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XM Gets a Walk
 Radio shows little concern — yet — with satellite's impact on its baseball programming.

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The Download On iPodders
 Podcasters put a new face on audio delivery.

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Radio World



\$2.50

The Newspaper for Radio Managers and Engineers

February 2, 2005

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NEWS & ENGINEERING

▼ Years later, programmers are still debating the merits of PPM. Data from Houston is next.

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▼ Saul Levine is angry at the FCC for what he sees as a double standard for satellite programming.

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HD Radio Via Satellite Tested

BOSTON WUMB(FM) at the University of Massachusetts hosted what participants say are the first tests of satellite transport of HD Radio-encoded audio with program-associated data.

Ibiquity, Broadcast Electronics and the Public Radio Satellite System sought to demonstrate that point-to-multipoint studio-to-transmitter links are ready for digital radio.

The WUMB public radio network operates five transmitter sites in eastern Massachusetts, and applications for more are pending at the FCC. The cost of terrestrial point-to-point leased data circuits for WUMB's STLs has reached break-even with the space-segment costs of a satellite distribution system, and funding has been acquired to purchase and install an uplink at the studio and five downlinks at the transmitter sites, participants said.

But, participants said, there was a problem.

"Using today's standard satellite technology, we'd have to encode our STL audio using MPEG 2 at 128 kilobits per second to get through the satellite, and then re-code using the HD encoder at each transmitter," said Grady Moates, chief

See WUMB, page 7 ►

Tower Trends: It's All in the Code

'Stringent' G-Code Demands Strength, Service; ERI, NATE Develop Gin Pole Safety Standards

by Tom Vernon

The tower industry has enjoyed a period of intense growth in recent years due to the cellular/PCS boom and the coming of DTV and HD Radio. FCC regulations stipulate

that TV facilities be maximized by July 2005 for the top 100 markets, and July 2006 for the remainder of stations. While there is no digital radio mandate, radio is affected by the HD Radio rollout and changes in TV.

See ERI, page 8 ►



The 'arbor' is lifted into place for a candelabra-type tower being constructed next to an existing structure in a photo from Dielectric Communications.

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◆ NEWSWATCH ◆

NPR Makes Big Push for Tomorrow Radio

LAS VEGAS If the concept of turning a radio channel into multiple signals catches on, public radio may have earned credit as midwife, if not the parent.

NPR is prepared to bring its Tomorrow Radio project to reality with plans for handling both the programming and hardware needs of member stations. The network is seeking manufacturers to make HD Radios

that are able to receive multiple digital signals, with a group purchase in mind. It also is offering free programming for member stations to use for the channels. The network broke the news at CES in Las Vegas.

The target date is June for the first of what will eventually be four program streams consisting of classical, jazz, news/talk and an additional music channel.

A group purchase potentially could include 10,000 to 50,000 radios, NPR's Mike Starling told Radio World at the show.

Look for analysis and details of news from CES in the next issue.

HD Radio Planned At 2,500 Stations

LAS VEGAS Calling it a signal to receiver makers, Ibiqity Digital announced what it calls historic agreement with 21 U.S. radio groups to speed the conversion of another 2,000 stations to HD Radio.

AM and FM stations both are part of the plans, detailed at January's International CES show.

With roughly 500 stations that have licensed the technology, a total of 2,500 reportedly are making the transition, including stations in all of the top

100 markets.

The agreement includes commitments from ABC, Beasley, Bonneville, Clear Channel, Cox, Cumulus, Emmis, Entercom, Entravision, Greater Media, Infinity, Jefferson-Pilot, Journal, Liberman, NextMedia, Radio One, Regent, Saga, Sandusky, Susquehanna and Univision. Some of these had publicly committed stations earlier.

FCC Bureau's Security Scrutinized

WASHINGTON The FCC inspector general has identified eight areas of improvement that the commission should implement to make Enforcement Bureau field sites safer.

Overall, it found that "positive security controls" were in place at the bureau and that it had taken proactive measures to ensure the safety of employees and operations. But the inspector general wants the commission to improve protection against attacks at two or more directional finder locations, develop more formal directional finder site security standards and address specific problems at several locations.

On a separate issue, Inspector General H. Walker Feaster III reported to Congress that the FCC had made "considerable progress" last year in developing a recovery plan to continue operations in the event of a disaster, after starting an intensive effort earlier.

"The chief information officer and his staff have developed a comprehensive (disaster recovery plan) to support the recovery of IT systems if an incident disrupts service," Feaster wrote.

But the plan is not complete; he said it needs to include how the FCC will handle major applications in an emergency or disaster.

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Next PPM Test Underway

Programmers Are Still Debating Merits of New Measurement Methodology

by Leslie Stimson

COLUMBIA, Md. The initial data from Arbitron's Portable People Meter test in Houston is due out in mid-May.

If the long-discussed PPM eventually is accepted by the industry, it would mean Arbitron is no longer limited to the quarter hour as the smallest time period measured. Minute-by-minute estimates are possible.

Bob Michaels, Arbitron's vice president of radio programming services, told program consultants gathered in December that with the new measurement system, a station would know if a significant amount of listeners tune out when certain material airs.

Arbitron executives say programmers want this level of specificity. But some specialists say some general managers and programmers are already buried in data and the ratings experts do not perceive demand.

Steven Goldstein, executive vice president of Saga station WLZR(FM) in Westport, Conn., also is chairman of a station group that advises Arbitron. He said that group has endorsed the Houston test, but not the PPM itself.

"If PPM doesn't work, don't buy it. We have to know if it works," he said to attendees.

In the meantime, he said, "We're going to be in the diary business a long time," noting that even if the PPM does go forward, in the future, the large markets are likely to use PPM only; both the diary and PPM would be used in select markets; and the smallest markets may always remain diary-only areas.

Arbitron is still hoping Nielsen will be a monetary partner on the PPM project and expects an answer from the TV ratings company in the first quarter of 2006, Guyther said.

Seeking to strengthen its pitch on PPM, Arbitron in January named Pierre Bouvard to oversee the introduction of the Portable People Meter services in the United States, in addition to his current responsibilities for PPM marketing abroad.

Holdouts

In an effort to attract remaining radio groups in Houston to take part in the next PPM test, Arbitron has contracted with one of the designers of the iPod to re-design the Portable People Meter.

Although 38 of 50 stations were to encode in Houston beginning in January, Cox and Radio One remained holdouts, said Jay Guyther, Arbitron's senior vice president, Global PPM Marketing. Cox doesn't like the design of the device; Radio One is worried that enough African-Americans aren't represented in the sample, he said.

Fifteen out of 16 TV stations planned to encode their signals, as did 44 out of 46 cable systems.

Arbitron is operating two panels in Houston. Of the 1,050 people per panel, 28 percent are Hispanics and 18 percent African-American.

The panels mirror the population of the cities. But the Arbitron Advisory Council wanted the PPM to be tested

in an additional market, saying that the race and ethnic make-up of the previous panel, in Philadelphia, wasn't suf-



Dr. Ed Cohen

ficiently diverse.

Houston is the fifth test market for PPM, and there likely will be another, Guyther said.

Arbitron has contracted with one of the designers for the iPod to redesign the pager-like look of the PPM, originally developed 14 years ago. Arbitron is now using the 10th version of the meter; Guyther said it is smaller and

has a longer battery life.

Arbitron continues to test its "E-diary," which it hopes will help raise diary response rates, especially among young males. Studies show young men to be "consenters" but not "returners" of the diary.

With the E-diary, the idea is that men 18-24 might take the time to fill out the survey online instead of keeping a paper diary.

According to Dr. Ed Cohen, Arbitron's vice president of domestic radio research, the company found it problematic to send the diary via e-mail due to address changes and spam filters. Outgoing e-mail is unreliable and it's easy to get an address wrong, the company has found.

"We can't get e-mail addresses over the phone," said Cohen.

When the company is trying to place such a diary, typically whoever answers the phone doesn't know the e-mail addresses of the other members of their households, Cohen said.

For its next test of the E-diary, Arbitron plans to contact potential respondents by mail and ask them if they want to keep a diary online.

Other upcoming projects for Arbitron include a cell phone study and a survey in Florida and Alabama to learn about radio listening during recent hurricanes. The goal of the cell phone study is to reach people who only use a cell phone and have no land line.

DIGITAL NEWS

Macedonian AM Tries DRM

PARIS A broadcaster in the Balkan nation of Macedonia is experimenting with Digital Radio Mondiale for AM transmission.

A Balkan public broadcaster, in collaboration with Thales and Deutsche Welle, has transmitted 720 kW mean power in DRM mode from the medium-wave station Ovce Pole. The companies say this is the highest DRM power level ever broadcast by a single transmitter.

Transmissions were done on 810 kHz with a Thales' S7HP 1200 kW solid-state medium-wave analog transmitter, in operation at Ovce Pole since June 2002. For the tests, Thales provided front-end equipment from its Sky wave 2000 DRM digital line.

DW said it performed measurements of the signal quality and coverage area using a customized van and fixed control and measurement centers in Europe. DW carried out tests twice a day: three hours during the day to measure groundwave propagation and three at night to measure skywave propagation, while transmitting the program of Macedonian Radio.

The DW measurement van reported a daytime coverage area of up to approximately 186 miles. The nighttime DRM coverage area reached larger areas of Western Europe.

Participants said the audio quality was "excellent and disturbance-free."

XM Exceeds 3.1 Million; Sirius Passes Million

XM Satellite Radio announced in December it had surpassed 3.1 million subscribers.

Sirius has passed the 1 million-subscriber mark, also exceeding its year-end targets, and ended the year at 1.1 million.

Both credited holiday shoppers for helping to push the satcasters toward their goals.

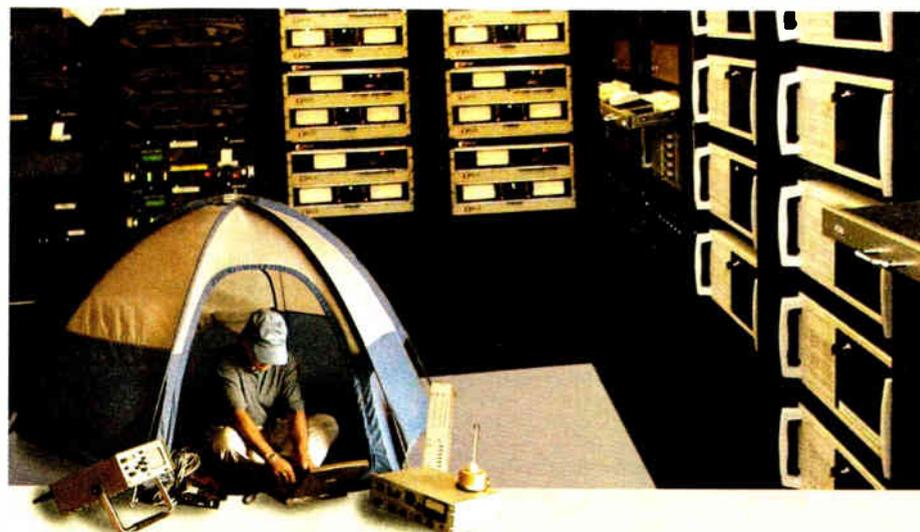
The higher customer numbers help in "reinforcing XM's significant market leadership position in satellite radio," said XM President/CEO Hugh Panero. New Sirius CEO Mel Karmazin cited aggressive marketing, advertising and an increase in consumer awareness for helping to drive subscriptions.

Also, GM recently signed up its 1 millionth XM Satellite Radio subscriber, the satcaster said. The automaker offers XM as a factory-installed or dealer option on 50 of its 2005 car and truck models and has been a strategic investor in the satellite firm.

A GM official said in a statement that more than 75 percent of customers with XM in their vehicles tell the automaker they would only consider, or prefer to buy a vehicle with XM, and that of those, 90 percent say they would recommend it to others.

GM began offering XM on Cadillacs in 2001. One out of three GM vehicles purchased now comes equipped with factory-installed XM.

— Leslie Stimson



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Is Ey Offended? The Heck With Em

Our technical adviser Tom McGinley wrote me to concur with our Jan. 5 editorial, "The Federal Bureau of Indecency."

"I completely agree with this piece, except for the last paragraph," he wrote. So I went back to look at it.

The published text stated, "The listener who finds herself offended should let market forces prevail, not look first to the government to solve her problem."

Tom took exception.

"This wording certainly seems to ignore the fact that males can just as easily be offended by indecent material on the radio as females. How 'bout some equal application of the gender-neutral or pejorative pronouns?"

This instance points up the danger of trying to make our language offensive to no one.

In this case, I made the change personally to the original text, inserting the female pronouns. Why?

In an ideal world, when describing people in a non-specific way, we would write "he or she," as in: "If a listener is offended, *he or she* should write to the FCC..."

That quickly becomes cumbersome. Some writers might turn to plural pronouns: "If a listener is offended, *they* should write to the FCC." Wordsmiths argue about such use, but our experts consider it undesirable. And we are far beyond using the male pronoun for *all* generic references that could apply to both men and women.

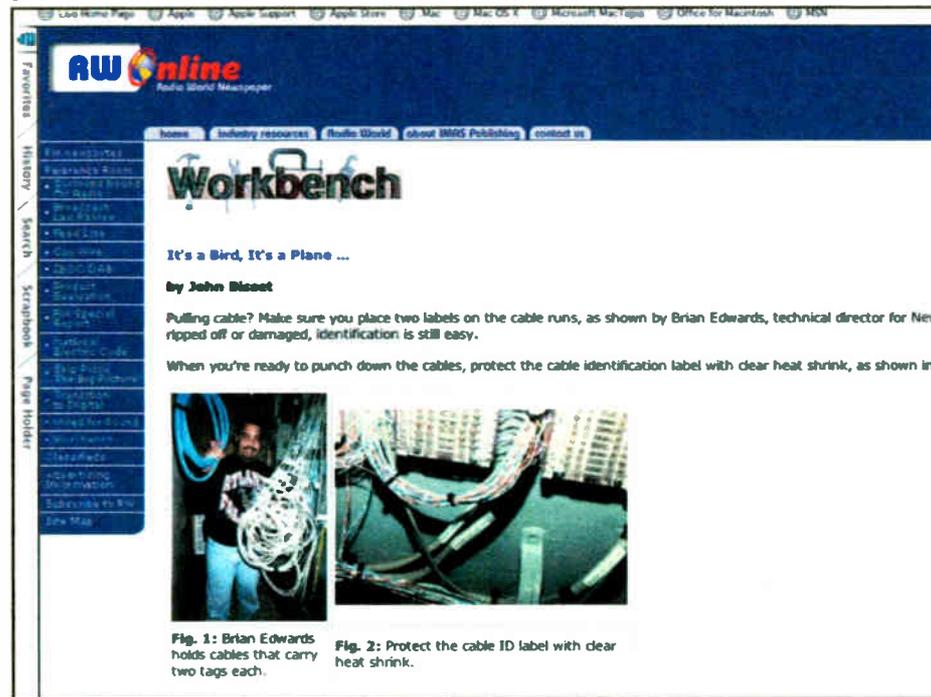
So as a practical matter, Radio World for years has sought to use gender pronouns blindly. Mark Lapidus might write, "Tell your GM how *she* can improve your promotions planning" or John Bisset might say, "Make friends with your group's personnel manager. *She* can be an ally."

In these cases, we assume the reader understands that *we* know not all GMs or personnel managers are female. And in a subsequent reference, we might write, "Also tell your sales manager *he's* a pain in the neck."

In the editorial Tom questions, I

chose the word "she." I did so ignoring any question of which gender is more likely to complain about radio programming. Tom asks for equal application of pronouns; and that's what we used.

forefront when you lose power or other public services. He likes having a windup radio at hand for such times, both as a radio professional and as a listener.



Archived Workbench content is a great resource, even years later.

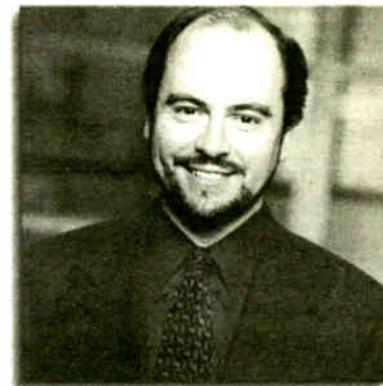
Having said that, it would have been better to write "him or her" in this case. Our article took listeners to task, and we should not have left the impression that we meant only female listeners. Editors must favor clarity over consistency.

PS: Thousands of entries are available online if you search the topic "gender neutral pronouns." These folks advocate using words like "ey" for "he/she" and "eir" for "his/her." Perhaps soon Radio World can use those. Thus I might write: "The listener who finds eirself offended should let market forces prevail, not look first to the government to solve eir problem."

If a reader has thoughts, ey can write to me.

Contributing writer Buc Fitch points out that local radio comes to the

From the Editor



Paul J. McLane

columns available, for free, on our Web site? What a great way to teach a newcomer tricks of the trade or freshen your own approach to your job.

I skimmed through the collection today and marveled at how much ground John has covered just in the past five years — and I noticed that most of this content never goes out of date.

What to look for on a roof inspection. Tools to keep around the shop. Ideas for labeling cables. How to kill hornets, chase away rats and keep pollen out of your transmitter. Surge suppressers. WaterBugs. Infrared camera systems. Literally a wealth of ideas.

Perhaps one day, John and I will compile those columns into a book. But why wait? Grab a cup of joe and enjoy a long winter's read through *Workbench*.

Thanks to all who wrote in response to our offer of a Tower Site Calendar. The winners were Dick Myers of WCTR(AM) in Chestertown, Md.; Rick Leigh of WKYI(FM) in Georgetown, Ky.; Dale Ganske of Hawkeye Radio in Middleton, Wis.; Steve Clendenin of WAMD(AM) in Aberdeen, Md.; and Lee Stang of the Elk Lake School District in Meshoppen, Pa.

Thanks also to Scott Fybush for contributing the prizes. Calendars cost \$16. Orders can also be placed at www.fybush.com.

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Canada Scrutinizes Pay Radio

Can Pay Radio North of the Border Survive Heritage Content Quotas?

by James Careless

OTTAWA, Canada By spring, experts say, the broadcasting industry and the public likely will know if the Canadian government will license pay radio, whether it be delivered by satellite or terrestrial transmitters.

Experts here wonder whether Canada's treasured heritage content regulations — which require broadcasters to play 35 percent Canadian music in exchange for their licenses — can survive pay radio.

This question is front and center now that the country's broadcast regulator, the Canadian Radio-television and Telecommunications Commission, has wrapped up its first pay radio hearings. There may be more on the topic, but the CRTC had not publicized its intentions as of January.

The CRTC does not have to make a decision by a certain time; and it has several options. It may license any or all of the three proposals before it, or none. It also could impose conditions on applicants different from those for terrestrial radio.

At the hearings in Gatineau, Quebec, across the river from the Canadian capital of Ottawa, CRTC commissioners heard from those seeking a license for pay radio. The companies are Canadian Satellite Radio, which is a partnership of XM Satellite Radio Holdings and Toronto entrepreneur John Bitove, founder of the Toronto Raptors NBA team; Sirius Radio Canadian, a consortium of Sirius Satellite Radio, the publicly-funded CBC and private broadcaster Standard Radio; and CHUM Subscription Radio Canada, a terrestrial system spearheaded by CHUM and Canada's Astral Media.

Both CSR and Sirius proposed piggy-backing at least four Canadian channels each onto existing U.S. satellite radio networks. In both services, some of the channels would be English, others French.

Because it would be broadcast over a network of terrestrial stations that also broadcast Eureka-147 DAB, most of CSRC's 50 pay radio channels would meet the commission's 35 percent Canadian content or "Cancon" requirements. However, unlike satellite radio, the terrestrial CSRC service would be

We don't feel that the broadcast radio model is applicable to pay radio, just as pay TV isn't regulated the same as broadcast TV in Canada.

— Stewart Lyons, CSR

only available in top markets, not heard in Canada's rural and remote areas until DAB repeaters were built to cover them, if ever.

Cancon

Were CSR and Sirius not satellite-based, they wouldn't have much chance of meeting Cancon requirements, a point raised by Commissioner Joan Pennefeather and shared by CRTC Chair Charles Dalfen, according to *Broadcaster Magazine* in Canada.

Pennefeather reacted to CSR's proposal by stating, "We could come into this looking at the deal in front of us and say that's not enough; four channels out of a hundred are not enough," according to the CBC Web site.

But regulators are considering CSR and Sirius because Canadians already are subscribing to U.S. satellite TV services illegally, and members want to curb this behavior for radio.

Known as the "grey market," this form of law-breaking is of real concern to the CRTC; up to 800,000 Canadians illegally subscribe to American DBS services, based on research by Bell ExpressVu cited by CBC.

About 2.2 million Canadians subscribe

to the country's two licensed pay TV providers, Bell ExpressVu and Star Choice.

CSR and Sirius Radio Canadian played down the Canadian content issue by positioning pay radio as distinct from over-the-air broadcasting.

"We don't feel that the broadcast radio model is applicable to pay radio, just as pay TV isn't regulated the same as broadcast TV in Canada," said Stewart Lyons, CSR's executive vice president.

regulatory affairs, at the hearing, as reported by *Broadcaster Magazine*.

Precedent

The regulators are wrestling with tough questions on this issue. If they insist on 35 percent Cancon quotas, the government won't be able to license CSR or Sirius as proposed.

It is unlikely that either could modify plans enough to meet Cancon regulations, which would mean playing one-third Canadian music on all channels. This could result in more Canadians seeking to receive satellite radio illegally as they have with satellite TV, some experts believe.

If the CRTC doesn't apply existing content quotas to pay radio, Cancon-regulated broadcasters likely will protest. However, the commission would then see at least some Canadian content on satellite radio.

The Canadian government has said it will prosecute retailers but is reluctant to go after grey-market subscribers. It has said it is legal for residents to bring U.S. satellite receiving equipment across the border.

Historically, there is precedent for the CRTC relaxing content regulations — ironically, with CHUM as the beneficiary.

CHUM owns and operates four radio stations in Windsor, across the St. Clair River from Detroit. To allow these to compete with Detroit stations, the CRTC has cut CHUM's Windsor Cancon requirements to 20 percent. CHUM says in order to compete against Detroit, it needs its quota reduced further. ●

DIGITAL NEWS

Sirius, Navteq Partner for Traffic

NEW YORK Sirius will provide traffic data to vehicles over its nationwide satellite radio network. The company has signed an agreement with Navteq, which provides mapping and traffic data reporting services to consumers.

Initially, the service will cover 30 markets and is expected to expand to more than 50. XM debuted a similar service with Navteq in April.

According to company officials, Sirius auto and retail partners plan to offer the Sirius traffic service as a product upgrade for their upcoming navigational systems. The satcaster also expects the service to provide an additional revenue stream.

XM Hires Bailey Lobbyist

WASHINGTON XM Satellite Radio has named Bill Bailey, a former staffer to Sen. John McCain, as senior vice president of regulatory and government affairs. Bailey was senior counsel for the Senate Commerce Committee. Bailey also served as the committee's lead Republican staff member on communications issues.

Prior to his work with the Commerce Committee, he was a senior advisor at the Commerce Department's National Telecommunications and Information Administration. He began his government service in 1996 with the Common Carrier Bureau of the FCC.

After serving in a number of posts at the FCC, Bailey left government for legal and public affairs positions with two private telecom companies.

— Leslie Stimson





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◆ NEWS WATCH ◆

Net Radio Called Bigger Threat Than Satellite

Internet radio is a much bigger competitor to terrestrial radio than satellite radio is.

That was the conclusion of a recent write-up in the Wall Street Journal, which noted that Net radio had about 19 million weekly listeners compared to 3.4 million for satellite radio at the time (it has since increased to 4.1 million).

The Journal reports that three years ago, Internet radio had 11 million weekly listeners. Figures are from Arbitron and Edison Media. By comparison, 227 million people listen each week to terrestrial radio.

The growth rate of Internet radio has caught the eye of traditional radio groups such as Clear Channel and Radio One. Clear Channel recently hired an AOL radio executive to lead its Web radio efforts; Radio One plans to simulcast some broadcasts online, COO Mary Catherine Sneed told the Journal in December.

Arbitron says people tend to listen to terrestrial radio in the car and Internet radio in the office. That balance could change as home networking systems become more popular and wireless Internet capability expands, according to the Journal.

Las Vegas Monorail Re-Opens

LAS VEGAS At least for now, it looks like the \$650 million Las Vegas monorail will be running for the 2005 NAB convention.

The system had failed to open in time for last year's NAB show. It opened in July only to shut down in September due to safety and maintenance problems. It reopened over the Christmas holiday, according to the Washington Post. A free-ride promotion running helped draw a reported 45,000 riders on Dec. 25.

"It's one of the most embarrassing things ever to happen to this city," the Post in December quoted a tourism trade publisher saying of the monorail's problems to date, including parts falling off and doors opening on the wrong side, exposing passengers to a potential fall. No one has been hurt.

Entercom Faces \$220,000 in Indecency Fines

WASHINGTON The FCC proposed a total of \$220,000 in fines against Entercom stations KFH(AM) in Wichita and KQRC(FM) in Kansas City for indecency. The broadcasts in question occurred in 2002 on the morning show "Dare and Murphy."

The original complaint was anonymous and included tapes of the material. Entercom told the FCC it doesn't have tapes of the segments. The four segments the commission said were indecent included a description of a game called "Naked Twister" in which local strippers participated, dwelling on sexual descriptions. The agency said an interview with a porn star was too graphic, including one discussing anal sex and another in which the interviewee reportedly used a sexual device on a stripper on-air.

Entercom told the commission the material was not explicit and could be open to other, non-sexual, meaning. The group said the indecency definition is "unconstitutionally vague and overbroad."

The commission rejected Entercom's arguments, including a contention that KQRC's high ratings indicate that the material is not offensive to the community. Entercom did not respond to queries from Radio World by press time.

Commissioners Kevin Martin and Michael Copps agreed with the decision to fine the stations but thought each indecent utterance should have been penalized so the stations would be assessed larger amounts.

The fines were the maximum \$27,500

each for four violations at \$110,000 per station.

Basics Loom Large When Power Fails

WASHINGTON Food, backup power and shelter. Those are the three things CBS needed during 9/11 and later, during the New York blackout of 2003, said Bob Ross, VP Operations at CBS, during a meeting of the Media Security and Reliability Council meeting last fall.

The group was formed by FCC Chairman Michael Powell after 9/11 to help stations plan for ways to stay on the air or get back up and running quickly in the event of further terrorist attacks or natural disasters.

Ross is chair of a working group for MSRC. Ross said that during the Sept. 11 attacks and the blackout in New York, the network had to shelter news people who couldn't get home and force them to eat food before it went bad because the refrigerators in the building were not on backup power. CBS had emergency fuel for its satellite trucks, but no power to pump the fuel into the vehicles.

Another item stations need to think about to plan for an emergency is a stash of cash with a designated person in charge of it.

"Without power, people can't take credit cards," said Ross.

In both cases, the city was without power for days. CBS also found out during the blackout that when it remodeled, some of the newsroom's lights were not connected to a backup power supply.

Inouye, Stevens To Hold Telecom Road Shows

WASHINGTON Sen. Daniel Inouye of Hawaii sees a key role for himself as Congress soon begins re-writing the

Telecom Act.

Inouye, ranking Democrat of the Senate Commerce Committee with the retirement of Fritz Hollings of South Carolina, told the Honolulu Star-Bulletin that he and Republican Ted Stevens of Alaska would chair hearings across the country to hear from citizens about the rewrite. The pair planned to hold six meetings in January and this month, reported the paper.

Lawmakers expect to focus on telephony for much of the rewrite, experts believe.

FCC Denies Texas Bid for LPFM Waiver

WASHINGTON The FCC denied Angelo State University's request for a waiver so it could have a low-power FM station in San Angelo, Texas.

When the application was filed in 2001, the FCC rejected it because it did not meet channel-spacing requirements. ASU's proposed site was 9.8 kilometers from first-adjacent KMDX(FM) in San Angelo. The commission requires a distance of 80 km between such facilities.

A year later, ASU amended its application, asking for approval of a major modification — a different LPFM channel to avoid the spacing conflict. But ASU applied after the filing window for LPFM applications, saying it had been unaware of the short-spacing problem when it filed originally.

The commission allows only minor technical modifications to applications after the close of an LPFM filing window. Minor changes to LP100 applications are limited to those specifying changes in site of two kilometers or less.

The FCC said WSU failed to show why the agency should bend the rules.

Tauzin to Head Drug Maker Lobbying Group

WASHINGTON Rep. Billy Tauzin of Louisiana, former head of the House Commerce Committee and one of the key players in shaping the 1996 Telecom Act, left office in December to lead a drug industry lobbying group.

Pharmaceutical Research and Manufacturers of America Chairman Miles White announced Tauzin would assume the role of president and CEO of PhRMA. Tauzin replaces Alan Holmer, who retired.

Tauzin, considered a longtime ally of NAB, gave up his leadership of the committee in February of 2004, when he disclosed he had a bleeding ulcer. Later, his diagnosis was changed to intestinal cancer. He had led the committee for nearly three years.

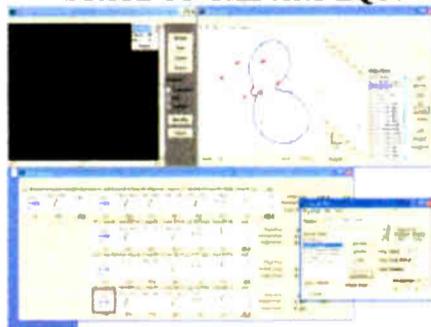
"When I was in my fight with cancer earlier this year, I was reminded about my own mother who fought off cancer — three times — and my father-in-law, who is currently battling cancer," stated Tauzin. "As I worked through my recovery, I realized that I wanted to work in an industry whose mission is no less than saving and enhancing lives."

Tauzin was up for the job earlier last year but bowed out when Democrats criticized him for considering the post while still leader of the Commerce Committee, which regulates the drug industry.

He was elected to Congress in 1980 as a Democrat and switched parties a decade ago. His son, Billy Tauzin III, lost his bid to replace his retiring father in a Dec. 4 runoff election.

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WUMB

► Continued from page 1
engineer for WUMB.

"While that might be acceptable if all of our source material is linear, close to 40 percent of our programming comes to us through the Public Radio Satellite, which adds a third coding. I am convinced that a single HD encoder at our studio, with satellite distribution of the HD signal, is the answer."

According to the participating organizations, Mike Kirk with PRSS researched the issue and suggested a live test of the concept spanning half the continent using an off-the-shelf "satellite Ethernet modem" technology. Moates and Kirk designed the test to emulate a fully-digital broadcast of a live classical music NPR program, from the network all the way to the listener.

Kirk came to Boston for final assembly of the downlink equipment on Dec. 16.

Participants say these were the first tests of satellite transport of HD Radio-encoded audio with program-associated data.

Moates said, "At first, it didn't work. After about an hour of head-scratching, as well as a break to attend the WUMB staff holiday party, we called BE's Dave Kroeger to get help with configuration of the IP addresses of the various components in the system. This worked."

The engineers said the tests show that HD + PAD can fit inside a standard 200 kHz digital SCPC channel on a satellite transponder, reducing distribution costs while improving audio quality through reduction of transcoding errors. In the 20 hours that the test was conducted, the modem counted zero data errors in the satellite link, they said.

Thanks to CPB funding, WUMB says it was the first public station in New England to broadcast with HD Radio. The Department of Commerce/PTFP is funding WUMB's plans to build the up-and-down-link sites in spring of 2005. WUMB expects to be on the air with HD Radio at its other four transmitters by summer.

How it was done

A stereophonic feed of classical music from a CD player was uplinked through a standard 256 kbps stereo PRSS channel, and received at the Satellite Transmission Center in Washington. A demodulated AES/EBU 48 kHz digital audio output was taken and fed into a Broadcast Electronics Exporter, which encoded the HD + PAD, and sent it out an Ethernet port at approximately 110 kbps, as User Datagram Protocol.

The UDP data was fed via Ethernet to the Radyne Comstream modem, uplinked

to the satellite again and received at WUMB on its standard PRSS downlink antenna. Another Radyne Comstream receiver/modem was used to reconstruct the UDP data, and it was fed into a Broadcast Electronics FXi-60 HD Radio/FM exciter with a new Engine card.

The exciter fed a dummy load, and an off-the-shelf JVC in-dash HD Radio receiver was placed on the table near the exciter.

Unlike TCP/IP, UDP/IP is designed for "one-way IP" data transmission. It does not have packet-reordering capability, and therefore has lower overhead, allowing higher payload throughput in a limited bandwidth channel. This characteristic makes UDP a good choice for digital audio transmission through a dedicated, one-way data channel, participants said.



Grady Moates is shown with the transmitter site/downlink test setup.



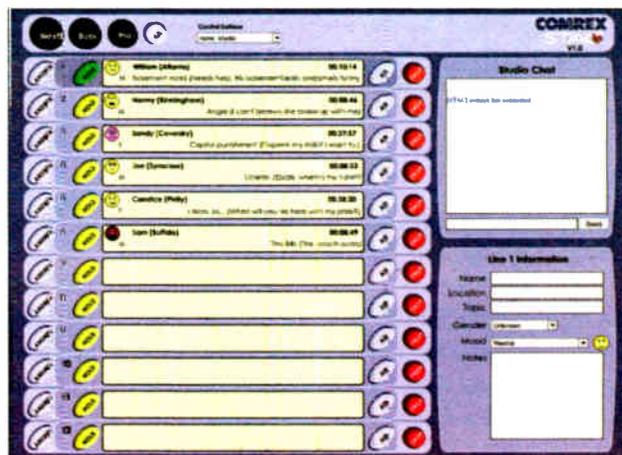
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STAC (Studio Telephone Access Center) puts you in control of your talk shows, request/contest lines, call-ins and phoners with great sound, ease of operation and scalable configuration. Incorporating a pair of Comrex high-performance digital hybrids, STAC provides the most natural sounding telephone audio — even when conferencing up to four callers.

The STAC system is available in six (STAC 6) and twelve (STAC 12) line versions. Connect up to four control surfaces using standard CAT5 cable — no custom cabling required. Best of all, STAC is incredibly easy to use — anyone can master it in seconds.



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Cool features include:

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- **Auto-Attendant** answers, plays your message and STACs callers on hold. Great stress relief for screeners and producers!



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COMREX

ERI

► Continued from page 1

"As these stations install additional transmission lines and antennas for HDTV, they may need to get structural analysis of their towers, and make sure that all new construction is compliant with the EIA/TIA Code 222G, also known as the G-code," said Jay Martin, vice president of sales and marketing for Dielectric Communications.

Martin said the upcoming G-code has more stringent requirements than the current F-code. Two design specifications are dealt with in the G-code: strength and serviceability. Strength limits are based on the loading of a tower under extreme conditions, while serviceability limits ensure that the tower will perform under day-to-day conditions.

Know your tower

Under the new code, a geo-tech report must be made for the tower base area before construction can begin. Towers constructed in seismically-active areas will require additional reinforcement to withstand earthquakes. Soil types are classified into sand, clay and rock. While the current F-code specifies a minimum number of ground rods for a tower, the G-code will stipulate that the system have a maximum ground resistance of 10 ohms.

Three classes of towers are specified in the G-code, based on the impact of that tower's failure on human life and public safety. The greater the impact of a failure, the more stringent the design specifications.

Class 1 towers include amateur, CB, two-

way and residential wireless towers. Class 2 includes broadcast and most other types of towers, while Class 3 describes towers in which a failure could result in loss of human life or property, or are used for emergency communications.

"The bottom line is that the new code will require owners and management to know a lot more about their towers," Martin said.

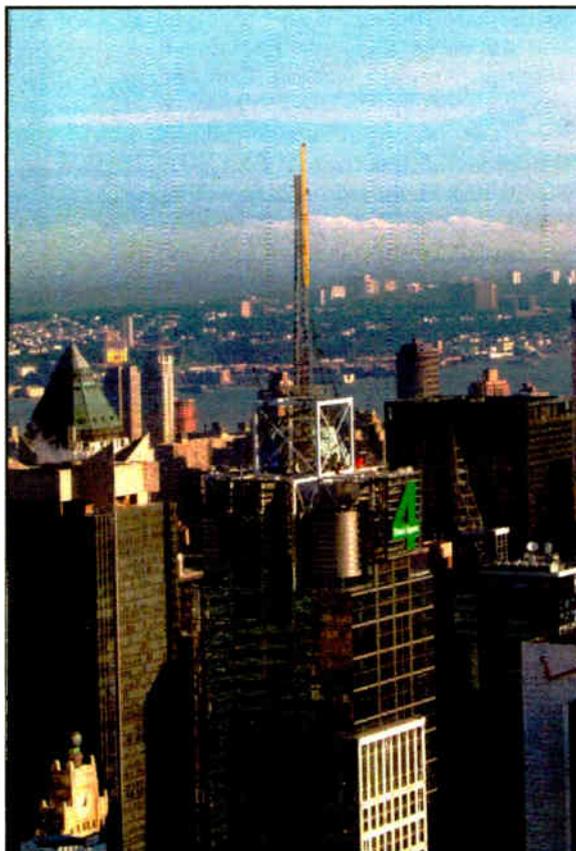
The same regulations apply to radio, and managers whose upgrades to IBOC entail installation of additional transmission lines and antennas will need to understand and comply with the G-code. Martin estimates that about 2,000 radio stations could be affected.

"We've been getting a lot more calls from broadcasters requesting structural analysis of towers and installation of reinforcing structures."

David Davies, structural engineering manager for ERI, said that with the G-code comes an increased awareness of tower issues among many parties.

"There used to be a mindset among many owners of 'why worry, that's why we have tower insurance.' Now insurers are becoming more savvy and demanding engineering reports, or proof of compliance with the G-code before they will issue a policy," he said.

Broadcasters also are more aware when it



An ERI gin pole sits atop 4 Times Square in New York City.

comes to renting out space on their towers.

"When someone wants to lease space on your tower and they offer to do the structural analysis," Davies said. "there is an obvious bias to present an optimal scenario, even if the data doesn't support it." He said most owners are now sufficiently aware to do their own analysis before making a decision to lease tower space.

"Practically all of the tower disasters from the last two years have been the result of a construction scenario where an increased load was not compatible with the capacity of the tower."

There can be an upside for radio stations with towers at maximum capacity. A potential lessee may be willing to foot the bill for strengthening a tower so they can rent space. For them, these costs may involve less time and money than getting zoning approval and erecting their own tower.

Is it safe?

Davies said the industry trend is towards safer structures.

"With the old code, the less data you provided to the manufacturer, the cheaper the

tower was. With the G-code, the less data you provide, the more expensive the tower becomes, because the defaults are very stringent."

While most construction activity centers on strengthening and upgrading existing towers for DTV, HD Radio or auxiliary services, Martin said the shift of U.S. population to the south and southwest has resulted in some new structures erected in those areas.

Safety standards and practices also are being upgraded for the riggers who work on towers. Gin poles, structures used to give a height advantage when stacking tower sections or antennas, have long been an area of concern. Often built in the tower rigger's shop, they vary in structural strength, size and design. Improperly used, they can be overstressed and collapse, or overstress the tower itself, leading to its collapse.

The National Association of Tower Erectors, based in South Dakota, is a non-profit trade association with a mission statement that promises the pursuance, formulation and adherence to uniform standards of safety to ensure the continued well-being of tower personnel (see sidebar).

A recent collaboration between NATE and ERI has led to the first set of standards for the manufacture of gin poles. New poles will be marked with load ratings, have mounting hardware that make it easier to attach the devices to towers and have indicators that display how much stress is being placed on the pole.

Consolidation is well underway in the tower business. Large companies continue to buy up smaller, family-run businesses. This practice is expected to continue, as compliance with stricter OSHA regulations for tower safety will raise the cost of doing business. The remaining small companies are concentrating on maintenance, painting and lighting, observers say, while larger organizations focus on the more lucrative construction contracts. Currently, SpectraSite Corp. and American Tower Corp. are the two largest companies in the industry.

While the state of the tower industry seems bright, it does face challenges. As the cellular boom winds down in the coming years, and the DTV deadlines are met by 2006, observers say, there may be a sharp decrease in business, with a resulting reduction in the workforce and reduced wages. There may be another brief surge in contracts with broadcasters, however, as all of those obsolete NTSC antennas are taken down. ●

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*HD Radio is a registered trade mark of iBiquity Digital Corporation.

NATE 2005 Offers Two-Track Educational Sessions

Approximately 1,200 broadcast and communications tower professionals are expected to visit the Wyndham Anatole in Dallas on Feb. 14-16 for NATE 2005, the 10th annual conference of the National Association of Tower Erectors. The gathering includes exhibitions and educational sessions. Up to 100 exhibitors are expected.

NATE is a non-profit trade organization that provides members with uniform safety standards, improved communication and loss control. It includes approximately 60 companies in the United States and Canada.

Recent activities include developing a standard for training tower climbers, advising on federal standards for tower erection and developing a set of best practices for safety and tower erection.

NATE 2005 educational sessions include technical and management tracks. Tech sessions include engineering basics, to give hands-on people insight into how structures are engineered; FAA observation and marking requirements; hydraulic power systems and hoists; RF safety; and aerial device safety.

Topics for management include leadership in the next generation; NATE and OSHA relations; leadership in the modern-day business organization; a Department of Transportation session on the commercial driver's license; and substance abuse.

The keynote address will be given by Lawson McGruder, retired lieutenant general in the U.S. Army and a consultant on homeland security.

For information about the NATE conference or to obtain a copy of the Tower Owner's Safety Checklist, call (888) 882-5865 or visit www.natehome.com.

Leading POTS Codecs Compared.

	Comrex Matrix	Tieline Commander	Zephyr Xport
Audio Bandwidth @ 24 kbps @ 19 kbps	14 kHz 11.2 kHz	15 kHz 9 kHz	15 kHz 15 kHz
Direct Internet Software Updates	No	No	Yes, via Ethernet port
Digital PC Audio Input	No	No	Yes, via Ethernet port and supplied driver
Audio Metering (XMIT/RCV)	Transmit only	One-at-a-time	Simultaneous
Audio Processing	None	Simple AGC	Digital multi-band AGC with look-ahead limiter by Omnia
Remote Control	No	RS-232 and dedicated computer	Ethernet via Web browser
Auto Dial Storage	19 Numbers	50 Numbers	100 Numbers
Frequently-Used Settings Storage	none	none	30
Standards-based POTS Codec	No - Proprietary	No - Proprietary	Yes - aacPlus (MPEG HEAAC)
Transmit-Receive Quality Display	No	Yes	Yes
Contact Closures	2	2	3
Display Resolution	120x32 LCD	120x32 LCD	128x64 LCD
Analog Cell Phone Interface	Optional	Standard	Standard
Mixer Inputs	1 mic, 1 mic / line	2 mic / line	1 mic, 1 line
Phantom Power	No	No	Yes - 12 volt
Automatic Voice-Grade Backup	No	No	Yes
Power Supply	External	External	Internal auto-switching
Local Mix Audio Outputs Headphone Line Level	Yes Yes	Yes No	Yes Yes
Direct Receive Audio Output	No	Yes	Yes
Uses ISDN at the Studio Side for More Reliable Connections	No	No	Yes - your Zephyr Xstream becomes universal POTS and ISDN codec.
Available ISDN Option	\$850.00 (adds MPEG L3 & G.722)	\$850.00 (adds G.722)	\$495.00 (adds G.722 & state-of- the-art AAC-LD for high fidelity and low delay)
List Price:*	\$3,700.00	\$3,650.00	\$2,495.00



The world's most advanced POTS codec
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* Refers to base MSRP without ISDN option as of 5/1/04. The Telos logo, Zephyr, Zephyr Xstream, Zephyr Xport are all registered trademarks of TLS Corporation, © 2004. aacPlus (TM) Coding Technologies. Comrex, Tieline and associated trademarks are property of their respective owners. Product specifications quoted from manufacturer's most current published documentation at time of printing.

Workbench

Radio World, February 2, 2005

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

PVC Pipes Help Rack Up Savings

by John Bisset

Like most engineers, I'm impressed with the scope of product found in the Middle Atlantic Products CD. These guys think of everything.

As data and communications become integral to broadcast facilities, and in order to optimize space and functionality, the company introduced its Rackmount

dual-slide rack system, allowing users to monitor the system while minimizing rack space used.

It also has integrated rear articulating cable carriers to provide cable strain relief.

Middle Atlantic Products recently turned 25. It is headquartered in Riverdale, N.J. Check them out at www.middleatlantic.com or call (800) 266-7225.

that Dirk and his boss, Nassau Senior VP for Engineering and Technology Tony Gervasi, used.

The PVC pipes are anchored inside the rack, using traditional bracket supports. The pipes were painted black to match the equipment racks. When the room is completed, ceiling tiles will be cut to finish the look. By locating the pipe runs at the edge of each suspended ceiling panel grid, panels can be installed or removed with ease.

I should point out that there is no plenum in this rack room. The room is sealed with its own wall-mounted air conditioner. Use caution about running non-plenum rated cable in ceilings, unless it's run in conduit. New facilities are likely to be inspected, and the electrical inspector will not be pleased.

Tony chose the Radio Systems

neat twist for multiple stations and EAS. Tony ordered the StudioHub distribution amplifiers, shown in Fig. 2. Each Sage Endec is fed into its own DA, which can be routed pretty much anywhere.

At the Nassau New Hampshire location, operation of the SAGE Endec is simplified through the use of the Sage remote control device, seen in Fig. 3 and held by engineer Steve Ordinetz.

Dirk is a good engineering manager. He wanted to make sure his entire staff received credit for the superb job they did with the New Hampshire studios. In addition to Dirk, Tony and Steve, George Bierbaum and Ron Leroux assisted in the construction.

In building a new rack room to accommodate a cluster of acquired stations, Nassau New Hampshire DOE Dirk Nadon chose Middle Atlantic equipment racks.

Art Hadley is with the University of Kansas and does freelance engineering and voice work. He writes with interest about the mention of Neutrik's solderless XLR connectors in the Dec. 15 Radio World.

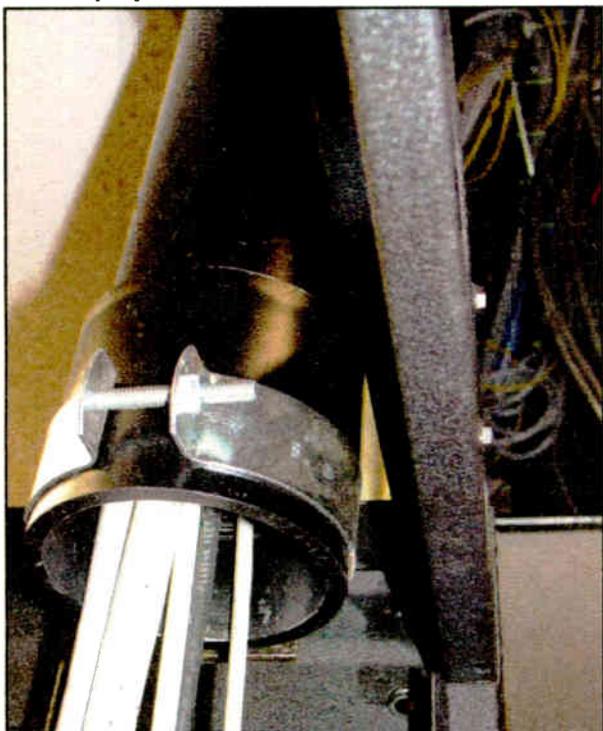


Fig. 1: Painted PVC pipe forms a conduit from the rack to the ceiling.

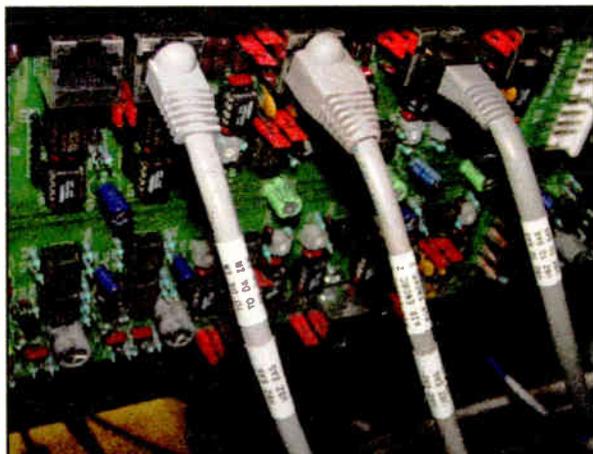


Fig. 2: A Radio Systems StudioHub DA routes EAS signals.



Fig. 3: Relay of EAS tests is simplified for air staff using a remote control device.

LCD. Keyboard and integrated Touchpad. The RM-KB-LCD15 has a

Fig. 1 shows a novel approach to handling wires and cables entering each rack

StudioHub wiring system to interconnect the studios to the rack room. Here's a

Interesting because 11 years ago Art See SOLDERLESS XLR, page 12 ▶

MultiPhones Makes Headphones Happen!

NEW! The **MultiPhones** headphones system gives each studio guest their own headphone amp on a compact, easy-to-mount "Guest Pod" panel.

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Solderless XLR

► Continued from page 10

went to Hawaii for the winter to install broadcast and recording studios for the Hawaii State Library for the Blind and Handicapped, a few blocks from Waikiki Beach.

At the time, Radio World had been advertising a quick-assembly, solderless, "no screws" XLR called Jaws. Ads showed a large (Mackie?) mixer being held up by a single audio wire and Jaws connector.

Art saw the ad and bought 300 of the connectors for his studio project. He had about the same results as reported by Jim

ful product. It's too bad Neutrik didn't just buy the product and process a decade ago.

Art Hadley can be reached at the University of Kansas at art@ku.edu.

★ ★ ★

I mention Art's letter because it points to the purpose of this column: to educate engineers. It could have been written by Jim Schropp's dad Larry; they run Schropp Technical Services.

As the generations move on, a lot of engineering techniques and tips never change. Often when I talk to engineers about a tip or trick, their reaction is, "Oh, everyone knows about that." But in so

ters, there's Dave Agnew, Ken Branton, Paul Gregg and Charlie Goodrich.

Longtime readers know how I feel about using a transmitter manufacturer's tech service: you pay for this service in the price of the transmitter, so you'd better use it. The same is true for other equipment problems. Find a good diagnostic technician, and hold on to that person's name. You'll learn a lot from your conversations.

Clay Freinwald, liaison to the SBE for EAS matters, recently received an e-mail requesting help with a problem involving the Sage Endec. Clay referred the matter to Chris Pannell of Harris, who provided the following response: For those who have the

Sage Endec, the Harris technician to contact for help is Mike Mills. His phone number is (513) 459-3693. Chris says that he is an expert on diagnosing Sage Endec problems.

Thanks Chris, and Clay, for sharing this information with readers of *Workbench*.

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

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

You pay for tech support from a manufacturer in the price of the product. Why aren't you using that service?

Schropp with the new connectors: not a single failure, and about 30 to 45 seconds per installation. The only tool needed was a wire stripper (to remove an inch of the outer insulation; the center wires were unstripped).

Art loved these connectors so much that he wrote me and we featured them in *Workbench*. I believe an Australian company, Alcatel, marketed these through a select number of broadcast distributors. Art recalls that the advertising stopped and the connectors went away. The next time Art wanted some, he couldn't find them or an equivalent.

Now, finally, there's something available again: the Neutrik version.

Interesting that it took 10 years before someone else started making such a use-

many cases, they don't.

Enter the *Workbench* column. If you've got an idea or simple tip that you haven't seen in these pages, send it. If you haven't sent it in because you think everyone knows about it, send it to me anyway. I'd like to consider it for a future column. Radio World will send a modest honorarium for any contributions we use. If you are SBE-certified, your published tip also will qualify for recertification credit.

You can e-mail your submission to me at john.bisset@dielectric.spx.com.

★ ★ ★

It never hurts to have a contact for "expert" advice in troubleshooting equipment problems. In the world of transmit-

MARKET PLACE

2005 Tower Calendar Available

The last "flat-top" wire antenna in use in the United States. A classic Art Deco transmitter site. A rare view of Chicago's Hancock towers.

These are among photos featured in the 2005 edition of Scott Fybus's Tower Site Calendar.

Fybus, a Radio World contributor and creator of the online Tower Site of the Week, is in his fourth year of producing the calendar, which started as a labor of love and incorporates photos from his travels around the country.

Sites include:

- WBBR, New York, the former WNEW and now the flagship station of Bloomberg Radio.
- KYPA, Los Angeles, a "flat-top" wire antenna dating to 1924.
- Sutro Tower, San Francisco
- WDEL/WSTW, Wilmington, Del., an iconic studio/transmitter site.
- Poor Mountain, Roanoke, Va., home to FM and TV signals.
- WOOD, Grand Rapids, Mich., a 1940s Art Deco transmitter site.
- KFJZ, Fort Worth, Texas, framed by a view of the city skyline.
- WDEV, Waterbury, Vt., with the Green Mountains as a backdrop.
- WNBF, Binghamton, N.Y., on Ingraham Hill.
- CFNB, Fredericton, N.B., a relic of a now-defunct Canadian station.
- KXNT, Las Vegas, amidst desert scenery.
- Gibraltar Peak above Santa Barbara, Calif.

Calendars cost \$16. Orders can also be placed at www.fybus.com.



A view from atop the John Hancock Center includes an FM master antenna plus WBBM(TV/DT) at left, with more TV at right.

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The DAVID-III is easy to set up and easy to use. It employs quasi-digital PWM processing circuitry, digital synthesis of the FM baseband signal, and it never requires routine calibration. Component parts are common and available worldwide.

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How to Submit Letters

Radio World welcomes your point of view on any topic related to the U.S. radio broadcast industry.

Letters should be 100 to 300 words long; the shorter the letter, the better chance it will be published in full. We reserve the right to edit material for space. Longer commentaries are welcome but may not reach print as quickly.

Include your name, address and contact information, as well as your job title and company if appropriate.

Send letters via e-mail to radioworld@imaspub.com, with "Letter to the Editor" in the subject field; fax to (703) 820-3245; or mail to Reader's Forum, Radio World, P.O. Box 1214, Falls Church, VA 22041.

If this processor were any hotter...

you'd need asbestos headphones.

Announcing Omnia-3fm Turbo.

The new Omnia-3fm Turbo gives you features you might not find even in processors that cost a lot more. Here's a small sample of what you'll get:

- Adjustable, oversampled three-band limiter and three-band Automatic Gain Control section for smooth, clean sound that's as loud as you want it to be.
- Omnia Bass Management System provides up to 12 db of bass boost using specially designed, time-aligned algorithms for the loudest, cleanest low end ever.
- Remote control your way: standard serial and optional modem and Ethernet connectivity let you tweak your sound from anywhere, any time.
- Famous Omnia non-aliasing, distortion-controlled composite clipper helps you achieve the clean, loud sound you've been dreaming of.
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A Satellite Phone Primer

by Tom Vernon

Even with the many technological advances in remote gear, there are still limitations relating to how most stations can cover off-site happenings.

If a remote location is far from a 450 MHz STL receive site or telephone line, it may be considered out of reach. As international events continue to have more impact on us in the United States, and weather or other natural disasters seem to be more commonplace, the need to pick up and go anywhere on a moment's notice for a live broadcast is becoming more pressing.

Enter the satellite phone.

Range of services

Even though sat phones have been around for about 10 years and are used by many networks, they often are considered too esoteric or expensive for the average radio station. The satphone landscape is changing quickly, however, as hardware costs are falling, new services are coming online and providers are gearing up with turnkey services to government agencies, relief workers and radio broadcasters.

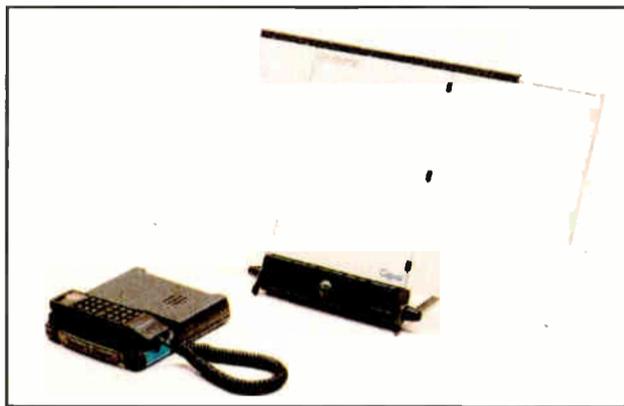
Several options are available for satellite phone service, ranging from simple to elaborate.

At the most basic level are handheld sat phones, which resemble oversized cell phones. Most of these are good for keeping in touch from remote locations, but only provide voice-grade connections, so their use for on-air applications is not recommended.

There are a variety of satellite networks to choose from, depending on your needs. Iridium provides global coverage, including open oceans and the polar

regions, with hardware costing around \$1,500 and airtime costing about \$1.50 per minute and a \$28 monthly fee.

Other satphone networks are regional, and therefore cost less. For operations in the Middle East, Africa or Asia, Thuraya is an attractive option, with equipment costing around \$800 and airtime of less than \$1/minute and a \$20 monthly fee. ACeS (Asian Cellular Satellite) covers India, Pakistan and most of most of the Asia Pacific region. International calls cost around \$1 per minute.



The Thrane M4 satphone enables mobile ISDN applications, including broadcast-quality audio via the Inmarsat satellite system.

GlobalStar's handhels provide coverage of the Americas, Europe and the Middle East. Monthly fees start at \$39.95, and there is a flat rate of \$1.39/minute for calls between the United States and Iraq.

Next generation

At the next level are satellite modems, also known as mobile ISDN, or GAN (Global Area Network). The unit is the size of a small briefcase and provides both voice and data connectivity. Satellite modems allow users to access the Internet via the Inmarsat satellite system with a 64 kbps connection to send and receive e-mail, data files, media files, video tele-conferencing, faxes and voice

messages from one compact unit. Inmarsat provides global coverage, except for the poles.

Hardware costs for the portable Inmarsat satmodem are around \$8,000, with airtime costing about \$2 per minute for voice, or \$6 per minute for mobile, ISDN or data, or \$4 per minute for MPDS or data. Mobile tracking antennas are available as an option, enabling satellite modem operation for mobile or maritime operations, even while the vehicle is in motion.

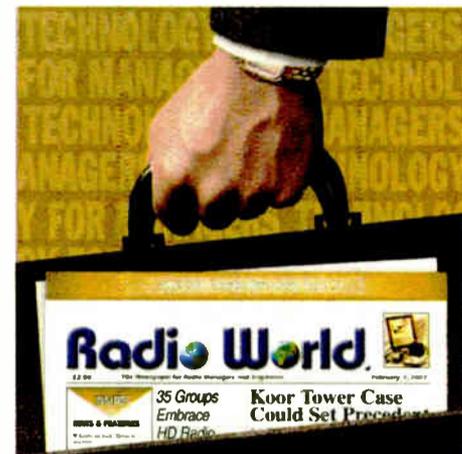
The next step up from satellite modems are vehicular satellite, or VSAT systems. They are packaged in two "airline checkable" flight cases, and offer up to T1 (1.54 Mbps) speeds. Many of the VSAT systems have auto-acquiring antennas, which work in conjunction with the system's GPS receiver to locate and lock on to the satellite signal automatically. These systems operate in the Ku-band and are marketed at IP-based mobile office/studio applications.

Up until now, most broadcast use of satphone technology has been at the network level. John Stoltz, business development manager-media for GCS (Global Communications Solutions), said that could all change over the coming months.

"In 2005, the next generation of satellite modems from Inmarsat will be available. BGAN — Broadband Global Area Network — will offer DSL-like (up to 432 kbps) bandwidth speeds from a laptop-sized satellite modem costing less than \$3,000."

Stoltz said voice, legacy ISDN and IP services will be available in addition to a dedicated "streaming" class service.

"Due to the lower hardware and service costs, backpack news gathering will now be more affordable and easier to use, even domestically. Users just have to plug the laptop satellite modem into an IP-based audio codec for a complete system." Stoltz estimates that this next generation of hardware will open up the satphone market to affiliates and radio freelancers.



TECHNOLOGY FOR MANAGERS

Satphones and associated gear also can be rented from a service provider on a daily, weekly or monthly basis. Stoltz said, however, that if users plan on renting for four or more months, it is usually cheaper to purchase a unit outright.

Line of sight

As promising as satellite phone technology is, there are limitations and precautions.

Satphones only work outdoors where
See SAT PHONES, page 16 ▶

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High-Tech Cute

Anywhere, anytime satellite radio remotes are a reality in Cologne, Germany, where broadcaster WDR is using a Mercedes mini-Benz crammed with high-tech gear, as reported in the German magazine Cut.

The tiny car is a self-contained broadcast unit, including wireless microphone and headphone, mixing console, ISDN codec and satellite gear. All of the equipment is contained in a 19-inch rack located under the rear hatch of the car. The package was custom-designed by Trans Tel Communications of Hamburg.



On the roof of the mini-Benz is a satellite dish, which utilizes GPS, an inclination sensor and compass to calculate the position of the highest Inmarsat satellite and lock on to it. The dish is mounted on a VPT-41 pan-tilt head from Videor Technical which is directed to the bird by custom software developed by Trans Tel. A "ready" indicator on the dash lights up when the dish is correctly aligned.

The satellite connection can be established via a hand-held remote control, so the reporter does not need to return to the vehicle once an interview has begun. The remote satellite control works in a radius of 60 to 200 meters from the car.

An ISDN codec stores the telephone numbers and settings for 24 studio connects. Reports filed via POTS lines and with poor audio quality are virtually a thing of the past, as the mini-Benz is dispatched to those events where it would not be worthwhile to send a large remote truck.

The mini-Benz vehicle has been an unqualified success with reporters in Cologne, and WDR is ordering five more of the vehicles for regional studios in North Rhine-Westphalia.

WIRED FOR SOUND

The Perfect Balanced Line

by Steve Lampen

Here starts my 60th column for Radio World. I have been writing about wire and cable on and off for eight years now.

Occasionally, a reader who stops to chat at a trade show or SBE, AES or SMPTE meeting will ask how I could write about one subject for so long and without running out of material.

Believe me, it's easy.

Wire and cable are no less "high tech" than any other part of broadcasting; and improvements, even "breakthroughs," occur with alarming regularity. I predict I will never run out of things to talk about.

This time, we're going to look closer at balanced lines.

Fig. 1 shows a balanced line, with transformers (or active balancing circuits, which mimic transformers) at each end. Where the signal is differential (black arrows), electromagnetic noise hits the two wires and travels to each end, where it cancels itself out.

What makes a perfect balanced line? There are three essentials:

The data world uses a term for length inconsistency: 'resistance unbalance.' Maybe we should start testing and referring to this for audio cable pairs.

The two wires must be the same length. If they aren't, the noise will not arrive at the same time. This means the two signals will not cancel out exactly. A timing or phase difference will exist between them. In the data world of Category 5e or 6, they use a term for length inconsistency, "resistance unbalance." Maybe we should start testing and referring to this for audio cable pairs.

The two wires must be the same size. If the wires are different in size, the intensity of the noise signals will be different and will not cancel out completely. This also shows up in resistance unbalance.

The two wires must be in the same place. The example shown here is probably the *worst* twisted pair because the wires are far apart. When they are spread, any noise will hit them at different times.

The two noise signals in the wires don't arrive at the same time at the end of the cable. They are out of phase with each other and do not cancel out completely. Whatever is left of the noise will travel through the transformer to the next device. This shows up in the data world as changes in capacitance or "capacitance unbalance."

As any engineer knows, it is much harder to remove noise once it is part of a signal. It is much easier to remove it *before* it becomes part of that signal.

This is true especially in analog audio circuits, which cannot recognize the difference between noise and the audio. In digital bit

streams, noise looks different than the bits and often can be filtered out.



Fig. 1

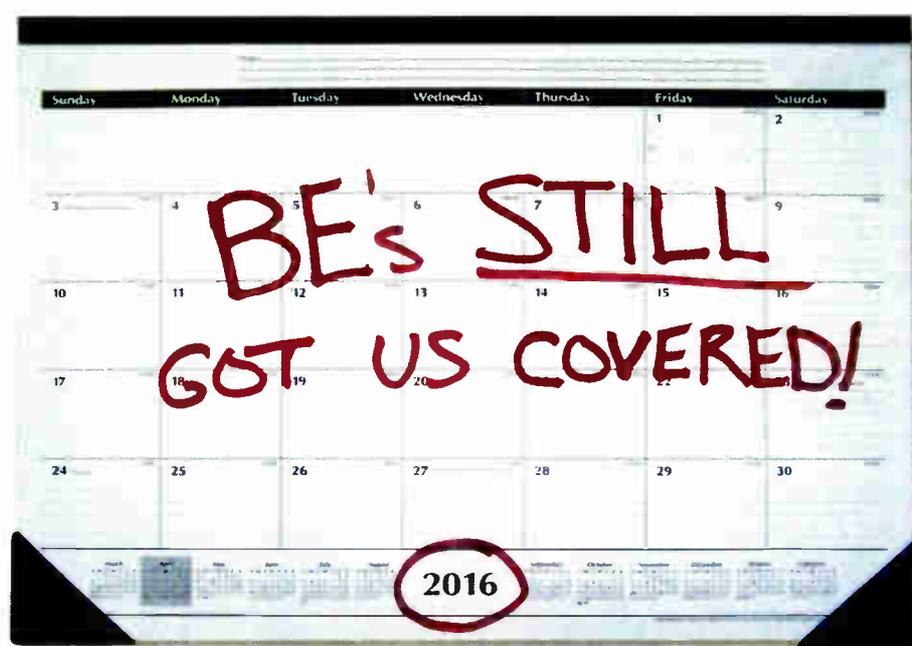
But it's still a lot cheaper to put in good balanced line cable attached to good transformers (or active balanced circuits) and get rid of the noise before it becomes part of the signal.

The problem is that you take a "perfect" balanced line and, by attaching it to some-

thing that is not well-balanced, destroy that circuit's ability to reject noise. So, really, you have to look at all passive components, cable, connectors, patch cords, patch panels and the source and destination devices as well.

The actual definition of a balanced line — with thanks to Bill Whitlock at Jensen Transformers — is a circuit where each wire and all passive components attached to it have the same impedance in reference to ground. That's quite a mouthful! But because "impedance" includes resistance, capacitance, inductance and the reactance of C and L produced when frequencies run through them, it covers everything that could be attached.

Steve Lampen's book "The Audio-Video Cable Installer's Pocket Guide" is published by McGraw-Hill. He can be reached at shlampen@aol.com.



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Radio Discrimination?

Find out why Saul Levine says the FCC is "hypocritical" when it comes to satellite programming. Page 37.

Is Radio Really Surround-Sound Bound?

As Radio Looks at Enhanced Audio Formats, Consider Options and History of Surround Sound

by Skip Pizzi

Before considering the options for adding surround sound to digital radio, it's a good idea to gather some background on the technology. Where it's going is easier to predict if you know where it's been.

This is particularly useful given that radio has tried to move beyond stereo before, with little success. Will results of the current movement prove any different?

It started with quad

Many readers will remember the quadrasonic movement of the early 1970s, which started as simply an "ambience recovery" technique. In this arrangement, a listening system sends standard stereo left and right signals to two speakers normally, with "inverted pair" wiring (i.e., left-channel hot lead with right channel ground, and vice-versa, via appropriate buffering) sent to a second set of speakers. The four speakers generally are set up in a square, with the inverted pair considered "rear" or "back" speakers, although it doesn't much matter.

The most popular commercial implementation of this system was Dynaco's Dynaquad box, a simple passive network fed by the powered outputs of a stereo

amplifier, with four pairs of output terminals labeled LF, RF, LB and RB for connection to four speakers (the term "back" was preferred in lieu of "rear" to avoid confusing the resultant R with "right" in any acronyms). The device also included an L-pad to attenuate the relative level of the "back" speakers, as they were often placed closer to the listening location than the "front" speakers. The two speaker sets might also have been of different types in those days, so the pad helped

Radio has tried to move beyond stereo before, with little success.

adjust for sensitivity differences.

The effect was a pleasant addition of spaciousness, with occasional interesting "panning" effects as particular sounds appeared to move around in the soundfield on certain recordings. Of course, these were random and unintentional effects that occurred simply as a result of stereo mixing techniques producing surprise artifacts when monitored with this type of four-speaker arrangement; such

ty of calls with little difficulty.

"Shortly before the Iraq war began," List said, "Inmarsat activated a spare satellite to cover Iraq with an additional spot beam. Television customers of Inmarsat used this new satellite to transmit live and store-and-forward video, whilst others had difficulty getting through."

Most saphones operate in the L-band, and are relatively immune to weather-related service disruptions. There may, however, be occasional disruptions of service during solar storms.

Overseas users need to be aware of restrictions and embargoes in certain areas. For example, in restricted countries including North Sri Lanka, North Korea, Poland and Hungary, Iridium phones will not complete a call to the local phone system.

While saphones will work in embargoed countries including Cuba, Iran, Libya, Sudan, Afghanistan, Angola and Yugoslavia, phones may be confiscated by customs officials. Broadcasters must obtain prior permission from the government before bringing satellite gear across the border.

Finally, while saphones are becoming more affordable and easier to use, this is not yet a plug-and-play technology. Novice users would do well to deal with one of the turnkey service providers who has had experience with broadcasters, rather than a box warehouse on the Internet. 

effects later became known in the audio industry as "magic surround."

Several of these ambience recovery systems appeared in the marketplace — along with numerous home-brew systems from hobbyists building the inexpensive circuits from plans printed in numerous hi-fi enthusiast publications of the day — including one from Electro-Voice. That company's profile in both the consumer and professional audio industries prompted it to begin marketing a professional "encoder" product, generally considered the first commercial product intended to purposefully create quad effects in an ambience-recovery matrixed listening system.

The Big Picture

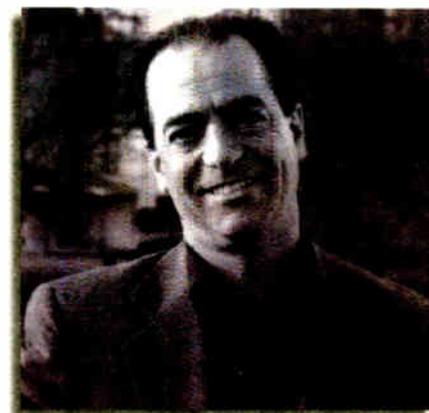


Photo: Gary Hayes, BBC

by Skip Pizzi

ing, while still producing a backward-compatible LP release format. CD-4 added supersonic FM carriers onto the stereo 45-45 groove. These carriers contained front-minus-back difference information for each channel (i.e., an LF-LB signal in its left channel and RF-RB signal in its right channel). Taking a page from the FM-stereo multiplex system, CD-4's normal baseband stereo signals included front+back signals, so a stereo-only listener heard a full left/right downmix of all four channels. When decoded through a CD-4 system, the subcarriers were demodulated to baseband and mixed via sum-and-differencing with the regular stereo signals to produce four signals, essentially full representations of the original discrete quad program.

The system's supersonic subcarriers occupied bandwidth from 20 kHz to 50 kHz, requiring great care in the mastering pressing and playback of the discs. (Remember that LPs used the RIAA equalization curve, which greatly increased the high-frequency content relative to low frequencies as cut on the disc, so this additional HF content taxed many systems' headroom.)

At the user end, playing a CD-4 LP with a standard spherical or elliptical stylus wouldn't track the supersonic carrier waveforms, and generally wore them down after only a few plays. A special, super-elliptical stylus called the Shibata (again, after the inventor) was developed to resolve the high frequencies for CD-4 decoding, and preserve them after repeated plays of an LP.

Then as now, how the four discrete tracks of the quad mix would fold down into stereo and then into mono was a critical concern. In CD-4, as stated, the rear channels each folded neatly into their respective front channel for stereo, and the resulting stereo summed to mono as well as it would have in a plain stereo context. The matrixed systems didn't really have to downmix to stereo because they already were in a two-channel form on the LP. (In the matrixed surround world, stereo channels that include encoded surround signals are referred to as L_T and R_T , where T stands for "total.") But because matrixed systems encoded signals with purposeful phase differences across L_T and R_T , there was some cancellation in mono. This generally affected only back-channel audio, so its removal from monaural signals was not seriously problematic in most cases.

Next time we'll continue the story of surround with the introduction of second-gen surround systems, and how quad moved from the audio world to the sound for picture environment.

Skip Pizzi is contributing editor of *Radio World*. 

Sat Phones

► Continued from page 14

there is line of sight to the satellite, making operations in urban areas or around airports problematic. Communications may not always be secure, as hackers with bootleg satellite receivers and DTMF decoders can listen in, and learn a caller's identity by decoding the phone number and tracing it back.

Low earth orbit satellite systems such as Iridium must frequently hand off calls from one satellite to the next. During these transitions, audio glitches can occur and calls occasionally are disconnected.

Availability issues need to be understood, said Gerald List, managing director for Trans Tel.

"The Thuraya handheld saphones were banned by the U.S. forces during the Iraq war, owing to a fear that the user's position might be forwarded to the enemy. Maritime Inmarsat satellite systems give priority to distress calls and will terminate other calls if no free channels are available."

List said savvy users can circumvent some of these problems by registering with several or all land earth stations to have different options available.

Satphone providers seem able to handle excess capaci-



Satphone service is available anywhere in the world using Iridium handheld units.



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World Radio History

NRB Flies West for the Winter

by Stephen M. Poole

ANAHEIM, Calif. Music, food, fellowship and technology. That might sound like a strange mix, but not to attendees of the National Religious Broadcasters convention. The annual event will be held Feb. 11-16 at the Anaheim Convention Center in Anaheim, Calif.

The NRB is an association of 1,600 Christian communicators; the group's goal is to help them work together to spread the Gospel via electronic media.

As the NRB puts it, "The annual Convention and Exposition is the largest nationally and internationally recognized event dedicated solely to assist those in the field of Christian communications. The dynamic Exposition consists of nearly 300 companies and is an active marketplace for those seeking tools and services to expand their ministries."

The organization is anticipating attendance of approximately 6,000.

Radio boot camps

Attendees will be exposed to the practical applications of technologies to ministry and how to promote standards of excellence in Christian media.

One series of workshops, called the "Innovation Exchange," will invite small groups to brainstorm a chosen topic, from LPFM stations to responsible fundraising. There will be discussion groups for programming, news, operations, sales and management.

There is a strong emphasis on creating and distributing a professional product, as demonstrated by the convention's "boot camps," all-day seminars that offer training on a specific topic. Television is well represented, of course, but there's plenty for the radio folks, too.

Dan O'Day, a programming and air talent consultant, will be making his first



The NRB Exhibition Hall at last year's convention in Charlotte. Organizers expect 6,000 in Anaheim.

appearance at NRB for the radio boot camp. He will lead a session titled, "It's Worth Saying: How to Make Sure Your Listeners Hear It," which is targeted toward Christian radio ministries that want to see more of an impact from the delivery of their message.

"You have some people involved in religious radio who feel that they are presenting, in one way or the other, the word of God, and that you don't need to dress up the word of God — you just say it and the power is such that everyone will hear it," said O'Day.

"But if that were true, the religious radio stations would be the number one radio stations in this country, and they would be reaching more and more people.

"It's possible some people at the beginning of the seminar will be a bit fearful that I'm going to suggest, 'Okay,

what you need to do is pander to your audience — dumb it down, water down the message, do focus groups and give them what they want to hear.' And none of that is my point," he said.

"A successful music station is about the people who make the music, and the people for whom the music is an important part. If it's a religious station, it's about the audience and how your message can help make their lives richer, fuller and more rewarding," he said. "It really should be about the listeners, and unfortunately, most radio isn't."

Another boot camp, "Digital Storytellers: The Art of Communicating the Gospel in Worship," will cover digital media in general. This three-part seminar will focus on integrating new technologies into worship, and avoiding what the NRB calls "operating new media with old mindsets."

Additionally, it will cover digital art and how to think and act artistically in ministry, as well as how to assemble a team of creative people committed to sharing the Gospel with the latest technologies.

NRB says it has encouraged members to consider new techniques for communicating the Gospel in the 21st century. Other boot camps at the 2005 convention will provide further perspective on using digital equipment, high-definition television and the Internet — especially Net evangelism. The schedule shows several sessions devoted to the Internet, from streaming audio to the nuts-and-bolts of setting up a Web site.

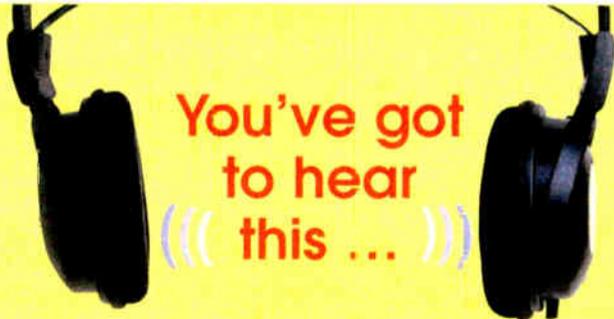
Gospel and gadgetry

In addition to O'Day's boot camp, audio ministries are targeted by sessions on IBOC digital radio; reaching out to Hispanics; targeting commuters during drive time; creating a professional in-house news department; and, for commercial (as opposed to listener-supported) stations, how to sell advertising effectively. One session of note is called "What Christian Radio Can Learn From Public Radio."

Evangelism is a priority. Among the seminars and discussion groups will be sessions on international broadcasting — how to get started, how to work with foreign governments that might be hostile to Westerners and so on. The convention includes seminars on raising funds for ministry and proper station operation, including question-and-answer sessions with FCC staff members on rules and regulations.

And there will be gadgetry on display for radio and television. Among the 300 exhibitors will be equipment manufacturers such as Broadcast Electronics, Harris Corp. and Sony, as well as providers of satellite services, CD/DVD duplication and programming. New for 2005 is NRB's Tech Lab, which enables

See NRB, page 23 ▶



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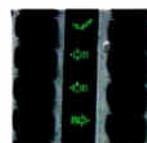
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o broadcast studio system.

udio broadcast studio system. Damned marketers.

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Nobody loves cable snakes. Besides soldering a jillion connectors, just try finding the pair you want when there's a change to make. Axia Audio Nodes come in AES/EBU and balanced stereo analog flavors. Put a batch of Nodes on each end of a Cat-6 run, and BAM! a bi-directional multi-channel snake. Use media converters and a fiber link for extra-long runs between studios — or between buildings.

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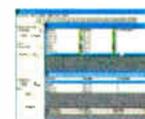
There are plenty of ways to control your Axia network. For instance, you'll find built-in webservers on all Axia equipment for easy configuration via browser. PathfinderPC® software for Windows gives you central control of every audio path in your plant. Router Selector nodes allow quick local source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



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Negotiation Training a Focus at RAB

Sessions Also Aim to Help Radio Sales People 'Get Under the Radar' of Skeptical Customers

by Lyssa Graham

Radio sales executives, managers and marketers will travel to Atlanta Feb. 10-13 for the 25th Radio Advertising Bureau sales, marketing and management conference. It will be held at the Hyatt Regency downtown.

Attendees will find a theme of "You Come. You Learn. You Make Money." The keynote address is by Herb Cohen, author of "You Can Negotiate Anything and Negotiate This!"

George Hyde, RAB's executive vice

president of training and conferences, said, "Our members constantly ask us for more and better training in negotiation. The name that keeps popping up as the best is Herb Cohen."

RAB President and CEO Gary Fries said sales and marketing staffers need to understand such skills better.

"Our industry is faced with mounting competition and rising expectations," Fries said. "Radio sellers need to be savvy to the nuances of winning negotiations to counter negative misconceptions and old stereotypes."

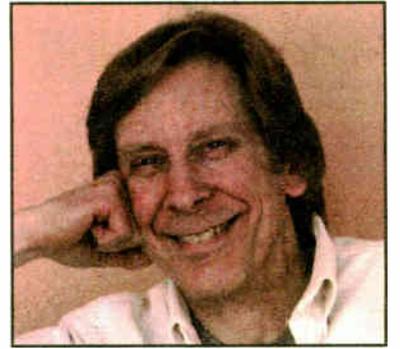
"It is up to us to convince the advertiser that radio is vital, exciting and can deliver results."

Skeptical consumers

The conference includes 70 workshops on topics like online broadcast sales and recruiting star salespeople.

Jeffrey Hedquist, president of Hedquist Productions, will present "Keeping It Real: Kill the Hype, Find the Truth and Get Results." His session will focus on changes in the marketplace and how to adjust advertising to fit that environment.

"Consumers are jaded," he said, noting that consumers are exposed to some



Jeffrey Hedquist says consumers are jaded, noting they are exposed to 3,000 ad messages daily.

3,000 pitches daily. Advertising that sounds like advertising, according to Hedquist, does not work.

"This is about making a commercial that doesn't sound like a commercial," he said. "Hyperbole doesn't work, it's something to be made fun of."

Hedquist said he hopes to help sales, production and marketing people understand the new reality of advertising. "Skepticism is the name of the game," he said. His session will help advertisers get "under the radar of wary customers."

Other presenters include Irwin Pollack, who will share "75 \$5,000 Money Makers in 75 Minutes" and Maureen Bulley of the Radio Store on "Teaching Customers to Buy."

People buy from people

John DiPietro of Advanced Business Concepts, which provides motivational speaking services to corporations, is to present "You Don't Have to be Perfect to Be Great." DiPietro said he learned an important lesson working with entertainment acts.

People who are now stars "were just regular people doing a job just like you and I do. The most important thing is that they failed a whole bunch of times along the way but didn't dwell on that."

DiPietro said sales people must set goals for achieving a certain level of success while accepting that often they won't succeed on the first try. With increasing pressure to meet target numbers, sales people need to "expand sales from just selling the spot, to selling yourself and the station as a whole. People buy from people, they don't buy from stations," he said.

DiPietro sees consolidation of the industry as a big challenge.

"The business is not run by broadcasters anymore," he said. Station consolidation has sales people facing pressure from many levels of management, all responding to the bottom line.

"People sell short-term business to a client when it's not in their best interest," he said, "Then they're just spinning plates. The big problem is that nobody is looking long-term. They're all looking short-term to protect their jobs and re-ends without thinking of the long term."

Panel discussions will be held covering marketing to Hispanics, salesperson training, urban marketing and promotions.

The conference focuses on education. Fries believes training is a big part of success. "As radio seeks to increase revenue and capture a larger share of advertising dollars, it is vital that we invest in training our sales and management staffs," he said.

For more information on RAB2005, visit www.rab.com.

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NRB

► Continued from page 18

attendees to see demonstrations of technology for broadcasting and production.

"We want to provide our attendees with the most relevant and technologically advanced examples of broadcasting systems and innovations that we could possibly find," said David Keith, NRB vice president of operations. "Through hands-on experience, attendees will gain invaluable benefits before making significant investments."

The Tech Lab occurs over a four-day period, from Feb. 12-15. Most of the topics are video-related but include discussions of digital audio editing, surround sound and streaming.

opportunity to interact with equipment, talk to those who have used it, establish contacts and network with other professionals.

Music at an NRB convention is a top draw, and 2005 will expand on this. New for the Anaheim convention is *Aspire*, a program of music and worship scheduled for the evening of Sunday, Feb. 13. Musician and TV personality John Tesh will be the host, and joined by another top Christian artist, Michael Card. Also appearing at the convention will Crystal Lewis, Steve Green and others.

For information on the 2005 National Religious Broadcasters convention visit www.nrb.org, or call (703) 330-7000, ext. 503.

Stephen Poole is the chief engineer for Crawford Broadcasting in Birmingham, Ala.

The goal of the convention is to show Christians who want to use media in ministry how to do so professionally and cost-effectively.

But perhaps the best way to exemplify the NRB's show theme is with the title of one of the seminars: "Is God in Your Gizmo?" This focuses on the ministry aspect, emphasizing that it's not enough to have the latest gadgetry; your staff must be committed and motivated, as well.

The goal of the convention, organizers say, is to show Christians who want to use media in ministry how to do so professionally and cost-effectively. It is an

On the Floor

This is a partial list of equipment exhibitors. See the full list including program suppliers and other services at www.nrb.org.

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Name: Michael LeClair

Occupation: Chief Engineer, WBUR Group; Technical Editor, Radio World Engineering Extra

Certification: SBE Certified CPBE

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Favorite station growing up: Early memories are of hit stations like KDWB(AM) Minneapolis and WABC(AM) New York. As FM came into its own I was a fan of experimental formats like WNEW(FM)'s.

Most rewarding project: Building a multi-studio complex for NPR show production.

Favorite technical toy: Spectrum analyzer; power inverter for the car.



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NEWS ANALYSIS

No Panic, Yet, on XM Baseball Deal

But San Diego Radio Owner Looks to Congress For Help Fighting MLB Satellite Contract

by John Merli

As 2004 turned into 2005, and baseball fans began thinking about another spring training, it was hard to detect concern among radio rights holders about the XM baseball deal.

Every Major League Baseball game in every market will be accessible on XM radio receivers anywhere in the country — for a price, of course, for XM subscribers and perhaps for local broadcast rightsholders, as well, in more ways than one.

Despite XM Satellite Radio's self-described "crown jewel" deal with MLB affecting all teams and baseball markets, most broadcast rights holders — who often stake their stations' identities and branding on the exclusivity they enjoy with local clubs — weren't making much of a fuss over this new "local vs. national, terrestrial vs. satellite" baseball scenario about to launch at a ballpark near you. At least not at the moment.

MLB may be hurt by steroid-induced controversy as coaches and players head into spring training, but the sport is hardly in pain when it comes to generating big-time cash from an electronic medium that didn't even exist a few years ago.

Although it has yet to turn profit, XM has committed \$650 million for an 11-year agreement with MLB for national broadcast rights to all 30 teams' local broadcasts in the American and National

Leagues. Each team plays 162 regular-season games, so there are more than 2,400 contests per season, and XM has national broadcast rights to each and every one of them.

Besides providing XM subscribers with access to local play-by-play coverage of any game during the regular season, XM also will provide at least one channel of live coverage in Spanish, and create an additional MLB channel to provide vintage play-by-play of classic games such as Don Larsen's World Series perfect game in 1956.

Thus, on days when all 30 teams play, XM will feature up to 17 radio channels of MLB, in all.

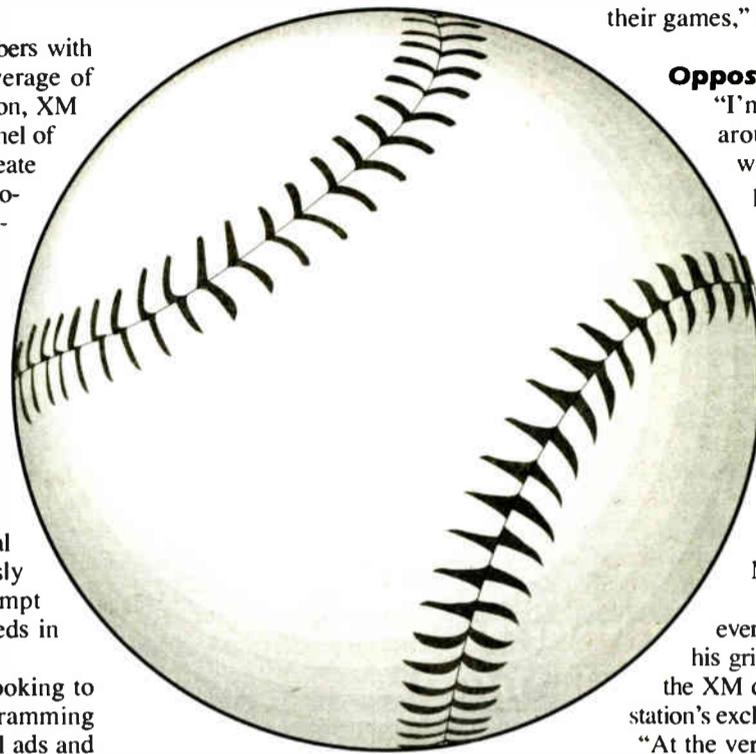
Although XM did not respond to inquiries for this article about when, or how much, it would preempt local ads in local broadcast game feeds, it previously told Radio World it won't preempt local ads, but would air local feeds in their entirety.

The satcaster and MLB are looking to create pre- and post-game programming in which XM would sell national ads and split the proceeds evenly with MLB.

XM's lone satellite competitor, Sirius, offers a similar subscriber sports package for football, featuring NFL games. On the television side, no such all-inclusive baseball

deal exists in any form, although DirecTV provides a premium satellite package that includes all NFL football games.

XM's national distribution of baseball's prime product — live play-by-play — is great news for XM and its growing fan base of monthly subscribers, and



Opposition

"I'm not so sure a lot of owners around the country will agree with that," said John Lynch, president/CEO of Broadcast Company of the Americas in San Diego.

The flagship station for Padres games is Lynch's XPRS(AM), about to start its second season under an MLB contract that runs until 2007. Lynch is attempting to gather support among fellow rights-holding station owners to fight the XM-MLB deal.

In December, he wrote to every member of Congress to air his grievances. Lynch contends that the XM deal is in direct violation of a station's exclusivity agreement with MLB. "At the very highest levels, I heard the belief that there's a violation of this clause with this," Lynch said.

He is telling anyone who is willing to listen on Capitol Hill that the MLB arrangement goes well beyond the concept of XM's original charter.

"Satellite radio was never devised in order to replace local radio. I think many of the stations with local broadcast rights are among the most important outlets in their respective markets, and that's something that Congress will take notice of."

Lynch said he and his fellow owners, as well as the Padres club itself, were not aware of the machinations of the MLB-XM deal until the day it was announced.

His argument rests in part on the

maybe not so good news for local stations that have spent millions of dollars, perhaps over decades, branding themselves to their hometown teams.

Ads to come?

Rob Riggsbee, owner of Inside Media Inc., purchases time on behalf of more than a dozen advertisers for Cincinnati Reds games on flagship WLW(AM). He foresees no big changes in the way he does business, at least for the 2005 season, but said he expects WLW will be eager to renegotiate its current contract with MLB that Riggsbee says expires in 2007.

If it was Major League Baseball's intention to piss off a lot of their partners, they've done it.

— John Lynch, XPRS(AM)

"But look, XM will be selling time in these games sooner or later, because they have to. There's no way they would go into such an expensive, long-range deal and not be selling time to make their money back," Riggsbee said. Generating new baseball-oriented subscribers alone, he said, probably won't pay for it.

WLW(AM) Operations Director Darryl Parks said it's his understanding that XM will not be preempting local ads in the 2005 season. And considering these are the start-up days for the young medium of satellite radio, he said WLW should have sufficient time to deal with any issues and potential conflicts as they arise.

XM's subscriber numbers are growing steadily — 3.1 million, it said in December — but are hardly causing

impact in his market. When the Padres (or any team) play outside its own market, the opposing team's away-game feed will be carried back into the San Diego market, since all XM channels provide national coverage. Lynch says that fact alone creates an additional signal — and unfair competition — in his local market.

"That is a violation of my exclusivity clause," he said. "If it was Major League Baseball's intention to piss off a lot of their partners, they've done it."

Meanwhile, by the start of the season in early April, terrestrial and satellite listeners will hear the time-honored cry, "Play ball!" But the radio industry may be doing more watching than listening — trying to assess how the new kid on the block will do in its rookie year. 

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Out of Radio After 52 Years

Sale of KELO Stations by Midcontinent Media Marks End of Bentson's Long Relationship

by James Careless

Fifty-two years after buying KELO(AM) in Sioux Falls, S.D., where it eventually owned five of the city's 14 radio stations, Midcontinent Media Inc. has decided to exit the radio business.

On Sept. 22 of last year, MMI announced an agreement to sell KELO AM and FM, KRRO(FM), KTWB(FM) and KWSN(AM) to Backyard Broadcasting for an undisclosed sum. Based in Baltimore, Backyard owns and operates 22 other stations in Muncie, Ind., Jackson, Miss., Elmira-Corning, N.Y., Orlean, N.Y. and Williamsport, Pa.

Larry Bentson, MMI's chairman, said, "We're a relatively small, privately-owned company that has been involved in several related businesses including movie theaters, radio and TV stations, and cable TV systems over the years.

'Eddie said that if I would join the business, they would consider moving into broadcasting with a radio station that Floyd wanted to buy in Sioux Falls.'

"The expansion of our cable TV business to provide video, high-speed Internet access and telephone services has demanded our total focus and total manpower. As a result, it is time for us to consolidate our efforts, and pass our radio stations on to a radio-focused company like Backyard Broadcasting."

Quick growth

In 1952, Bentson joined his father-in-law, Eddie Ruben, and Ruben's partner Joe L. Floyd in the Welworth Theatre Co. They then formed a new entity, Midcontinent Broadcasting Co., which later became Midcontinent Media Inc. Midcontinent Broadcasting bought KELO(AM) in Sioux Falls.

Even in 1952, radio wasn't MMI's only broadcast business; WMIN had an FCC permit to build a TV station in Minneapolis-St. Paul and KELO(AM) had a TV permit for Sioux Falls.

Bentson said they moved fast and got both TV stations on the air in 1953. WMIN(TV) began its career as an ABC affiliate and KELO(TV) as an NBC affiliate; but it became a CBS affiliate three years later and remains so today.

Within a few years, KELO(TV) covered the entire state of South Dakota with three VHF and one UHF stations, all simulcasting the same programming. In 1956, TV stations WMIN and WTCN were merged and sold to a third party. It operates today as KARE.

Midcontinent continued its growth by acquiring radio stations WKOW(AM) and (FM) in Madison, Wis., and built three television stations in Madison, LaCrosse and Wausau. It launched KELO(FM) in Sioux Falls in 1954, and built two other FM stations in South Dakota.

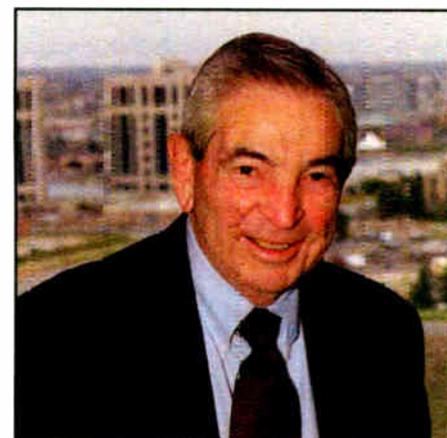
Over the years, Midcontinent added radio stations in Des Moines, Iowa; Wichita, Kan.; and Minneapolis-St. Paul. Most recently, it added three stations in Sioux Falls.

In the 1970s Midcontinent moved aggressively into the cable TV business, with initial systems in the Black Hills of South Dakota and Aberdeen, also in that state. Over the past 25 years, Midcontinent says it has built or acquired a majority of the cable systems in South Dakota and North Dakota, with additional systems in western Minnesota and northern Nebraska. Midcontinent's cable systems serve some 200,000 customers in 200 communities.

'Perfect' fit

The buyer of Midcontinent's radio holdings is happy.

"This is perfect," said Barry Drake,



Larry Bentson

president/CEO of Backyard Broadcasting. "We set out two years ago to build Backyard Broadcasting into a company of

See MIDCONTINENT, page 26 ▶

Start the New Year with a New Book



Sabre Site Solutions is starting the new year with a new book. Designed to be the most comprehensive catalog in the tower industry, the third edition of Sabre Site Solutions' Product Catalog offers everything from pre-engineered lightweight structures to tower parts and accessories. With an expanded antenna mounting section and product information to make your purchasing decision easier, this edition is more than just a catalog - it's a buyer's guide.

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Podcasting: Is It Radio's Next Wave?

by James Careless

Like "Web" and "streaming" were, "podcasting" is one of those geeky terms that sounds harmless but actually implies profound opportunities for those who grasp it — and, potentially, serious trouble for those who don't.

Strictly speaking, podcasting refers to audio programming distributed via the Web, which is then downloaded onto Apple iPod MP3 players. This lets "iPodders" listen to the programs they want to hear when they want to hear them, just as easily as they now listen to songs resident on their iPod's 20 or 40 MB hard drives.

"Each of these podcasts create an RSS 2.0 XML feed URL" — i.e. the show's Web site location — "with an enclosed URL (directed to) the location of the show's MP3 file," said Rob Greenlee, co-host of WebTalkRadio, a Web tech program that reaches a million listeners a month through 11 radio stations, streaming audio, and — to a small degree — podcasting.

"What listeners do is insert this URL into podcast-receiving software like iPodder or DopplerRadio. The iPodder or RSS FeedReader software checks this URL on a regular basis and downloads anything new in this feed.

"Ironically, the podcasting concept isn't new," Greenlee said. "In fact, MP3 program downloads have been available on the Web since 2000. What makes podcasting different is the automatic delivery of content to people's computers. This makes it easy and convenient for them to transfer these programs to their MP3 players."

Worth noting: Any MP3 player and MP3-enabled PDA such as the Pocket PC can actually play podcast programs. Like the brand-name Kleenex, the iPod has given its name to podcasting, denoting just how popular this brand is among the teenage/young adult demographic.

What's on

As in the early days of Internet radios, the kind of content available via podcasting is incredibly diverse. However, in order to avoid the RIAA's wrath, "most podcasters rely on royalty-free music," said Chris McIntyre, designer and programmer of the Podcast Alley directory to podcast programs online. By doing so, podcasters avoid the legal threats and eventual royalty payments that crippled so many small Webcasters a few years ago.

So what's on Podcast Alley? All kinds of shows, many too raw for conventional radio, ranging from indie music and talk

to religion, sports, education, business, movies: you name it.

One of the most popular podcasts is

on average per show," Domkus said. "We're getting all kinds of people listening; from kids to old guys; moms and

Podcast Alley hopes to become 'the biggest and best directory of podcasts available on the Internet.'

Podcasting will only be a threat to those broadcasters who don't embrace it.

— Rob Greenlee

"The Dawn and Drew Show." Produced by Dawn Miceli and Drew Domkus, the show was described by the New York Times:

"The unscripted 'Dawn and Drew Show' is recorded in the living room of Ms. Miceli, an artist, and Mr. Domkus, who provides technical support for an office building in nearby Milwaukee. They play off each other like Abbott and Costello, with Mr. Domkus as the straight man and Ms. Miceli as the joker, continually cracking jokes and making off-the-wall comments (and sometimes venturing into sexual subject matter)."

"We started doing the show to celebrate our 10th anniversary together," Miceli told Radio World. "We just record ourselves talking to each other; listening to the show is just like being in our living room."

Dawn and Drew's unscripted approach has resulted in "about 6,000 downloads

dads."

Such is the success of the "Dawn and Drew Show" that they've got their first sponsor.

"We don't do anything special to promote them; just read a few lines about their Web site during the show," Domkus said.

Commercial potential?

The fact that Dawn and Drew are starting to attract advertisers hasn't escaped the podcasting community. In fact, talk about making money from the medium has become sufficiently intense that a conference on the subject has been scheduled, said Chris McIntyre.

"Most people just want to cover the cost of their bandwidth, because send-

Midcontinent

Continued from page 25
market-leading radio stations. The superior technical facilities and heritage of service of the Midcontinent stations makes this an ideal acquisition for us. We look forward to carrying on their fine tradition in Sioux Falls."

But for Larry Bentson, the sale of MMI's five stations to Backyard ends a radio career that stretches back to the 1930s.

"I began as an 11-year-old appearing on a children's radio show in the Twin Cities," he said. "In 1939, my uncle, Edward Hoffman, built WMIN Radio in Minneapolis-St. Paul. It operated on 1400 kHz with 250 watts. I worked as a part-time announcer and engineer until I

ing out 50,000 programs can get expensive," he said. "However, there's no doubt that podcasting offers some really good opportunities for niche marketing. For instance, a podcast on antique car restoration is a natural venue for companies selling reproduction parts."

Using language eerily reminiscent of Web promoters before the dot.com bubble burst, PR consultant Steve Rubel has been "Pondering Podvertising Possibilities" in an article of the same name on www.imediainconnection.com. With Seattle radio station KOMO, the BBC and Minnesota Public Radio starting to offer podcasting content online, "it's time for forward-thinking markets to start looking at podvertising," wrote Rubel, who is vice president of the New York PR firm CooperKatz & Co.

Besides buying on-air time or sponsoring entire podcasts, Rubel recommends that advertisers place ads in the RSS (Really Simple Syndication) text feeds that podcasters offer to their listeners, or start podcasts of their own. Whatever individual advertisers choose to do, "The key thing is to start investigating and experimenting because podcasting is here to stay," Rubel said.

Before your sales department gets all worked up about podvertising, you should know that today's technology only measures podcast downloads, Greenlee warned.

"We can track whether the file is downloaded, but the system still does not exist that enables accurate tracking of actual playback on the portable media device."

Implications

Dawn Miceli is leery of advertising's impact on podcasting.

"We often reflect on the line between art and commerce," she said. "At what price do you plug someone else's product instead of saying what you want to say?" However, Drew Domkus admits, "I would love to parley this show into some kind of career."

If the history of broadcasting is anything to go by, the decision to commercialize podcasting will be left up to the advertisers, not the content producers. But the fact that people are talking about adding cellphones to iPods and vice versa indicates how pervasive podcasting may become, says Greenlee.

"For broadcasters, the smart thing to do is take advantage of this new medium by getting into. Podcasting will only be a threat to those broadcasters who don't embrace it." 🌐

finished college and entered the Navy in 1943. When I returned three years later, I married and resumed my radio career at WMIN."

His father-in-law, Eddie Ruben, was in the movie theatre business and had about 75 theatres in Minnesota, North Dakota, South Dakota and Wisconsin with partner Joe L. Floyd.

"Eddie said that if I would join the business, they would consider moving into broadcasting with a radio station that Floyd wanted to buy in Sioux Falls."

With the sale of its South Dakota radio stations, MMI said it will focus on cable telecommunications and inbound telemarketing, and the last of its radio and TV holdings will have been sold. It's the closing of a 52-year era in American radio, and the end of Larry Bentson's 65-year radio career. 🌐

Product Showcase



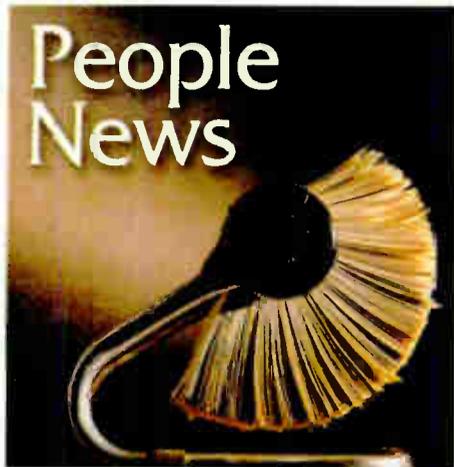
Model RFC-1/B Remote Facilities Controller

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Send news and photos via e-mail to radio@world.imespub.com or mail to *Radio World People News*, P.O. Box 1214, Falls Church, VA 22041.

First Broadcasting Investment Partners named **Alastair B. Westgarth** as its first executive VP of engineering and software systems. He was president and CEO of Dallas-based Navini Networks.

Mark Turner was promoted to VP of business technology and data systems, **ABC Radio**. He had been interim director of information technology and senior manager of network operations.



Alastair B. Westgarth

Broadcast Electronics promoted **Richard Hinkle** to VP of engineering. He has been director of RF engineering since 2000.

Bill Suffa left **Clear Channel Communications** to look for other opportunities. He had been senior vice president of capital management.



Richard Hinkle

Orban/CRL appointed **Charlie Rich Jr.**, son of the late country singer, as Web site manager for the Orban and CRL sites.

Steve Blatter was promoted to senior VP of music programming for **Sirius Satellite**.

dMarc Broadcasting appointed **Bob Griffith** to VP, broadcaster relations. He had been senior VP of stations for RAB.

Scott Studios implemented a revised customer service initiative and hired **Daryl Webster** as VP of customer support for its SS32, SS Flex, Maestro and Protégé digital studio lines. He had held supervisory positions at Prophet Systems.

Peter P. Brubaker decided to retire as president/CEO of **Susquehanna Media Co.** **David E. Kennedy**, president and CEO of Susquehanna Radio Corp., will succeed him. **Nancy Vaeth-DuBroff**, senior VP and regional manager of Susquehanna Radio, will replace Kennedy.

Dr. Timothy Kowalik was named associate dean of alternative education and director of the FOCUS adult degree completion program for Northwestern College & Radio. He had been associate professor of communication.

DK-Technologies appointed **Lars Beyer** sales manager for Europe and Asia. He held senior sales and management positions at NTP Elektronik and AEQ. ... **Thomas Holm Hansen** was appointed deputy general manag-

er, and joined the company's board of directors. He had been with Texas Instruments.

Paragon Media Strategies named **Steve Davis** director of music research. He had been research director for Citadel Oklahoma City.

Sandy Berenics joined **Wheatstone Corp.**'s west coast sales division. Berenics had been national accounts manager for Harris.

Border Media Partners made **Robin Flores** operations director. He had been the program director/brand manager and morning show host for Clear Channel Austin.

Mark Roush joined **Dialight Corp.** as VP of illumination futures, responsible for market development of LED products for the lighting industry. He had been director of brand experience for Philips Lighting.

Clear Channel Radio appointed **Jeffrey D. Holden** to regional VP, Sacramento, Calif. Holden replaces **Jerry Del Core**, who was promoted to regional VP, Atlanta.

Mary Niemeyer was named VP and market manager for **Infinity Broadcasting**, Minneapolis, and will assume the role of general manager of WCCO(AM), WLTE(FM) and WXPT(FM). She had served as director of sales for the cluster.

Dial Communications-Global Media promoted **Eileen Decker** from senior VP of sales to executive vice president and director of sales.

American Urban Radio Networks promoted **Vernon Wright** to executive VP, sales and new business development. **Michelle Jennings** was appointed senior VP, marketing operations.

Howard Eisen was promoted to VP of sales, Eastern region. **Jon Krongard** was promoted to regional VP of sales, Western region.

Former Monkees drummer **Micky Dolenz** was named morning show host for **Infinity Broadcasting's** WCBS(FM). Most recently he starred on Broadway in "Aida."

The FCC named **Dr. Karen Wheelless**

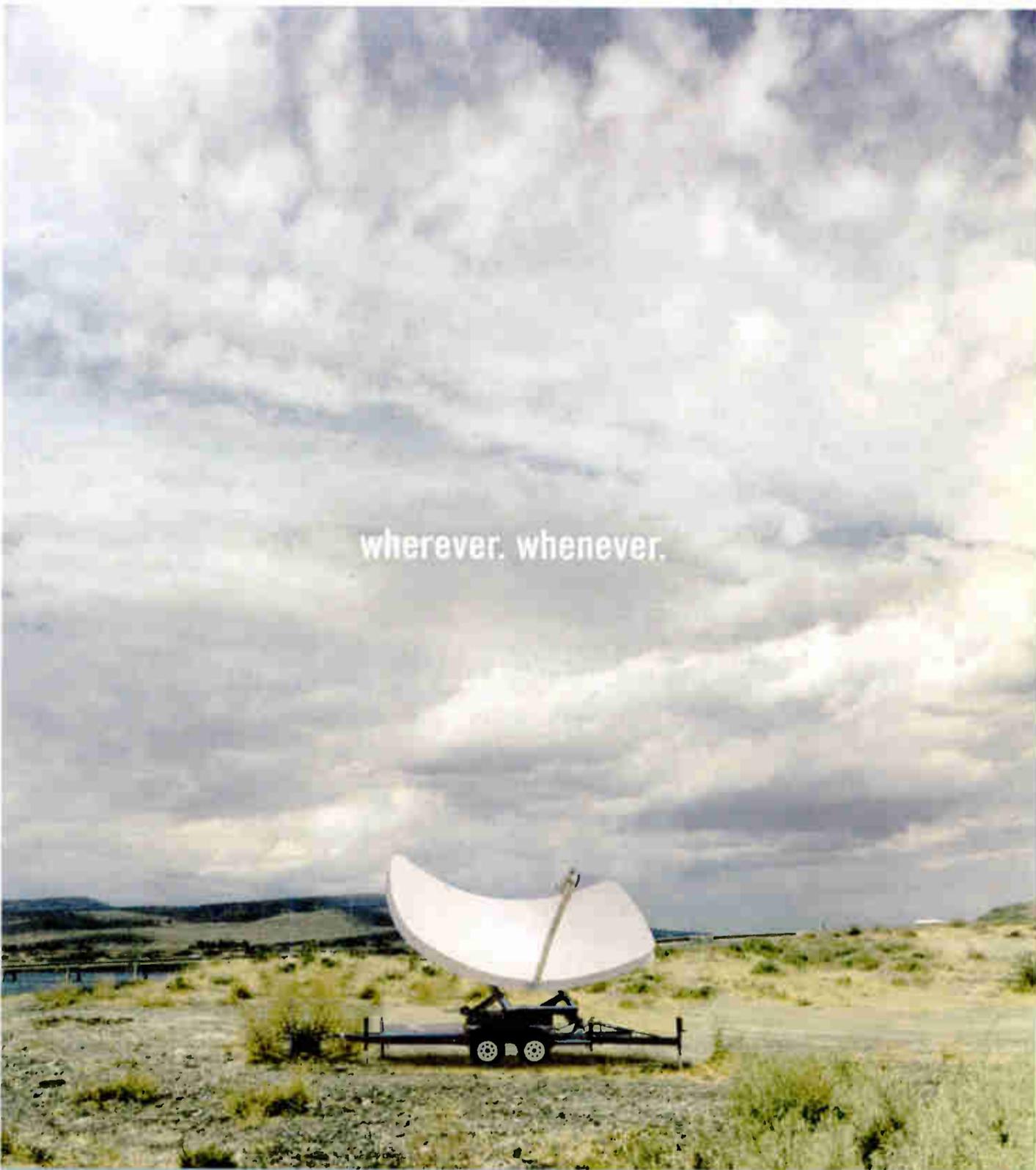
associate managing director for Performance Evaluation and Records Management. She joined the commission in 2001 as deputy associate managing director of PERM.

Larry Gifford joins **ESPN Radio** as program director. He fills a position left vacant by Peter Giancesini, promoted to senior director of programming.

Westwood One named **Dee Perkins** as account executive, satellite services. She had been a traffic announcer for Metro Networks.

The U.S. Senate confirmed the appointment by President Bush of **Jerry Lee**, president of Philadelphia's WBEB(FM), to the National Board for Education Sciences.

Tom Bartunek, GM for the New York Times' classical music station WQXR(FM), was named president of **New York Times Radio**. He continues as GM of WQXR, which became part of the company's News Services division.



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Motivate Listeners to Positive Action

Seneca Said 'The Best Way to Do Good To Ourselves Is to Do It to Others'

"For the poor shall never cease out of the land." It's from the Bible, book of Deuteronomy. Keep it in mind as you read on.

I had my doubts about listeners filling an entire Mayflower moving truck with donated canned food. This was 15 years ago. To that point, I had not asked listeners for a huge quantity of anything.

The tough part about this Thanksgiving promotion to benefit the local area Food Bank was that a lot of individual listeners had to be convinced to action. It wasn't just a few listeners

doing something. It was thousands of listeners, each bringing a few cans of food.

I could tell the DJ who was to live in the Mayflower until it was full was wondering just how long he was going to have sleep on a hard floor.

Perhaps you can guess the ending of this story.

Motivating listeners

We were wrong about our listeners. They did care. They came by with cans of food at all hours of the day and night. In less than a day, the truck was full and

the event was over. I said a special prayer of thanks that particular Thanksgiving, not just for the fact that we filled the truck with food for those who needed it, but also because I had learned that if you offer listeners an approach to a social issue that they can relate to, they will react.

From those holiday gems like "Thanksgiving on the Mayflower" or "Coats for Kids," to radiothons and disaster relief, you can motivate listeners to positive action, which can make the world a better place.

If you do it correctly, you also will be encouraging listeners to feel positively about your radio station, perhaps enough

Promo Power



by Mark Lapidus

so that they'll write your call letters down in a ratings diary. While this shouldn't be a primary goal when it comes to public service, you would be foolish not to consider it as part of your equation for success.

Let's explore ways you can maximize your drives to help the needy.

Timing and cooperation

Timing! This is crucial. Whatever you're doing, it's all about tapping into what people are thinking about in their everyday lives.

Be specific in your call to action. What do you want listeners to do?



When it comes to HD Radio for AM, you really have only two choices.

And BE's ASI 10 is both of them!

There is no reason AM should be left behind in the industry's transition to HD Radio™. And when you make the transition, your first choice is an advanced BE AM transmitter with our ASI 10 signal generator.

A complete solution that generates AM and HD Radio simultaneously, with precise time alignment for blending, the ASI 10 has an easy-to-use touch screen interface for monitoring and control.

Own a late-model transmitter from another manufacturer? You may not need to settle for less—odds are that the ASI 10 can be integrated with your current rig. Contact BE for details.



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One reason the Mayflower promotion works is because it's topical. If you did it in August, it would sound odd on the air and you'd be lucky to get a few hundred cans of food.

I heard a representative from a disaster agency recently say that hard-hit areas, whether in the United States or abroad, often need more help five months *after* a disaster than they do immediately. Once the story about the disaster — in this case, the terrible tsunami that struck Asia in December — leaves the daily headlines, donations drop.

I'm certain he's correct; but sadly, I'm not sure there's a lot that can be done about it. It's vital to strike while a disaster story is hot. When your listeners are hearing the story constantly on TV and reading about it in the newspapers, you've got to hit the airwaves with your biggest push for assistance.

Is this calculating? Certainly. However, if the goal is to raise as much money as possible or obtain as many items like clothing as you can, it's better

See LISTENERS, page 29 ►

Listeners

► Continued from page 28
to be logical than emotional about it.

Sound! Few things cut to the soul like the sound of human distress. When you air interviews with kids who want certain presents for Christmas, or play the sound of public officials asking for certain items, it grabs the attention of listeners. Effective communicators — DJs who can emote — can do something similar by expressing the way they personally relate to an issue, but there's no substitute for the real words of non-radio people, expressing what it is needed, each in their own way.

Frequency and Focus! When you are raising funds to help a cause, you've got to air the message several times per hour. It helps if there's nothing else you're talking about during this period on your radio station. When you attempt to do other things during a relief promotion period, like contesting, it can make your station sound disjointed and even silly.

Call to Action! Be as articulate as possible about what you want a listener to do. You must be specific in every message. This may be as simple as giving them a Web site to visit to make a donation, a place to bring something or a phone number to call with a credit card.

Consider the example of Regent's WGNA(FM) in Latham, N.Y., and its 'Sean and Richie' show, which presented \$46,000 to 13 children's charities in its annual 'Pennies From Heaven' campaign this past holiday season. Listeners were invited to drop off loose change at sponsor locations. That's a call for action listeners can understand.

Get Permission and Cooperation. Do not move forward promoting a cause without permission, assistance

and advice from the non-profit group, government or agency that you want to help. A direct association with the group that needs help is beneficial in many ways. Most important, that group will tell you what is needed by the people it represents. Too often, the wrong items are gathered for causes. A relationship with the group also lends credibility to your efforts and often comes with volunteers who may assist in many ways.

We have the power to do so much good in radio. Please make even greater efforts this year to go beyond the ordinary to help out when needed in your community and around the globe.

The author is president of Lapidus Media. E-mail him to marklapidus@yahoo.com.



WGNA(FM) morning hosts Sean McMaster, left, and Richie Phillips join Rose Cooper of Hannaford Supermarkets and Megan Horan of Albany Youth and Family Support Group.

NEWS WATCH

Lowry Mays To Receive Distinguished Service Honor

Thirty-three years after buying his first radio station in San Antonio, Lowry Mays will receive NAB's Distinguished Service Award.

The chairman of the board of Clear Channel Communications will be honored at the spring show. Oprah Winfrey received the award last year.

Clear Channel now has 1,200 stations in addition to numerous other holdings, and 50,000 employees.

NAB President/CEO Eddie Fritts stated that Mays had "built from scratch a media and entertainment company that has changed the face of broadcasting and mass communications," and complimented Mays' "passion for excellence, his commitment to community and his support for civic causes."

The award recognizes broadcasters who have made significant and lasting contributions to the broadcasting industry.



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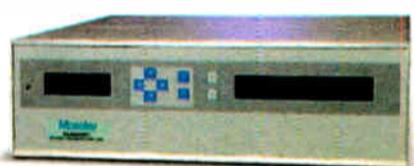
And consider this, *the Starlink is priced nearly a third less than the competition.*

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www.moseleysb.com

Chapter Two

One balmy Cleveland evening, the Telos and Omnia gang were relaxing when someone asked a blue-sky question: “What do you think the radio station of the future will be like?”

The ideas flew. “Computers will send digital audio right to the mixing bus,” said one engineer. “Information, too.” “No more sound cards, distribution amps or cable bundles,” said another. “No more expensive routing switchers, either. Everything will be simply networked,” said a third, “and all the audio devices will talk to each other using low-cost stuff from the computer world.” “They’ll probably be broadcasting in surround sound by then,” piped one. “Consoles will be fully integrated with phone and codec gear, and will be much more flexible!” offered another.

Waitjustaminutehere!” came a voice from the corner. “We could do all of that today! We could use Ethernet and it would be quick to set up and easy to use. You could network dozens of studios, or whole buildings with it. And it would cost a lot less than any other all-digital system. I’ll bet broadcasters would love it!”

The engineers got very excited and decided to turn their ideas into reality. Tirelessly, they toiled. Immense quantities of pizza, Chee-tos and magical elixirs were consumed. Finally, they were ready... but how would the world react?

Good news! The system they brought to NAB was a success! Broadcasters swooned. The press were impressed. Early adopters adopted it.

Meet Axia, the newest division of Telos. Axia is all about making radio studios better. Another happy ending! Or is it just the beginning?

Stay tuned for more...



Studio Sessions

Carl Takes a StudioDrive



Page 33

Radio World

Resource for Radio On-Air, Production and Recording

February 2, 2005

PRODUCT EVALUATION

Yamaha DM1000: More Than a Mixer

The Digital Production Console Offers Display Screen Features, Compact Size for Studio, Live Sound

by Doug McLeod

Ever since we emerged from the primordial ooze of analog audio, stations and studios have built wish lists for digital mixers. Power, flexibility, user-friendliness and cost became the key issues in choosing a digital board.

Size has become important, too. Yamaha's DM1000 digital production console continues the lineage that includes the 02R and DM2000 digital consoles with a comprehensive feature set coupled with an agreeable footprint and price.

Out of the box, the DM1000 is striking for two reasons: its compact footprint — 16.9 inches wide, 22.7 inches deep, 7.8 inches high without optional meter bridge — and its heft.

Yamaha isn't kidding when it calls this unit a "console" instead of a "mixer." Not only does it contain a console's worth of features, it weighs in at 48 pounds — a sturdy mass of metal that should hold up well in daily use. Just as important are the unit's compact size compared to some other digital consoles, and rank-mount option, making it a player in almost any studio or live sound application.

Features, settings

A total of 20 input jacks, 16 mic/line with switchable and assignable phantom power and four line, brings audio into the console. The I/O set includes 12 XLR outputs; MIDI in/out; Word Clock in/out; four inserts; AES/EBU I/O; S-PDIF I/O and XLR master outs.

Options include side panels, which look nice if you're not rack-mounting the console, and a meter bridge, which provides comprehensive metering for every channel. Additional I/O cards may be installed in two slots on the rear of the console to provide a total of 48 inputs. These are controlled through built-in layering technology, which I'll get to in a moment.

The unit's excellent on-board router and patch system make it easy to move audio to any fader to fit your taste. Every available input, output, effect and channel insert is routable. The eight auxiliary patch busses can be patched anywhere, and the DM1000 can save any patch set-

up for future use.

The digital standard for this console is 96 kHz. It can carry that standard with full 32-bit internal processing on every one of its 48 channels, something lots of digital mixers can't pull off. A well-laid-out control surface makes it easy for the console's arsenal of on-board tools to



work together. Built-in data "libraries" contain pre-sets for EQ, compression, gating and I/O patching. You can also cook up your own and save them.

The DM1000 is designed to integrate with various digital audio workstations and computer-automated recording technology, including DigiDesign ProTools, Steinberg Nuendo and E-Magic's Logic Audio, as well as Yamaha's bundled Studio Manager software.

Mixing and processing parameters, transport control and editing functions can be controlled directly from the DM1000's intuitive control surface. Between the usual input controls at the top and the fader bank lies the heart of the console: a screen that Yamaha calls the Display Section, flanked by display access, aux select, routing, EQ and monitor controls.

Each section has a light gray, diamond-shaped button labeled Display. Push it and that section's settings appear on the screen. You can then, depending on the application, use directional arrow buttons, a good-sized jog wheel and a tiny but effective joystick to manipulate settings.

A fixed meter shows levels at all

times. While the screen's angle is fixed, a contrast knob allows adjustments for room light. The first screen to appear is the Initial Data display, which indicates parameters you must set before you can operate the console. Word Clock Select and several other settings are included here. You can also select and save settings for any one of 48 layered channels of audio.

Another control group is for Scene Memory. These buttons allow you to store, switch and recall any mix setup with all its parameters. To store a complete set of fader, EQ, router, compression or other settings for future use, simply use an up/down button pair to find a blank scene number on the DM1000's large digital Scene Memory display and hit Store. To retrieve your setting, return to that scene number, punch Recall and watch the faders fly, and the display alter to instantly set up even the most complex mix exactly the way you wanted it.

In my TV and radio voiceover work I have absolutely no use for this function, but it sure is fun to use. If I were mixing a concert or stage show, I would be grateful this level of automation is available in an "under-five-figures" console.

Surround, layering

Another feature that will save the bacon for someone other than me is layering.

With the addition of optional I/O cards in two slots on the back of the DM1000 a total of 48 full-featured inputs can be available. By "layering" up to three inputs on each of the 16 faders, a full mix can be achieved. This is only possible because of the DM1000's high level of automation. I did not have the additional I/O cards, and so did not test this application.

Producing surround audio on this console is surprisingly easy and actually was fun. This is where the little joystick gets a workout. The DM1000 can, all by itself, create 3.1, 5.1 or 6.1 surround environments and run a multi-channel monitoring system.

In "pan/surround" mode, you select the environment you want to create and a diagram appears on the Display screen. It's then a matter of selecting how and where you want the sound to appear. You can fine-tune width, depth and offset parameters and shape the surround effect you want. Surround features include monitor matrix, bass management and speaker alignment. Of course, the DM1000 saves everything for later recall.

One of the DM1000's real treasures is a set of 12 user-defined keys, the controls for which are located down by the stereo master fader. There are actually eight banks of settings, labeled A-H, for each of the 12 buttons. You could store anything from machine controls to individual surround monitor settings — a whopping

Product Capsule:
Yamaha DM1000 Digital Production Console

Thumbs Up

- ✓ Muscular, intuitive production tool
- ✓ Versatile router and patch system
- ✓ Scene Memory conveniently stores presets
- ✓ Surround-capable

Thumbs Down

- ✓ Pricy for smaller applications (if you need a Mackie, buy a Mackie)
- ✓ Lightweight fader knobs won't take a hammering

Price: \$5,299

For information, visit www.yamaha.com/proaudio

96 user-defined settings.

Because a great deal of my production work involves voice recording, I was interested in the DM1000's mic preamps. Sixteen of the console's 20 analog XLR inputs are equipped with preamps and they sound terrific. Using a Shure SM7 plugged straight into the console, I recorded a couple of different spots: a warm-and-fuzzy radio read and an in-your-face flamethrower for an auto dealer.

I first laid down the tracks with no EQ or compression. The DM1000's preamp gave a crisp and clean sound to the loud, punchy read and cozied right up to the softer voicing — in fact, sounding warmer than I am used to in the digital domain. Adding compression and EQ in moderation produced the desired effects without any noticeable problems.

The DM1000's owner's manual is a thick 380 pages, plus another 33 for the Studio Manager software. It is worth a thorough read. Still, I mastered most functions without the manual; and I am no technician. The routing, patching and scene memory functions alone make the DM1000 worth owning, not to mention the four 32-bit/96-kHz stereo digital effects processors.

Features like surround and layering won't be used in many broadcast and production environments but could be useful elsewhere (and surround is of growing interest to radio, too). For live sound, the console packs a lot of punch and solves a lot of problems. Its relatively small size is attractive, too, as is its rack-mount capability.

Version 2 software for the DM1000 is an upgrade available for the console's system software and accompanying studio manager software. Features include ESAM II editor control and improved automation.

Doug McLeod is a TV and radio voice talent for clients nationwide. He is also the TV play-by-play voice of the NHL Colorado Avalanche. 🌐

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PRODUCT EVALUATION

StudioDrive Tunes PCs to Radio

Henry's Broadcast Mixer Fits In Drive Bay, Transforms Computer Into One-Mic Console

by Carl Lindemann

Henry Engineering endeared itself to us by creating the Matchbox, bridging the gap between consumer audio and broadcast equipment. Now its StudioDrive helps bring computers up to snuff.

The device will transform a PC or Mac with pro audio card into a single-mic radio production console for live broadcast and studio production. The computer becomes a standalone studio, with no need for an external mixing board. Just add peripherals — mic, mic processor, telehybrid, CD.

From the source

The StudioDrive consists of an audio interface box and a control unit, linked by a ribbon cable. The interface is an AC-powered box with 16 1/4-inch TRS jacks laid out 4x4, along with a single Neutrik XLR mic input. Thankfully, a connector map is stenciled alongside the jacks for reference, so what you plug in here matches the controls.

With an additional 1/8-inch unbalanced stereo line-in jack on the control unit, the StudioDrive allows for six sources through four mixing channels. Altogether, there are three stereo-line level inputs, a dedicated PC soundcard input and an integrated telecoupler to interface with audio coming over a standard POTS line. Two pairs of stereo outputs are intended to feed live broadcasting and PC recording. A mix-minus output is included for a telephone hybrid.

The monitor jack is designed to play the program output, the playback from the PC soundcard or off-the-air signals. The audio interface is made of heavy-gauge metal and can be wall-mounted or

placed anywhere within the reach of the 24-inch ribbon cable.

The control unit is designed to fit inside a PC drive bay, so it matches the dimen-



sions of a CD or DVD recorder/player. The relatively small amount of space on the front holds five in/out buttons to toggle functions and modes, with six knobs to set levels plus a 1/4-inch stereo headphone jack. The buttons toggle play/record, program/air and patch for the phone line. These make it simple to switch between on-air and production modes without having to swap out or patch in anything in the audio interface.

As noted, the panel includes a 1/8-inch unbalanced line-in jack for input of sources like a portable MiniDisc.

A four-level LED stereo VU meter keeps track of the action. While installation in a PC makes for a tidy setup, an optional desk-mounting kit makes this an external standalone, and allows for tucking the computer away or operation via

laptop — options that can keep down PC noise from fans and hard drives, as well as cut RF issues.

The unit is thought out carefully and engineered to do the job for a one-mic studio. For some, it may seem sparse. But what do you need extra knobs and sliders for, anyway?

Setup was far from self-explanatory. However the relatively straightforward five-page instructions and circuit diagram were not too difficult. The trick is in setting the internal jumpers in the control unit mostly to match levels with peripherals and soundcards. These are key for optimizing audio quality and calibrating the LED VU meters. Additional jumpers in the interface box allow for a mic processor insert and a cough switch for the mic.

Connected externally to a generic Pentium 4 PC with a Digital Audio Labs Soundcard Deluxe, the StudioDrive proved quiet. The DAL card achieves a 106 dB S/N ratio, and adding this to the audio chain brought it down slightly to just under 100 dB. Remember, that's connected externally with six feet of balanced cable between the interface box

Product Capsule:
Henry Engineering StudioDrive

Thumbs Up

- ✓ Excellent audio
- ✓ Controls well thought-out and constructed
- ✓ Flexible configuration for internal/external install
- ✓ Good documentation

Thumbs Down

- ✓ Single mic input
- ✓ Awkward cable-run from PC with internal installation

Price: \$675

For information contact Henry Engineering in California at (626) 355-3656 or visit www.henryeng.com.

and the audio card in the PC.

While internal installation in a drive bay looks great, the inside of a PC is generally a noisy, RF-contaminated environment. Though the StudioDrive boxes are well insulated, there is a chance for picking up static from the drives and power supply through the ribbon cable. The company suggests care in keeping the cable away from other data cables and PC boards, but that is problematic, as the typical computer doesn't give all that much room to maneuver.

Getting the cable out of the box is a jury rig. I used an open card slot in the back. The bottom line is that if you're fussy about noise, set it up externally. If you want to clear the clutter, internal installation is fine.

The StudioDrive is an elegant solution to what is otherwise an awkward undertaking. While great for single mic installations, it would be nice to have a few more mic inputs. That would add further versatility to this excellent addition to the Henry line. 🎧

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NEWS MAKER

Levine: FCC Decision Was 'Hypocritical'

In late 2004, the FCC rejected a petition from Saul Levine, president of Mt. Wilson FM Broadcasters, which asked the commission to amend the Satellite Digital Audio Radio Service rules to include an "indecent" provision.

FCC Media Bureau Chief Kenneth Ferree wrote in response to Levine that the commission had ruled "subscription-based services do not call into play the issue of indecency," and that "the commission does not impose regulations regarding indecency on services lacking the indiscriminate access to children that characterizes broadcasting."

Radio World Associate Editor Kelly Brooks spoke with Levine.

RW: You requested that indecency regulations apply to subscription satellite.

Levine: Satellite radio should be treated the same way as terrestrial radio. That was the thrust of it. Not that there should be censorship or there shouldn't be, but the same rules should apply to both.

Remember, for terrestrial radio, you have this so-called "safe harbor" where from 10 at night on, you can have some pretty far-out language. But they're treating satellite radio differently in that they can do it 24 hours a day. ...

We (petitioned the FCC) in an effort to keep satellite radio from having a hypocritical advantage. It was to protect the traditional radio industry from this hypocrisy, to give terrestrial radio a level playing field. I've gotten a few e-mails from people who don't understand this, saying, "Oh you're terrible. You're trying to censor what we get!" And that's not it.

RW: What's your feeling now?

Levine: I'm disappointed that the commission did not address the real facts of our petition, which is that they do have the jurisdiction to control satellite radio because they already do in two respects: political advertising has to conform to regular radio rules; and EEO practices have to conform to regular radio rules.

They said in 1997, "We reserve the right to come back and put additional regulation on satellite radio." Yet they just walked away from all that and said, "No, we don't really have the right to do it, and besides children are protected because they're not going to hear pay radio." ...

This is not the end of the petition. It's being considered by Congress. When Congress adjourned last fall, they were still taking up the possibility of a bill.

There are some people in Congress who disagree with the commission's interpretation. They do not believe that indecent programming should be available on satellite radio, which is an interesting distinction, because we're not pushing for censorship.

RW: Meaning...

Levine: Satellite radio should not be allowed to do what terrestrial radio cannot do, because they're really very similar.

A satellite stream is not a Playboy Channel on closed-circuit cable television. There are now 8 million radios out there, there are no devices on them to block this programming — it's just out there. There are no restrictions. A 16-year-old can go into

Best Buy and pick up a receiver and subscribe to it. There are no forms to sign that say, "I'm an adult." There's just no control over it.

The distinction

RW: Why impose indecency standards when customers are paying for the service?

Levine: That avoids the real issue. According to the commission, (unregulated satellite radio) is okay because adolescents can't hear it, and that's incorrect.

The distinction is we are talking about the radio waves. The commission is saying they are public, they are a public domain and that private cable television is not — it comes in over a wire, and it's something within the control of people.

If people want to go out and buy videotapes of pornography and show it to their little kids, well, that's their own private issue. I guess, so far. That may violate some laws, but as far as the commission is concerned, they're not involved in that.

So this is the distinction we are making. There is hypocrisy. There is discrimination. The commission is saying the radio waves belong to the public, therefore they can regulate it. We're saying the radio waves that satellite radio uses also belong to the public.

Now, I suppose you might have a more-narrow test if satellite radio had devices to block indecent programs so adults can control it, or if satellite radio made the buyer show identification when getting the service to show they are not a minor. But they're not doing these things. So the whole thing is a farce.

The commission says adolescents are not exposed to it, therefore it's okay. We know as a reality they are exposed to it. The FCC is penalizing terrestrial radio and making us appear at a disadvantage. You know, parents can just as well control what a 5-year-old hears on regular free radio if they want to.

Something else that is very interesting is that with digital free radio, we will have the ability to have a subscription channel. So, potentially, with the commission ruling, they will not be able to say that terrestrial radio cannot present obscenity and indecency on a subscription pay channel as part of the broadcast.

RW: Is there a silver lining here?

Levine: We did get this response from the commission, which will be a benefit to companies such as Infinity and others who are going to court to fight the FCC's imposing of sanctions and penalties on them for these so-called bad words, because what this decision really amounts to is discrimination.

What the FCC is saying is that it's discriminating between the two services for no really good reason, except one you pay for and one you don't. I think ultimately the courts are going to strike down the commission on this.

This decision will help regular radio broadcasters fight indecency fines from the commission, because they are really unfair and inequitable. ... We also succeeded because we sent copies of this to a number of important members of Congress, and they are aware of this now, so this could potentially still end up in legislation. 🌐

Our readers have something to say

“My RW regularly gets cut up to circulate articles around the building. Keep up the good work!”

—Laverne Siemens, CET
Director of Engineering
Golden West Radio
Altona, Manitoba

Radio World

The Newspaper for Radio Managers and Engineers

There Is Life Above 5 kHz

I just read the article in Radio World concerning Clear Channel's proposal to limit AM audio bandwidth to 5 kHz. A lot of things have been ticking me off almost to the point of writing, but this just pushed me over the line.

I might suggest that we limit the AM bandwidth even more, just to plain old CW. That way, we can educate the listeners as to the Morse code and squeeze another 5,000 stations on the band. Seems like people have been doing everything in their power to chase listeners away from not only AM but from FM as well.

I started in this business in 1962 at a classical music commercial FM station. Yes, there were such things back when radio served the public interest, convenience and necessity. Audio was of paramount importance because there were "audiophiles" at that time who demanded quality audio.

As time went on, I think the first bit of crap were 8-tracks. Manufacturers discovered that consumers really didn't care about audio quality, and they sold like hotcakes. Well, with FM processing, loudness wars on AM and FM, cassettes and now MP3, it is obvious that the general public is not at all concerned about audio quality.

The buzzword is *digital*. If it is digital, it must be better, so no matter how it sounds, it matters only that it is digital. Just like your digital cell phone that sounds like you are listening to Radio Moscow in Philadelphia when you are more than 500 feet from a cell tower. We are implementing technology, not because we need to, but because we have to find a use for something that someone developed.

To these ends, we have IBOC. Too bad a small station in northeastern Pennsylvania on 730 kHz can't be heard more than 30 miles from the transmitter because of digital noise from WOR(AM)'s IBOC on 710, over 100 miles away — doesn't matter, it's *digital*.

We are doing everything we can to make people tune away. I am not picking on WOR, it is just the nature of the system. If we are going to have to "blend" to analog AM, let's just stay there. Analog FM sounds as good as the human ear can hear. If you listen to an LP — remember, LPs aren't compressed into the ground — on a nicely processed (analog) FM station performing say, Samuel Barber's "Adagio for Strings," you will hear *all* the music.

Maybe I have "golden" ears, but there is a lot missing from the music on a CD, let alone a compressed IBOC or MP3 rendition of the same music. People think that their boom boxes and their little computer speakers with the subwoofer that resonates at 200 Hz is hi-fi. It must be just me.

Yes, AM still sounds good. As a matter of fact, a nicely tuned AM antenna system and

properly maintained gear will sound better than most squashed FM stations. I am not against the 5 kHz limit for talk stations, but there are still plenty of AM guys out there playing music and making money at it.

I have several AM facilities that I maintain and it is sure nice to hear the little "ting" in America's "You Can Do Magic," or the bells in Steve Warner's "Small Town Girl" on the stock Ford radio in my pickup. Maybe the Ford radio doesn't go to 10 kHz, but the rolloff is gentle enough to not kill what the station transmits at, say, 8 kHz.

Unless the commission issues an edict, I wouldn't reduce the bandwidth of my stations to 5 kHz. As long as there is music programming, there is life above 5 kHz. I do have an idea though, which goes back to Leonard Kahn — remember, the guy who developed AM stereo, which worked but was crushed by Motorola, which never before or since has had any interest in broadcast gear. The idea is single sideband, or like the TV guys, say VSB.

Let each AM station be assigned one 10 kHz sideband. Upper or lower would be determined by the protection requirements of first-adjacent channels. Think of how many DAs we could eliminate that are serving to protect first-adjacent channels. This would solve the WLW/WOR problem — all the fidelity with half the bandwidth. Forget the IBOC. While we are at it, forget HDTV. I haven't yet seen HD that is as clear and fluid as NTSC.

I could go into the Sirius and XM Radio I have heard, but no sense in beating a dead horse.

With that said, I will go back downstairs and put an LP of Dvorak's "New World" on my Thorens turntable, power up the McIntosh C-20 tube preamp and the HH Scott tube power amp and listen to *real* audio, just as it was recorded — before the world was totally driven by the bottom line.

Ron Schacht
Mason City, Iowa

Hats Off to NAB

It's great to hear that the NAB is backing Sen. McCain ("NAB Supports Bringing Back Tax Certificate Program," Nov. 3).

You see, in this world of "The Mighty Dollar," the little people have gotten stepped on. I don't see myself as making a ton of money, but I like radio as a hobby, or stress reliever. The big boys really don't service the community. They have special things they will let on their stations.

The tax certificate program was great. In a lot of ways, it helped the little guys in the business who don't have mega-bucks. My hat is off to the NAB.

David J. Davis
Crowder Communications Inc.
Indy, Ind.

Web Policing More Effective Than Program Retention

We wrote recently that the FCC should say no to mandatory retention of program recordings during the indecency "safe harbor" hours of 6 a.m. to 10 p.m.

The commission hopes to improve the complaint process, which in turn will help it enforce existing indecency standards. But with companies like Clear Channel and Viacom now pursuing zero-tolerance policies, and given Chairman Powell's promise to "sharpen the FCC's enforcement blade" ("Mandatory Recording Disputed," Dec. 1), why cost a station time and money just so evidence lies in wait in case an "average person, applying contemporary community standards" objects to something on the radio?

Thanks to the convenience of technology, the market is already ahead of us.

Gone are the days of having to acquire transcripts or tapes and mail the evidence to the commission. A disgruntled listener now can submit a complaint to the FCC in minutes with a few clicks of the mouse. Both the commission and Parents Television Council offer online complaint boxes that make home policing of the airwaves fast, easy and affordable.

A visitor to www.cleanup.tv (which focuses on radio as well) would have a difficult time *not* lodging a complaint to the commission, as the various links and information on doing so take up most of the screen. All that is required is the complainant's name, address, phone number and related information along with the call sign, broadcast date, program title and an account of the offending material. Estimated time before clicking Sign and Submit is determined only by individual typing skills.

While the site recommends the complainant print out the grievance and mail to the commission for good measure, it still beats having to obtain transcripts or tapes from the show.

Or go right to the source, www.fcc.gov. The FCC site not only provides a quick link for indecency complaints in particular, but offers distinctions between obscene, profane or indecent broadcasts, and a reaffirming step-by-step account of how the commission handles complaints.

As noted in an earlier editorial, the FCC issued or proposed indecency fines against only 10 broadcast stations in 2000. From 2002 to 2003, the number of indecency-related complaints increased, but the number of programs that triggered complaints declined to just 375. The NAB says that in the combined years of 2002-04, a mere fraction of 1 percent of radio stations in the United States received a Notice of Apparent Liability for indecency.

The problem is not widespread.

Additionally, proactive groups such as Parents Television Council, an organization of diary-keepers who monitor broadcasts for offensive material, have had an impact, with nationwide chapters and the aforementioned Web sites. In fact, thanks in part to members of PTC, which reported the victory on www.parentstv.org, Beasley Broadcasting's WQAM(AM)/Miami was hit with a \$55,000 fine for a "Scott Ferrall Show" broadcast.

Justice served without leaving the comfort of one's own home.

The question of whether such an online complaint process is fair to broadcasters can be saved for another day. However, no one can argue that this system exists. It's easy and evidently effective for listeners to deliver concerns directly to the commission.

Given this truth, why force stations that may have limited resources and clean records to incriminate themselves and presume future violations through an Orwellian means of mandatory transcription of every word?

We know radio's recent change of practice has come as a result of pressure, not altruism, and that its programming record is imperfect. But the regulatory process has worked; and at this stage it seems the time and energy involved in the perfunctory act of retaining tens of millions of hours of programming would be a waste.

The NAB understands the astoundingly overbroad and punitive nature of the proposal, and so should the FCC.

— RW

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