rotary pots. Make offer. Email glen.kippel@gmail.com or phone KWXY 760-328-1104

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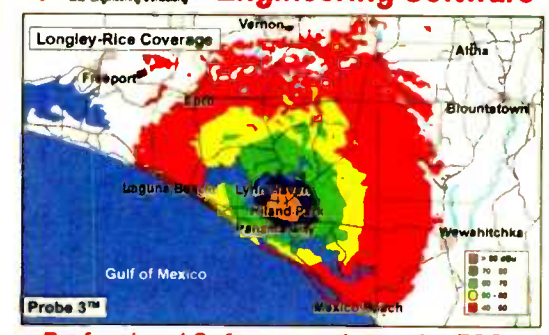

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◆READER'S FORUM◆

Get Your i-Jam Here

With the controversy over leaky FM modulators recently, I just died laughing when I came across last week's Fry's Electronics ad for the "i-Jam FM transmitter."

Remember, only one per customer!

Gary Wachter
Director of Engineering
KKDA(FM)
Dallas

Podjacking

Over the years, I have been a big user of "mods." I live in the Dallas/Ft. Worth area, and utilize one of the "offending" devices that is way over Part 15 limits ("'Podjacking' Draws Increased Attention," Sept. 27).

From a user's perspective, these devices are practically useless in most metro areas. No one in their right mind uses them on the same frequency as a local station — the local station's signal would blot out the signal. Even first-adjacents are unusable, due to high levels of crosstalk. There is only one "open" frequency here: 92.9. But high levels of interference from stations in Waco and Wichita Falls, well over 100 miles away, still interfere with the device. So these complaints by stations that their signal is getting jammed seem very suspicious.

Complaints by stations that their signal is jammed seem very suspicious.

The only way one of these devices could possibly cause a problem would be in a fringe area, well outside of protected contours. I can envision "sour grapes" by a station engineer that loses a few listeners out in the fringes, but that brings to mind discussions of digital radio interference I won't go into.

The real issue here is that for years, these devices were manufactured in "four frequency" models, and those four happen to be at the bottom of the band on frequencies utilized by a lot of NPR stations. Whole-band models are now available, but there are a lot of legacy devices out there.

Station engineers also can blame the car radio makers, which for decades have denied any third-party access to in-dash receivers. They did not even make provisions for a headphone jack, much less a set of RCA jacks for auxiliary input. Why? Partly due to pressure from broadcasters, who now complain about wireless modulators. Believe me, every single one of those wireless modulator users would probably much rather have a reliable audio patch directly into their radio than an unreliable wireless link.

Not even aftermarket radio makers "got it." I was gratified to see a pair of RCA jacks on the back of my Pioneer car radio, and an "auxiliary" input on the power-up sequence, only to be disappointed when the RCA jacks proved to be outputs, and the auxiliary input only for their proprietary interface.

The industry needs to push hard for iPod and auxiliary inputs to be installed on all car radios. This is a simple change, easily made, and would eliminate the modulators as new cars are purchased that — finally — have auxiliary audio inputs.

Bruce Carter
Plano, Texas

The Solution for a Rising Noise Floor

You probably saw the postings (RW Online Newsbytes, July 17 and 19) announcing the NAB's petition to the FCC that would allow AM stations to supplement their coverage with FM translators.

The NAB made a good point that AM listeners have to tolerate an increasing amount of noise from power lines, traffic signal sensors, electric motors, lighting and other electrical devices. It's getting noisier out there.

The NAB's solution is a switch to the FM band via FM translators. Did anyone else sense something odd, or is it just me?

Is the NAB suggesting that the FM band is superior even for talk and news programming? Well, it would solve the noise problem.

If a 50 kW AM — WSM(AM), Nashville, given as an example — has to add very low power FM translators to solve coverage problems, what is the NAB saying about the future of the AM band?

Wouldn't a switch to HD on the AM band solve the rising noise floor? Yes, but wait! Stations can only use AM HD during daytime hours. What would they do at night?

Ibiquity's AM HD system really needs 30 kHz of bandwidth to avoid adjacent- and second-adjacent interference from skip at night. The AM band has 10 kHz spacing. Hello, who signed off on that plan?

It would work if, starting at 540 kHz and counting off every third frequency (540, 570, 600, 630, etc.), these stations stay on the air. Those in between (550, 560, 580, 590, etc.) would go dark … permanently.

Or, we could wait the five or 10 years it will take for enough digital capable radios to be in use to have the beginnings of a digital audience, then (joining the rest of the world) switch from analog modulation to all-digital DRM.

How much will the noise floor rise in another 10 years?

FM translators will save AM? Is the NAB trying to send us a message about the future of the AM band?

Walt Lowery
Seattle

GUEST COMMENTARY

Great Entrepreneurs Know About Perseverance

Cathy Hughes, Among Others, Exemplifies the Vision, Determination and Will Required to 'Make It'

by Roland S. Martin

As the only African-American woman to head a publicly traded company, Cathy Hughes is used to being feted and receiving accolades because of her accomplishments.

Cathy Hughes

As the founder and chairwoman of Radio One, she has done an amazing job in building the nation's largest owner of black radio stations, beginning with the tiny WOL(AM) 25 years ago. Today, her company — run by her son, Alfred Liggins — owns 71 radio stations; the cable network TV One (which employs me as its news commentator); a controlling interest in REACH Media, which owns BlackAmericaWeb.com; and Syndication One, the nation's only black talk-show network.

She's got a ton of money, and doesn't have to worry about where her next meal comes from. But it's important for everyone to recognize that when we look at self-made millionaires like Hughes, we should not forget the trials and tribulations they endured to get to the top.

Self-made woman

When I think of Hughes, I don't talk about the more than $300 million in revenue the company did last year and the fact that its valuation on Wall Street exceeds a billion dollars. What impresses me the most is that when she had that one small station with a weak radio signal, Hughes spent 18 months living in the station in order to keep it on the air. Her entire life was consumed in trying to keep the station on the air, and whatever needed to be done, she did it — even washing herself in the bathroom.

That's right. Hughes would get up from her sleeping bag and rush to the bathroom to wash herself off for another day, trying to finish before her employees started their workday.

While they were often waiting for their paychecks, she would forego a check just to make sure they could pay their rent and put food on the table.

I don't look at guys like Donald Trump — who flaunts being a billionaire when he has said he isn't — and see them as the epitome of success. He had the good fortune to be left with a huge sum of money from his father, and has built his company through mostly self-promotion. If folks want to buy into the hype, fine. But budding entrepreneurs who want to learn what it takes to make it in this world shouldn't want to be like "The Donald," they should aspire to be "Ms. Hughes."

Success stories

"Making it" in America isn't about having a TV show, riding in limousines, sailing a big yacht and having your own helicopter. It's about doing the hard, dirty work necessary to build something and making your dreams come to reality.

When I travel to high schools and college campuses and speak to young people, I often hear folks talk about wanting to "get paid," without even bothering to understand the pain and sacrifice that goes into building something. Bishop T.D. Jakes is often saluted for building his 30,000-member Dallas-based church, The Potter's House, which reaches millions more through television, books and the Internet. Yet we can't forget the reality of him and his wife being on welfare while trying to keep his small church afloat in West Virginia.

John H. Johnson, the late, great entrepreneur who built Ebony and Jet magazines into two of the most outstanding and successful magazines in history, sent one of his sales executives to Detroit every week for 10 straight years before an auto company would take out an ad in his magazine.

An overweight woman with big hair from the South took Chicago by storm, striking a nerve among women and becoming a billionaire. Her name? Oprah Winfrey.

My point? The success of an entrepreneur doesn't come overnight. It takes building that company, employee by employee, brick by brick and prayer by prayer.

As Radio One embarks on a yearlong celebration of its 25th anniversary, let's not get ourselves caught up in how great the company is today and the millions of people it reaches each week. What is most important is that when the reality of business almost forced her to close her doors, this strong woman, Cathy Hughes, relied on her faith and her fierce discipline to get her through the tough times and eventually become one of America's great success stories.

Roland S. Martin is executive editor of the Chicago Defender, the nation's only black daily newspaper. This commentary appeared in his column in the BlackAmericaToday.com Newsletter in August.

GUEST COMMENTARY

Sirius, XM: United They Stand

Why Continue to Duplicate Channel Genres When One System Could Offer the Same Programs Plus More?

by Greg Fitzgerald

The opinion piece "Should Satellite Radio Merge?" (Sept. 27) misses a couple of important points, especially when dealing with the issue of competition.

It's true that competition is what makes radio and audio services better and cheaper, but the statement that "this trial balloon should be shot down," overlooks a key point: While XM and Sirius do have to compete for that customer standing in front of a Best Buy rack wondering "which [radio] do I buy?," the real competition for both companies is over-the-air radio, not each other.

Merging both companies pushes the competitive factor further.

Sirius' purchase of Howard Stern was an expensive, albeit very wise, move to grab commercial radio listeners, not XM customers. Each programming move by Sirius and XM is aimed at getting the listener to switch to satellite, not switch from each other's services.

Competition is key

There's a lot to say about the Wall Street wisdom that neither satellite company, even when eventually in the black, will ever make much money. Though there are comparisons to Dish Network and DirecTV, the income potential for satellite radio is miniscule.

With subscription costs stuck at about $160 a year per subscriber, that's little more than two to three months of subscriber income from a Dish or DirecTV customer, and with the radio satellite companies practically giving away the hardware, there's little profit available there either.

Dish and DirecTV currently pay upwards of $400 to $500 in marketing, hardware and support to acquire each new customer. Can XM or Sirius really afford to match this, especially when the market begins to flatten?

The merging of both companies to create a broadcaster with 200-plus audio channels pushes the competitive factor much further than forcing two young, cash-hungry companies to duke it out on their own. When subscriber growth begins to fall over the coming years, that will put a real pinch on programming costs for both companies, and listeners will be the ones at a loss when both companies are forced to shrink their programming budgets.

Why continue the duplication of popular music channels, news channels and sports channels on two systems when a single system could offer these same channels plus another 100 channels for expanded programming? Imagine what kind of sales increase would result if 50 of those new channels were given over to foreign-language broadcasters. Suddenly satellite radio would be the source for popular European, Asian, Arabic and other language channels now only available via satellite TV.

There's a reason Dish Network has championed foreign-language TV and radio: They account for tens of millions of dollars in annual income.

Yes, competition is good for satellite radio. So give satellite radio the real chance to compete as a single powerful force in the market.

Greg Fitzgerald is president of Sound Advantage Inc., the distribution and marketing agency for Deutsche Welle Radio and TV.

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◆READER'S FORUM◆

'Keep the AM Out of the FM Band'

AMs on FM translators (RW, Sept. 13)? Are you crazy?

First, there are no frequencies left to do it even if you wanted to. Second, if you want to get an AM signal into an area within 25 miles of the transmitter site, then do it by way of a low-power synchronous AM booster. But keep the AM out of the FM band.

AMers just got more channels from the FCC, 1600 kHz to 1700 kHz. If the FCC wants to expand the FM band from 88 to 122 MHz, then I am all for it.

Brian Leifson
Provo, Utah

'It Started With Such Promise'

The right wing is sure to seize on Air America's financial woes ("Air America Rumors Fly," Newsbytes, Sept. 14), as a "sign" that progressive talk radio is a financial clunker. A closer look at Air America and the history of "low-power" AM stations tells a different story.

Today's world is loaded with listening options. Audio streaming on the net, iPods, digital radio and traditional FM all finish far ahead of AM listening. But even AM has its own version of "have" and "have-not": stations that broadcast with 50,000 watts of power, and those licensed to broadcast with something much less. Air America clearly has landed on the side of the AM have-nots.

As you know, the worst sounding/lowest power AM stations are usually located between 1230 and 1490 AM. The FCC crowded in thousands of stations in this space, meaning that most have to reduce power output at night to keep from interfering with so many other stations on the same or adjacent frequencies. In urban areas, these frequencies were "gobbled up" by people who often programmed their stations for black and/or Hispanic audiences. It's that part of the dial where R&B, from early days onward, had a modest home.

But rock-and-roll didn't become "official" until people like Alan Freed and the WLAC(AM) guys out of Nashville started playing that "stuff" on much more powerful stations at night, when the signals reached hungry listeners across dozens of states; the music was finally "legitimized" on *real* AM with kick-ass signals ... just as Elvis was coming along. Since its inception, Air America has needed that kind of technological boost to level the political playing field on radio.

One example is the Delaware Valley. The Air America affiliate is located at 1340 AM in Philadelphia. You can barely pick up the signal 30 miles south during the day in Wilmington, Del., and at night the station's broadcasting radius drops to about 15 miles.

Other bottom-feeder AM stations (between 1230 and 1490) also carry Air America in other markets. The 760 "Progressive Talk" signal in Boulder/Denver, Colo., is an exception to this; they have a relatively great signal. Meanwhile, "Brother Rush" is heard over 50,000-watt blowtorches everywhere.

It started with such promise. But even with plenty of money to start, Air America did not do its homework on the technical side of things, and this illustrates a continued disturbing trend.

Radio folk on the left assume that because they bring truth, people will tolerate a scratchy signal.

— Pete Simon

Radio folk on the left haven't been paying attention. There has been a phenomenal increase in listening options, and some still assume that just because they bring the truth it will be enough for people to tolerate a scratchy signal. See KGNU(AM) in Denver at 1390 until about two months ago, when they finally made the signal somewhat listenable. In this frame, the truth will not be heard by political fence-sitters unless the delivery system is at least as good as everything else they pay attention to on their receivers.

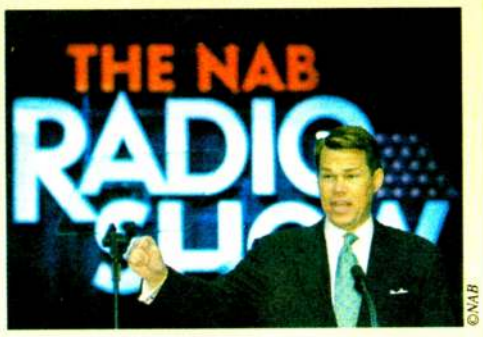
To use a sports analogy: It's like giving the Broncos a beat-up high-school field out on the plains to use for practice, and for their fames to generate interest, loyalty and revenue. Sure, whether we like it or not, in this modern world it all comes down to money, money, money. But it also requires much better planning and a more realistic attitude.

Pete Simon
Denver

Smash-Mouth Radio

How delightful to hear David Rehr steppin' it up.

"We have news for our competitors," he said from the podium of the recent NAB Radio Show. "We will beat you — as we have beaten those change agents in the past." He was referring to a lengthy list of media each of which were predicted, at one time or another, to spell the death of radio, from TV and LPs to iPods.



David Rehr

Bring it, Dave!

The new president/CEO of the association is putting his welcome energy into the job of trumpeting radio. He said the NAB board recognizes "the importance of going on offense" and listed areas where radio can do so.

He called radio's product "highly coveted." He talked about reaching out to foster the adoption of new technologies. He spoke of the "often-missed additional value of HD Radio to small markets."

He was blunt in his criticism of satellite radio, saying its business model is "bankrupt" and touting, "They cannot have it both ways. They cannot be both a subscription and a free service."

Rehr said NAB is "strongly encouraging" the FCC to adopt HD Radio rules and standards and said the commission must stop considering multicasts experimental. He noted that NAB is pushing the commission to let AMs use FM translators. And he criticized RIAA efforts to impose what he called a "performance tax" on radio, saying record labels have "conveniently forgotten about the mutually beneficial relationship their companies have shared with performers and broadcasters since the inception of radio."

Eddie Fritts and others have made many of these points. But we find Rehr's framing of the issues direct and effective. We like his tone and his forthright insistence on radio's strengths.

In calling for further change, he acknowledged that developing copyright, technology and business models will not be easy. But he was clear on his most important point: "We are transforming the NAB into an aggressive advocacy organization."

Another welcome voice was that of research consultant Mark Ramsey, who has gained a higher profile, particularly in the past year, for frank comments about the industry made online, in RW and elsewhere. Ramsey was quoted in The Dallas Morning News talking about what is *right* about radio.

"The assumption is that if something's hot in the moment, something else must be cool in the moment," he told the newspaper, criticizing media reports of radio's business outlook. "There are a lot of strengths that radio has evident in the research that we've done. It's not the story that's being told."

Listener satisfaction with radio, Ramsey said, is "overwhelming" (let that sink in for a moment), thanks in part to the "stuff between the songs that people value." Loyalty to stations is driven by what's between the tunes. "It's about connecting with other people." Listeners don't get that on an iPod, on Internet radio or on much of what satellite offers, Ramsey said.

Of course, traditional radio airs spots. Ramsey phrased a key question: Not "Can we get the number of spots down to zero," but "Are we giving people something that's worth the price they're paying in commercials?" Ramsey encouraged broadcasters to air content between the songs that matters to listeners. That means personalities people can connect with. "Invest in your strengths," he said. "Content is not cheap. Talent is not cheap."

Hear, hear. With new energy at the top of NAB and with clear-eyed analysis from folks like Ramsey, radio may, as Rehr said, have a bright future.

— RW

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