LPFM Interference Redux

Little interference would result if protections to third-adjacent channels were lifted, a report finds. Does this change anything?

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Good-bye, Glynn

Colleagues wonder about Walden's departure from Ibiquity and what it means for HD Radio.

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Radio World

$2.50 The Newspaper for Radio Managers and Engineers August 13, 2003

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NEWS MAKER

Provizer Leaves Station He Started

by Naina Narayana Chernoff

BOSTON The unwavering message of long-time radio activist Stephen Provizer has been that people should invest themselves in having control over the communications in their community.

Although he still believes that, these days Provizer, 52, is supporting that goal

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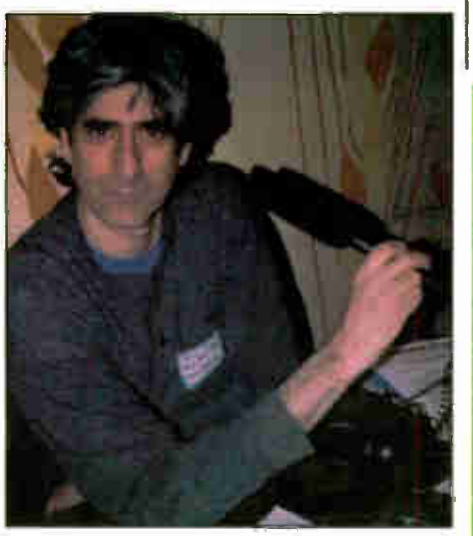


Stephen Provizer

NEWS ANALYSIS

RDS Slowly Gaining Station Acceptance

by Randy J. Stine

LOS ANGELES The never-ending race for revenue has some broadcast groups taking another look at the Radio Data System, a text and data delivery technology that failed to catch the attention of most broadcasters when introduced in the United States in 1993, as a possible means of boosting bottom line through non-traditional advertising.

Following the lead of Clear Channel and at least one other major radio group, some broadcasters appear ready to take the RDS leap.

Determining the number of vehicles on the road equipped with RDS-ready radios is difficult; the Consumer Electronics Association has no current market research on the technology. Radio frequency subcarrier management and wireless data distribution firm dMarc Networks Inc. estimates that RDS-enabled radios are a standard feature on more than 75 percent of new automobiles sold in the United States.

RDS allows radio stations to incorporate inaudible signals into their broadcasts on the 57 kHz subcarrier to control

See RDS, page 6 ▶

Industry Eyes Mitre's LPFM Report

WASHINGTON FCC Media Bureau Chief Ken Ferree said it's too soon to reach any conclusions about the recently-released Mitre report on potential LPFM interference.

Mitre seems to suggest in its 700+ pages of text that little or no interference to full-power FMs would result from LPFMs if protections to third-adjacent channels were lifted.

In recently completed interference studies for LPFM, Mitre conducted tests to determine whether LPFMs would interfere with existing analog FMs or their ability to go IBOC if the third-adjacent protections were dropped. Mitre used five receiver brands and conducted tests in six markets.

Mitre believes LPFMs won't interfere with FMs or their ability to go digital "provided relatively modest distance separations are maintained between any LPFM station and receivers tuned to the potentially affected full-power FM station."

Mitre believes LPFMs won't interfere with FMs or their ability to go digital 'provided relatively modest distance separations are maintained.'

In its report, it states, "These required separations are on the order of a few tens of meters in the best case, to slightly more than a kilometer in the worst case. Mitre has determined ... that no case of harmful third-adjacent LPFM interference will exist outside of an area with a radius of 1,100 meters surrounding the LPFM antenna, for an LPFM transmitter Effective Radiated Power of 100 W or less and an LPFM antenna height of 30 meters or less."

The report continues, "The 1,100-meter separation value applies to LPFM locations that are near the protected contour of the third-adjacent-channel FM station. In other cases where the LPFM station is closer to the FM station, this radius will become much smaller — on the order of tens of meters, to one or two hundred meters, depending on the proximity.

Correlations

"In the measured data, LPFM interference was not strongly correlated with variations in terrain or program material type. The measurements also did not show a strong dependence on LPFM antenna height. Mitre's model does show a dependence on antenna height because higher LPFM antennas could extend the distance to which a second-power propagation law applies. This factor argues in favor of retaining the current rules regarding reduction of the LPFM ERP for antenna heights above 30 meters.

"In terms of the impact of an LPFM station due to interference on the audience of an FM station, in the worst case measured, the fraction of the protected coverage area of an existing station that could be subjected to harmful interference is 0.13 percent. In most other cases, this fraction is orders of magnitude smaller.

"No significant interference was noted in the auto or home receivers at distances greater than 130 meters, or in any of the other non-translator receivers at a distance exceeding 550 meters."

As for IBOC, the report states, "The digital analysis has shown that the Ibiquity IBOC system is very robust and performed about as well in the presence

See MITRE, page 3 ▶

NPR Looks to Expand Signals

by Michael LeClair

The last 10 years have shown strong growth in listening to public radio. National Public Radio executives believe if their audiences were counted together, NPR affiliate stations would rank as the third-largest radio group in the United States.

An essential part of continued growth for public listenership lies in signal expansion, said NPR VP for Engineering and Operations Mike Starling. NPR has a project underway to accomplish this goal, called ACORN.

The acronym stands for "Acquisition of commercial stations, conversion of independent noncommercial stations, the importance of operational readiness to assist efforts to add new stations as opportunities arise, and the urgency of the current effort (now)." The initiative is unrelated to early digital radio proponents who used the name Project Acorn.

According to Starling, if ACORN succeeds, NPR will serve more than 1,000 member stations and add an additional 5-10 million listeners by the year 2010.

'Vivid' payoff

In particular, Starling noted that markets featuring multiple public radio program sources have had large audience growth. Commenting at a Public Radio Engineering Conference session this spring, he pointed as an example to Colorado Public Radio, which reported 50 percent audience growth in slightly more than a year of dual-stream operation.

Rather than dividing a fixed number of listeners among multiple public radio outlets, "by adding stations, you can grow the market," said Starling. "The payoff is vivid, dramatic and demonstrable."

According to Starling, the current economic climate is favorable for adding new member stations to NPR. While new applications for both the AM and FM bands are currently on hold at the FCC, this freeze is expected to be lifted later this year, opening up more than 360 new stations in the FM band.

Also, many new frequencies could be created in the AM expanded band. NPR says independent state and municipally owned noncommercial stations are under budget pressure due to local government deficits nationwide. Commercial radio groups that borrowed heavily to purchase large numbers of stations in the late 1990s are under pressure to reduce debt levels and may consider selling off unprofitable licenses, said Starling.

In light of these conditions, NPR is studying opportunities that may exist nationwide. With this study "we can begin to map the current public radio coverage across the nation," said Starling, with an eye to where improvements can be made.

Doug Vernier, president of V-Soft Communications, highlighted signal expansion opportunities presented by the upcoming FCC auction of new FM licenses, whenever the commission sets the date.

In a 2002 court decision, the FCC was told it could not allow noncommercial applicants to participate in auctions for new licenses. Vernier studied 25 markets where licenses are being auctioned to see if a comparable signal for a noncommercial station could be allocated in the reserved band. New applications for stations in the reserved band currently are frozen. Vernier also investigated additional commercial band opportunities in these same areas.

Vernier's results showed that in the majority of cases, 68 percent, it would be possible to allocate a reserved-band channel that would match 50 percent or more of the predicted coverage of the commercial license in the auction. In 64 percent of the markets studied, a second commercial frequency potentially could be licensed for noncommercial use. Between these two options, 84 percent of the cases studied allowed the creation of an alternative signal.

Vernier's research indicates that many opportunities to add noncommercial licenses exist. Additionally, Vernier said many noncommercial stations have the potential to expand their signals immediately due to the change in second-adjacent protection ratios that was enacted by the FCC in 1996.

However, Vernier warned that while expansion is still possible, many competing interests are aware of these circumstances and are likely to pursue them aggressively.

Vernier warned that while expansion is still possible, many competing interests are aware of these circumstances and are likely to pursue them.

MITRE

▶ Continued from page 2

of LPFM signals as the analog car radio used in the tests. As a result, no interference from LPFM stations to digital receivers is likely to occur at a distance of more than 130 meters, even at the LPFM protected contour distance."

The commission has requested comments on the report (Docket MM 99-25) by Sept. 12. To view the report, go to *www.fcc.gov/cgb/ecfs*.

Ferree believes the commission may issue a report on the issue by the end of the year. The agency would need to ask Congress for the authority to make any channel protection changes.

— Leslie Stimson

KCBQ Gets Lift From Clear Channel

SAN DIEGO Clear Channel Radio in San Diego is helping Salem's KCBQ(AM) stay on the air. The county board of supervisors in nearby Muth Valley denied KCBQ's request to move its tower to a location in that area, so Salem will diplex off a tower owned by Clear Channel's KPOP(AM) beginning in September.

"We'll be paying them monthly until we have a permanent site," said Judy Bowen, general manager of Salem in San Diego.

KCBQ has a four-tower directional array for daytime and a six-tower configuration for nights. The station is licensed at 50 kW day and 1.5 kW night.

Bowen said KCBQ has had its towers in Santee, part of the San Diego metro area, since 1949. Now the owner of the site wants to build stores on the parcel, she said. Salem was ready to build on another site in nearby Muth Valley but some residents fought the tower relocation, she said.

Without much time to obtain a new site and notify the FCC and FAA, Clear Channel's offer was welcome, said Bowen, calling it "a great solution and an example of how business relationships can overcome natural competitive issues to better the entire industry."

— Leslie Stimson

Walden Will Be Missed — And How

Why would Ibiquity let Glynn Walden walk out the door, much less give him a push, as seems to be the case? And could the company have picked a worse time to lose the man most closely associated with IBOC?

In case you missed it, Radio World Online broke the story in July that Glynn Walden and two other managers had been laid off by digital radio developer Ibiquity, apparently for cost-cutting reasons. In fact the company put out a statement with the phrase "Glynn Walden announced his departure," but this was a layoff, sources confirm.

Many in the industry think it was more than that. Some speculated privately that *someone* had to take the fall for the controversy over PAC and the NRSC's decision to stop standards work. Ibiquity, as it often does to its detriment, said little publicly; so speculators were free to run wild about the company's health and the reasons management chose to release Walden.

To its credit, Ibiquity praised Walden in a brief statement. "It would be difficult to overstate the contribution Glynn has made to what Ibiquity has accomplished over the years. Glynn Walden was one of the original visionaries for IBOC digital radio. Glynn should be very proud of his accomplishments, and we are honored to have had him as an employee."

Darn right. That's why I and so many other radio people are stunned.

Driven force

Walden was a co-founder of USA Digital Radio, a predecessor company to Ibiquity; and for many of us, he is *the* face of digital radio.

A former director of engineering for CBS Radio, for years he was the front man whenever USADR or Ibiquity needed to explain its technology to radio engineers in language they could understand. When a Radio World journalist needed information or assistance in understanding a concept, Walden invariably was helpful and patient, sharing as much time as necessary to help the writer comprehend.

One top engineer for a major broadcast group flatly called Walden's departure a mistake for Ibiquity and told me, "We're shaking our heads and wondering what the hell happened there."

He described Walden as "one of the most honest, upfront guys at that organization," and praised him not only for his advocacy of IBOC but also for his willingness to speak frankly about problems.

The engineer acknowledged that, at a large technology company, no job is ever really safe. "Who knows what can happen when there's so much at stake?" But he also said, "We hear that Glynn was *trying* to tell Ibiquity that they had problems" with their codec, and that management wasn't listening until the NRSC forced the company to focus on it.

Another prominent radio engineering executive expressed surprise and described the situation thus:

"Ibiquity has three challenges in order to become a self-sufficient business: They need receivers to be manufactured; they need broadcasters to turn on stations; they need the FCC to finalize IBOC rules. Glynn was the lead person on items 2 and 3."

How all this will influence broadcasters in their planning about whether to go HD Radio is unclear. But with so many companies investing so much money in digital radio, and with serious questions raised in the codec selection process, Ibiquity now should be more forthcoming about the circumstances.

Deeply emotional

Most of us understand that differences of opinion can develop in any business endeavor; we are forgiving of a company's need to move in a new direction. But tell us *something*. We feel as though we have lost an advocate for broadcasters in this transition.

All I know is, if I were running that company, I'd be doing everything in my power to make sure that Walden remained on board. It's not an overstatement to say that Ibiquity wouldn't be where it is without his vision and drive.

I will never forget interviewing Walden along with Leslie Stimson for a story in Radio World in 1998 about the future of digital radio; he was the subject of a page 1 story in my first issue as editor.

In my accompanying column, I shared an anecdote. It seems appropriate to repeat it.

At one point during our interview, Walden became reflective. The USADR team, he said with obvious feeling, is working on the future of broadcasting for the next century.

"We had a (videotape) in here one day on the history of radio," he told us. "With all the engineers sitting around, I said, 'Can you stop the tape for just a second?' They were showing some shots of KDKA.

"I said, 'You know, I was lucky enough to meet Leo Rosenberg, who announced the first broadcast on KDKA. I got to shake his hand and say hello to him, just before he died.'"

Walden continued, "And I said, 'Seventy-five years ago in Pittsburgh — I get a little emotional about this — 'seventy-five years ago in Pittsburgh, Westinghouse invented radio. Here in this room, you're inventing the next century of radio.'"

At this point in our discussion, Glynn Walden had tears in his eyes.

I wrote in 1998 that I felt comforted, knowing people like Walden were hard at work on the future of our medium. Now I'm deeply sorry to learn that he is no longer on the team.

From the Editor

Paul J. McLane

APT now offers broadcast and post-production users a product for apt-X file format encoding, decoding and editing.

In the form of a plug-in for Syntrillium's popular Cool Edit Pro editing software, it "ensures an unprecedented level of flexibility and minimizes the number of encode/decode cycles," APT says.

The plug-in retails for $150. The winner is Bill Gellhaus, chief technology officer of WIMG(AM) in Trenton, N.J.

Abernathy Defends Ownership Action

Commissioner Says Previous Court Decisions Dictated Outcome of FCC Rules Vote

Kathleen Abernathy was no stranger to the FCC when President George W. Bush nominated her to the commission in May of 2001. She was sworn in later that month.

Many broadcasters remember Abernathy during her previous agency stint serving as telecom advisor to former FCC Chairman Jim Quello, legal advisor to Commissioner Sherrie Marshall and special assistant to the FCC's general counsel.

Abernathy then left the FCC for the private sector. Prior to her appointment, Abernathy was vice president of public policy at BroadBand Office Communications Inc. and a partner at the law firm of Wilkinson Barker Knauer. She also served as vice president for regulatory affairs at U.S. West Inc. and held a similar post with AirTouch Communications Inc.

The sole female commissioner joined fellow Republicans FCC Kevin Martin and Chairman Michael Powell in June to support new media ownership rules that passed 3-2 in June.

What follow are excerpts from Abernathy's testimony during an FCC oversight hearing before the Senate Commerce Committee that took place after the agency vote.

The commission faced another historic decision affecting free speech where we needed to decide whether to be guided by facts or by fears. For literally years, this commission has struggled to strike an appropriate balance in its media ownership rules. ...

I began my review of the FCC's media ownership rules with three inescapable realities: The Telecommunications Act of 1996, the judicial decisions interpreting it and the United States Constitution.

First, the act requires the commission to conduct a review every two years to determine which of our broadcast ownership rules can be justified in the modern media world. We are already five months behind schedule for our 2002 biennial review and have therefore been unfaithful to the statute. I understand that some members of Congress, this committee and the public have requested that we delay this proceeding, but I could not do that and also adhere to the statutory mandates.

Second, judicial decisions in this area have struck down every broadcast ownership rule the courts have reviewed since the 1996 act. Each time the courts found the FCC had failed to justify the limits it continued to place on broadcast ownership.

A decision to maintain all our rules in their current form would be contrary to the edict from the courts and would most likely be remanded, or indeed vacated, by the courts.

Third, the First Amendment to the Constitution protects the free speech rights of broadcasters. Any rules we retain must be a reasonable means to accomplish our public interest goals.

The federal court opinions specifically tell me that any restrictions we place on ownership must be based on concrete evidence — not on fear and speculation. Based on the record, I could not conclude that most of our previous rules would meet this standard.

Within these parameters, the decision we adopted ... tailors our ownership restrictions to the competitive realities of today's media marketplace, which includes not only more broadcast stations than ever before, but also cable operators, direct broadcast satellite providers, and other outlets. It also safeguards free over-the-air television by granting additional flexibility in response to the increased competition broadcasters are facing and the increased costs they are incurring to produce local news and to transition to the digital age.

Moreover, by preserving several key ownership restrictions, our decision ensures that the public will continue to receive diverse and independent sources of local news and information. In contrast to previous commission efforts, we have discharged our statutory obligation to provide a rigorous justification of these rules, thereby diminishing the prospect of our ownership restrictions being vacated by the court of appeals. ...

We must be able to demonstrate (to the courts) that our existing rules are reasonably necessary to promote competition, localism and diversity _ or we *must* modify or eliminate those rules.

In conducting this analysis, the commission compiled a record of unprecedented breadth and depth. The record includes hundreds of thousands of comments, 12 independent studies and testimony from a number of broadcast ownership hearings. ...

Timing

Despite concerns that have been expressed, the path that led to (the) decision was anything but a rush to judgment. The FCC initiated a review of the newspaper/broadcast cross-ownership rule and the local radio ownership rule in fall of 2001.

We were also required to respond to court remands of the local television ownership rule (adopted in 1999) and the national television cap (adopted in 2000). Those decisions were made three to four years ago and the NPRMs in these cases were issued in 1996 and 1998 _ *five to seven years ago.*

The commission thus has had, for the most part, between 18 months and seven years to craft legally sustainable media ownership rules. While some would prefer to continue debating the issues in this 2002 biennial review, it is almost time to begin the 2004 biennial review. The issues before us are difficult and complex, but our task would not have become any easier a week from now, a month from now or even a year from now.

Photo by Leslie Stimson

FCC Commissioner Kathleen Abernathy (center)

Broadcast ownership rules

Based on my review of the record, I am persuaded that several ownership limitations — in their current form or with some modifications — remain "necessary in the public interest" to preserve competition, localism and diversity.

These rules thus met the legal standard demanded by Congress and the courts. Rules that did not meet this standard were not retained. Overall, our restrictions are grounded in actual evidence of harm, as required by the courts, not in merely hypothetical fears.

First, in the process of retaining our current limits on ownership of radio stations, we have tightened our definition of radio markets to ensure that it more accurately reflects the level of competition in these markets.

Second, our television ownership rules continue to maintain the prohibition of mergers among any of the top four networks.

Third, for such other matters as restrictions on local television ownership, the national television cap and our cross-ownership rules, we have preserved structural limitations in revised forms.

We have modified these restrictions because, not only do the former rules fail to promote competition, localism and diversity, but they may actually be

See ABERNATHY, page 7 ▶

RDS

▶ Continued from page 1

RDS-enabled radios. Those signals, for example, can trigger text on a car radio's display screen and scroll station call letters and streaming slogans.

RDS at home

The renewed interest in RDS services comes as stations are exploring more non-traditional revenue opportunities.

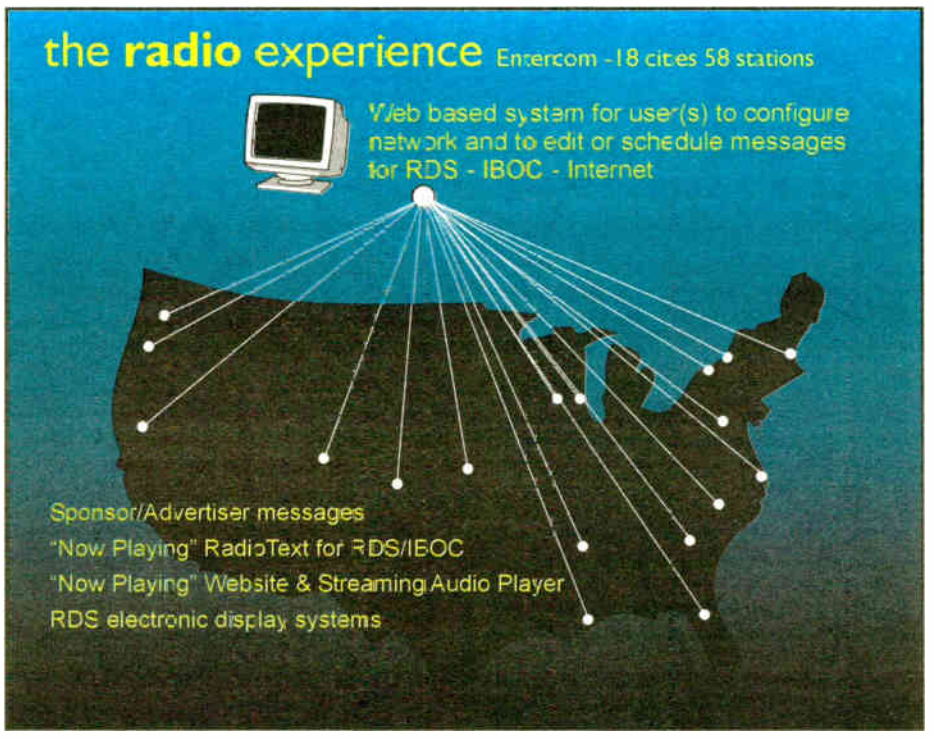
Along with the name of the radio station and artist information of the tracks being played, RDS can flash sponsorship messages on car radios equipped with the technology. A CEA spokesman said RDS technology also is finding its way into some home stereo systems.

Meanwhile, broadcasters are positioning themselves to take advantage of consumer interest in RDS services. Clear Channel Communications and dMarc signed an agreement earlier this year to launch dMarc's dRDS or dynamic radio data service across 53 Clear Channel radio stations throughout Southern California.

The two companies tested the text-based programming method at KIIS(FM) and KOST(FM) in Los Angeles last year with good results, according to Roy Laughlin, regional vice president and Los Angeles market manager for Clear Channel Communications.

Laughlin stated in a press release announcing the agreement, "dRDS has created an entirely new media and distribution outlet for our stations. In less than 10 months after launching the service, we billed over $100,000 in dRDS advertising. We were able to monetize this new programming through advertising."

Chad Steelberg, CEO of dMarc, said, "By using underutilized data carriers and sidebands, we can produce good consumer content through traffic, weather, sports and station promotions while generating revenue for terrestrial broadcasters."



Entercom is spending nearly $150,000 to deploy RDS on 58 stations.

Steelberg said dMarc is testing text data service with broadcasters in Houston and Dallas and that he hopes to sign Clear Channel's entire group of radio stations, approximately 1,225 at last count, to deploy dRDS.

Entercom announced in April that it would equip 58 of its FM stations in top radio markets with RDS services using Dynamic Data Initiative software from The Radio Experience.

"Right now, we are only running (scrolling text) of station call letters, positioning statements and song title and artist information," said John Price, assistant to the vice president of engineering for Entercom. "Generating revenue by some means, maybe through sponsorships of some kind, is obviously the long-term goal."

Price said Entercom is spending almost $150,000 to deploy RDS across the 58 stations.

Allen Hartle, president of The Radio Experience, said the arrival of XM Radio and Sirius and their data text display systems helped provide incentive for terrestrial broadcasters to make an investment in RDS and improve the radio experience for listeners.

New incentive?

"I think radio management is finally saying, 'Hey, it's time for this to evolve and add some complexity to the system.' The threat of new media is acting as an incentive, I think," Hartle said.

He recalls hearing broadcaster concerns about low consumer demand and doubts about the benefits of transmitting RDS over the last 10 years.

"They did not immediately see the financial gain from it because it was not tied to direct revenue. I believe that is changing. RDS was really back-burnered when Internet streaming became the hot thing in the late 1990s," Hartle said.

Steelberg said, "There's a feeling that the broadcasters now think there are enough RDS receivers in the marketplace to merit trying to see what the response will be. The awareness level is rising ... the public's and broadcasters' attention to it."

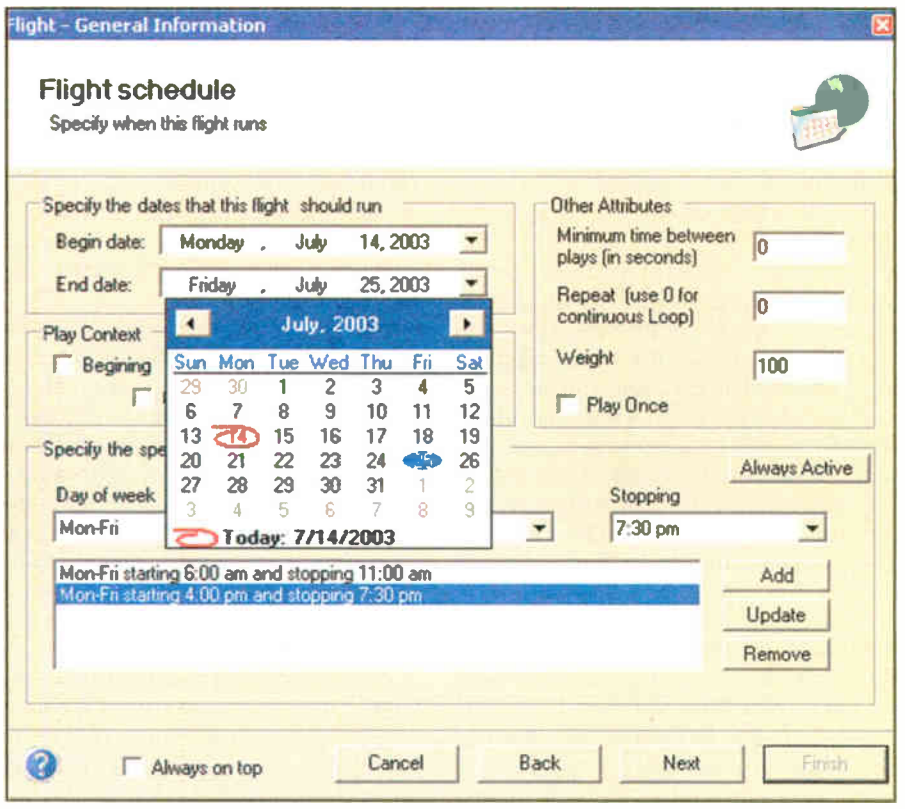
The program data capabilities of HD Radio will open possibilities for terrestrial broadcasters taking their first baby steps into ancillary services, proponents said.

"We have done a lot of work making sure this common platform of ours is fully compatible with the Ibiquity folks. Broadcasters will be able to manage the datacasting both on traditional analog and future Ibiquity deployments," Steelberg said.

Hartle said he believes HD Radio will offer many opportunities for broadcasters, including "text, graphics, even video services."

Cumulus Broadcasting Corporate Director of Engineering Gary Kline said the broadcaster is in the process of running RDS tests and is excited about the potential of datacasting.

"We are looking at a number of applications for RDS. We see lots of potential to utilize text in the radio display to enhance our marketing strategy, advertising sales and music promotion.



dMarc WebManager is a desktop program that helps stations to manage dRDS text campaigns; it supports a scheduling and reporting engine. Marketers and advertisers can monitor and manage text campaigns in real time across one or more stations.

RDS

▶ Continued from page 6

"We also see ways to tie the display messaging with cell phones, PDAs (personal digital assistants) and other wireless technologies to allow a two-way path of communication between the listener and station. HD Radio will allow even greater flexibility with the greater bandwidth," Kline said.

Conservative view

Kline said the decision to roll out RDS will likely be a market-by-market decision for Cumulus. "In some markets the 57 kHz channel isn't even available for RDS because it is leased to a third party."

Even though the Consumer Electronics Association no longer tracks how many RDS-enabled radios are in the marketplace, CEA spokesman Dave Wilson said, "There is still an interest from manufacturers in RDS. However, I'm not aware of any research data to confirm how many receiver manufacturers are producing RDS radios at this time."

That lack of data from receiver manufacturers is enough reason to make some broadcasters take a conservative approach to RDS.

"We have looked at it, specifically in Los Angeles, and may still consider utilizing it in the future. It's still a bit of an unknown," said Kate Healy, spokeswoman for Emmis Communications. "We are still focusing our revenue efforts in other areas at this time."

Dave Stewart, vice president of engineering for Hispanic Broadcasting Corp., said the broadcaster has RDS on several HBC stations. "It's neat where stations use it. I think program data will be a very common thing with HD Radio deployment," he said.

RDS/RBDS: How We Got Here

The Radio Data System was standardized in Europe in the mid-1980s as a method to transmit text and other data along with an analog FM broadcast signal. The National Radio Systems Committee approved the Radio Broadcast Data System for use in the United States on the 57 kHz subcarrier in 1993.

According to the NRSC, "The RDS standard is entirely contained within the RBDS standard, with the functional core of RDS and RBDS being identical."

The former Electronics Industries Association, now the Electronics Industry Alliance, attempted to seed the technology in the United States in 1995 by giving away more than 500 RDS encoders to stations in the top 50 markets. Broadcasters have cited a lack of consumer demand as the primary reason for not transmitting an RDS signal.

Though widespread usage of RDS here is rare, the technology has proven popular in Europe and other countries. Consumer Electronics Association spokesman Dave Wilson said, "I believe government promotion of RDS was one of the main reasons for its greater success in Europe."

A low-rate RDS data stream can include data like playlist information, advertisements, weather, traffic, news and concert information, which can be displayed on specially-enabled radios.

— Randy J. Stine

Abernathy

▶ Continued from page 5

harming these goals. For example, the record demonstrates that combinations of two television stations actually produce more local news.

The record also demonstrates that newspaper-owned television stations provide more news and public affairs programming and receive more industry awards for such programming than unaffiliated stations. If we kept our existing rules unchanged, we would artificially restrict such benefits to local communities with no countervailing advantages. ...

Moreover, media companies may not own more than one of the top four stations in a market. The changes we are making to the newspaper/broadcast and radio/television cross-ownership rules restrict any such combination in all markets with three or fewer television stations, and allow for limited combinations in mid-sized markets. Our new cross-media limits recognize that broadcast television and radio and newspapers continue to be the primary sources of local news and information, and the rules restrict ownership accordingly. ...

Balance

The defining characteristic our biennial review decision is balance. We have undertaken affirmative steps to retain limits on ownership where they can be shown by actual evidence to promote competition, localism and diversity. In the process of reaching this balance, we have also taken some additional steps.

Our decision also leads the commission down a path of providing more opportunities for small businesses, many of which are minority- and woman-owned businesses. The order restricts transfers of most existing combinations that fall out of compliance with our new rules unless the purchaser is a small broadcaster. ...

For me, given the rules the commission adopted, the breakneck pace of technological development and the ever-increasing number of pipelines into consumers' homes, it is simply not possible to monopolize the flow of information in today's world.

Provizer

▶ Continued from page 1

in different ways. He has left the 100-milliwatt AM station called Allston-Brighton Free Radio that he built outside the city of Boston three years ago.

Four years before that, Provizer was a pirate operator who launched A-B Free Radio's predecessor, Radio Free Allston. He says he began that station on his own instead of complaining about the increased concentration of the radio industry and the lack of differing points of view on the air.

The station was on air for almost a year during a time when the NAB and the FCC mounted an effort to close what became up to 500 pirate stations around the country. The commission's Greater Boston bureau asked Provizer to shut down the station. Going off the air when asked enabled him to avoid a penalty.

He refers to both ventures as "public access radio stations," set up with the hope of providing a broadcasting venue for minority groups and those without a voice. The stations also were envisioned as media outlets that would provide news otherwise unavailable in the adjoining communities. These hopes, he said, were never quite realized.

"I have raised the bar as the years have gone by on my expectations, and those expectations couldn't be met," he said. "I wanted the station to have more of an impact on the communities of Allston and Brighton than I felt it was having."

Like many small stations, Provizer said A-B Free Radio struggles to build an audience while working with a small budget for newsgathering and lack of equipment. Only listeners in a small city-block radius could hear its broadcasts. The listeners have never been counted, but rather measured anecdotally by letters and phone calls to the station.

"We were pretty much regulated to car radios." The station has a range of couple of miles when heard on a car radio, but has trouble penetrating homes more than half a mile away.

Provizer with the host of 'Boston Seniors Count,' Fran Johnnene

At one time, Provizer sought to increase the signal's reach by trying to obtain an low-power FM license. But because of the lack of available spectrum in the Boston market, he decided against even applying. In any event, Congress eventually reversed an FCC decision that would have allowed former pirates to operate stations in some circumstances.

Recession factor

Provizer said the other reason he left A-B Free Radio came down to finances.

In 2001, he received a $35,000 grant to support the station, but due to the nation's economic recession, "that has become very difficult as many foundations' funds have narrowed to a trickle." His part-time non-media work has dried up too, he said. Provizer is a former television producer at WBGH(TV) in Boston and freelance fiction scriptwriter for children's theatre for National Public Radio.

Yet he expresses pride about his efforts over seven years.

"I'm proud to have helped provide a platform for members of the community to express their voice," he said. He's also pleased that the station informed people about media regulation through public affairs programming, including a political show he hosted on A-B Free Radio called the "Allston Curmudgeon."

"I was part of a national effort. When you say FCC to people, a much higher proportion knows what it stands for than, say, five years ago."

His support of bringing media control back into community hands does not mean he blames media conglomerates for syndicating programming. Provizer's beef is with the listening public. Ownership, he believes, is second to accountability.

"Breaking up Clear Channel wouldn't necessarily solve a lot of problems," he said. "Until you have people invested in the process of having some control over the communications in their community... (it's a) moot point."

The news media, he said, responds to what people are doing. Radio does have an active listenership, Provizer believes, in talk radio, not public affairs.

"Part of the reason that our local public affairs programs didn't build an audience was because people didn't care to invest themselves into listening."

While Provizer looks for a job in education, programming creation/production or community organizing, he says he remains committed to local radio concerns. He has been asked to help start a radio program for a middle school for girls in Massachusetts. He also is active in an organization called Commonwealth Broadband Collaborative, a group of public access television outlets and community technology centers that promote access to community information and programs in the region.

Part 15

He plans to stay involved in regulatory issues in community radio and spectrum allocation. He wants to help establish a low-power AM service, an idea he spurred by creating A-B Free Radio. The station was created legally under the FCC Part 15 rules, which allow low-level unlicensed transmissions in the AM broadcast band and in a small slice of the longwave spectrum (160 to 190 kHz).

Provizer said many radio insiders had known about the rules, but after A-B Free Radio went on the air, radio activist groups such as the Amherst Alliance and REC Networks began to look more closely, sparking the idea for low-power AM. In June, the groups sent a proposal to the FCC for low-power AM, arguing that LPFM licenses are difficult to obtain in urban areas because of channel protections.

Provizer also was recently involved in an effort to revise the contents of a House bill (H.R. 5285) called the Internet Radio Fairness Act, introduced in July 2002, that exempts small Internet broadcasters with annual revenues below $6 million from sound recording royalties. He and other radio advocates were concerned that the agreement did not specifically address Internet outlets produced by non-commercial, community radio or college stations, which are often licensed by universities with revenues over the specified amount.

In early June, representatives of certain Webcasters including non-commercial stations without a voluntary recording industry agreement finished negotiating their pact with industry. The deal calls for those Webcasters to pay a flat annual fee of $200 to $500 to the recording industry, plus $25 to $50 to waive a record-keeping requirement.

"It seems like a good deal to me," Provizer said, "and it got settled in a positive way."

Webcasting, he believes, is another way community broadcasters can make their voices heard and provide an environment where shows about topics such as children's health or senior citizens' concerns could reach an audience.

For community broadcasters struggling to stay on air and LPFM applicants who are launching their stations, Provizer has advice. Any media outlet with a goal of building listenership must understand that it competes with every other media choice.

"The mere fact that you are doing something that people think is a 'good thing to do' is absolutely no guarantee that they will listen to you."

'The mere fact that you are doing something that people think is a "good thing to do" is absolutely no guarantee that they will listen to you.'

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◆ NEWSWATCH ◆

NAB Shifts Gears on Cap

WASHINGTON NAB in late July re-embraced the 35-percent TV audience cap. The organization briefly had stopped lobbying for such a bill, blaming amendments it considered anti-broadcast. The FCC recently raised the cap to 45 percent.

NAB's movement on the issue troubled the ranking Democrats of the House and Senate Commerce Committees, Rep. John Dingell and Sen. Fritz Hollings. They planned to press forward with legislation to restore the 35-percent cap.

President/CEO Eddie Fritts had said the NAB preferred a 35-percent bill with no amendments; he objected to several added by the Senate committee. But several days later, the trade group saw a better chance of passage of a cap with no amendments, and again embraced the bill.

In the meantime, the House voted to roll back the TV cap to 35 percent, despite the threat of a presidential veto.

At press time, Sen. Byron Dorgan, D-N.D., said he had enough votes in the Senate to pass a congressional override of the FCC's new ownership rules. Dorgan said he would bring the measure directly to the Senate floor for a vote, bypassing action by the Senate Commerce Committee, in early September.

Radio of NAB Concern, Too

WASHINGTON The NAB is worried about how radio would fare under a flurry of amendments being added to the Senate and House TV audience cap measures, including a provision by Sen. John McCain that would force radio spinoffs when clusters exceed limits under the new market definitions.

Ticking off a laundry list of amendments, including restoring the ban on broadcast-newspaper cross ownership, Fritts said, "If you add all those up, you could come up with a nightmarish view of rollbacks of gains broadcasters have made."

Feds Order Pirate To Pay $10,000

TAMPA, Fla. A federal judge in Florida ordered Richard Rowland to pay $10,000 for operating an unlicensed radio station. The civil judgment is the result of an investigation that began in May of 2000.

The FCC's Tampa field office received a complaint of an unlicensed station operating in the Longwood, Fla. area. Commission agents determined that Rowland operated an unlicensed station on 97.1 MHz from a Longwood, Fla., address. The feds seized his equipment and the FCC Enforcement Bureau levied a $10,000 fine on Rowland.

After Rowland refused to pay, the FCC filed suit for collection through the U.S. Attorney's Office.

EAS Has New FCC Office

WASHINGTON The FCC has created an Office of Homeland Security, the new home for EAS within the agency.

The new division is part of the Enforcement Bureau. Thirty-one-year FCC veteran Jim Dailey heads up the office. The office consolidates support for the homeland security and emergency preparedness responsibilities of the commission.

The office also combines support for the "defense commissioner," currently Chairman Michael Powell; the FCC's Homeland Security Policy Council; and the Enforcement Bureau.

It will take over the commission's interactions with advisory panels for broadcast and telephone reliability and restoration should the nation come under terrorist attack or when natural disasters strike.

Dailey's most recent FCC stint was as deputy chief of the Enforcement Bureau's Technical and Public Safety Division and as an advisor to the FCC's Homeland Security Policy Council.

Concern for Public Stations: Is PTFP at Risk?

WASHINGTON A public broadcast organization is expressing concern over the future of the PTFP program, which many pubcasters use to fund facility improvements.

The Association of Public Television Stations issued a statement of disappointment in July over the outcome of a House Appropriations Subcommittee markup of an appropriations bill. Although the group focused on the impact on TV, the funding program affects radio as well.

"The House Commerce, Justice, State, Judiciary Appropriations Subcommittee essentially zero-funded the entire PTFP program, and that is going to have an immediate, negative impact on the ability of public television stations to deliver important new services their communities."

The association said, "The action by the subcommittee sends a very mixed signal to public television. On one hand, Congress mandated that our stations transition to digital broadcasting or soon go dark. Then the subcommittee today basically pulls the rug out from under the key source of matching funds to help our stations complete the transition. If not changed in the final bill, this cut to PTFP essentially makes digital conversion an unfunded federal mandate."

Grants are provided to public TV and radio stations through the Public Telecommunications Facilities Program by the National Telecommunications Information Agency within the Department of Commerce. The program distributed $42 million last year to TV and radio stations.

Senators Disturbed by Dixie Chicks Ban

WASHINGTON First, Clear Channel's Lowry Mays was in the hot seat during Sen. John McCain's hearings on radio ownership and consolidation. Then in July, Cumulus Chairman, President and CEO Lew Dickey had the pleasure.

It was the first chance that members of the Senate Commerce Committee had to scrutinize radio since the FCC released new media ownership rules.

Given the agenda, observers expected the committee to review the new radio market definition. Instead, the Dixie Chicks controversy dominated the hearing.

Senators expressed concern that concentration has given large radio groups power to trample an individual's First Amendment rights. That's what Chairman McCain said happened to the Dixie Chicks after one of its members criticized U.S. involvement in the war with Iraq.

McCain grilled Dickey over the month-long ban of Dixie Chicks airplay. Dickey cited a "hue and cry" from country listeners to stop playing the group's music. After meeting with PDs, he said, the corporate office opted for the ban on country stations. The Chicks were played on the company's top 40 stations because those listeners didn't object, he said.

Dickey also said the "groundswell of negative reaction" by country listeners was "unprecedented."

It was a business decision, he said. He told Radio World that, facing the same decision now, he would leave such a decision to each station. After the 30-day ban was lifted, he said a third of Cumulus' country stations chose to continue banning Chicks airplay because of continued negative reaction from listeners.

McCain said, "I was as offended as anyone by the Dixie Chicks, but to restrain their trade ... It's an issue of concentration."

Several senators feared such a ban could be applied to political speeches that a group owner felt could hurt its business. Sen. Barbara Boxer likened the ban to the blacklisting of writers though to be communists in the 1950s.

Fritts: NAB Not Run by Clear Channel

WASHINGTON NAB President/CEO Eddie Fritts termed a comment by Sen. John McCain during a hearing on radio consolidation in July "tongue-in-cheek."

He was referring to McCain's aside that NAB was a "subsidiary" of Clear Channel.

Fritts told reporters NAB hadn't discussed the quip or anything else with the radio group. To set the record straight, he said that of NAB's 35 radio board members, Clear Channel has two seats, and no seats on the TV board nor the executive committee.

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HD Radio News

HD Radio Scorecard

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Radio World — Covering the Industry's Digital Transition — August 13, 2003

GUEST COMMENTARY

AM IBOC: I'd Turn Back If I Were You

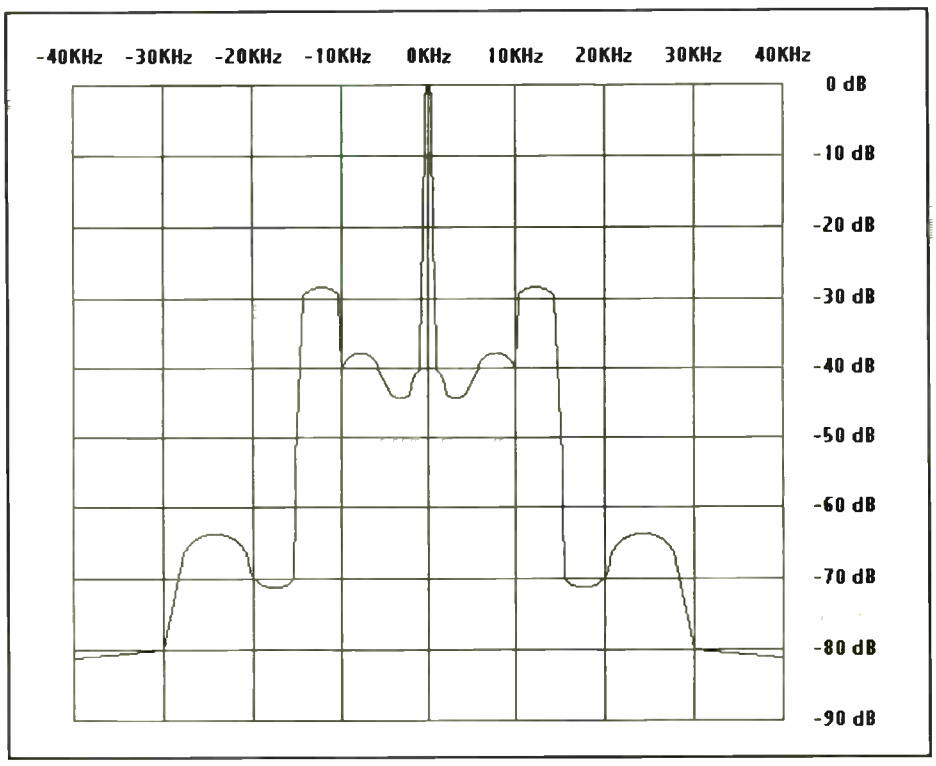
by David S. Forsman

IBOC is a big step backwards for AM stations in several respects.

In the initial phase of IBOC, the new digital transmission will coexist with the current analog AM signal, but regular AM radios likely will receive digital noise when tuned to weaker stations. When the IBOC system has reached some level of public acceptance (say 50 percent), eventually, stations will progress from broadcasting both analog and digital signals to an all-digital transmission scheme. Those who don't have the newer IBOC radios then will receive nothing but noise.

For FM broadcasting, the scenario is about the same. Because FM is mostly a line-of-sight technology, interference will only be apparent on weak signals in remote locations. For AM broadcasts, with their narrower channel spacing and nighttime "skywave" (signals that travel through the ionosphere) propagation, interference will be greater.

Current state-of-the-art AM broadcast transmission systems use a maximum of 20 kHz of bandwidth depending on the type of audio programming they are feeding to the transmitter. When no audio is present in current AM transmission systems, they use zero bandwidth!



A composite 'sketch' of the few AM IBOC spectral graphs the author has seen, showing how much additional spectrum AM IBOC will use. It not only has data carriers in the main and second-adjacent channels, but also significant carrier level in the third-adjacent channel.

Maximum bandwidth used

However, when IBOC digital carriers are added to an AM system, they increase the normal bandwidth by a factor of at least two (2x) — even without the audio program present. Ibiquity Digital suggests that for AM transmitters to comply with its IBOC system, the transmitters must have at least 50 kHz of radio frequency bandwidth — 30 kHz more than current analog AM; IBOC relies on both amplitude modulation as well as phase modulation.

This means that IBOC stations will be using the maximum bandwidth permitted by the FCC no matter what programming material they are broadcasting. Two recent stories in Radio World covered AM stations in the Midwest and eastern parts of the United States that had converted to IBOC.

Listeners of adjacent AM stations (the station either above or below the primary channel) in nearby areas said that they could only hear a hissing noise, similar to what someone would hear if he or she played a blank cassette tape. These reports are consistent with what high-speed digital transmission sounds like. AM stations that could once be audible are no longer heard because of IBOC.

Seldom do current analog AM stations use 100 percent of their available bandwidth. The AM bandwidth standard (FCC 47CFR73.44) was developed years ago when transmitter designs were less stringent.

The AM bandwidth standard could have been narrowed due to newer technology, but it was left the same. IBOC takes advantage of the old emissions standard

See AM, page 14 ▶

NEWS ANALYSIS

Ibiquity In the Wake Of Walden

Layoffs Herald Change in the House of IBOC

by Leslie Stimson

Broadcasters were stunned to learn that Ibiquity Digital Corp. had laid off several top managers in July, including one of the founders of USA Digital Radio, the forerunner to Ibiquity. Some wondered what else was to come from the company as it strives to bring its digital radio technology to market.

Terminated as of the end of July were positions for E. Glynn Walden, vice president of broadcast engineering; Rick Martinson, vice president of program management; and Gerald Marcovsky, senior legal adviser. The move was made for cost-cutting reasons, sources said.

Ibiquity declined all comment on the issue, including the nature of the reasons the individuals left the company. After Radio World broke the story, the company released a statement about Walden's departure, calling Walden "one of the original visionaries for IBOC digital radio. Glynn should be very proud of his accomplishments, and we are honored to have had him as an employee. We wish him all the best in his future endeavors."

Ibiquity would not comment on how the duties of the engineers no longer with the company will be handled.

Walden and Martinson had worked on IBOC development for several years.

See IBIQUITY, page 16 ▶

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AM

▶ Continued from page 12

by filling the spectrum beyond the normal 20 kHz that most AM stations use.

The use of IBOC digital AM transmission will reduce the number of stations that can be heard on the AM band and also the distance that they can be heard. With IBOC, AM radio will likely have only a 40-mile daytime distance and a 20-mile nighttime distance. Nighttime skywave propagation likely will cause additional interference.

Many stations use directional antenna systems that prevent interference to first-adjacent channels. These systems allow more signal to be transmitted in some direction(s) and less in others. Many DA systems have narrow bandwidths and will not protect fully the analog and digital carriers of adjacent stations.

Steep conversion costs

Projected conversion costs are steep for many small-market AMs. The costs of implementing AM IBOC go beyond the cost of buying the basic equipment. For example, AM IBOC exciters have been pegged at $35,000.

Often, an AM station will need to replace its existing AM transmitter. Typical costs are $35,000 to $40,000 for a 5 kW model. If an AM facility employs a directional antenna, its technical staff will likely have to re-engineer its design to increase the available bandwidth needed to accommodate IBOC. If, however, this cannot be done with low-cost changes in the electronics of the DA system, a new DA system complete with towers, feedlines, phasing equipment and land will be needed.

Depending on the geographical location, this cost easily could exceed several hundreds of thousands of dollars, or even millions in larger markets, due to land costs. Most small-market AM radio stations will not be able to afford this expense.

In many markets, AM stations are vital to the community.

Idaho residents, as well as those in other western states, rely on AM radio to receive their local news, weather and emergency information. When power systems fail, AM radio often is the only medium left.

Can't get up there

FM transmitter sites usually are located on mountains to enhance their coverage, but many do not have full emergency power or fuel supplies. In winter, these sites are sometimes inaccessible, especially to fuel trucks. The Emergency Alert System relies on many AM stations with emergency gasoline and diesel generators.

AM radio also has the advantage of using "groundwave" propagation, signals that travel along the earth's surface, during both day and night. With groundwave, AM signals can travel hundreds of miles during the daytime and be heard on radios equipped with external antennas.

Because AM stations usually are located in accessible areas, they are supplied easily with emergency generator fuel. Back in the San Francisco earthquake, AM radio was the only source that I could get up-to-date news on. Both KGO at 810 kHz and KNBR at 680 were on the air with live reports from the sidewalks of San Francisco.

The TV stations apparently did not have the emergency capabilities that the AM stations had; they kept showing the same three news video clips the entire night. Only the AM radio stations had minute-by-minute disaster reports from the citizens of San Francisco.

Low fidelity

Given that the FCC has already adopted the IBOC standard, what are we to do at this point? Is IBOC superior to analog AM if it reduces the number of stations that we can listen to and the effective distance that those stations broadcast?

I will truly miss the old reliable AM radio format that I have become accustomed to. I also will miss the nighttime stations from Calgary, Alberta; Casper, Wyo.; Los Angeles, San Francisco, Seattle and Boise, Idaho.

The AM band has less than 1.2 MHz of bandwidth compared with the 20 MHz of the FM band, yet the AM band still has more channels. The phenomena of skywave and groundwave propagation are too valuable to sacrifice for IBOC.

If AM radio becomes a narrowband line-of-sight digital technology, it will become like low-fidelity FM or MP3. A few companies already have developed new AM radio designs that could make standard AM much better.

Battery life iffy

It has been suggested that portable IBOC radios will require bigger batteries to operate than current analog radios. This would limit their emergency use time.

Digital cell phones use nickel-metal-hydride and lithium-ion batteries; few, if any, can operate on small AA alkaline batteries, as most rely on 120 VAC chargers. Emergency radio communication systems need simple and available "off-the-shelf" technology with low power consumption.

Some modern analog radios can operate continuously for days on a single set of AA batteries. With only intermittent daily use, their batteries can last for months. So far, IBOC automotive-type radios, where battery drain is not an issue, will be the first to the consumer market. Most cars have 100-amp-hour batteries.

I believe that it is important to reconsider the effects of AM IBOC in regard to emergency broadcast needs. In my public comments to the FCC during the initial IBOC proceedings, I suggested that any new system meet or exceed the current AM standards. In fact, I believe that AM IBOC is a big step backwards — in cost, complexity, spectral efficiency, power consumption and communication range.

Many glowing reports about AM IBOC from equipment manufacturers are on the Internet. Many of these broadcast equipment manufacturing companies are heavily invested in the Ibiquity system, so one could not expect them to convey negative comments.

The so-called "public airways" are really not that public. Without the proprietary IBOC licenses and software, a station can neither transmit nor receive IBOC signals legally. The technologies that operate our current AM and FM systems are pretty much considered "public domain."

AM IBOC should be moved to a small 1.2 MHz section of one of the soon-to-be vacated VHF TV channels. Perhaps the FCC no longer represents the needs of ordinary people. I am afraid that this is the case for AM IBOC.

David S. Forsman is a technician with 4K Radio's KOZE/KORT in Lewiston, Idaho. RW welcomes other points of view.

HD Radio Scorecard (Sorted by State)

Stations with one asterisk (*) have special temporary authority to broadcast HD Radio; two asterisks (**) are confirmed on the air. Additions or changes in status since July are in bold. Some without asterisks may be on with experimental authorization/limited testing. Others have ordered equipment or indicated a commitment to HD-R. List is partial. Are you on? E-mail us to radioworld@imaspub.com.

Call Letters	State	Market	Frequency	Owner
AM				
WJLD * **	AL	Birmingham	1400	Richardson B'casting
KAZN	**CA**	**Pasadena**	**1300**	**Multicultural B'casting**
KCBS *	CA	San Francisco	740	Infinity
KMNY	**CA**	**Pomona**	**1600**	**Multicultural B'casting**
KNX *	CA	Los Angeles	1070	Infinity B'casting
KTNQ	CA	Los Angeles	1020	Hispanic B'casting
KNRC	CO	Denver	1150	Newspaper Radio Corp.
WHSR	FL	W. Palm Beach	980	Beasley
WJNA *	FL	Royal Palm Beach	640	S. Florida Radio
WKAT *	FL	N. Miami	1360	Spanish Media B'casting
WQBA	FL	Miami	1140	Hispanic B'casting
WRHB *	FL	Kendall	1020	New World B'casting
WRHC	FL	Miami	1550	WRHC Management
WWFE	FL	Miami	670	Fenix
WWNN *	FL	Pompano Beach	1470	Beasley Broadcast
WSB * **	GA	Atlanta	750	Cox
KMRY	IA	Cedar Rapids	1450	Sellers B'casting
WIND	IL	Chicago	560	Hispanic B'casting
WILO **	IN	Frankfort	1570	Kasper B'casting
WOWO *	IN	Ft. Wayne	1190	Federated Media
WBZ *	MA	Boston	1030	Infinity B'casting
WWIN	**MD**	**Baltimore**	**1400**	**Radio One**
WCHB **	MI	Detroit	1200	Radio One
WWJ *	MI	Detroit	950	Infinity B'casting
**KFUO ** **	**MO**	**Clayton**	**850**	**Lutheran Church-Mo. Synod**
WTWZ *	MS	Clinton	1120	Wood B'casting
WCTC *	NJ	New Brunswick	1450	Sentinel Publishing
WMTR *	NJ	Morristown	1250	Sentinel Publishing
WPAT	**NJ**	**Paterson/New York**	**930**	**WPAT Inc.**
WWTR *	NJ	Bridgewater	1170	Sentinel Publishing
KXNT *	NV	N. Las Vegas	840	Infinity B'casting
WADO	NY	New York	1280	Hispanic B'casting
WOLF * **	NY	Syracuse	1490	Wolf Radio
WOR **	NY	New York	710	Buckley
WZRC	**NY**	**New York**	**1480**	**Multicultural B'casting**
WRMR *	OH	Cleveland	1420	Cleveland Classical
WSAI	OH	Cincinnati	1530	Clear Channel
WPEN *	PA	Philadelphia	950	Greater Philadelphia Radio
WWDB	PA	Philadelphia	860	Beasley
KCHN	**TX**	**Brookshire/Houston**	**1050**	**Multicultural B'casting**
KOAL *	UT	Price, Utah	750	Eastern Utah B'casting
WKDL * **	VA	Alexandria	730	Mega Communications
WXGI	VA	Richmond	950	Gee Communications
WTMJ *	WI	Milwaukee	620	Journal Broadcast
FM				
KCPB	**CA**	**Thousand Oaks**	**91.1**	**Univ. of So. Cal.**
KDFC * **	**CA**	**San Francisco**	**102.1**	**Bonneville**
KFAC	**CA**	**Santa Barbara**	**88.7**	**Univ. of So. Cal.**
KFOG	CA	San Francisco	104.5	Susquehanna
KIIS	CA	Los Angeles	102.7	Clear Channel
KKBT *	CA	Los Angeles	100.3	Radio One
KKDV *	CA	San Francisco	95.7	Bonneville
KKJZ	CA	Los Angeles	88.1	Cal State Univ/Long Beach
KKSF	CA	San Francisco	103.7	Clear Channel
KLVE	CA	Los Angeles	107.5	Hispanic B'casting
KOIT *	CA	San Francisco	96.5	Bonneville
KOST	CA	Los Angeles	103.5	Clear Channel
KPSC	**CA**	**Palm Springs**	**88.5**	**Univ. of So. Cal.**
KROQ * **	CA	Pasadena	106.7	Infinity B'casting
KSAN	CA	San Francisco	107.7	Susquehanna
KSOL	CA	San Francisco	105.7	Hispanic B'casting
KUSC	**CA**	**Los Angeles**	**91.5**	**Univ. of So. Cal.**
KUOW	**CA**	**Seattle**	**94.9**	**Univ. of Washington**
KYLD	CA	San Francisco	94.9	Clear Channel
WEDR	FL	Miami	99.1	Cox
WFLC	FL	Miami	97.3	Cox
WHQT	FL	Miami	105.1	Cox
WKIS *	FL	Boca Raton	99.9	Beasley Broadcast
WPYM	FL	Miami	93.1	Cox
WRMA *	FL	Miami	106.7	Spanish B'casting
WRTO	FL	Miami	98.3	Hispanic B'casting
WUSF * **	FL	Tampa	89.7	Univ. of So Fla.
WALR * **	**GA**	**Atlanta**	**104.1**	**Cox**
WBTS * **	**GA**	**Atlanta**	**95.5**	**Cox**
WFOX * **	**GA**	**Atlanta**	**97.1**	**Cox**
WHTA	**GA**	**Atlanta/Hampton**	**107.9**	**Radio One**
WSB * **	**GA**	**Atlanta**	**98.5**	**Cox**
KZIA *	IA	Cedar Rapids	102.9	KZIA Inc.
WBEZ *	IL	Chicago	91.5	WBEZ Alliance
WDRV *	IL	Chicago	97.1	Bonneville
WNUA **	IL	Chicago	95.5	Clear Channel
WOJO	IL	Chicago	105.1	Hispanic B'casting
WPWX	IL	Chicago	92.3	Crawford B'casting
WTMX *	IL	Skokie	101.9	Bonneville
WUSN *	IL	Chicago	99.5	Infinity B'casting
WVAZ **	IL	Chicago	102.7	Clear Channel
WSHW **	IN	Frankfort	99.7	Kasper B'casting
WASE * **	KY	Elizabethtown	103.5	W&B B'casting
WAAF *	MA	Boston/Worcester	107.3	Entercom
WBOS *	MA	Brookline	92.9	Greater Boston Radio
WBOT	**MA**	**Boston/Brockton**	**97.7**	**Radio One**
WKLB *	MA	Lowell	99.5	Greater Boston Radio
WMJX	MA	Boston	106.7	Greater Media
WQSX * **	MA	Lawrence/Boston	93.7	Entercom
WROR *	MA	Framingham	105.7	Greater Washington Radio
WTKK *	MA	Boston	96.9	Greater Boston Radio
WDMK * **	MI	Detroit	102.7	Radio One
WDTW	MI	Detroit	106.7	Clear Channel
WMGC * **	MI	Detroit	105.1	Greater Boston Radio
WRIF	MI	Detroit	101.1	Greater Media
WCSX *	MS	Birmingham	94.7	Greater Boston Radio
WRAL * **	NC	Raleigh	101.5	Capitol
WDHA	NJ	Dover	105.5	Greater Media
WJRZ	NJ	Manahawkin	100.1	Greater Media
WMGQ *	NJ	New Brunswick	98.3	Sentinel Publishing
WRAT	NJ	Pt. Pleasant	95.9	Greater Media
WCAA	NY	New York	105.9	Hispanic B'casting
WNEW *	NY	New York	102.7	Infinity B'casting
WCLV	OH	Cleveland	104.9	Cleveland Classical
WNWV * **	**OH**	**Elyria/Cleveland**	**107.3**	**Elyria-Lorian B'casting**
WYGY * **	OH	Cincinnati	96.5	Susquehanna
WMGK *	PA	Philadelphia	102.9	Greater Philadelphia Radio
WMMR	PA	Philadelphia	93.3	Greater Media
WMWX *	PA	Philadelphia	95.7	Greater Philadelphia Radio
WFID *	PR	Rio Piedras	95.7	Mackfidie
WIVA *	PR	Aguadilla	100.3	Arso Radio Corp.
WPRM *	PR	San Juan	98.5	Arso Radio Corp.
WZAR *	PR	Ponce	101.9	Uno Radio of Ponce
KSOC	**TX**	**Dallas/Gainesville**	**94.5**	**Radio One**
KBKS **	**WA**	**Tacoma**	**106.1**	**Infinity B'casting**
KBSG	WA	Seattle	97.3	Entercom
KISW	WA	Seattle	99.9	Entercom
KMTT	WA	Seattle	103.7	Entercom
KNDD	WA	Seattle	107.7	Entercom
KQBZ	WA	Seattle	100.7	Entercom
WKWS * **	**WV**	**Charleston**	**96.1**	**W.Va. Radio Corp.**
WVAF	**WV**	**Charleston**	**99.9**	**W.Va. Radio Corp.**
WVAQ * **	WV	Morgantown	101.9	W.Va. Radio Corp.

DIGITAL NEWS

Historic KFUO Goes HD; Crawford in Chicago Too

Religious station KFUO(AM) in St. Louis has begun broadcasting in HD Radio. Ibiquity Digital said the station is the first facility in Missouri to make the digital transition.

KFUO(AM) is owned and operated by The Lutheran Church — Missouri Synod, which counts 2.6 million member in 6,145 congregations. According to its founders, KFUO is the oldest religious radio station in the world. It began broadcasting in 1924.

Separately, Crawford Broadcasting now has its first station on the air full-time with HD Radio.

WPWX(FM) in Chicago is at 92.3 MHz. It began broadcasting in digital on July 7, according to Chief Engineer Art Reis, and went on full-time on July 16.

The station uses a BE FMi703 digital transmitter, FXi-60 exciter, FSi-10 IBOC generator and Shively injector, according to the group's director of engineering, Cris Alexander.

Kahn Coy on Cam-D Details

Leonard Kahn says 10 broadcasters have agreed to test his Compatible AM Digital technology, and he expects those stations to begin field tests by the end of the year. Kahn says his Cam-D technology will restore AM to 15 kHz stereo fidelity by using digital processing.

Kahn declined to identify which stations had paid for his system and how much money that entailed. He said, "The receive end of this has a very big potential if it's done right. AM radio going digital and doing the tricks (the system) is capable of, can make the receiver shoot right up. That's where the money is and where our patents will go."

Kahn said he would make a small amount of receivers available to his test stations as pre-production models.

Industry engineers and other observers have called for details concerning the technical specifications of the system, which Kahn claims will "provide improved fading performance over vast distances at night" and "will not increase adjacent or co-channel interference." But he declined to give details.

However, he said he knows he needs to do that soon. "After bragging, it's time for people to put up or shut up. ... We're not playing around and not weasel wording."

Asked whether he would discuss details of his system at the NAB Radio Show, Kahn said he wasn't sure. An NAB official said in July that Kahn was not slated for a presentation.

Ralph Carlson, president of Carlson Communications in Salt Lake City, plans to test Cam-D and hopes the necessary equipment would be installed in the fall. Using Kahn's Powerside AM stereo exciter, Carlson said he has increased his station's nighttime power level by a factor of three.

"Previously, we couldn't get 20 miles south. Now, we can be heard 40 miles," said Carlson.

Kahn has said his Cam-D system would perform using a station's existing transmitter and antenna.

— Leslie Stimson

Cleveland Engineers Look At HD Radio

CLEVELAND Members of Cleveland's SBE Chapter 70 met in June at Omnia Audio/Telos Systems for a discussion of audio processing for HD Radio. Management from WNWV(FM) discussed their plant conversion, which incorporated the Omnia-6 HD processor.

Telos/Omnia President Frank Foti, left, discussed processing techniques for HD Radio. WNWV(FM) CE Gary Kneisley is to the right; an unidentified attendee has his back to the camera.

Participants were able to compare digital to analog using an Ibiquity Digital receiver.

Ibiquity

▶ Continued from page 12

Walden in particular was described as "the father of IBOC" or similar nicknames by many in the industry. Walden, several said, was the "face" of IBOC for broadcasters in this country and abroad.

Martinson was appointed director of digital radio broadcast development in 1996. He handled in-house duties of technical development while Walden focused on field trials and other outside testing, according to Ibiquity's Web site. Walden was the technical representative for Ibiquity on standards-setting groups along with attorney Al Shuldiner, who remains with the company.

Marcovsky joined the company in 1998.

'Incredibly shocked'

The news stunned radio engineers.

"I am furious," said one RF source involved in the digital rollout. "It makes no sense for him (Walden) to go out the door."

"It's a confidence-breaker for me," said a broadcast engineering source.

"I'm not sure what message this is going to send to the industry," about IBOC development, a source with the NRSC said. "This is strangely timed."

"I'm incredibly shocked and disappointed. ... Many broadcasters think he is the most reliable and dependable contact" at the company, said another observer, Milford Smith, chairman of the DAB Subcommittee of the National Radio Systems Committee.

"I am personally familiar with the incredible work ethic he has brought to this," Smith worked with Walden on many National Radio Systems Committee and NAB committee efforts.

Receiver, transmitter, hardware and software experts as well as broadcasters contacted for this story characterize Ibiquity as a company moving from a technology development organization to one with a focus on marketing and sales.

A company must do what it can to survive and get the product to market, several observers said, which may mean hard choices about how much in salaries it can afford to pay vs. the skill sets needed.

File photo by Leslie Stimson

Rick Martinson and Glynn Walden work on an early IBOC presentation.

The satellite radio companies have gone through leadership changes as they made the transition. Now Ibiquity Digital seems to be going through a similar transition, although Ibiquity has always had a much smaller budget than Sirius or XM Satellite Radio had at their disposal for launch.

Personnel changes

Such organizations typically shed some technical talent in favor of marketers. In Ibiquity's case, that process has begun; broadcast sources predicted that the July layoffs are only the beginning of personnel changes to come.

Sources close to Ibiquity and its board of directors also said the company had to reduce its cash "burn" rate, pegged by one source at roughly $2.1 million a month. Ibiquity, they said, needed to stretch out its cash on hand, and planned to refinance soon.

Of the nine board members of the privately held company, four represent broadcast companies: Gannett Co., Radio One, Clear Channel Radio and Infinity Broadcasting. There are representatives from the former Lucent Technologies' new ventures group and three venture capital companies: Grotech Capital Group, Flatiron Partners and Pequot Capital.

Ibiquity President/CEO Robert Struble is chairman of the Ibiquity board. The four venture capitalists on the board are part of a larger group of 13 institutional investors.

Sources close to the board said that in the most recent round of financing, in which Ibiquity raised roughly $100 million, broadcasters did not reinvest much money compared to the amount put up by the venture capitalists. "There's some resentment there," one source said.

"Ibiquity has made a clear statement to its investors it's moving forward," said one observer.

Many participants believed that the "pause" in NRSC standards setting, seen as a setback in Ibiquity's digital rollout, contributed to the personnel changes. The slowdown caused by the PAC codec issue translates into less cash coming in immediately via broadcast HD Radio licenses. It also delays the timetable for licensing revenue to Ibiquity from receiver sales.

The codec issue was unresolved at presstime. Sources also cautioned that a decision to switch codecs had not been made by Ibiquity. The company has been pursuing parallel paths with different codecs to resolve audio quality issues on AM at low bit rates.

'Soon'

A company spokesman said, "We're moving forward. We have a plan as to what we're going to do. We'll announce it as soon as we possibly can."

A Kenwood spokesman said the receiver maker still has confidence in Ibiquity and IBOC. Kenwood shipped 100 test receivers to Ibiquity for stations on the air with the digital radio technology.

Kenwood spokesman Bob Law said that even if Ibiquity changes codecs, receiver production would remain on track.

"If there's a change made after production is completed, we would have the ability to make changes to the unit if required. It's a software change," he said.

Law said personnel changes are to be expected in a company making a transition such as the one in which Ibiquity is involved.

"The responsibilities and what they have to accomplish now are much different than over the past 10 years."

He said he's seen such changes many times in the years as he has watched other media go digital. He cautioned those who he called naysayers about terrestrial radio going digital.

"The technology has been proven. If the broadcasters want to block this and slow it down, I'll sell more satellite radio. The consumer wants digital. If (broadcasters) want to remain in the analog space, they will go the way of the cassette."

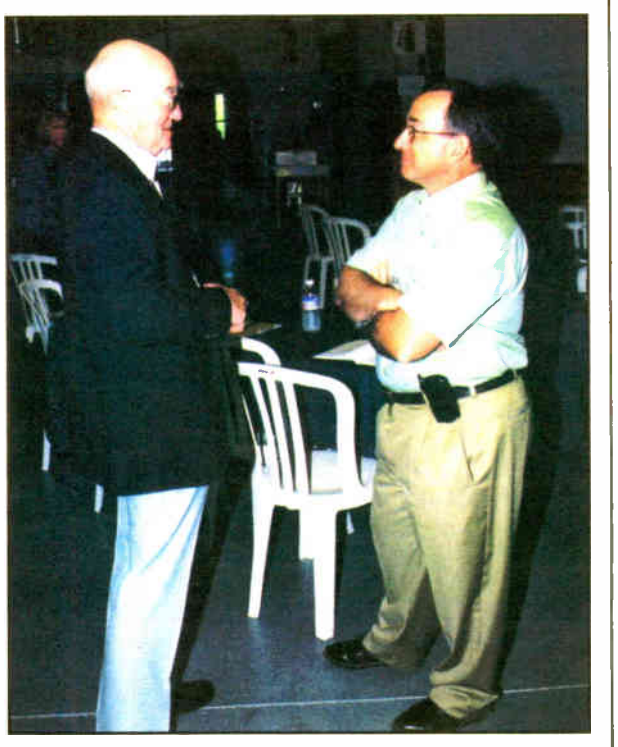
Asked how changing codecs might affect receiver chip production, Philips spokesman Jack Morgan said, "We think there's enough headroom in the computer performance chip so Ibiquity can upgrade their compression and decompression software for some period of time."

Sources close to Ibiquity have said aacPlus uses more computing power than does PAC.

Nautel Seeks Engineer Feedback

Nautel has begun holding informational sessions for customers and potential customers on future technologies, including HD Radio. Two dozen Atlantic Canadian broadcast engineers attended the first event, called Nautel Forum@the Factory, in Nova Scotia.

Nautel opened its doors to broadcast vendors and engineers on June 20 for a day of interactive presentations and product demos that also included vendors such as Audio Precision, Belar and Telos/Omnia.



Dave Morrison of Morcom Technical Services and Michel LeBlanc of the CBC discuss broadcast technology during a refreshment break.

"This is not your *ordinary, average* microphone."

Joe Walsh
• guitarist for The Eagles
• ordinary average guy

Excerpts from Ty Ford's review in June Radio World

- *The GOLDLINE PRO was much smoother and clearer sounding than the SM57.*
- *It was brighter than the RE 27ND without being edgy.*
- *The 421 was more honky and nasal sounding.*

Bob Heil, pioneer innovator of live sound reinforcement systems for such greats as the 'Who', the Grateful Dead, Joe Walsh, Peter Frampton, and countless others has been carefully listening to broadcast engineers, industry professionals and talented performers for many years. Bob has now allied his vast knowledge and 37 years of experience into his new line of high quality microphones and audio hardware.

The introduction of this great new product line marks the birth of the new 'PROLINE' division at Heil Sound, Ltd. It is truly documented in recent product review's that the new Heil dynamic microphone element has raised the bar for dynamic microphone technology.

This latest Heil technology captures every note and feeling with brilliant, natural articulation. Clean, clear condensor-like sound producing an exceptional rich, warm sound - the way your want it from the most beautiful and affordable microphone ever...The new Heil GOLDLINE PRO.

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India Gets a Slew of New FMs

by Frederick Noronha

The private FM scene is heating up across India, with a number of radio stations taking to the air over recent months.

"War on the airwaves" was how the story was highlighted in financial daily newspaper Business Standard. By spring, radio stations were coming out on the airwaves with surprising frequency and gala events.

Radio Mirchi, for example, was launched by Indian filmstar Kareena Kapoor. It was soon followed by two other stations in Delhi, making the start of a battle for listeners and advertisers in the Indian capital.

Over the past year, a number of private FM stations went on air in Mumbai, Bangalore, Lucknow and Indore. Delhi is playing host to another round of station launches. New stations are also being heard in Kolkata and Chennai.

2 billion rupees

India is the second most-populous nation, after China, with 1.05 billion people, according to the U.S. Census Bureau's International Data Base.

Estimates say private FM operators will invest the equivalent of $43 million in new stations over the next year. Many newspaper giants are involved in the fray.

In May, Radio Today, the radio division of the Delhi-based India Today magazine group, launched its services in Delhi a year after launching operations in Mumbai.

93.5 Red FM went on-air in Delhi at midnight in April. This station is aimed at listeners in the 18- to 35-year-old age group, spanning the upper-end socioeconomic classes.

For its morning show, "Good Morning Delhi," the focus will be on providing the "right information at the right time," 93.5 Red FM officals said.

Another program, "Delhi Talkies," targets housewives, shopkeepers and retailers — people who are not on the move. Other programs include "Total Timepass," which focuses on games and interaction; "Happy Hours," an afternoon drivetime show; and "Palchhin," a late-night music show.

"We have devised a very effective programming strategy," Radio Today Chief Operating Officer Nishchint Chawla was quoted as saying.

"We have some of the best names (among announcers and singers), including Ameen Sayani, Usha Uthup and Shamshir Rai Luthra as presenters coupled with a strong and experienced programming team, which is set to provide the best to music aficionados as well as to woo listeners."

Meanwhile, in Chennai, Radio Mirchi, the largest private radio network in India, launched a new station on 98.3 MHz in May.

Radio Mirchi is owned by the Entertainment Network India, a division of the Times of India newspaper chain.

Youth-oriented

The station is youth-oriented. It promised to focus on Tamil and English programs, including a combination of both languages and Tamil film songs. Chennai is a fast-growing metro with a strong retail market.

Radio Mirchi now has stations in the four largest metropolitan areas of India, as well as in Indore, Ahmedabad and Pune. It has a total of nine licenses for stations across India, and claims to be the widest licenseholder among India's private radio FM segment. It plans to set up operations in the cities of Jabalpur and Bhubaneswar.

In the commercial capital of Mumbai, Radio Mirchi claims a 54- to 60-percent market share.

Industry watchers have noted that one of the conditions laid down by the government on private FM stations was specifically that no news be broadcast.

But among the private FM stations in Mumbai, Delhi, Bangalore, Lucknow and Indore, news programming is being aired under different names. Stations were capitalizing on the fact that no specific definition of "news" was given to the private players by the government.

"These radio stations refrain from calling any of the content 'news,' they do have 'Biz Updates,' 'Bizness Update' and even stock prices," according to a report in the Financial Express.

Some stations title their programs as "news you can use," and film news and reviews gets packaged as "hot news and gossip straight from Bollywood and Hollywood."

Sumantra Dutta, chief operating officer of the radio division of Star India, has argued, "'News' is mainly political." Instead of covering politics, Radio City plans to carry news that "impacts local people."

At the launch of Radio Mirchi in Delhi, private FM operators asked the government to allow news on their channels. Many are run by newspapers that already have considerable news output.

There was also a debate in the Indian mainstream media over the exact meaning of "news," and whether this only excluded political updates.

Workbench

Radio World, August 13, 2003

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

Discovering the Root of the Problem

by John Bisset

We've all visited transmitter sites where the grass, vegetation. weeds, vines and trees seem to spring up overnight.

In most cases the sites have been neglected. Sometimes this is unintentional; the engineers simply are overworked. But visiting every transmitter site is time spent well.

In some cases, sites are acquired and the engineer has no control over what is inherited. This is where a good due-diligence inspection can save an owner thousands.

New World Radio Director of Engineering and Operations Brian Edwards inherited such a site. Here is a pictorial essay of any engineer's worst nightmare.

Through the years, the AM site basically was forgotten. After all, the station was on the air, right? Add to that zero budget to handle transmitter site basics like grass mowing, and seemingly "overnight" a jungle appeared, as seen in Fig. 1. Grass turned into bushes, bushes grew into trees. When the keys to the site were handed to Brian, a tree was growing through one guy anchor point.

In addition to the brush and tree issue, dirt had buried several of the guy wire turnbuckles. It wasn't a pretty picture. Brian's first course of action was to get a better picture of the situation by removing the brush.

A job this intense required some heavy machinery; see the brush in Fig. 2. Brian had the experience to operate a backhoe. If you've never operated such machinery, hire a professional to do the job. Clipping a guy wire and toppling a tower is pretty expensive on-the-job training.

Fig. 3 shows that once the brush was cleared away, a closer inspection of the anchor point could be made. At this point, Brian realized the turnbuckles were not just covered with weeds; they were buried in dirt, as seen in Fig. 4.

Fig. 5 on page 20 shows the dirt around the anchor point being removed with care by the backhoe operator. In Fig. 6, the excavated guy is visible. To prevent further burial, Brian is building a retaining wall using landscape ties. Gravel will cover the area around the anchor after the turnbuckles are replaced.

Being buried for who-knows-how-long caused severe rust on the turnbuckles. To guard against future

See WORKBENCH, page 20 ▶

Workbench

▶ Continued from page 19

growth, a piece of landscape fabric will be placed under the gravel.

The fun wasn't over yet. At another guy anchor, a tree was growing. Fig. 7 shows the stump, which had to be cut away carefully.

This anchor point also was buried. Note the tree stump to the left of the anchor point, as Brian unearths the guys in Fig. 8. Fig. 9 is a closeup of the stump and the buried turnbuckles.

5 Excavating Buried Guys

6 Excavated Guy

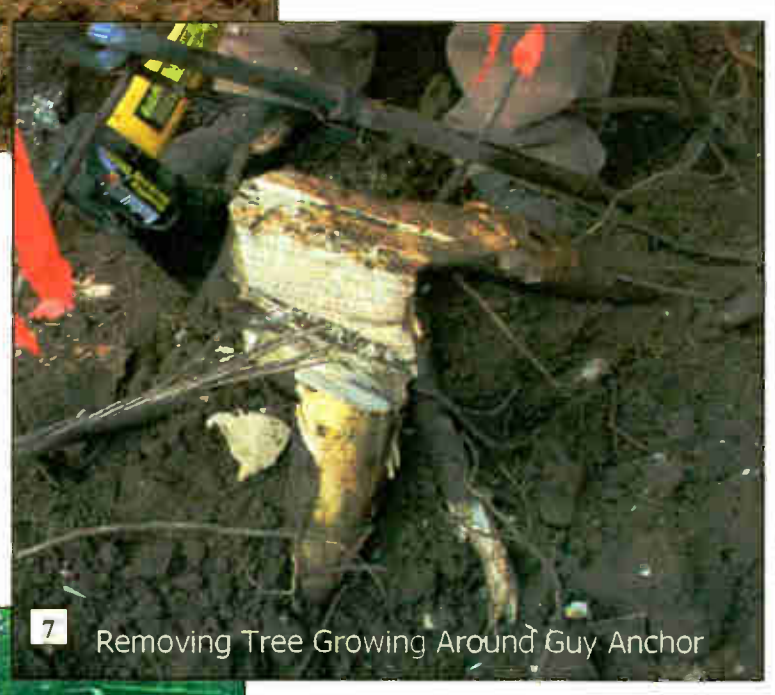
Brian likens tree stumps to icebergs – there's a lot going on underneath, as you can see in the photo on page 1 as the stump is hauled off. After the stump is removed, the area around this anchor point was graded as shown in Fig. 10. Again, a retaining wall with landscape timbers, landscape fabric around the anchor and a layer of clean gravel will prevent future growth.

It goes without saying that the commercial cost to have this work done would approach thousands of dollars. And Brian's work could have been complicated further had these anchor points been within the station's ground system. Roots and copper radials don't mix.

After the work is completed, retain the services of a qualified tower company to inspect and replace damaged components. This will help to ensure that your towers will be standing. Remember, today's vines are tomorrow's trees. Visit your site regularly, and practice a regular routine of vegetation control. Brian Edwards can be reached at Brian@NewWorldRadio.com.

Working on a project of your own? Bring along a digital camera and submit the pix to *Workbench*.

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is a district sales manager for Harris Corp. Reach him at (703) 627-0233. Submissions for this column are encouraged, and qualify for SBE recertification credit. Fax your submission to (703) 323-8044, or send e-mail to jbisset@harris.com



7 Removing Tree Growing Around Guy Anchor

8 Removal of Ground Covering Guy Anchors. Note the Tree

9 Buried Guy Anchors and Tree Growing around Anchors

10 Excavated Guy Anchor

DIGITAL NEWS

Digital Radio, Down Under

Australia is pondering digital radio.

The federal government has formed a study group to assess the suitability of several digital radio platforms, according to the World DAB Forum. The group will look at Eureka-147, IBOC, and Digital Radio Mondiale and is expected to make its report by late November.

XM Exceeds 692,000 Subscribers

WASHINGTON XM Satellite Radio was close to having 700,000 subscribers in July. The satcaster added approximately 209,000 subscribers in the second quarter for a total of 692,253. In April, it had a total of 483,075.

"XM's subscriber base continues to grow rapidly," said XM President/CEO Hugh Panero. "The popularity of the Delphi XM SkyFi Radio and the XM PCR combined with the strong rollout in new General Motors vehicles provide a great foundation for growth as we head into the second half of 2003."

XM executives say the company is on pace to have more than 1 million subscribers later this year.

Sirius crossed the 100,000-subscriber mark as of June 20.

Some XM Airplay To Be Tracked

WASHINGTON In July, Nielsen Broadcasting Data Systems began monitoring music played on XM Satellite Radio. Nielsen BDS provides data that industry trade publications use to determine airplay charts.

It will identify songs played on 10 XM Satellite Radio channels. Those playlists will be available to Nielsen BDS subscribers and included in its national airplay charts.

"The fact that BDS wants to track the songs played on XM is a great reflection of the impact that XM is making on radio listeners," said Lee Abrams, chief programmer for XM.

XM Backs Its Weather Product

WASHINGTON XM Satellite Radio FCC defended its new weather service, which offers detailed weather information for aviation and marine enthusiasts.

The NAB opposes the weather product, worried that it may be a back door that allows the satellite radio service to offer local programming.

In a letter to the commission, XM said the weather service will make a big contribution to public safety. "For the first time, the public, including pilots, mariners and mobile emergency crews, will have access to near real-time radar, wind-speed and other critical information for navigation," the company said.

XM said the weather service fits within its FCC authorization. "That authorization expressly permits XM Radio to provide ancillary data services and to use its repeaters to retransmit programming that is simultaneously transmitted by its satellites."

Delphi Radios Hit the Road

TROY, Mich. Delphi kicked off a national tour for its portable satellite radio, the Delphi XM SkyFi Satellite Radio. The tour is a self-contained road show display.

The tour planned 25 stops within the contiguous United States, including appearances in major cities such as Boston, Chicago, Pittsburgh, Baltimore and St. Louis, as well as other venues over the next six months.

The display features images of several in-dash products that Delphi says were industry firsts including multi-button radio, digital tuner, transistor radio and satellite radio. Delphi's mobile communication, navigation and video products displayed will be marketed through consumer electronics retailers later this year.

— Leslie Stimson

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FIRST PERSON

Pleading, Coaxing to Get on the Air

It Was Summer, 1971. Our Intrepid Author Recalls 'the Longest EBS Test Ever Run'

by Ed Montgomery

Many look at radio's golden age as the decades of the 1930s and '40s, when it dominated the entertainment business with drama, comedy, soap operas and news of World War II.

But another "golden age" evolved in the 1950s, '60s, and '70s, with DJs and local radio with events designed for specific communities. Most stations were owned locally, supplying their communities with sports, news and remotes at the county fair, high school football and basketball games, along with live broadcasts from churches on Sundays.

There were no satellite downlinks, no computer systems allowing three or four people to voice-track days of programming in hours. These facilities required constant attention. They were operated by licensed individuals taking transmitter readings every half hour through the broadcast day.

Cheap, with no accent

I got my break at an FM station in Franklin, N.J., in the late 1960s. I had trained for the job, ridding myself of the lamentable New York City accent. Shedding the accent was a requirement for radio then. With the help of a friend who knew the station owner, I was in.

I also met two other important requirements for the job: I would work cheap, and I had that jewel of the age, a First Class License.

machine was located. It had spewed news and features all night on its "urine yellow" paper. As long as the ribbon hadn't broken, the big tasks would be clear all this by cutting out the reports and features with a straight edge, and to prepare the 6 a.m. report.

This was a one-person operation, a rip-and-read newscast that included the latest farm market prices. I had no clue to what

It takes a lot to intimidate a Vietnam veteran, but Ed Montgomery, shown here at the mic, almost met his match in the transmitter room of Mountaintop Radio in 1971.

a year in Vietnam.

The FM studios and transmitter were located atop the Hamburg Mountain, where sunrises were almost worth the low wages. Yet there were days when the frugality of the owner would come back to haunt him.

The FCC required that spare tubes be on hand to replace ones that might fail in the transmitter. Well, the owner of the station thought a spare tube was one that had already been used in the transmitter. He was careful with his money, believing a record stylus should last at least a generation and a half. Some said he would squeeze a quarter until the eagle would — well, perhaps you know what eagles are supposed to do when they're squeezed. They leave some stuff behind.

Click, click

With all those good days of glorious sunrises came a few dismal ones, usually related to aging tubes.

Taking transmitter readings every day for the maintenance log, I noticed that the Grid Drive current meter kept dropping. I would tune the IPA, or driver, as it was known, and maximize its output; but it dropped every day, signaling a warning. Yet the owner wasn't going to spend precious money on a couple of 807s.

One bright morning, I arrived, turned on the filaments, cleared the UPI wire and went back to hit the Plate-On switch. Its response: a tepid click. The grid drive was so low it couldn't hold the final plate current at a safe level. The transmitter would not turn on.

It was about 5 minutes to 6. There were no new tubes and not much time to do anything. What do you do in a situation like this?

I started to talk to the old Gates: "Come on, buddy; just a little more drive. Come on, you can do it." I kept tweaking the IPA tuning until finally I heard that comforting "*ka-chunk.*" I had dodged a bullet, or so I thought.

The morning went well at the station, taking transmitter readings. Everything looked good until I looked at the program log. There it was: "EBS TEST."

Oh no, not that. The EBS test required turning the carrier off for 5 seconds, on 5 seconds, off 5 seconds, and then back on with a 1kHz tone for 15 seconds, followed by copy explaining the test.

I looked at the transmitter meters, knowing full well what had happened at sign-on. Would the driver tubes have enough kick in them to handle this? Should I postpone the test?

I decided to go for it. I loaded the EBS test cartridge in the Spotmaster machine and set myself up for what could be called a Guinessian experience. The cart rolled. I hit the Plate Off and that was it. Nothing happened after 5 seconds, 10 seconds, 5 minutes.

A little more talk: "Come on; you can do it — just a little more grid drive."

Twenty minutes later, finally, came the comforting *ka-chunk.* I had raised enough grid drive current to get back on the air.

It was probably the longest EBS test ever run. I duly noted that the EBS test had failed, wrote it up on the log and went home.

The transmitter got new tubes.

Ed Montgomery is the video technology and communications lab director at Thomas Jefferson High School for Science and Technology, Fairfax County, Va. He has worked as a broadcast engineer and college-level instructor.

Radio stations that are off the air have a deafening silence about them. They are lifeless.

Just out of college, I worked that summer doing morning drive, and then weekends. FM was just coming into its own. Mountaintop Radio was unique, programming a daily schedule of country music in full-frequency monophonic sound, and strictly with used equipment. I suppose the owner saw stereo as something that few, if any, would pay attention to.

The following year I was drafted into the army. When I returned in May of 1971, I was looking for something to do before entering graduate school in Ohio. I went back to doing the morning shift from 6 a.m. to 1 p.m., five days a week.

I would arrive at the station at about 5:30 in the morning and prepare for the sign-on at 6.

Radio stations that are off the air have a deafening silence about them. They are lifeless. A distinct smell permeates them as well.

Mountaintop Radio had an acrid odor, a combination of vinyl, stale tobacco smoke and coffee that assaulted my nostrils every morning.

We had a closet where the UPI I was reading; but northern New Jersey and southeastern New York had a lot of farms, so this was a "must carry."

Old beast

At about 10 minutes to 6, I would turn on the transmitter, an old Gates FM1-C, an abused beast that somehow continued to run.

The manual was missing, and people seemed to have put all sorts of parts in to keep it running. Copper straps had replaced the fuses on the floor of the transmitter. I'm surprised it didn't burn up.

Usually I would hit the Filaments On switch and exhaust fans would activate. After a few minutes the Grid Drive meter would peak; then I would press Plate On. This would be followed by the solid "*ka-chunk*" of the solenoid cutting in and a hum from the power transformer. Plate Voltage and Plate Current meters indicated proper operation. On the air — that made for a great day.

The summer mornings of '71 *were* great. Of course, any place north of the Carolinas would be considered cool after

MARKET PLACE

JK Audio Ships Host

JK Audio is now shipping its new Broadcast Host Digital Hybrid.

"It seems everything takes a bit longer when designing a product for global compliance,." President Joe Klinger said. "Broadcast Host has been approved for sale in North America, as well as Australia, Europe and a host of other countries."

Broadcast Host allows the user to connect audio equipment to a analog telephone line while providing >50 dB separation between transmit and receive audio paths. Features include balanced XLR mic/line input jack, balanced XLR caller output jack, line-level 3.5 mm jacks for send and caller signals, front-panel 3.5 mm headphone jack monitors send and receive signals. Retail price is $49.

For information contact the company in Illinois at (800) 552-8346 or visit www.jkaudio.com.

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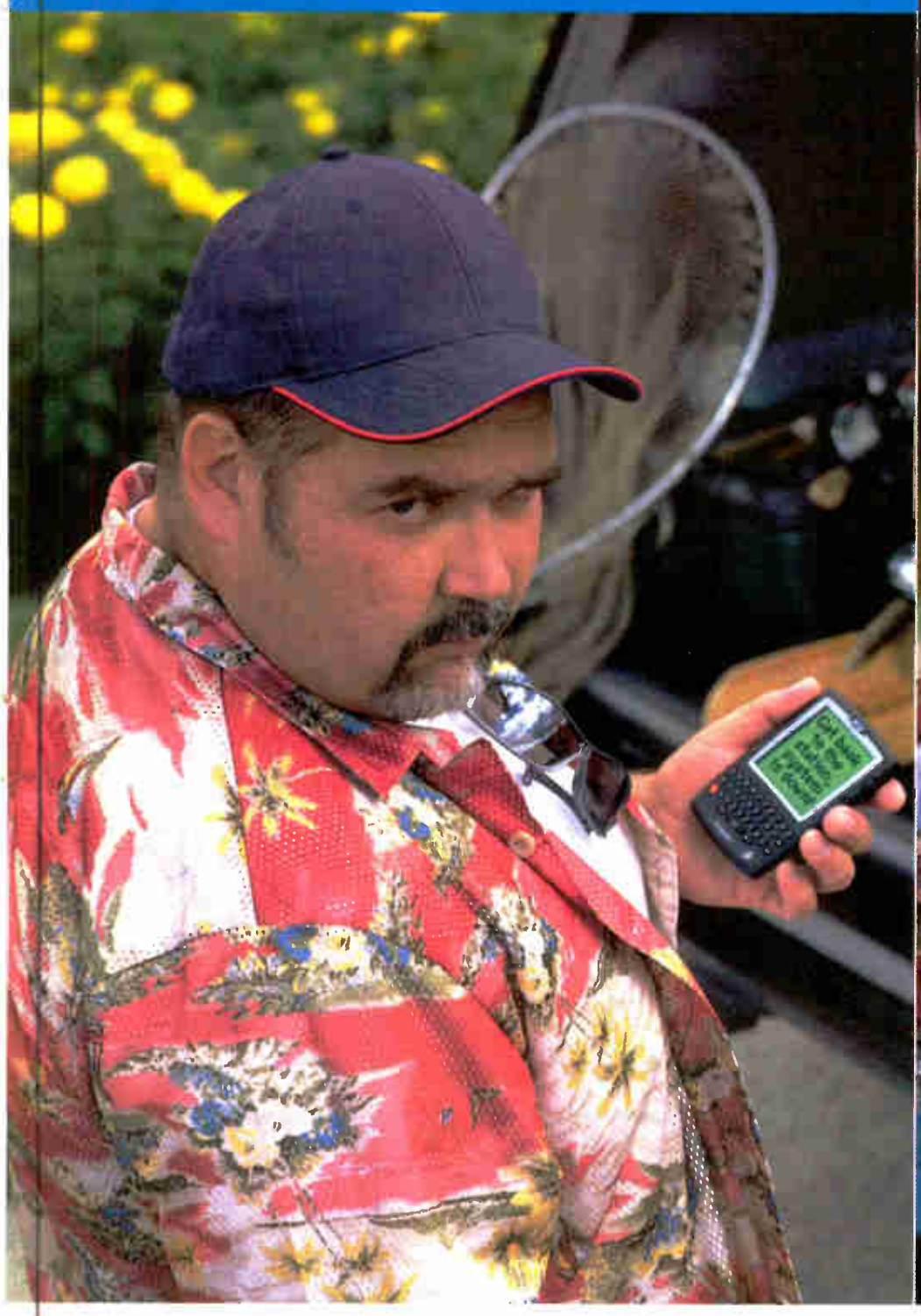
What Vacation!



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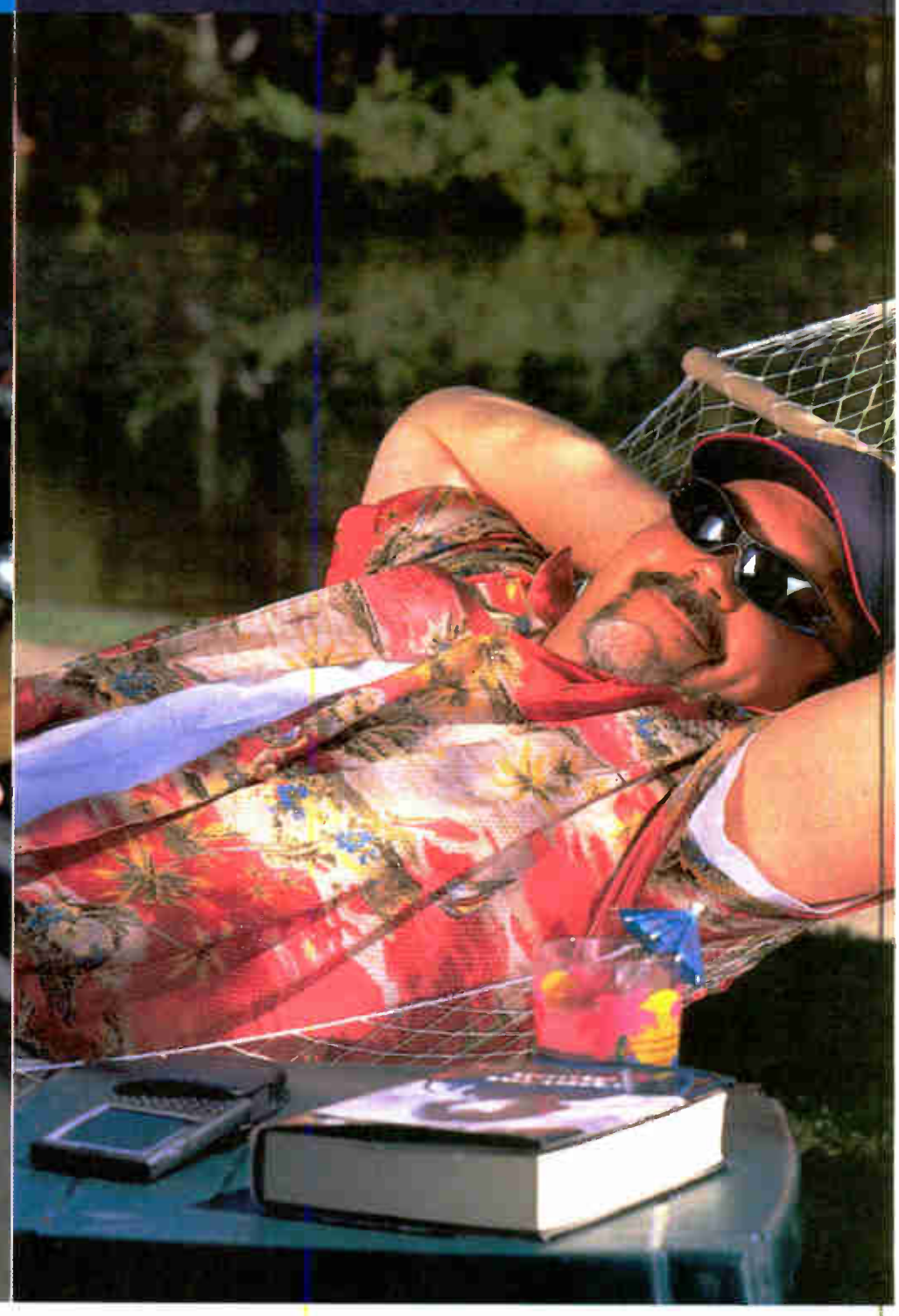

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PC1100 List 1,590⁰⁰ **CALL FOR PRICE**

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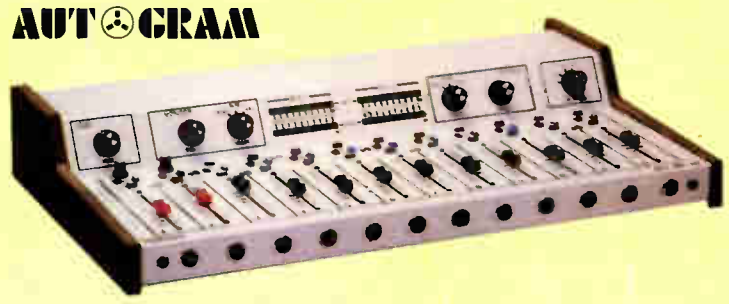
AUTOGRAM



12-Channel Table-Top Audio Console

The Autogram Mini-Mix 12A is a 12-channel, table-top console loaded with professional features, including built-in cue amplifier and speaker; dual stereo LED meters; a flexible input configuration to interface any piece of professional or consumer audio equipment; 12 slide pots which host a total of 25 stereo inputs (15 balanced pro level, 10 unbalanced consumer level); the first 2 channels are dedicated mic level; all VCA-operated. And with the Autogram brand name, you know it's bulletproof and built to last. Dimensions: 27.25" W x 15.5" D x 4.7" H.

MINIMIX12A List 3,799⁰⁰ **CALL FOR PRICE**

Artists's conception of private train linking our main corporate headquarters with BSW President Tim Schwieger's private golf course and yacht basin. Slated for completion sometime before the end of the next millennium, pending a significantly increased order rate from our customers.

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BSW's 30th Anniversary Giveaway Continues! Enter online today at www.bswusa.com!

Giveaway Prize! August 18-24

Digital Tube Preamp with Studio Tube Mic

ART's new Digital MPA is a 2-channel tube mic preamp with two 12AX7A tubes that render unsurpassed detail and clarity with any microphone. Balanced XLR and unbalanced 1/4" analog output along with AES/EBU, S/PDIF, TOSLINK and ADAT digital interfaces allow you to connect to the broadest assortment of equipment. Digital output is switchable from 24-bit to 16-bit, and internal sample rates are fully adjustable from 44.1 kHz to 192 kHz.

The prize package includes the new Audio-Technica AT3060 large-diaphragm tube mic and a ProCo M25 XLR mic cable. Enter today!

DIGITALMPA	List 749⁰⁰	**599⁰⁰**
AT3060	List 599⁰⁰	**499⁰⁰**

Giveaway Prize! August 25-31

Symetrix

Popular Voice Processor with Studio Condenser Mic

Broadcasters around the world rely on the Symetrix 528E for crisp, clear on-air vocals. This industry standard analog voice processor offers 5 major functions in a single-rack-space unit. It enhances vocal intelligibility, increases perceived loudness and "presence" and reduces off-mic noise. **Features:** microphone preamp with a switchable 15 dB pad; front panel mic/line level switch; 48V phantom power; voice symmetry switch that corrects excessive positive/negative peaks; de-essing with frequency/range controls; compression/limiting; 3-band parametric EQ; balanced XLR and unbalanced 1/4" I/O; 1/4" patch points on each section.

The prize package includes an AKG C4500B-BC studio condenser mic with shock mount; a boom mic stand; and high-quality mic cable.

528E	List 749⁰⁰	**499⁰⁰**
C4500B-BC	List 665⁰⁰	**399⁰⁰**

Giveaway Prize! September 1-7

Hafler

Biamplified Monitors with Consistent, Accurate Sound

These renowned Hafler powered stu monitors are magnetically shielded an acoustically matched for the most criti monitoring applications. The TRM6 fe woofer and 1" dome tweeter and are b with 55W LF and 33W HF power. Whe tracking, mixing or mastering, the Ha will deliver the consistency and accura crucial in today's competitive environ

The prize package features a pair of monitors (priced as each when sold), a pair of Quiklok BS336 solid steel, trian 36" monitor stands. Enter to win today

TRM6	List 625⁰⁰	**449⁰⁰**
BS336	List 149⁹⁵	**108⁰⁰**

ings. Not-so-serious Ric.

Professional Omnia On-Air Processors

With its 96 kHz sampling rate, five-band limiter and smooth, precise AGC, the Omnia 4.5FM gives you maximum control over your sound. Omnia's exclusive PC card-based design makes software updates a snap. There are even features not found on processors costing thousands more, like Ethernet remote control, digital I/O with automatic sample rate conversion, pilot-protected distortion canceling composite clipper and a bright full color display.

The Omnia 4.5AM processor makes AM radio sound loud, smooth and dynamic. It features advanced DSP chips, Ethernet and modem connectivity; PCMCIA expansion slots; and powerful remote control software. Call BSW today.

OMNIA4.5AM List 6,980[00]
OMNIA4.5FM List 7,980[00] **CALL FOR PRICE**

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A Telos Company

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The AEQ Swing is the ingenious ISDN audio codec that adds a POTS back-up connection with frequency extension and echo cancellation. Its built-in digital telephone hybrid can connect to an ISDN and analog line simultaneously, making it ideal for broadcasts that requires a back-up or when ISDN lines aren't available. The mic mixer features two headphone jacks with separate level controls and three mic inputs with built-in limiters. A four-wire connector permits auxiliary analog audio I/O. Call our knowledgeable sales staff today to learn more, and get in the "Swing" of things before the fall remote sports season begins in September.

SWING List 2,295[00] **CALL FOR PRICE**

AEQ

ews Console in 2 RU Spaces

The Dixon Systems NM-250 newsmixer is designed for busy wsrooms and contains almost all the features of a full broadcast isole in a two-rack-space unit. **Features:** 2 mic inputs with off switch and 48-volt phantom power; mono line input for phone hybrid; input for computer sound card; front panel input DAT/cassette recorders; built-in mix-minus bus for telephone brid; built-in talkback system with 2 sends and receives; relay sures for computer/telephone/mic channel on; LED VU meter play; built-in headphone amp; balanced XLR line, mic and ne inputs via pluggable terminal connectors; unbalanced RCA . This mini-console is one of the best values in the industry. n't pay for a full-size tabletop board if you don't need it. Call for low price today.

250 List 1,195[00] **CALL FOR PRICE**

Dixon

Affordable Digital Output Turntable

Need a robust direct drive turntable at the station? The Stanton STR8-80 is a straight-tonearm, direct-drive turntable that's ready for anything (even disco again), with both analog and S/PDIF digital output. **Features:** reverse and motor-off functions; 3.5 mm line input (cable included); digital key adjustment/master tempo (change tempo without changing pitch); quartz-lock pitch; ±8%, 12% pitch adjustment; remote start. The STR8-80 comes complete with a durable, best-selling 520SK cartridge.

STR8-80 List 449[00]
249[00]

STANTON

Compact Studio Reference Monitor

These passive speakers are an amazing value! The Hafler M5 is a passive reference monitor utilizing an elaborate crossover network and tweeter overload protection. The result is a compact package offering high power handling and unmatched sound quality for the price. **Features:** 5.25" woofer and 1" tweeter; magnetically shielded; power handling 20 to 200 watts. Priced as each.

M5 List 124[50] **99[00]/each**

Hafler

Giveaway Prize!
September 8-14

YAMAHA

Three-piece Yamaha Powered Speaker Package

The MSP5 biamplified monitor speakers from Yamaha deliver extraordinary sound quality. The perfect choice for recording or post production, they feature a 5" woofer and 1" tweeter in an ultra-compact enclosure, with both XLR and 1/4" inputs.

The SW10 amplified subwoofer delivers smooth, accurate low end response through its 180 watt amplifier and 10" woofer.

This is a quality studio monitoring package! Purchase it today or enter our $30,000 Giveaway contest for your chance to win.

MSP5 List 319[00] **249[00]/each**
SW10 List 849[00] **679[00]**

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TRM6
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Rackmount CD Player with RS-232/Parallel Control

The single-rack-space CDP-D11's professional functions are ready-made for broadcasters with instant start, auto cue, variable speed operation (±12.5%), an IR wireless/wired remote controller and connectors for both RS-232 and programmable parallel remote control. Superb audio performance is guaranteed by high-density linear Sony 20-bit D/A converters. Outputs are balanced XLR and unbalanced RCA, plus there are optical and coaxial digital outputs.

CDPD11 List 770[00]
599[00]

SONY

Clean, Quiet Power Amp

The ART SLA-1 Studio Linear Amplifier is a robust yet compact power amplifier designed and engineered to provide clean, quiet power with ultra-low noise and distortion. **Features:** 100 watts /channel into 8 ohms; Toroidal Transformer; XLR & 1/4" inputs; ground lift switch; fan cooled design; power, clip, signal and protect LEDs; space-saving 1RU design; and frequency response of 10 Hz-40 kHz within 1 dB.

SLA1 List 279[00]
199[00]

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FEED LINE

Be Militant About Reradiation

You Can Take Steps to Protect AM Antennas Against Reradiating Structures

by W.C. Alexander

With the continued growth in the wireless communications industry, the demand for better coverage requires more and more antenna support structures.

While most such structures are electrically short at AM broadcast frequencies, they can be remarkably efficient radiators. If located in an area of high incident field from a nearby AM station, substantial amounts of reradiation can be produced. This can significantly distort the circularity of a non-directional radiator, or distort the pattern and fill the nulls of a directional array, causing the station to exceed the licensed radiation limits in certain azimuths and produce interference to other stations.

It is the responsibility of the structure owner to ensure that no significant reradiation occurs; but in the end, it is incumbent on you, the AM station licensee, to protect your pattern.

Protection

47 C.F.R. §22.371 provides for protection of AM broadcast station antenna patterns by Public Mobile Service licensees such as cellular that construct *or modify* antenna supporting structures in the immediate vicinity of AM broadcast station antennas. Similarly, 47 C.F.R. §27.63 provides for protection of AM broadcast station antenna patterns by Wireless Communication Services licensees.

Boiled down, these FCC rules require that licensees constructing or modifying such antenna supporting structures must take certain steps if the structure falls within 1 km (0.6 miles) of a non-directional AM station or 3 km (1.9 miles) of a directional AM station. The licensee with an antenna structure that lies within these boundaries must prove scientifically that the construction or modification has not affected the AM station antenna pattern.

The procedure for determining this includes two sets of partial directional proof-of-performance measurements, made in accordance with 47 C.F.R. §73.154.

The first set, made pre-construction or pre-modification, establishes a baseline. It is not necessarily intended to show that the AM station is operating within the terms of its license. The second set of measurements, made post-construction or post-modification, is analyzed and compared to the pre-construction or control measurement set to determine what, if any, effects that the construction or modification has had on the radiation pattern. The details of the exact measurement procedure are discussed below.

Uncertain results

In a perfect world, an entity constructing or modifying an antenna supporting structure would make the required pre/post measurements, analyze them and conclude that the structure has had no effect on the AM station's pattern. The documentation would be presented to the FCC and to the AM licensee and all would be satisfied.

In the real world, however, quite often the measurement results are either ambiguous or inconclusive. In many cases they show that the structure produced *some* effect on the AM pattern but did not cause it to exceed the standard pattern value along any azimuth; the AM station, though its pattern was affected slightly, remains within its licensed limits.

The trouble with an AM licensee blindly accepting such a situation is that this pushes him ever closer to the point where he is not in compliance. An otherwise small environmental change, seasonal variations in ground conductivity or small drifts in pattern parameters may cause a violation.

The effect of multiple reradiating structures is cumulative. AM licensees should be proactive, even militant, when it comes to protecting their directional patterns.

This fact indicates that a greater level of vigilance is required of AM broadcast licensees and their engineers. In the end, it is the AM licensee that will be left holding the bag. Because the danger here is primarily to AM stations employing directional antennas, we focus here on such stations.

47 C.F.R. §73.154 specifies the procedure for making partial directional proof-of-performance measurements on AM antenna systems. In short, at least eight measurements must be made between 3 and 15 km from the center of the array on each monitored radial.

In the case of simple arrays with fewer than four monitored radials, measurements must also be made on the radials from the latest full proof-of-performance adjacent to the monitored radials. The measurement locations selected must be from the latest full proof-of-performance.

Measurement locations must be unobstructed, i.e. clear of overhead wires, metal structures and the like. A good rule of thumb is that as the field intensity meter is rotated, there should be at least a 10-to-one ratio between maximum and minimum signal. Anything less indicates local reradiation and the location should be rejected.

Same parameters

Before each set of measurements is made, determine that the operating parameters are correct, either at the licensed values or within the licensed limits. In some cases, a station normally may operate at variance with the licensed parameters but within the tolerances prescribed by the FCC rules. The important factor in such cases is that the pre- and post-construction measurements be made with the same indicated operating parameters.

One set of partial proof-of-performance measurements must be made pre-construction. This is the control set and should be made before *any* construction or modification is made.

Tabulate the measurement results, including location number (corresponding to the same location in the latest full proof), date and time of measurement and measured field intensity at each location, in a spreadsheet or other convenient format. Make a notation of the environmental conditions including sky conditions, temperature and ground conditions.

After all construction or modification work is complete, another identical set of measurements must be made. The post-construction measurements must be made as close in time to and in similar environmental conditions as the pre-construction measurements. Waiting a long time between pre- and post-construction measurements allows other unaccounted-for variables to enter the equation.

That the pre- and post-construction measurement must be made in similar environmental conditions cannot be sufficiently stressed. This also has bearing on construction schedules. Because ground conductivities and the dielectric constant of soils tend to change significantly from wet to dry and summer to winter, you must make every effort to make both sets of measurements when it is known that the conductivity and dielectric constant is unchanged.

The worst case would be to make pre-construction measurements in winter, when frozen ground can make conductivities (and thus field intensities) double or triple their nominal values, and the post-construction measurements in spring or summer. In that event, the analysis will be worthless because of the introduction of the unknown variable of significantly varying conductivity. If it were likely that the measurement sets would of necessity span two different seasons, it would be better if construction were delayed.

Post-construction measurement data should be tabulated alongside the pre-construction data. A post-to-pre ratio is calculated for each point and an average is computed for the entire radial. This average ratio will reveal whether there has been a substantial change on the radial following construction or modification.

It is a good idea to include field strengths from the last full proof-of-performance in the tabulation. This will reveal how the station is doing with respect to the standard pattern both before and after construction.

Each measurement is ratioed against the recorded field intensity from the last full proof. The ratios then are averaged and then multiplied by the measured inverse distance field (IDF) for that radial from the latest full proof. The resulting number represents the current measured IDF. A comparison to the standard pattern value for the radial will reveal the amount of headroom available.

In many cases, it may be determined that the pre-construction measured IDF is within 1 or 2 percent of the standard pattern IDF for the radial. This is perfectly acceptable and legal. Analysis of the post-construction data, however, may reveal a slight increase, perhaps 1 or 2 percent, which in and of itself is not alarming. However, when considered in light of the standard pattern value for the radial, the analysis may show that the construction or modification of the antenna support structure has in fact caused the measured IDF on the radial to exceed the FCC limit.

The bottom line is that comparison of pre- and post-construction data is, in many cases, inadequate. The data must be compared to that from the latest full proof to fully gauge the impact.

Detuning

In the event that analysis of the pre- and post-construction measurement data does reveal an increase in the IDF on one or more radials, reradiation from the structure may be indicated. In such cases, detuning of the offending structure may be required.

Detuning of a reradiating object is most often achieved by means of attaching an insulated wire skirt to the structure and terminating it to ground through a reactive network. The network, most often simply a vacuum variable capacitor, is adjusted for minimum reradiation from the object.

Reradiation from the object can be measured by placing a field intensity meter at a short distance from the structure at a location where the meter antenna plane is oriented toward the structure and perpendicular to the AM broadcast station. The detuning network then is adjusted for minimum measured field. A properly installed wire skirt by nature exhibits a high Q. As such, it should tune quite sharply.

In some cases, in particular where two or more AM stations are multiplexed into a single antenna, it may become necessary to detune the reradiating object on more than one frequency. This can be achieved by employing more than one skirt, each with its own terminating network.

Another method involves the use of traps in series with two or more parallel networks, one for each frequency. Each trap consists of a series LC network in one leg that is resonant on the frequency that the network is detuning. A parallel component is placed across the series LC network and adjusted to parallel resonate the net residual reactance on the other frequency. The trap then is terminated through a component that is adjusted for minimum reradiation as discussed above. This arrangement is simple for two frequencies; it becomes considerably more complex with three or more.

Detuning of reradiating structures is not a one-time process. The detuned structure becomes, in effect, a parasitic element in the AM station's directional array. Just as the currents and phases must be touched up periodically in the driven elements of the array, the effectiveness of the detuning must be evaluated regularly.

Checking the effectiveness of the detuning is not complex. A monitoring location is established, most likely the same location used to adjust the detuning network initially. The field intensity meter is placed at the location and rotated so that its antenna is oriented toward the detuned structure and perpendicular to the AM broadcast station. The field

See FEED LINE, page 27 ▶

Feed Line

▶ Continued from page 26

intensity is read at that location and noted. You should do this every time you check the AM station's monitoring points.

Evaluating the effectiveness of the detuning then is a matter of comparing the periodically measured field intensities to previous values as well as the original value. If a substantial increase is noted, readjustment of the detuning network may be indicated.

Human contact

Because a typical reradiating antenna support structure is grounded only through copper wires and ground rods, considerable drift in the detuning effectiveness may occur with changing ground conditions.

One way to stabilize the detuning is to install a copper screen at least 24 feet on a side on the ground at the tower base and bonding it to the tower with a 4-inch copper strap. The ground screen should be covered with a couple of inches of rock or gravel to protect it. This creates a miniground system for the tower that is on top of the ground and thus not unduly influenced by changing ground conditions.

Because detuning networks may periodically need to be readjusted, the AM broadcast station engineer should maintain contact and a good working relationship with the detuned structure's owner or owner's representative. It is not unheard of for such structures suddenly to become reradiators again when an uninformed technician or tower worker removes the skirt, disconnects or misadjusts the network.

Detuning networks may need to be adjusted periodically. This is where good relations with the other owner pays off.

The best means of preventing this is to stay in contact and maintain ready access. Also post the AM broadcast station's call letters, engineer's name and phone number in or on the detuning network enclosure.

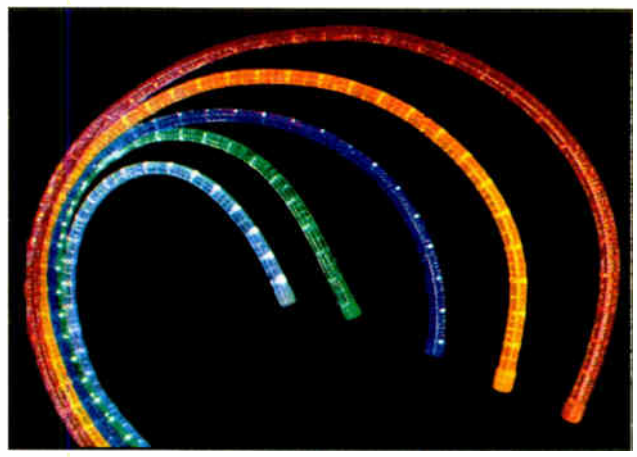
While the FCC requires Public Mobile Service and Wireless licensees to protect AM broadcast station directional antenna patterns, such licensees typically will do the minimum necessary to comply. In many cases this does not adequately protect the AM broadcast station. As such, a higher level of diligence and involvement on the part of the AM licensee and the engineer is required.

The effect of multiple reradiating structures is cumulative in nature, and for that reason, each should be viewed in that context. AM licensees should be proactive, even militant, when it comes to protecting their directional patterns. To do otherwise invites long-term difficulties in directional pattern maintenance.

W.C. "Cris" Alexander is director of engineering for Crawford Broadcasting Co.

MARKET PLACE

Round RopeLED Gives Color Accents



A facility manager might put this product to creative use in a radio station.

LEDtronics makes Round RopeLED, an accent lighting doodad housed in a flexible PVC tube with a diameter of a half-inch and a length of at least 6-1/2 feet.

Ten LEDs per foot are spaced 1.1 inches apart in a weather-resistant casing. The rope could be used for emergency pathway lighting, staircase accents, closets and, we're thinking, some interesting creative designs around your studio, lobby or station driveway.

It's powered from a separate cable that plugs into an electrical outlet; 120V is standard, 12V and 240V are available. Colors are red, blue, green, yellow and white; segments can be cut and spliced. Small clips can be nailed, screwed or glued to the surface. The company says the product does not get hot.

Prices range from $9 to $42 per meter depending on color, with quantity discounts available.

For information contact the company in California at (800) 579-4875 or visit www.ledtronics.com.

Certification of Certifications

National Skill Standards Board Recognizes An SBE Program — Another Tool in Your Toolkit

by Joe Snelson, CPBE

The author is a member of the SBE National Certification Committee.

One of the core SBE services is the Program of Certification, created to provide a standardized benchmark to be used in evaluating an individual's skill. Despite the accomplishments of the program and industry acceptance, you may have thought, "It will take an act of Congress for my general manager to recognize SBE certification."

Well, if it's an act of Congress that's needed, we are here to say that an act of Congress has been achieved.

The SBE National Certification Committee is pleased to announce that the National Skill Standards Board now recognizes the SBE Program of Certification.

Eight inches of paper

The board was created by Congress with the National Skills Standards Act of 1994. The group is charged with building a voluntary national system of skill standards, assessments and certification methodology to enhance the ability of the U.S. workforce to compete effectively in a global economy.

Achieving this NSSB certification required the SBE Program of Certification to meet several criteria.

The first step in the process was to meet with the Voluntary Partnership on Information Communications Technology. After securing its initial recommendation, the Program of Certification was asked to provide additional information before the application would be reviewed by the NSSB Board.

We were asked to show that our certification assessments were:

1) consistent with federal civil rights laws with respect to race, color, gender, age, religion, ethnicity, disability and national origin;

2) developed in a manner consistent with relevant professional and technical standards and government guidelines to ensure reliability and validity; and

3) maximally accessible to individuals, with a mechanism to provide feedback to candidates on their performance, a formal process for individuals to appeal and a mechanism to ensure the continued relevancy of the examinations.

While it may not seem difficult to provide the necessary information for these items, note that the steps taken up to that point resulted in several binders full of information about the origin, history, practices and maintenance of the Program of Certification. The stack of paper for the initial submission was more than 8 inches thick.

With the heavy burden of providing statistics behind us, a subcommittee was formed to address the final points, which required detailed reports from information in the Certification archives.

This subcommittee, appointed by National Certification Committee Chairman Chriss Scherer, CSRE, CBNT, consisted of Scherer himself; Certification Committee Member and former Certification Committee Chairman David Carr, CPBE; former SBE President and Certification Committee Chairman Terrence Baun CPBE, CBNT; Certification Committee Member Joseph Snelson Jr., CPBE; and SBE Certification Director Linda Baun.

You may have thought, 'It will take an act of Congress for my general manager to recognize SBE certification.' Your wish has been granted.

After several discussions via e-mail and telephone, the subcommittee met in Indianapolis on May 17, 2003 — at their own expense — to develop the final submission to the NSSB, which consisted of two three-ring binders full of information.

Higher standard

Many may ask why we would put the SBE Program of Certification through this voluntary assessment. One of the objectives of the SBE Program of Certification is to raise the status of broadcast engineers by providing standards of professional competence in the practice of broadcast engineering and related technology.

It is a natural that our own Program of Certification should be held to a higher standard. Your participation in the SBE Program of Certification is voluntary and so was ours to become recognized by the NSSB.

There are many other certification programs out there. As an example, it is not uncommon to find certified plumbers, mechanics and even accountants. The SBE Program of Certification, however, is a continuing process where individuals who, by fulfilling the requirements of knowledge, experience, responsibility and conduct, demonstrate that they meet the standards of competence in their profession.

If we expect certification holders to go through this process, we should be willing to place the program itself through a process to ensure its validity.

Another objective of the SBE Program of Certification is to encourage broadcast engineers to continue their professional development. Certification not only gives you a sense of personal accomplishment; it also demonstrates to your peers and others your dedication to being the best you can be in your profession.

Somebody once said, "If you're standing still, then you're going backwards." In this changing industry it's essential to stay current with technology. Certification provides an excellent opportunity for you to demonstrate this kind of commitment.

I'm sure there are many people who have helped you along the way in your career. The same can also be said about the SBE Program of Certification.

Our thanks are extended to James Wulliman, CPBE; Ben Wolf, CSBE; Walter Dudash, CSBE; Robert Dye, CPBE; Jack McKain, CPBE; Dr. Robert Remsted and William Orr, CSBE, for providing the expertise in getting this program off the ground.

We also thank Carr, Baun and Scherer for providing vision for the Program of Certification during their terms as SBE National Certification Chairmen. Currently serving on the national committee are James Bernier Jr., CPBE, CBNT; Dane Ericksen, PE, CSRTE; Douglas Garlinger, CPBE, CBNT; Ralph Hogan, CPBE, CBNT; Troy Pennington, CSRE, CBNT; Richard Ryan, CPBE; Joseph Snelson Jr., CPBE; Roy Trumbull, CSTE; and Larry Wilkins, CPBE, CBNT.

Our continued success depends on the efforts of everyone at every level of the certification program. Efforts at the chapter level make the Program of Certification possible and keep it moving forward to bigger and better things — such as the recognition of our certification program by the NSSB.

If you are not certified, you should seriously consider it. The Act of Congress you were waiting for has happened.

The author is vice president and director of engineering for Meredith's Broadcasting Group. He is a Certified Professional Broadcast Engineer and was recognized as Broadcast Engineer of the Year in 2001.

MARKET PLACE

Pesa Aims for Flexibility With TDM 3000

Pesa Switching Systems Inc. has introduced a large-scale audio routing switcher designed to accommodate a denser switching matrix than conventional cross-point switchers.

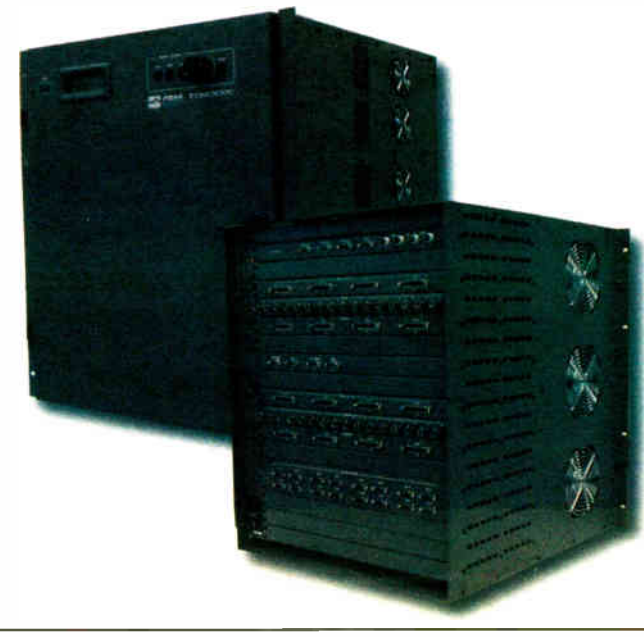
The density is accomplished by using a Time Division Multiplex module. "When using TDM, much larger switchers can be compressed into a much smaller space, and with greater signal management flexibility," the company stated.

Pesa positions the TDM 3000 as an alternative approach to handling low-bandwidth signals such as professional audio (digital AES/EBU and analog), SMPTE Time Code, Port switchers (machine control and data communications) and other signal formats to be routed within common router hardware architecture.

The system is available in three frame sizes. I/O modules can be mixed within a frame, eliminating the need for separate frames for each format type. The company said the design saves a substantial amount of rack space.

The TDM 3000 is compatible with the Pesa 3500PRO control system and works with RCP series control panels. Dual TDM cards can be installed, eliminating concerns about single-point failures. Each frame is capable of redundant power. The TDM 3000 accommodates signal switching requirements to 1,024 x 1,024 I/O.

For information call the company in New York at (800) 328-1008 or visit www.pesa.com.



MARKET PLACE

Energy-Onix Explores Tele-Link STL Applications

Two years after introducing it, Energy-Onix Broadcast Equipment says it is learning more about how its Tele-Link system can be used in STL applications.

The system initially was designed for connecting two points that did not have line of sight, using the Internet. But Net access is a problem at many RF sites, and ISP service can be unreliable.

Now the company says it is finding that spread-spectrum capability makes it a suitable STL link where line of sight does exist to the transmitter.

"Existing STL microwave systems do not have the capacity to transfer HD Radio AES/EBU digital or uncompressed audio," it states in its literature. "The installation of a spread-spectrum transceiver within the Tele-Link terminal and the utilization of high-gain antennas and low-loss transmission lines permit the establishment of an STL link whose range can be reliably computed up to as much as 40 miles at 2.4 GHz and 20 miles at 5.8 GHz."

The use of spread spectrum permits a broadcaster six uncompressed stereo channels in both directions, according to Energy-Onix.

The company has issued a technical update to help stations take better advantage of the system, both for Internet and wireless applications.

"We have found that there does exist a problem with encoding when utilizing conventional cable modems, but a cable modem system normally has adequate bandwidth when decoding," wrote President Bernard Wise.

"The same situation occurs with the Starband satellite system. It will very comfortably accept in its downlink the Tele-Link information generated by some far-distant studio, but its uplink is very limited. We understand that Starband is planning to triple the capacity of their uplink; and under these circumstances we can utilize Starband as a monitoring source of the remote location, but not for program origination."

Wise said Energy-Onix has found that ISDN lines are excellent but can be expensive. "Considering all the terrestrial sources available, we find that DSL, with a minimum of 128 kbps in each direction, is the optimum compromise for reliability, performance and cost.

"Some customers are wiling to invest in a T-1 connection if we could provide them with an audio transmission with a minimum of compression," Wise stated. "Accordingly we have modified the Tele-Link so that the compression rates are selectable from as low as 32 kbps to as high as uncompressed."

Because the broadcaster owns the equipment, he said, there are no monthly interconnection charges.

"The Internet version of the Tele-Link can transmit both balanced analog and AES/EBU. With the advent of digital, this AES/EBU feature is extremely desirable. The duplex capability of the system permits the location with the higher elevation to be used as a relay point for remote pickup equipment," he continued.

"The only weakness of this system is that there exists a 3- to 4-second delay in the uncompressed mode and an 8- to 10-second delay in the compressed mode. Thus, utilizing the Tele-Link may be difficult for on-air talk shows."

Wise said Energy-Onix is continuing to investigate applications of the Tele-Link that will enhance its operation. The company has shipped 50 terminals to date.

For information contact the company in New York at (518) 758-1690 or e-mail to energy-onix@energy-onix.com.

Marti Has New Mono STL

Marti said it has introduced a new single-channel STL system that substantially outperforms previous models.

The STL-20M transmitter and SR-20M receiver use a frequency-synthesized and power amplifier design; the result is increased output power to 20 watts for long-range studio-to-transmitter links, Marti said.

"We've effectively doubled the range of the STL hop with this new design," stated Technical Sales Manager John Lackness. Previous STL systems were crystal-controlled and the transmitters had half the output power, limiting the range and frequencies available, Marti said.

The STL-20M mono transmitter has a wide-band amplifier that allows for front-panel adjustment of transmitter power output. The transmitter is available for the 940 to 965 MHz band. As other bands are introduced, Marti said it will phase out its STL-10A mono transmitter.

The SR-20M single-channel receiver for 950 MHz will be available in September. Marti's R-10 receiver will work with the STL-20M transmitter as well; the R-10 is crystal-controlled and not frequency agile.

For information contact the company in Illinois at (217) 224-9600 or visit www.bdcast.com.

PRODUCT GUIDE

Products for Radio Air & Production Studios

Mail info and photos to: RW Product Guide, P.O. Box 1214, Falls Church, VA 22041

Stute CAMS32 Measures Acoustic Response

The CAMS32 from German firm Stute Engineering is a professional audio measuring system for Windows PC or laptop computers with an audio interface. Possible sample rate is up to 96 kHz with 16 bits resolution for two channels. Automated good/bad measurements can be executed and the external measuring electronics can be powered via car battery for mobile use.

The CAMS32 lets the user assess acoustic systems and determine acoustic interference levels, determine Thiele Small parameters, determine reverberation time of rooms and check acoustic attenuation of windows, walls and acoustic insulation.

Features include remote control of programs via Windows DDE and measuring data transmission via DDE. Measurement results can be saved directly as a PDF file.

The company is seeking U.S. distributors.

For more information from Stute Engineering, contact the company in Germany at +49-231-531-0432; FAX: +49-231-531-0434; e-mail: info@ing-stute.de, *or visit* www.stute-engineering.de *or* www.cams32.com.

MAXmodular Integrated System Introduced

AKG Acoustics has introduced MAXmodular, an integrated mixer, amplifier and speaker system for use in small mobile sound systems for remote broadcasts as well as PA, paging and conferencing applications.

The system consists of a powered eight-inch, two-way speaker (AC or battery powered for up to 14 hours of operation); three-channel mixer with phantom-powered microphone input; wireless receiver input and stereo line inputs for CD players and tape decks.

The system also has a slot for AKG half-rack WMS 80 (diversity) and WMS40 (nondiversity) wireless receivers and can supply DC voltage for operation. Two line outputs can be used for recording or to cascade the signal to additional MAXmodular systems.

The system has a durable enclosure and a metal stand mount, as well as an integral handle for ease of transportation. The system weighs in at 26.7 pounds, easily handled by one person. The amp delivers 60 W peak and can drive the system to 114 dB SPL output.

For more information contact AKG Acoustics U.S. in Tennessee at (615) 620-3800 or visit www.akgusa.com.

Linux Driver for Digigram Sound Cards

A Linux driver under open-source licensing is available for Digigram VX222, VXpocket v2 and VXpocket 440 sound cards. The driver follows Advanced Linux Sound Architecture (ALSA), an advanced audio standard.

Since November 2002, when Digigram made the source code of its Mac OS X drivers and driver interface documentation available on the ALSA Project Web site (www.alsa-project.org), the Linux community has developed a driver that takes advantage of the newest ALSA version 0.9.1.

Digigram says the development project, along with the Exaudi Platform for integrated audio systems embedding Linux, demonstrates its commitment to high-quality, high-function audio.

For more information from Digigram, contact the company in Virginia at (703) 875-9100 or go to www.digigram.com.

Radio World — Resource for Radio On-Air, Production and Recording — August 13, 2003

PUBLIC DOMAIN

Trailing Bush on the White Line

NPR Dives Into the Pool: A Story of 12 Days, 10 Flights, Seven Countries and No Martinis

by Rich Rarey

When a United States president travels outside the country, American television and radio networks combine resources to get sound and picture back to their respective organizations.

This cooperative effort for radio is the "White Line" — so named, we believe, because during the first TV pool feeds, when Richard Nixon went to China in 1972, the satellite provider designated a "White Line," a dedicated circuit, to be used by the White House press TV pool to transmit images back, and the name stuck.

On the radio side, ABC, CBS, AP, Voice of America and NPR participate by taking turns sending producers to conduct a pre-advance survey and later, to haul mixers, microphones, ISDN and POTS codecs and video monitors around the world to predetermined press filing centers, near where the president is visiting.

Photo courtesy of John Keator, NPR

Don Gonyea of National Public Radio files a report as NPR Technician Michael Cullen sets his level. They are in the press filing center in the Hotel Pulkovskaya in St. Petersburg, Russia.

Into the radio pool

On President Bush's trip of May 30 to June 5, NPR drew the responsibility for producing the radio pool across three continents. To accomplish this, we had to assemble three producer-plus-technician teams to hopscotch from one country to another in advance of the president's arrival.

The teams were to connect by ISDN to NPR, which would distribute the audio and switch the backfeeds from the pool members to the ISDN codec as needed. Complicating this particular White Line was the lack of a complete travel itinerary prior to the president's departure. This is the story of those teams.

On May 28, David Argentieri, NPR director of operations/pool producer, and Andy Rosenberg, NPR technician, arrived in Krakow, Poland, and established the Radio Pool Press Filing Center at the Manggha Center of Japanese Art & Technology.

Each White Line team packed a Comrex HotLine POTS codec, Electro-Voice RE18 microphone, Sony V6 headphones, Sharp MT-15 MiniDisc recorder, Musicam USA RoadRunner and its TA201 terminal adapter, Fostex powered speakers, a two-channel Prospect IFB box, a Shure FP31 to submix three TV pool audio sources, a Whirlwind mult box to distribute pool audio to its members in the filing center and an international-standards video monitor for watching the TV pool pictures as they arrived.

Limited space

Space is limited for the U.S. press to accompany the president on his visits to shrines and local sites. The TV pool arranges to capture the picture and sound. The various audio sources are sent by multipair cable from the TV pool to the radio pool site.

The radio pool teams can expect raw, untranslated audio from a location; English translation from various sources, such as host (i.e. "local") TV; and White House Communications Agency Audio.

"I expected to go to Krakow for four days and come home," Argentieri said. "Once we actually arrived, however, the president's visits to the Middle East were announced, so we devised a plan that my team — Andy Rosenberg and I — would fly to Sharm el-Sheikh, Egypt, to set up in advance of the president's visit there."

At that point the schedule began to fall apart. Rome had the only direct flight to Sharm el-Sheikh from Europe, and there were no direct flights to Rome from Krakow, so the team was forced to fly from there to Vienna, Austria, Vienna to Rome and then Rome to Sharm el-Sheikh.

"As I sat in a turbo prop plane at Krakow, ready for takeoff, filled with U.S. Secret Service staff and equipment," Argentieri said, "I saw the ground crew take off our largest equipment case from the airplane and drive it back to the airport."

The small plane was overloaded, and the pool equipment was removed in lieu of the Secret Service equipment. "This happened," Argentieri said in mock annoyance "*after* we had paid $136 in excess baggage charges."

Upon arrival in Vienna, the team discovered that their luggage cart had been taken off the plane as well, and Argentieri's personal bag was lost. After consulting with Senior Pool Producer Jeff Rosenberg at the site in Evian, France, it was agreed that Andy Rosenberg and Argentieri should continue their travels using whatever equipment they had remaining.

Fortunately, the equipment cases still in their possession contained all necessary codecs, mics, mixers and gear. The team made arrangements with the airline to pick up their equipment and Argentieri's personal bag in Vienna in five days, as the team was returning to

See WHITE LINE, page 33 ▶

PRODUCT GUIDE

Comrex GSM Module Pleases Beta Users

Comrex said it has shipped several dozen beta units of the wireless module for its Matrix codec to users.

Clear Channel FM stations KOSO and KMRQ in California are among the beta stations; two contestants are shown at right.

"If you want to hear audio from Modesto, check out the beta page on the Comrex Web site," spokeswoman Kris Bobo told us.

"Chief Engineer Greg Edwards recorded comparison between RPU, hand-held cellphone and the Matrix GSM." The audio is available online at *www.comrex.com/GSM_Sound.htm.*

The module lets a user send remote audio over a wireless network without a phone line or separate wireless phone. Comrex said updated firmware provides up to 7 kHz response.

Studer Extends Mixer Line

Studer recently announced the release of its OnAir 500. This addition extends the company's broadcast product line, which includes the OnAir 1000, 2000M2 Modulo and 5000.

The OnAir 500 is a compact console designed for small live on-air applications as well as remote broadcasts. Features include six channel faders, two master faders, routing system and monitoring and talkback facilities for the control room and studio.

The mixer integrates with automation systems and is suitable for small stations looking for a simple upgrade router from analog to digital, as well as new broadcasters setting up a digital infrastructure. It also is suitable for established broadcast operations that require occasional extra capacity for special programs and off-site broadcasts.

For more information from Studer, contact the company in Switzerland at +41-1-870-7511 or visit www.studer.ch.

Products & Services SHOWCASE

Telephone Solutions by CircuitWerkes

The HC-3 hybrid telephone autocoupler

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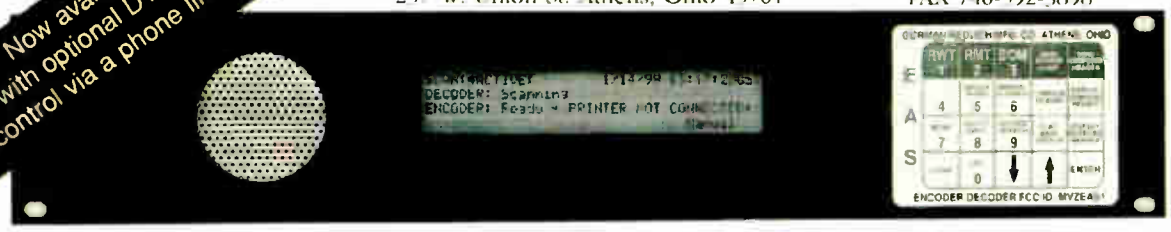

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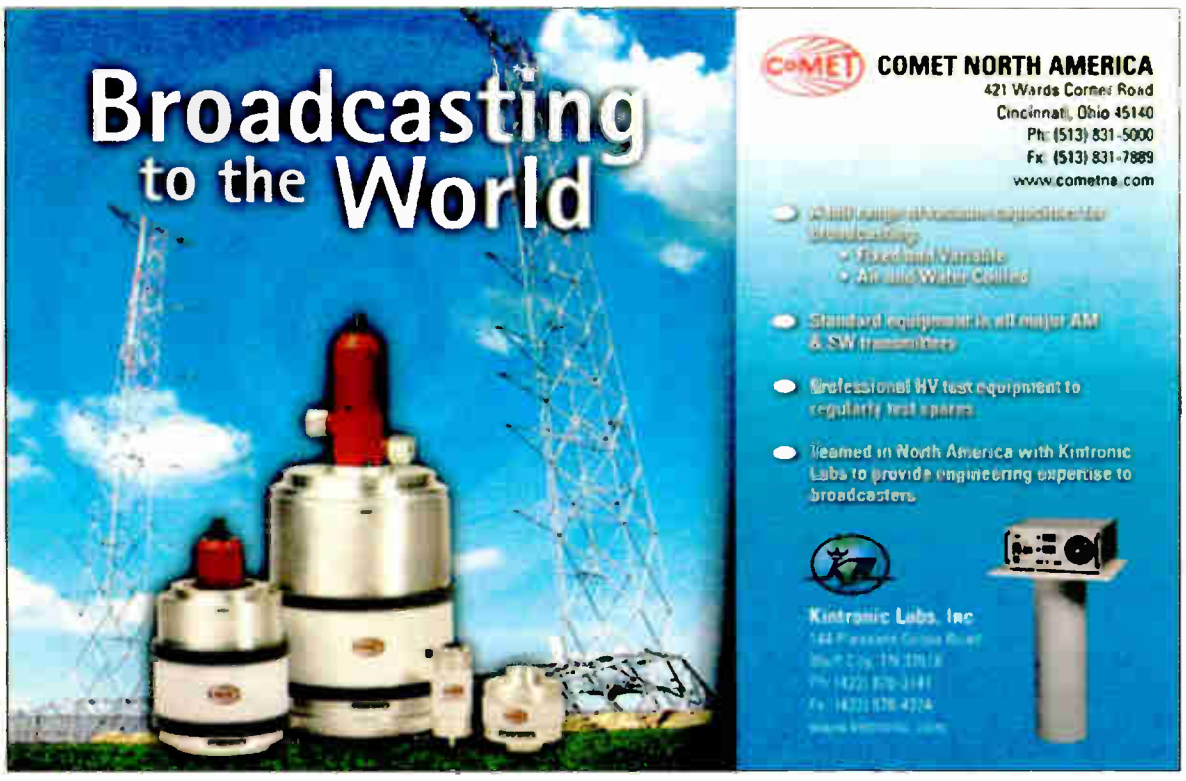

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White Line

▶ Continued from page 31

the United States.

Their travels became more interesting.

"We proceeded to the Alitalia desk to check into our flight to Rome, only to discover that that flight was one of the 200 flights cancelled due to a labor strike in Italy, Austria and Germany."

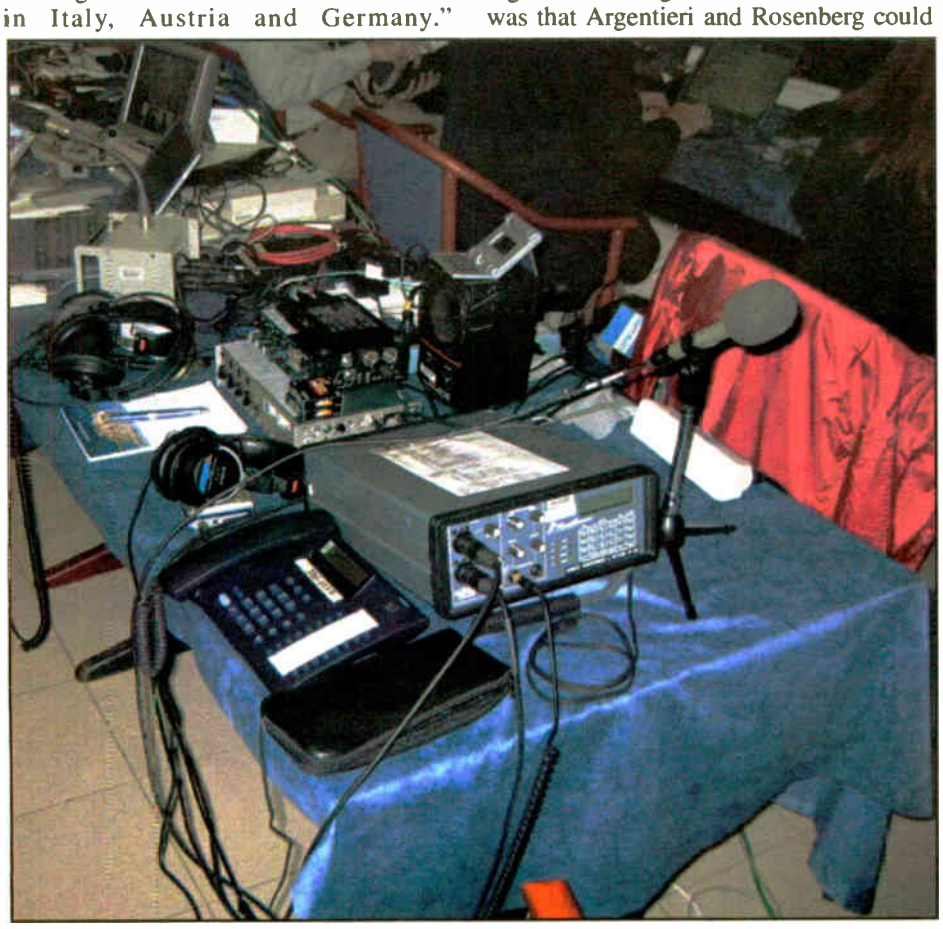

Photo courtesy of Michael Cullen, NPR

Closeup, Radio Pool Equipment,
Press Filing Center, Hotel Pulkovskaya, St. Petersburg

Argentieri said. "Not only did we *not* have our equipment, we were also not going anywhere."

After further consultation with Jeff Rosenberg in Evian, new plan was devised in which Andy Rosenberg and Argentieri would fly to Geneva early the next morning and be inserted into the White House "bubble," the insulated world of the presidential press pod. This would allow them to travel on the White House Press Charter to the remaining stops of Sharm el-Sheikh, Egypt, Aqaba, Jordan, and Doha, Qatar.

While this eased things, the disadvantage of traveling with the White House was that Argentieri and Rosenberg could not set up in advance of the correspondents; they would arrive at the Press Filing Center at the same time as the radio pool correspondents, who would expect to be able to file immediately.

Photo courtesy of David Argentieri, NPR

Press Filing Center in the Conrad Intercontinental Hotel Ballroom, Sharm el-Sheikh, Egypt. Radio pool equipment is in foreground and pool correspondents are seated in row in front of the pool equipment.

Because the team could not continue until the following day, they recovered their large equipment case and Argentieri's luggage. Rosenberg repacked their equipment to make a "run bag" that would contain essential pool equipment for audio transmission, such that it could be carried off the Press Charter and assembled within minutes of arrival at the Sharm el-Sheikh press filing center.

Meanwhile ...

Meanwhile, in St. Petersburg, Russia, the second radio pool team was having its share of interesting ISDN problems.

NPR Technician Michael Cullen described the work he and producer John Keator had to do to get an ISDN line to frame.

"I plugged in the RoadRunner, and I made a couple of calls, which would connect but would not frame," said Cullen. "We told the phone guys about it, and they immediately asked if it was our equipment. It was not, so the (phone company) tech called his switch people, and had calls from the AT&T network rerouted through Swedish Telecom — they essentially changed their gateway for international ISDN traffic. It worked perfectly."

As this pool site was winding down, Cullen began repacking his equipment to fly to Doha, Qatar, by way of Frankfurt, Germany, to prepare the radio pool site there. Fourteen hours after his arrival at St. Petersburg, the president and press pool departed for Evian, where the third team was waiting.

Next stop, France

NPR Producer Jeff Rosenberg and NPR Technician Suzanne Herin had set up their pool equipment at the G-8 International Press Center in the town of Publier, France.

The president remained in nearby Evian about 24 hours before departing to

See WHITE LINE, page 35 ▶

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Wednesday, October 1
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Thursday, October 2
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Erica Farber
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THE NAB RADIO SHOW

White Line

▶ Continued from page 33

Sharm el-Sheikh by way of Geneva.

At this point the Argentieri and Rosenberg team joined the White House Press Charter at Geneva. Upon arrival at Sharm al Sheikh, they took their "run bags" and were set up and ready to feed at the Press Filing Center within 15 minutes of arrival. The pool correspondents started feeding shortly thereafter. Twelve hours after his arrival, the president departed for Aqaba, Jordan — a brief stop, according to Argentieri.

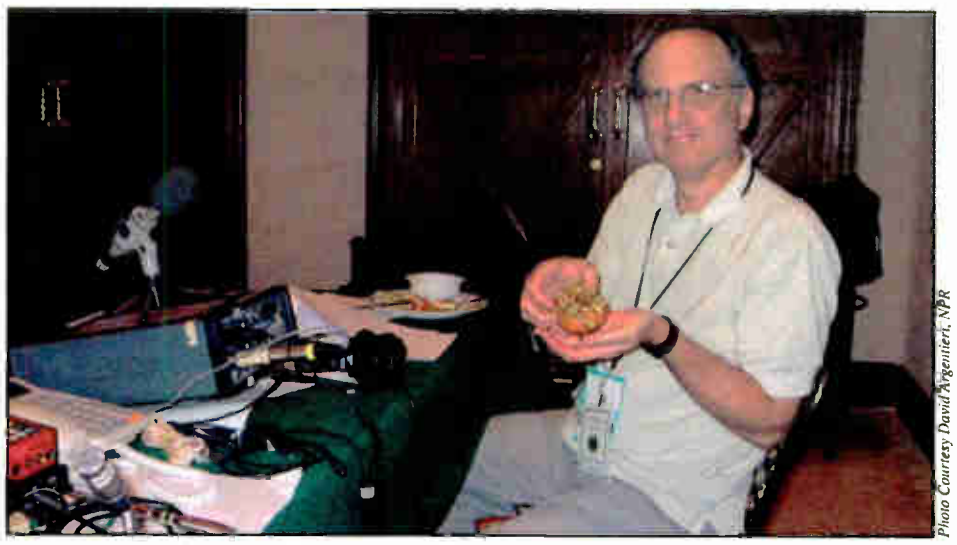

Photo Courtesy David Argentieri, NPR

NPR technician Andy Rosenberg enjoys the fine dining while working at the Press Filing Center.

"The remaining time in Aqaba was uneventful, but then, we were only there for six hours," he said. Then it was onward to the to the last site: Doha, Qatar.

The White House press advance people had told Michael Cullen to have no expectations with respect to international POTS and ISDN capability in Doha because a switching center for a Pan-Arab fiber line had destroyed by an earthquake in Algeria.

"The Qatar phone company, QTel, had rerouted as many circuits as possible through older satellite circuits," Cullen said. "But it took 45 seconds for an international call to complete."

Two related problems affected radio pool filing: Because the call completion time was so long, the RoadRunner would "think" the line was unresponsive, and the call would fail. This necessitated NPR having to initiate the call to Cullen, rather than vice versa.

Also, calls automatically terminated after two hours. Cullen supposed that this was an economy feature provided by Qtel, but it was a feature he discovered the hard way.

"A Bush speech was due to start in an hour," Cullen said. "I had NPR call me, and we waited for the speech. The speech got delayed a bit, and in the middle of transmitting it 'live' back the U.S., the QTel connection timed out and the live feed dropped. I had NPR call my ISDN and, as is White Line protocol, I was recording it for the pool members, so after the live speech, I simply re-fed it to the U.S."

The president departed Doha 16 hours after his arrival. David Argentieri reported that he had a more interesting time leaving the country, because he was flying home on commercial airlines.

"I left the day after the president left, and as I went through Doha passport control, I discovered that since I had been in the White House bubble traveling to Doha, they had already stamped my passport as leaving the country from a military air base."

The lieutenant on duty was "quite interested" in why the exit stamp was in Argentieri's passport when he was still in the country. After an hour of intense questioning and the arrival of two additional press people in the same predicament, customs finally handwrote a new date on the exit stamp and let them all leave.

It was this final wrinkle that caused David to muse "12 days, 10 flights, seven countries, 0 Martinis."

Rich Rarey, CEA, CBNT, is the master control supervisor at NPR and managing editor for EUonline.org, NPR Engineering's Web publication. He developed the popular AudioLocker software application that plays NPR's Web streams.

You Read It Here ...

Ten Years Ago

"Nearly 1,000 AM stations have applied for migration to the expanded AM band (1605 to 1705 kHz) for various reasons, such as nighttime operation and escape from low-band congestion.

"Judging by the large number of applications, computing the allotment scheme will take 'several months,' according to the FCC. ...

"Under Docket 87-267, known as the 'AM improvement docket,' the FCC intended to use the expanded band as one of the methods to relieve congestion and interference on the lower band.

"Successful applicants will be allowed 10 kW daytime and 1 kW nighttime power authorization. They also will be encouraged to go AM stereo."

"AM Stations Vie for New Frequencies"
by John Gatski
Sept. 22, 1993

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PRODUCT EVALUATION

Orion Platinum: Synth Beds for All

by Alan R. Peterson

Production and imaging directors have to reinvent the wheel every day. Heaven help us if we use the same vocal effect or laser zap again a week after we first pulled it out.

And remember when we convinced management to get us one of those loop-based music editors to make our own production music? Three weeks later, we noticed how lifeless and repetitive that music had become.

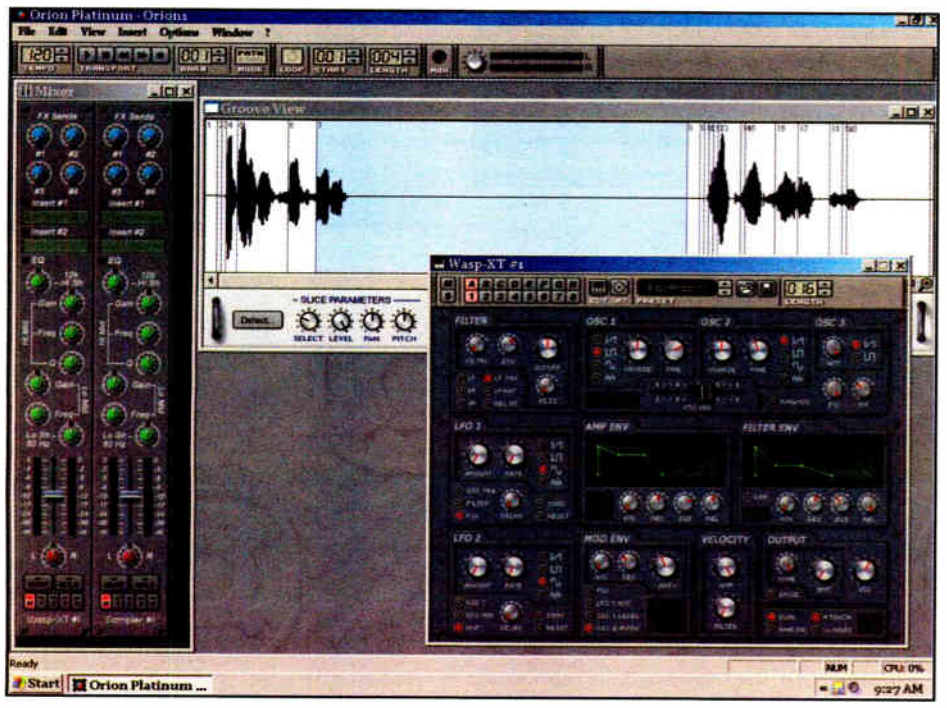


Fig. 1: The Mixer, the versatile Groove Slicer and one instance of the Wasp synthesizer running in Orion Platinum.

This primarily was because we were locked into only the loops we paid for. Many a commercial producer has said, "We can't do that bed because we don't have the loop."

Wouldn't it be nice to pop open some program and create our own 105-bpm shuffle drum bed with all the posts and hits right where we want them? Or some thunderously buzzy techno bass line no one else has?

To rise to a level of production brilliance heretofore unrealized in other products — and perhaps by other producers — you may want to explore computer-based music generation.

Free your mind, Neo

Once requiring several thousands of dollars of recording, processing and synthesis equipment, compelling music beds and synthesizer pads created from scratch now are possible with a common PC and soundcard.

Costlier programs are out there, and some limited versions packaged with soundcards may be enough to wet your toes. A capable program called Orion Platinum from Germany's Synapse Audio Software lets you explore this process for a meager $199.

Make no mistake: this program is not fast or simple, nor does it automatically play itself, á la Acid from Sonic Foundry. You need a fundamental knowledge of music, competency with some instrument, or else have a lot of time and curiosity to make something useful come out of Orion Platinum.

But when you do, you are rewarded with a colorful palette of synthesizers, drum machines, plucked string emulators, samplers and high-quality processing, plus the ability to plug in a ton of freebies from the Internet.

And it is not only for music. Record a voice part in your favorite audio editor, then open it up in Orion to really mess with it.

Orion works best on a fairly fast PC with a bucketload of RAM and a soundcard with ASIO drivers for fast playback response time. Although minimum requirements call for a PII-400 with 64 MB RAM, you will be happier running Orion on something other than a hand-me-down computer.

A MIDI interface will be helpful, as a project created in Orion can be ported as a .MID file *and* play external MIDI devices with the included MIDI-Out module.

Getting started

First, create a Generator. This is what Orion calls any module that makes a sound, whether it is a drumbeat or a synthesizer line.

The first generator worth opening is called Wasp (Fig. 1). This is a *very* techno-sounding two-oscillator synth module with filters, phase width and FM, dynamics control, overdrive and more. If Wasp were available as hardware in 1986, it may well have set you back two grand.

Clicking an icon marked Edit opens a piano roll-style editor. Draw long stripes with the mouse on the notes you want, and Wasp plays it back as it if were music on a piano roll.

By noodling with the knobs on the main screen of Wasp, you can mold the kind of sound you are hearing in your head. Emulate the vintage blips of Human League's "Don't You Want Me," or nail down the edginess of modern Techno style dance tracks.

It is helpful if you understand the hierarchy of synthesizers in general. If you know what a specific function does on the Wasp panel, it is easier to shape a sound than to grasp blindly at whatever knob looks prettiest and hope for the best.

The thin starter manual and the online Help Menu, while handy, are not extensive. You must come in knowing a little about it, or prepare for a lot of experimentation and discovery.

Next, fire up one of the drum modules (Fig. 2 on page 38). Orion has two ready to go out of the box: the XR-909 analog drum synthesizer, and one simply called "Drums" that uses actual samples. If you can count to 16, you can program a drum line.

If you consider the classic boom-*tock*-boomboom-*tock* four-by-four rock rhythm and try to work it out over the buttons by ear, you will be pleased with the results. Fine-tune the levels and the pitch with the knobs.

Whole compositions are created first in small blocks called Patterns, which contain a sequence of notes. Assemble these patterns end to end in the Playlist window also shown in Fig. 2 and you have a completed song.

The Mixer, shown back in Fig. 1, lets you massage your masterpiece. The quasi-Mackie appearance of the mixer lends itself to fast and intuitive handling, and the sweepable EQ section is a pleasant feature.

Especially handy are the Insert Effect lines and the four FX Send controls on each channel. We never had enough of these on our hardware consoles in the studio, and now here they are included in the $199 price along with everything else.

Synapse saw fit to give us a basic toolbox of delays, dynamics, filters, distortions and a few gems like rotary speakers and ring modulation, assignable to any channel. But they also left the architecture wide open to include DirectX and VST plug-in effects you may already own or can download. The same effects you use in your favorite audio editor can go across the street and play nice with the Orion program.

The VST and DirectX standards also allow you to use additional software synthesizers and effects that are not bundled with Orion. Many can be found on the Net for free, others can be purchased.

processing will drag things down on a weak machine.

I experienced trouble with the DirectX effects bundled with the Cakewalk Plasma MIDI/audio sequencer. The reverb and flanger plug-ins pulled everything down. This may be an isolated quirk, but it was enough for me to switch to plug-ins from other programs.

Best of all, the mixing process is automated. You can slide faders, alter EQ or panning, and change parameters on any Generator and Orion will memorize the changes and apply them to playback every time.

You also may use a pencil tool to draw changes in velocity, gain, aftertouch and a bunch of other MIDI functions you may not be used to. Not to worry. You will open this window when you are ready.

When all is said and done, a file is created that saves the song's configuration and settings, and you may now do a WAV mixdown of your composition, ready to fly into a multitrack production in your favorite editor. Alternate mixes can be created by muting one or more Generators, transposing the key or altering the rhythm.

Cut a slice

One process that makes Orion such a blast is the Groove Slicer, shown again in Fig. 1.

Imagine being able to take a waveform, analyze the peaks to create samples with distinct beat points, then apply them to a keyboard or trigger them via drum machine playback. The Groove Slicer does this automatically, then maps the samples across a piano roll editor. All you do is draw stripes in the editor to fire each desired sample.

Take President Kennedy's historic moon landing challenge: "...not because they are easy, but because they are hard." With each word or syllable isolated as a sample, you can compose a modern-sounding drum track and fire the samples in rhythm:

Imagine what a compelling end-of-year retrospective your news department can produce using the year's most prominent soundbites set to a contemporary rhythm.

Right now I am also using Sampletank (a sampler program), MDA ePiano (a superb *free* plug-in electric piano), the Cheez Machine (emulates cheap "string" synths from the '70s), the RBC Voice Tweaker (recreates the robotic glitchy singing voice heard in pop songs) and Izotope Vinyl (pristine digital audio sounds like a scratched 78-rpm record). All are on the Net, waiting for you now.

Orion may stop playing if the CPU gets too bogged down. A small CPU monitor shows processor usage expressed as a percentage. Reverbs and other dense

Not... not... not-not-not...
Because they are easy...
But because...
Bec-bec-bec-because
Because-because they are hard ... are hard.

Imagine what a compelling end-of-year retrospective your news department can produce using the year's most prominent soundbites set to a contemporary rhythm you have created in house.

While every other station in town is

See ORION, page 38 ▶

Orion

▶ Continued from page 37

setting those same cuts to Ray Charles' "America the Beautiful" for the thousandth time, you can be doing prize-winning work with the Groove Slicer.

Too darn complicated

The argument can be made against a program like Orion Platinum in that it is too complex for the typical production person to use. That is an argument I have fought throughout my career.

Given time and a deadline, production people have somehow figured out 16-track reel machines, the Eventide Harmonizer, the Orban Audicy and the paragraphic equalizer with little harm to the ozone layer. I myself came in knowing the Moog synthesizer and digital sampling devices when I encountered both at various stations.

Admittedly, Orion is a deep piece of software. Generators like the three-oscillator WaveFusion, the wavetable-driven Ultran and the Sampler are filled with controls that might bewilder you. It does pay to know a little something about synthesis.

Bigger and more complex programs are out there, such as Reason from Propellerhead Software and a real handful called Fruityloops. Everyone who uses these programs has settled on a favorite — much like the SAWStudio crowd vs. the ProTools user base.

Orion Platinum itself is going to be a handful from the outset too. But you quickly will lose yourself in the studio creating audio with it, filling the drive and numerous CD-Rs with the results — all of it your own work.

It is laughably low-priced, full of cool features; and it will make you sound like a genius. Go to the Web site and listen to streaming MP3 files of the generators in action, then try out the downloadable demo.

If you have the itch to break away from typical radio production and want to get excited about making funny noises again in the studio, start with Orion Platinum.

Alan R. Peterson is Radio World technical advisor and a longtime contributor. He handles production for WMET(AM), Gaithersburg, MD.

Hear a montage of Orion samples in Windows Streaming Media format, produced by Peterson, by visiting www.rwonline.com *and clicking the* OrionSamples.wma *icon.*

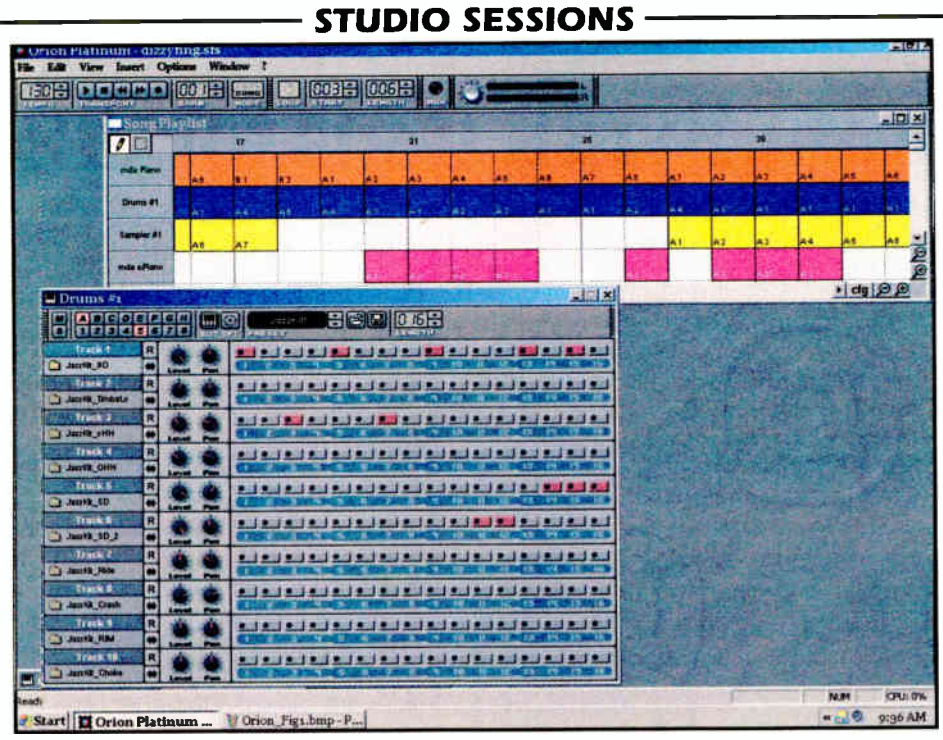


Fig. 2: Dropping a drum pattern and laying down a song in the Orion Playlist window.

Product Capsule:
Synapse Audio Software
Orion Platinum

Thumbs Up

- ✓Lots of generators for lots of sounds
- ✓Full-featured mixer with Sends and Inserts
- ✓Groove Slicer
- ✓Accepts both VST and DX plug-ins
- ✓Exports to WAV

Thumbs Down

- ✓Doesn't like some types of plug-ins
- ✓You need a working knowledge of synthesizers

Price: $199

For imore information from Synapse Audio Software in Wuppertal Germany, contact the company at +49-1-79-463-1826; or visit the company's Web site at www.synapseaudio.com.

Get Good Now

In April, I delivered a talk at NAB2003 on the topic of new techniques and technology for production people.

"Radio Production: Beyond the Digital Editor" challenged broadcasters to embrace software and audio production techniques that have been used in music production for a long time. Music producers have had the ability to slice and map audio samples for quite awhile, and the robotic "Cher Effect" — better known by its trademarked name Auto-Tune — has been technically feasible since 1998.

Why should the music industry have all the fun? Why aren't we jumping all over this good stuff, especially now that it is so affordable?

The greatest irony of our "going digital" was that we could do mixes in a fraction of the time it used to take us, but now that time is filled with having to do production for six to eight stations at a time. There is almost no time to be innovative. Yet we have to find that time, for the success of our stations, our sales projections, the needs of the client and the preservation of our own careers.

Radio production today is too dependent on whatever presets came in the audio editor when it was bought, whatever is on this month's production elements CD, and on the bandpass filter effect, the Headroom stutter and the fake tape rewind.

With software such as Orion and others, it can be possible for production closely to match the technical artistry of the music we air now, return originality and innovation to the production suite and raise the bar for other stations in our markets. Again, such software requires a good ear and a lot of curiosity.

It doesn't matter what software you now have or what you may want to start off with. Just do so right now and start advancing the art.

— Alan R. Peterson

Ridin' That Train to Concertland

by Alan R. Peterson

Remember only a few years back how we thought we could grab the world by the tail if we put our station's audio up on the Web?

What a neat concept. Folks who had a bout of homesickness could click an icon and hear their old favorite hometown station long-distance. Or they could until it was bought up and relaunched as a 24-hour CNN news station.

We could reach out to entirely new audiences clear across the country and around the world and let them hear our unique music mix and our wacky DJs — at least until 1,100 other such stations sounding exactly like us also began streaming.

Advertisers could tell the whole world about their unique products or services, but only until AFTRA tacked on that trivial little 300 percent Internet reuse fee for commercials produced by union talent. Which left us pretty much with only music casting, until the CARP ruling came down.

In spite of the fact we are still in the Atwater-Kent days of Webcasting, it continues to have promise. We just had to shake out the bugs, eliminate the false starts, get used to the regulatory issues and find models that work.

And the folks who play by the rules, pay the fees and give Web listeners something worth coming back for are the winners.

Something like live jazz concerts.

More talk, more music!

Through a good part of the summer, my new station, an AM talker in the Washington 'burbs, got involved with a prominent local civic group and the National Park Service.

The proposition: we would Webcast weekly lunchtime jazz concerts performed from a portable truckbed bandstand set up in Farragut Square, one of D.C.'s largest and most vibrant midtown parks.

While we continued our regular talk programming on the air, our Web stream would carry live jazz as it was happening. Folks who could not make the show live could hear it at their desks.

Technically, it would not take a lot of effort. The phone company pulls a line up from the big steel utility box that no large park in the country is without. We would take an auxiliary feed from the concert mixer's console and connect it to the input of a POTS codec dialed up to the studio. The studio routes their codec output to the input of the Web encoding PC and there we have it.

All our forms were signed, the bands and the civic group agreed on details and we were ready.

Then we hit a snag, and it was a monster. The big utility box did not *have* any telephone pairs coming up. No POTS, no ISDN, no turn-of-the-century telegraph lines, nothing. We found this out only a couple of days before show time. And the real kicker? The phone company wanted five grand to wire in a switch for us to use at the park.

The expense came from the fact that a technician would have to dive down a manhole a block away, tack in some wire and find a way to run it over to the park without it getting flattened and shredded in D.C.'s legendary traffic. This might mean having to dig.

And all for a two-hour concert that was to happen once a week for eight weeks. *Five grand!*

The Bell two-step

Needless to say, we needed some alternatives and fast.

One possibility was to go the Wi-Fi route, hoping the Starbucks down the block had the high-speed wireless Net thing going on. We'd bring a laptop and go borrow a cup of bandwidth for two hours in exchange for on-air ad mentions.

A call to Verizon and other phone-service providers revealed that this particular part of town was not Wi-Fi-ready yet. We never would have hit the data rate we needed for it to sound good.

Existing cellular service was good for a low data rate only, and we could not get assurance from the cell providers that we would have a stable stream, which meant our music program would go out in packets. Plainly, the music would be full of pauses and would be unlistenable. You'd hear seven seconds of jazz, then rebuffering would kick in.

Finally, the suggestion was made simply to record the concert and rebroadcast it later on in the same afternoon. We would catch the show on MiniDisc, run it on up to the studio and put it on the air with only a little delay. The music still gets on the air and we get to keep five grand in our pocket.

Concerns were raised about the loss of spontaneity of the live performance; essentially, is it live or is it Memorex? Won't people care that they are not hearing a live performance exactly as it happens?

Actually, it is probably a good thing they are not. We seem to forget just how many pauses, false starts and dead spaces there really are in a live band performance. In person, we never notice. On the radio or on Web audio, it is deadly.

Someone could yell out a potty word. The host of the concert could mess up our call letters (in fact, a jazz FM station was there handing out swag). And when the band takes a break, the ol' soft shoe just doesn't cut it on a Webcast.

Our best advantage was that a MiniDisc performance could be edited rapidly prior to broadcast. And as the studio was 45 minutes up the road by light commuter rail, we could cut out the dead stuff without becoming dead stuff *ourselves* had we been driving there and editing at the same time. The concert would be over at 2 p.m. and then heard in edited form on the Web at 3:30.

The civic group, while disappointed they didn't have their live hit, liked the rationale behind the delayed broadcast: "If you missed the concert, or you were there and want to take it all in again, go to www..."

So for most of the summer, this is how we have been pulling off the "Farragut Sounds in the Square Concert Series."

I would show up before the concert with an HHB MD recorder (yep, the purple one), take a feed from an aux line on the mixer, and let 'er ride. I often have to tweak levels over the sound engineer's shoulder to make my own mix sound right.

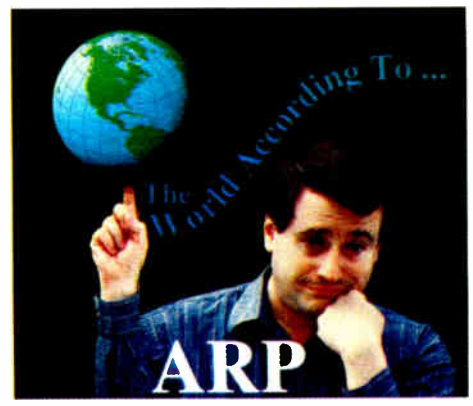
When the band takes a break and the free Frisbees start getting tossed from the stage, I've got headphones on, already cutting out the fluff and dead spots between songs. For the second half of the show, I keep recording and taking notes of errors and more dead air.

We could cut out the dead stuff without becoming dead stuff ourselves had we been driving and editing at the same time.

By 2:08, I am on a train to Gaithersburg, Md., bringing the MD deck to our soon-to-be retired studios (a new facility is being built in downtown D.C. Watch this space for news).

While tourists are yammering and leakage from portable CD headsets can be heard around the rail car, I am hunched over the deck with my own headphones, rocking the FF and REW buttons to cut and paste together an airable product. We hit the Web at 3:30, so the edits have to be done by then.

The last items to be done are to float in an intro, an outro and two spots for a local business sponsoring our Webcasts. These were recorded to the disk in the studio earlier in the day and are placed into position by the HHB deck's Move function. Depending on whether or not the band needed a lot of editing, this has often been done only minutes from airtime.



At 3:30, we swap patchcords, I hit Start, then go across the street to 7-11 for a Crystal Lite Slurpee.

You call that work?

For those of you who have been doing radio news for years, this is nothing new. Good grief, you folks have had to edit on the fly with cassettes — or worse, on portable Uher reel decks — mere moments before airtime and without the advantage of nonlinear editing.

Television reporters also have to practice these methods as necessary skills, editing a story in the truck as the videographer drives like a lunatic back to the station.

For concerts on radio or on the Web, there is hardly ever such a narrow time window. Often, it's "tune in this Saturday night for last night's concert at the Blupney Pavilion," so the high-school intern has a chance to cut together the good parts. A turnover of 1-1/2 hours for a music concert can be a little unnerving, but possible. We prove it every week.

On page 31, you'll read Rich Rarey's accounts of his crew bringing it back in one piece from the field. While I cannot claim the same distance covered by the NPR crew, our efforts are just as important to our listeners — on the air or on the Web — and that's what we do.

In spite of Homer Simpson's observation, "The Internet? Is that old thing still around?", stuff like this is just getting me warmed up.

Bring me more concerts, Igor!

Alan Peterson handles production and imaging for WMET(AM), Gaithersburg, Md./Washington, poised for an increase to 50 kW later this year. Contact him at alanpeterson@earthlink.net.

MARKET PLACE

HHB Addresses High-Speed CD Recording Issues

Dennis Charney of NXT Generation

HHB says evidence seems to be emerging that high-record-speed discs are failing in standalone audio CD recorders. Dennis Charney of NXT Generation, a Pennsylvania pro audio service center, said he sees an increasing number of audio CD recorders from all manufacturers with the fault reported as "does not record."

When the recorders are checked out using correctly speed-rated discs, they work fine, Charney told HHB. The company says, users do not realize that many manufacturers increase the speed rating for their media to be compatible with the latest computer drives, making them no longer compatible with the 1x drives used in audio CD recorders.

"Users need consistently reliable performance at 1x" said Charney, "they should be cautious of using any CD-R disc with a specified speed rating wider than 1x to 24x."

HHB now offers a line of professional CD-R media, designed for use with standalone audio CD recorders and duplicators. The HHB Professional Recorder Media line includes 74 minute, 80 minute, printable and bulk packaged silver type discs, all rated at 1x to 24x, as well as a gold type 1x to 8x disc.

For more information from HHB, contact the company in California at (805) 579-6490 or visit www.hhb.com.

Products & Services SHOWCASE

BROADCAST Equipment Exchange

"Broadcast Equipment Exchange" accepts no responsibility for the condition of the equipment listed or for the specifics of transactions made between buyers and sellers.

ACOUSTICS

Want to Sell

AMPLIFIERS

Want to Sell

Ramko LA-5S line amplifier. 10 mono or 5 stereo. $50 +shpg. John Wilsbach, WMSS, 214 Race St, Middletown PA 17057. 717-948-9136.

ANTENNAS/ TOWERS/CABLES

Want to Sell

ERI 3 bay FM antenna, 5 years old, excellent condition, tuned to 102.1 FJ, $3950. Rod Chambers, KSUE, 3015 Johnstonville Rd, Susanville CA 96130. 1-800-366-9162.

ERI FMH-10 rototiller, 10 bay circularly polarized high power antenna, 1981 model, on 104.9 mHz w/connectors, $1500. Bruce Campbell, Dove Media, 598 Westwood Dr, #201, Abilene TX 79603. 325-677-3900.

AUDIO PRODUCTION

Want to Sell

CRL Dynafex DX-2 NR unit, excel cond, stereo, rack mount, balanced input/outputs, $250. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

Eventide H3000B ultra harmonizer in excel conc w/manual, stereo, rack mount, $950. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

AUTOMATION EQUIPMENT

Want to Sell

AXS System from Scott Studios. Complete On-Air System with CD interface and switcher, comes with (5) Pioneer 100-disc jukeboxes, $2000. Dewayne Forbis, WKNK, 1130 South Dixie St, Horse Cave KY 42749. 270-786-1000.

Smartcaster Jock in the Box CD automation system and live assist. Includes 8 Pioneer 18 disc CD changers, computer, cables, and new rack. Great Condition, $3500 +shpg. John Wilsbach, WMSS, 214 Race St, Middletown PA 17057. 717-948-9136.

CART MACHINES

Want to Sell

Broadcast Electronics Duratrac 90A, excel cond, stereo, many available. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

ITC 99 Series stereo cart recorder with ESL, looks and works great, $750/BO. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

ITC Delta, 3 deck stereo, like new, mint condition, $500 +shpg. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07628. 800-585-1031.

Tapemaster 700-RP & X701-RP, 3 older model Tapecasters, very good condition, $500 for all 3/BO +shpg. Gary Marmitt, WSFN, 7515 Blythe Island Hwy, Brunswick GA 31523. 912-264-6251.

COMPLETE FACILITIES

CONSOLES

Want to Sell

Broadcast Electronics 8M150 in good condition, 8 pot mono console, $300 +shpg. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

Broadcast Electronics 8S150A, like new, 8 pot stereo console, mint condition, $850 +shpg. Gerry Turro, WJUX, 75 Second St, Dumont NJ 07627. 800-585-1031.

Audio Arts R-60. There are about eight slides on it plus two for mics with room for four more slides. Used in light recording. $2750.00 plus shipping and handling. If you would like a picture e-mail Michael Raley at Mraley@bbnradio.org or call (704) 523-5555.

Autogram IC-10, 10 channel stereo, rotary pots, good condition, $950/BO. Tom Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-640-6047.

Gates Stereo 80, 8 channel, good condition, $750/BO +shpg. Gary Marmitt, WSFN, 7515 Blythe Island Hwy, Brunswick GA 31523. 912-264-6251.

Harris Medalist, 10 channel stereo, slider pots, $950/BO. Tom Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-640-6047.

LPB Signature 2, 10 channel, good condition, $750/BO +shpg. Gary Marmitt, WSFN, 7515 Blythe Island Hwy, Brunswick GA 31523. 912-264-6251.

Three Audio Arts A-50 eight channel with slides. Used in light recording. Excellent shape but will sell "as is" for $900.00 each plus shipping and handling. Call Michael Raley at (704) 523-5555 for more information or e-mail Mraley@bbnradio.org for a picture.

Yamaha 03D digital mixing console, $2000. Julie Crosen, Educational Media Corp, 830 Gunnery Hill Rd, Spotsylvania VA 22553. 540-582-5371 x2.

Want to Buy

RCA BC-7 series parts: Immediate need for several stereo 600 ohm step pots with cue. Also transformer cards, program amps, cue amps, power supplies. Noncommercial 501©(3) community station near NYC seeks donation if possible; can pay for parts if necessary if price is reasonable. Will pay shipping. Will also take complete consoles if within reasonable driving distance of NYC. Marc, WDFH-FM, 212-924-9833 or marc@wdfh.org.

DISCO-PRO SOUND EQUIP

Want to Sell

Audio Cord Cart machines. We have about 15 "E" series playbacks at $20.00 each, 12 "DL" series playbacks and two "A" series playbacks at $20.00 each. Most of them have been refurbished. We also have one "A" series P/R mono, two "E" series p/r mono, two "DL" series p/r mono and two "DL" series stereo p/r at $100.00 each. No connectors are available. Will sell "as is". Shipping and handling charges apply. Call Michael Raley @ (704) 523-5555 or e-mail Mraley@bbnradio.org for some pictures.

ATI Audio Distribution Amplifier 2016-1. We have about 10 of these as a result of studio renovations. They cost over $1,100.00 new but will let these go for $475.00 each plus S&H. Contact Michael Raley at (704) 523-5555 for more information or e-mail Mraley@bbnradio.org for a picture.

Audio Arts 8400 Distribution Amplifier. We have about 15 of these as a result of studio renovation. They cost over $1,100.00 new but will sell "as is" for $400.00 each plus S&H. Contact Michael Raley at (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

Broadcast Tools 8x2 Duel Switcher. Will sell "as is for $300.00 plus plus s/h. Email Mraley@bbnradio.org for a picture or call (704) 523-5555.

Denon 650 F CD player. Will sell "as is" for $225.00 plus s/h. Email Mraley@bbnradio.org for picture or call (704) 523-5555 for more information.

Dynaflex Audio Reduction unit (2) Each unit cost around $400.00 but will sell "as is" for $200.00 each. Call Mike R at 704-523-5555 or e-mail Mraley@bbnradio.org for a picture.

Dynamax CTR100 Series Record/Playback with manual- Like new and ready to ship. Will sell "as is" for $125.00 plus S&H. Call Michael Raley at (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

Enberg BA - 6 Announciator. Four of them in great condition with no more than eight years of use in them. Original cost was $359.00 each but we will sell them for $225.00 each "as is" plus s/h. Call Mike R at (704) 523-5555 or e-mail Mraley@bbnradio.org for more information.

Over inventoried with Otari MX 50, MX 5050 all in good shape. Will sell as is" for $50.00 each plus s/h. Call Mike Raley at (704) 523-5555 or e-mail Mraley@bbnradio.org for pictures. They work I'm just trying to get rid of them!

RCA FM Modulation Monitor model BW75A (Belar mono). Needs some repair but will sell for $200.00 plus

S&H. Call Mike Raley @ (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

RCA FM Modulation Monitor model BW85A (Belar Stereo). Probably needs repair but will sell for $200.00 plus S&H. Call Mike Raley at (704) 523-5555 or e-mail mraley@bbnradio.org for a picture.

Revox Reel to Reel Recorders. Good for parts but might be repairable. We've got seven of them and can let them go for $20.00 each plus s/h. Call Michael Raley @ (704) 523-5555 or e-mail Mraley@bbnradio for pictures.

Tascam CD 301 (Have two working units) will sell as is for $225.00 each plus s/h. E-mail Mraley@bbnradio.org for pictures or call (704) 523-5555 for more information.

Tascam Ministudio Porta One Cassette. Four mic lines for remotes This cost $600.00 new but will sell "as is" for $125.00 plus s/h. Call Mike Raley at (704) 523-5555 or e-mail mraley@bbnradio.org for a picture.

Technics SL-D2 record player can let go "as is" for $175.00 plus s/h. E-mail Mraley@bbnradio.org for a picture or call Mike at (704) 523-5555 for more information.

Ten Nidec motors for Audio-cord "E" series. 117v 6H 3.1w 0.2amp 12p and 600rpms. Will sell "as is" for $5.00 each. Working condition just somewhat noisy. Call Michael Raley (704) 523-5555 or e-mail Mraley@bbnradio.org for pictures.

TFT 713 AM Frequency and Modulation Monitor. Cost $3,400.00 new but will sell for $1500.00 plus S&H. Needs re-calibration. Call Michael Raley at (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

Two B.E. Record Playback cart machines Two Stereo units "as is" for $65.00 each and two mono units "as is" for $50.00 each. Call Michael Raley @ (704) 523-5555 or e-mail Mraley@bbnradio.org for pictures.

Two RTS 416 Distribution Amplifiers. Has slight problem pushing +4. Cost $1,173.00 new but will take $325.00 for each unit plus S&H. Call Michael Raley at (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

MICROPHONES

Want to Buy

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Inovonics Map II Multiband processor - $350.00 "as is" plus shipping and handling - Call Michael Raley @ (704) 523-5555 for more information or e-mail Mraley@bbnradio.org for a picture.

Proteck 20 MHZ Spec. analyzer (A-3502). Make a decent offer. Call Michael Raley@ (704) 523-5555 or e-mail Mraley@bbnradio.org.

QEI Model ARC - 27 Automatic Remote Control - $50.00 "as is" plus shipping and handling - Call Michael Raley @ (704) 523-5555 for more information or e-mail Mraley@bbnradio.org for a picture.

Several different types of operation manuals ranging from Revox, Otari, Moseley, Gentner, Comstream, A/C (for cart machines. Too many to list. E-mail me at Mraley@bbnradio.org.

TFT 886 AM EBS receiver for obsolete system, now useful as frequency agile AM receiver, excellent condition, $50/BO +shpg. Bob Rivkin, KPLM/KJJZ, 441 S Calle Encilia, #8, Palm Springs CA 92262. 760-320-4550.

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Moseley 1600 microprocessor remote control, w/manual, in good condition, $400/BO +shpg. Bob Rivkin, KPLM/KJJZ, 441 S Calle Encilia, #8, Palm Springs CA 92262. 760-320-4550.

Moseley 1620 microprocessor remote control, w/manual, good condition, $400/BO +shpg. Bob Rivkin, KPLM/KJJZ, 441 S Calle Encilia, #8, Palm Springs CA 92262. 760-320-4550.

Moseley MRC-1600, 16 channel, good condition, $350. Tom Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-640-6047.

Moseley Taskmaster 20 remote access program version 2.3.9 w/manual, $100/BO +shpg. Bob Rivkin, KPLM/KJJZ, 441 S Calle Encilia, #8, Palm Springs CA 92262. 760-320-4550.

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Want to Sell

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RVR 20 watt FM exciter. $850. B. Stevens, 505-313-0882.

1949 Gates 250W AM transmitter, Model BC250 GY. Not working, antique or salvage value. DuQuoin Bdctg Co, Hwy 51 North, Du Quoin IL 62832. 618-542-3894 or wdqnradio@onecliq.net.

1972 Harris 1 kw AM transmitter, Model BCIG, presently in service. DuQuoin Bdctg Co, Hwy 51 North, Du Quoin IL 62832. 618-542-3894 or wdqnradio@onecliq.net.

1972 Harris 2 kw FM transmitter, Model FM2H3 with extra tubes. DuQuoin Bdctg Co, Hwy 51 North, Du Quoin IL 62832. 618-542-3894 or wdqnradio@onecliq.net.

CSI 12000E in good condition. Taken out of service in June 03, $5000/BO. Charlie Russell or Dennis Cope, WESR, POB 460, Onley VA 23418. 757-787-3852.

Harris FM-3H, wKW FM transmitter, perfect working condition, must pick up by July 30th, off interstate, fits in pickup, $1000. John Kimel, Kimel Broadcast Group, 43 Suburban Square, South Burlington VT 05403. 802-343-2666.

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AnaCom ANASAT - C Series C-Band Transceiver 10 watt Just reconditioned $6,000.00. For Technical Information e-mail Rmuffley@bbnradio.org for purchase call Michael Raley at (704) 523-5555 or e-mail at Mraley@bbnradio.org for pictures.

Continental 816R2A 20kw FM transmitter w/802A exciter on 104.9 mHz, $17,000. Bruce Campbell, Dove Media, 598 Westwood Dr, #201, Abilene TX 79603. 325-677-3900.

Harris BC-5HB, 5 kw AM, good condition, $4500. Tom Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-640-6047.

Moseley PCL-606/C STL xmitter - This was pulled from service because of bad amplifier and it might be repairable or good for parts. Will sell "as is" for $250.00. Call Michael Raley @ (704) 523-5555 or e-mail Mraley@bbnradio.org for a picture.

QEI FMQ 10000 transmitter tuned to 100.1 in good working condition and can be retuned on the field. This was installed in March of 1994 but will be replaced by another xmitter sometime at the end of the summer of 2003. This xmitter cost 30,000.00 new but will let go for $18,000.00. Call Mike Raley @ (704) 523-5555 or e-mail Mraley@bbnradio.org.

QEI FMQ series 6.0 to 9.6FM. This xmitter did a tour of duty in Argentina but some goofy laws in this country made it impossible to permit the station to operate at this power. To make a long story short it was only in operation no more than four months. Will let this go for $22k firm. Call Mike Raley at (704) 523-5555 or E-mail Mraley@bbnradio.org for pictures.

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Harris SX-1A, 1 KW AM. Continental Comm., 314-664-4497, ContComm@sbcglobal.net.

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ACTION-GRAM

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Radio World, August 13, 2003

George Marti Rediscovered

by Bruce F. Elving

"Don't ever retire!" Those were the words I heard as I stopped by the office of George Marti, president of Cleburne, Texas-based Marti Electronics.

Ever since receiving the former KCLE(FM) 94.3 Cleburne by means of sporadic-E FM skip in my hometown of Duluth, Minn., as a teenager in 1951, I had known of Marti and at least one of his stations.

To almost everybody in the broadcast industry, his name is legendary. It's associated with the world's best-known system for remote control for radio stations and for studio-transmitter-links.

It was partly out of curiosity, therefore, that I stopped by at 1501 North Main Street in Cleburne not long ago and asked for Mr. Marti. In the office, I noticed a picture on the wall, mentioning that he had been mayor of Cleburne from 1969-1987. There also was a bronze plaque, recognizing him for service to the Texas Association of Broadcasters. Indeed, he was a founder of that organization in the early 1970s.

Much to my surprise and delight, the next person I saw after his secretary was Marti himself. He invited me into his office, and I spent a good two hours listening as he explained his philosophy of life and how the broadcasting industry has been good to him.

He sold his business some years back to Broadcast Electronics of Quincy, Ill., but a workshop across the hall performs service on vintage Marti equipment. Rick Neace heads the workshop.

Part of his town

Why did George W. Marti settle in Cleburne? He was born and raised nearby, and in the late 1940s he saw fit to begin his enterprises in this clean, bustling little city south of Fort Worth. The town has been good to the Marti family. It is there where he started KCLE 1120 kilocycles, and later KCLE(FM) 94.3 megacycles.

In his letter of verification to me of June 18, 1951, Marti stated "Our FM station is normally received at a distance of about 40 miles in the vicinity of Cleburne, (a) sister station to KCLE, 1120 kcs, a 250-watt daytimer which went on the air April 6, 1947. KCLE began operation April 13, 1949, and has an effective radiated power of 325 watts with a 250-watt transmitter."

The letter looked like it was typed on a manual typewriter. During our visit, my wife, Carol, noticed a standard Royal typewriter in Marti's office and mentioned that she had learned to type on such a machine. The 1951 letter's reference initials were "jm," which must have been for his wife, Jo Marti.

Although he had only three years of college, Marti had substantial engineering experience, having designed the various circuits that were and are integral to the systems used in the industry. Prior to visiting, I had just attended the annual convention of the Worldwide TV-FM DX Association in the Oklahoma City area. I talked about Cleburne's most famous citizen to the group. All had heard of George Marti, but nobody knew if he was still alive or what he might be doing.

Photo by Carol Elving

George Marti, left, holds an issue of the FMedia! newsletter with Bruce Elving.

A few years before, I had heard Marti speak at a Minnesota Broadcasters Association convention. He described how several stations, using his equipment and the newly approved local marketing agreements, could stay on the air. The public benefited because the stations provided service rather than go dark. Several could be operated remotely from a central studio/control point. Marti has visited most of the state broadcasters groups.

He gave me an example of how small stations in San Saba and Hamilton, Texas were able to use this equipment and stay on the air while being controlled from the studio of a larger station.

"One of the announcers worked on the air 10 a.m. to 1 p.m. The rest of the time he sold advertising, and it wasn't long before that station was showing a profit."

Bit by the bug

He put his arm on my shoulder and told me not to retire. It's the only way to stay in shape mentally, he said. He does not consider himself retired. He has had interests in cattle, banking and helping his children with their educations. He retains a 20-percent ownership interest in four Texas stations, including KCLE(AM) in Cleburne and KTFW(FM) at 92.1 MHz in Glen Rose, the programming of which is heard in the Fort Worth market.

That afternoon, he received phone calls about other stations, including upgrading possibilities for a small AM that could have its transmitter moved to also serve another town, at least for daytime service. His words — to me and others — were heartfelt.

"Once you get into the industry and are bitten by the radio bug, it never leaves you." He showed obvious delight in speaking to his industry peers on the phone and in talking to this "young" reporter.

He mentioned the Marti Foundation, established to aid graduates of four high schools in the county who might not otherwise be able to attend college. These $10,000 scholarships are aimed at helping youth in lower-income families. Students must maintain a 3.75 grade-point average and carry a minimum of 14 credits per term to retain their scholarship.

He said each of his surviving three children are well-set financially. An older daughter, Ann, quit teaching at age 38 to purse her M.D. degree and became a physician; she died a few years later of cancer. Pam is a dentist. Michelle is a lawyer who turned to college teaching, while son Wes — "the normal kid" — runs the ranching operation.

Marti spends time as a lecturer at Southwestern Adventist University in nearby Keene, a unique town where the post office is open Sundays but not Saturdays and where even the smallest restaurants feature vegetarian entrees. There were three certificates on the wall of his office, showing Southwestern Adventist University's appreciation of his being a lecturer.

Knowing I am 68, he told me he made three-quarters of his fortune after age 65. This includes taking over a failing bank at age 70. After five years, the bank, which had been paying no dividends, had improved to the point where it was paying a 15-percent dividend rate, at which point he "retired" from banking.

He was the youngest of nine grandchildren. His grandmother took a special interest in young George, and he assimilated values such as persistence and applying his intelligence toward solving problems. This, he suggested, may be the reason he was a successful engineer, entrepreneur and philanthropist.

I asked several people around Cleburne if they knew Marti. Invariably they did.

"Not everybody here likes me, but I've never heard anybody bad-mouthing the foundation," he asserted.

Marti is now a vigorous 83 and shows no sign of retiring. Working keeps a person mentally sharp, he said. His secretary, Hoylene Harris, has been with him 35 years.

He was married 58 years. His wife, Jo, passed away not long after I met him.

He has been mentoring young people all of his career, and says many are well-established in broadcasting. Marti coexists nicely in an adjoining office with Propagation Systems Inc. It's a manufacturing sales office for TV and FM broadcast antennas, headed by Ron Pohler. Ron's been associated with Marti for 10 years, but "I knew of him for 30 years or so."

Yes, George Marti is alive and well in Cleburne, Texas, and has willingly pledged his name and funding to a foundation that is soon expected to make higher education possible, as he stated, "for a thousand or more young people."

Bruce Elving is a long-time FM DX listener, claiming a total of 1,952 FM stations heard in the Duluth area since 1948. One was KCLE(FM), subsequently sold by Marti; it's now KLTY(FM) in Arlington, with a contemporary Christian format.

Elving holds a Ph.D. in instructional communications from Syracuse University. For information on his publications, visit http://members.aol.com/fmatlas/home.html. *He publishes an electronics catalog, featuring FM/SCA modified radios and adapter modules.*

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.

◆READER'S FORUM◆

Lampen got it wrong

As the son of Edgar, first president of RCA of Canada, and grandson of Emile Berliner, inventor of the microphone and the disc record player (gramophone) that made our voice and music broadcasting possible, I regard myself as qualified to comment on the grievous errors in Steve Lampen's July 2 article, "Radio Pioneers Enter Story of Wire" which, upon reading, we see would be more aptly entitled "... Wireless."

With regard to the first time audio was amplified electrically/electronically, he states in his cutesy prose, "But here, boys and girls, I must tread lightly."

Indeed he should, because in implying that the audion was the first audio amplifier, he overlooks the fact that in his invention of the microphone Emile Berliner incorporated a Rhuemkorff coil for voltage step-up, which not only amplified the weak output of the loose-contact mic but removed DC from the receiver in 1877, selling the patent to Alexander Graham Bell in 1878. It was a concept to be used in all the world's telephones for the ensuing century.

Lampen then tells us that Armstrong's triode permitted listening to telegraph signals without the need for headphones, so great was the amplification of the tube when feedback was incorporated — a truly brilliant invention.

However, in a court case, my grandfather demonstrated that, via the Berliner system, one could speak into a properly adjusted telegraph key and hear the voice reproduced on another equally sensitized key. The keys were actually functioning as transmitter (microphone) and receiver (loudspeaker).

Now, let's correct the errors about Sarnoff, my dad's boss at RCA in 1929-30. While escaping mother Russia to avoid the pogroms, he jumped out of the frying pan and into the fire when he went to work for Marconi and encountered the anti-Semitism there.

At the moment of Titanic's sinking, Davey was not on duty, because he wasn't hired as an operator, he was an office/errand boy. Instead, as being radio's first, maybe only, "groupie" — lived, breathed and slept "radio" — he'd sneak into Marconi's wireless receiving station atop Wanamaker's department (not hardware) store where, except, they say, for a few Canadian fishermen, he was the only man on land who heard Titanic's S-O-S.

While it's true that Davey spent sleepless hours at his "post," it was not to communicate with Titanic nor the Carpathia, because at Wanamaker's the facility could only receive. So he relayed no messages but merely copied down the survivors' names that came from Carpathia and other rescue vessels.

But Sarnoff's secret activities with respect to Titanic are what Kitty Kelley unauthorized biographies are made of, and which I reveal as part of my forthcoming book on the peccadilloes of the music biz, "Bon Voyage, Titanic." For the moment, let me hint that Davey got his general manager's job at the 1919-founded Radio Corp. (owned jointly by GE and Westinghouse) due to his Titanic antics, which my book discloses (shocking, I assure you).

Further, contrary to Lampen's "honorary title," Harry Truman appointed Davey a general in the Signal Corps Reserve. Sarnoff "liked" this title so much that he went out and bought a silk uniform and demanded that everyone call him General.

Oliver Berliner
SounDesign Engineers
Beverly Hills, Calif.

DRM, a global standard

The NRSC action that suspends the testing of the Ibiquity DAB system (especially for AM) is a smart course of action, and suggests that broadcasters may want to consider an alternative to the present situation before the USA is locked into a system unique to our part of the world.

I suggest that broadcasters learn about Digital Radio Mondiale, a non-proprietary digital system for present-day AM broadcasters.

DRM offers FM-like sound quality with AM reach; improved reception quality; flexible use of radio, whenever and wherever you want it; and continued use of existing transmission systems.

Further, it involves no change to existing listening habits: same frequencies, same listening conditions (fixed, portable and mobile radio) and same listening environment (indoors, in cities, in dense forests).

It offers low-cost receivers; low energy consumption; easy tuning with selection by frequency, station name or program type; radios that will give you programs with associated text information, station name, record title, singer's name; and opportunities for added-value services with data, text and other services.

DRM is a *world* standard. Global travelers won't need a separate radio or radios with multiple decoders.

To know more, and hear how DRM sounds in the "real world," point your Internet browser to *www.drm.org*

David M. Sites
SBE CBT #7517
Idaho City, Idaho

Selling underwriting

I read your article in RW Online about Clear Channel's precedent-setting relationship to sell underwriting on KUSC(FM), and wanted to let you know that my sales staff at WMVY(FM) in the Cape Cod market has been selling underwriting for WGBH(FM) on their Cape Cod affiliates WCAI(FM) and WNAN(FM) for more than four years. It's a relationship similar to the one you describe between these two parties.

My company has nothing to do with the programming or operations at the station, but the sales staff is responsible for developing most or all of the underwriting support for the stations. And our four-year history speaks for itself in terms of its success.

We're so busy working on developing business that we didn't have time to send out a press release.

Jennifer Lane
Director
Aritaur Communications, Inc.
Vineyard Haven, Mass.

Radio Could Play More Ball

Radio promotions are becoming a bit staid, a bit predictable ... lots of "be the 10th caller," "last one holding the Humvee wins" — even pole sitting and the like have become passé.

Meanwhile, Minor League Baseball promotions seem to be getting a bit more interesting. The Nashville Sound recently had a "Randy Johnson" night. Given that the real Randy Johnson of the Arizona Diamondbacks was not present at Greer Stadium, local Johnsons were invited to throw out first pitches at a game played in July.

Also in July, Bowie Baysox fans at Prince George's Stadium in Bowie, Md., were given the opportunity to participate in being recognized by the Guinness Book of World Records. The 2,557 fans in attendance set a new standard for simultaneous whoopee cushion deflation.

Why are we mentioning Minor League baseball promotions? There is a connection — Minor League ball was once not only a proving ground for young players, it was a place for upcoming broadcast talent to break in. Unfortunately Minor League clubs, as many other businesses, are cutting costs. Often, radio coverage is among the first items to be slashed from the operating budget. According to an article posted to the Web this spring by the Augusta Chronicle, at the Class A level this season, 17 of 60 teams were off the air completely. In the late 1980s and early '90s, almost every Minor League team broadcast all of their games.

Traditionally, AM has been the band of choice for airing Minor League games. Airing games would provide today's AM stations the opportunity to reduce their syndicated satellite fare and add something of value to the community.

Cross-promotion between Minor League ball and radio broadcasters would help both. It would not only breathe some fresh air into stale radio promos, but it would inject some local flavor and provide a service to the community, something sorely lacking in radio at this juncture.

With this baseball season approaching an end, here's a timely thought for programmers looking ahead to next year. Markets without Major League teams depend on the Minor Leagues for their baseball fixes. Being able to listen to these games is important to the listeners in these markets; it's a void that local radio, if given the chance, can fill.

— RW

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E-mail: radioworld@imaspub.com • Web site: www.rwonline.com

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