YOUR READER'S FORUM EXPANDS. Pages 53-54

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DAB in the Public Eye
Pubcasters face special digital considerations.

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Patterns on the Side
Confused about sidemount FM antenna patterns? Dick Fry explains it all for you.

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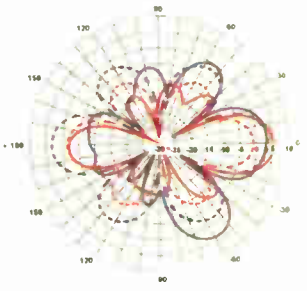

Radio World®
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GM JOURNAL

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▼ At NPR, record-setting audiences are a mixed blessing for Jay Kernis.

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STUDIO SESSIONS

▼ Art Shifrin rescues wire and wax cylinder recordings, and Daniel Kumin test-drives a Sony CD-R.

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▼ We send an ERI Lightning Spur to a reader in Illinois.

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FIRST PERSON

Sirius, XM Go Head-To-Head

Sirius Expands Its Availability; Buyers Now Can Compare the Services in Most States

by Stephen Blum

Sirius Satellite Radio plans to have product available in retail locations nationwide by July 1. Satellite broadcasting and retailing consultant Stephen Blum went to Phoenix in late April to check out Sirius' product introduction. At the same time, he experienced XM Satellite Radio's presence in that market.

Competition is heating up on the retail floor as Sirius Satellite Radio continues its slow roll out and XM Satellite Radio reports increased sales in markets where both systems are available.

At the end of the first quarter of this year, XM had 76,000 paying subscribers while Sirius was claiming slightly more than 400. The demographics of satellite

See SIRUS, page 6 ▶

NEWS ANALYSIS

CFA Co-Inventor, Marketer Clash Over Sales Rights

Proponents of the AM Antenna System Wrestle Over Who Gets to Sell It in the United States

by Randy J. Stine

A contract dispute between a co-inventor of the crossed-field antenna and the company spearheading the worldwide marketing of the CFA could further delay the development and marketing of the new antenna design in the United States.

See CFA, page 8 ▶

FALL REGIONAL SBE PREVIEW

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Legacy: The Digital Future–Value Packed

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World Radio History

◆ NEWSWATCH ◆

Tauzin, Green Question XM Repeaters

WASHINGTON House Commerce Committee Chairman Rep. Billy Tauzin, R-La., and committee member Rep. Gene Green, D-Texas, object to XM Satellite Radio's patented technology that would allow the satcaster to broadcast local content on its translators.

In a letter to FCC Chairman Michael Powell, the lawmakers state that the FCC needs to examine the issue before finalizing licenses for XM's terrestrial repeaters, including ascertaining the location of every repeater and "the interference issue justifying its existence."

No Easing On Foreign Ownership Seen

Though Britain plans to open its broadcast industry to foreign ownership, don't look for this country to follow suit. There's a 20 percent cap on foreign ownership of any U.S. broadcaster; that cap rises to 25 percent on indirect ownership interests.

Experts told The Wall Street Journal they doubted the United States would move to change its rules in a similar fashion due to increased security concerns since the terrorist attacks.

Britain recently said it planned to eliminate its rule that limits ownership of its broadcast companies to 25 percent by companies outside the European Union.

NAB: We're Different Than Telephony

WASHINGTON NAB is not happy that consumer complaints about broadcast indecency and obscenity could be included in the process used to funnel telephony complaints through the agency. The commission has proposed expanding the telephony consumer complaint process to all industries regulated by the agency.

NAB stated in comments to the commission that consumers may be confused by the FCC's use of the terms "objectionable material" and "public apology" — so confused they mistakenly assume the agency "has full authority to regulate and compel responses for all programming complaints, including those outside the scope of indecent or obscene material."

DOJ, FTC Merger Clearance Plan Off

WASHINGTON The Bush Administration plan to formally divide antitrust review of proposed mergers between the Department of Justice and the Federal Trade Commission is in limbo. Senate Commerce Chairman Sen. Fritz Hollings, D-S.C., didn't approve of the plan and said his staff was not consulted about it.

Media mergers would have fallen under DOJ's purview for part of the antitrust review, while the FCC would still review the deals to make sure they meet ownership limits and serve the public interest.

Hollings' committee has the ability to affect the budgets of the agencies, and he threatened to do so, which is reportedly why the plan was dropped.

The DOJ and FTC supported the division of work as being more effective and reducing disputes over agency jurisdiction.

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DIGITAL NEWS

Ibiquity: No Fees for Translators

by Leslie Stimson

WASHINGTON Ibiquity Digital Corp. has clarified some aspects of the licensing fees it plans to charge broadcasters for its in-band, on-channel digital audio broadcasting technology.

Company President/CEO Robert Struble told attendees at the Public Radio Conference in May that FM translators and boosters, commercial and noncom alike, would be exempt from IBOC licensing fees.

Roughly 3,650 FM translators were licensed to operate in the United States as of May, according to the FCC.

FM translators rebroadcast the signal of a primary FM station on a different frequency, typically to fill in coverage. Boosters essentially are translators operating on the same frequency as the main FM station.

Radio World also asked Ibiquity about the status of fee negotiations with major broadcast groups. Struble declined comment, saying the discussions were proprietary.

Low fee

Clarifying its intended fee policies, an Ibiquity spokesman said a station's IBOC license fee would be transferable to a new owner. This stipulation, and the fact fees will not apply to translators and boosters, are new information.

Ibiquity bases part of its fee structure on the FCC's annual regulatory fees, which noncommercial stations do not pay. Ibiquity said the one-time licensing fee for public radio stations would be $3,750, reached by multiplying the lowest commercial FCC regulatory fee ($250) by Ibiquity's standard multiple of 15.

One PRC attendee expressed outrage that Ibiquity will charge noncoms any license fee at all in addition to seeking a percentage of the profits from a station's data services. The attendee asked whether the FCC would look into it.

Struble said, "If we don't get fees, we won't be a viable business," and radio would not have a digital path anytime soon.

Keith Larson, chief engineer of the FCC's Media Bureau, said any commission position on fees would be premature.

"That issue hasn't surfaced because we have yet to pick an approach," he said.

As of late May, the agency had yet to endorse IBOC as a digital standard for America's terrestrial radio. Ibiquity hopes the commission will endorse IBOC by September to give receiver manufacturers certainty about the technology.

Another attendee asked if using TV Channel 6 to alleviate overcrowding on the FM band as stations transition to IBOC — or using that spectrum for analog expansion instead of going digital at all — was still a possibility. This was one of several alternative-spectrum proposals raised in the DAB Notice of Proposed Rulemaking in 1999.

Larson said TV's transition extends to the end of 2006 and that radio wants to go digital sooner, so the Channel 6 spectrum would not be available in time. Struble said radio might also be required to pay for any new spectrum.

NPR is pursing a second audio channel for stations using IBOC, said Don Lockett, NPR's vice president and chief technology officer.

Some public stations would like to program differently for the digital signal during the transition period in which stations transmit both analog and digital signals. NPR has stated this in comments to the FCC and has discussed it with Ibiquity.

While it would be feasible to use a station's spectrum allocation for two talk channels, said Struble, Ibiquty does not recommend it. One of IBOC's selling points is a blend-to-analog feature, used to avoid a digital drop-off in some interference circumstances, and this requires the same programming on the analog and digital services.

Photo by Leslie Stimson

Don Lockett, NPR's vice president and chief technology officer, holds an Ibiquity receiver chipset.

Members of NPR's Digital Transition Advisory Committee are working out the specifics of paying for the digital transition, including funding priorities. Lockett said that of the 135 FM NPR member stations that had filled out Ibiquity's early-adopter equipment forms, the total estimated conversion cost is $14 million.

Omitting stations that need dual antennas, the average conversion cost for these FMs is approximately $107,000, he said. For the nine AMs that had filled out the forms, the total conversion estimate was $900,000, for an average of about $110,000 per AM.

Funding concerns

Mark Handley, president and GM of WEVO(FM), Concord, New Hampshire Public Radio, said the Corporation for Public Broadcasting was able to secure $21 million in 2001 and $25 million in 2002 for digital conversion costs. He told attendees radio would be competing with public TV for that money.

"You'd better think about other sources of funding," Handley said.

Meanwhile, Ibiquity is preparing for additional nighttime tests of its AM system.

The company has applied for new experimental stations in Warren, N.J. (50 watts on 1700 kHz), and in Frederick, Md. (4 kW on 650 kHz), for additional system testing.

The idea is to use experimental stations near its two headquarters to debug software before deploying the technology on real stations, a spokesman said.

In May, Ibiquity still was working to identify specific stations for AM nighttime testing. It wants to test clear-channel stations using skywaves — tests the standards-setting National Radio Systems Committee had not previously required.

Also last month, additional SCA receiver tests conducted by Ibiquity were completed. The trade association representing radio reading services, the International Association of Audio Information Services, was reviewing the results. All parties had agreed that previous SCA tests were inconclusive.

Struble said the new SCA test results showed no meaningful impact on either the host or surrounding stations.

Ibiquity Vice President and General Counsel Al Shuldiner said Ibiquity conducted mapping exercises for approximately18 stations that inject radio reading service signals onto their FM subcarriers.

Receiver performance

These tests focused on the performance of SCA receivers under a number of scenarios: the default case involving no adjacent-channel signals, establishing SCA receiver performance with no IBOC, then with IBOC on the host FM channel; a second scenario, again without adjacent channels but this time with simulated multipath interference; and finally, a scenario in the presence of analog and IBOC adjacent channels (upper and lower single first-adjacent, and upper and lower single second-adjacent channel cases were tested).

The tests showed between about 2 to 3 percent of a population within a station's coverage area would be affected by some interference to the subcarrier, said Shuldiner. Not all of those listeners would be radio reading service subscribers, he said; only a fraction of that affected population uses a subcarrier service.

NPR said the results showed no impact on the 67 kHz and 92 kHz subcarriers, nor first-adjacent-channel interference, although there was some second-adjacent-channel interference. Results were submitted to the FCC in the DAB rulemaking Docket 99-325.

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World Radio History

Radio Echoes of EchoStar

What will happen eventually to the two U.S. satellite services?

XM and Sirius are still just getting started with national service. But I can't help thinking ahead after I read strong reactions to the proposed merger of EchoStar, which runs The Dish Network, and Hughes Electronics, owner of DirecTV.

Eleven U.S. senators from rural areas wrote to the attorney general and the FCC chairman to complain about this merger of Direct Broadcast Satellite providers.

"The rural consumers who presently (sic) have a choice between two very competitive satellite providers could be subjected to monopolistic practices if the merger is approved," they wrote.

That situation has nothing to do with radio satellite; yet it has everything to do with it.

This is speculation on my part, but speculation shared by others: the United States can't support two competing, similar radio satellite services. I expect one or the other not to survive three years.

Given their debt burdens and demands of investors, each must succeed relatively soon. Do not be astonished if someday, one service moves to buy the other.

If that happens, we'll be asking the same questions about satellite radio. Will satellite services be offered to all at a fair rate; will satellite consumers in areas not served by other media be offered the same specials or promotions as those in big cities?

As I was musing, I also noted this sentence in the senators' letter:

"While we are glad to see the merger applicants recognize the importance of serving all 210 television markets, this pledge causes concern in light of the applicants' legal efforts to overturn the law requiring carriage of all local channels in a market."

Again, nothing to do with radio — except this demonstrates that satellite providers are indeed capable of going back and asking that their rules be changed.

The NAB worries about just that. It thinks the satellite radio boys want to use terrestrial repeaters as local broadcast systems. No, no, the satellite companies say; we don't intend to do that. But intentions can change.

(This issue recently caught the attention of House Commerce Committee Chairman Rep. Billy Tauzin, Republican from Louisiana, and Rep. Gene Green, Democrat of Texas, who no doubt were hearing whispers from the lobbyists at NAB. Tauzin and Green called on the FCC to examine this issue before finalizing licenses for XM's terrestrial repeaters, including ascertaining the location of every repeater and the interference issue justifying its existence. Those precautions seem reasonable to me.)

Meanwhile, we watch the DBS saga with curiosity and interest.

★ ★ ★

Radio World has the most loyal, involved readers of any radio publication. When you like a story, you respond to it. When we mess up, you tell me about it. When you disagree with something one of our columnists has to say, I'm hit with many responses.

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So tell us what you think. About anything radio. Write to *radioworld@imaspub.com.*

Keep those opinions coming.

★ ★ ★

Kudos to two members of the Radio World family.

Peter King now is a staff correspondent for CBS News Radio. This means he will contribute more stories to the network from Florida and the southeastern United States; and you will hear his voice more often as he anchors occasional newscasts from New York.

King began stringing for CBS in 1994 as a reporter at WWNZ(AM) in Orlando. He started covering the space program for CBS two years later, and became a full-time freelancer in 1997. He also has done work for VOA. Now he is a full-time CBS employee.

Closer to home, Sharon Rae Pettigrew adds the title of Radio World business editor to her duties as managing editor. She replaces Laura Dely.

Pettigrew will handle story assignments and is your contact for any content in the *GM Journal* and *Internet Radio* sections.

She has worked as a radio news director and announcer in Michigan and Virginia, and she owned Rover News Services before joining us in 1997. Recently she also returned to the air with a free-lance anchor position at WTOP(AM-FM) in Washington.

★ ★ ★

The national media just can't get enough of Tom Silliman.

The president and chairman of ERI was to appear on the Discovery Channel last week, in a story about tall TV towers for the so-called Nashville Project.

In the past year, Silliman has been featured in several TV programs and print publications. Much of the coverage focuses on his experiences as a climber of high broadcast towers such as the structure atop the Empire State Building. In 1992, Silliman led the team that installed antennas atop Empire.

Last year, ABC's "20/20" profiled him as one of its "People Working on the Edge." The New York Times covered one of his trips to Empire under the title, "Where Is King Kong When a Bulb Goes Out?" He has appeared on "Ripley's Believe It or Not" and in the pages of Radio World and National Geographic.

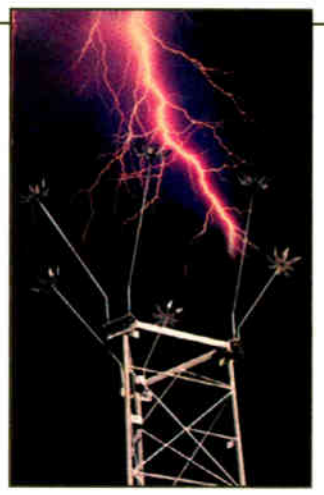
Our profile of Silliman can be seen on the Net. Go to *www.rwonline.com,* click on the *Special Report* tab and scroll down to July 2001.

From the Editor

Paul J. McLane

2002 Radio World READERS' CHOICE Sweepstakes

Mike Roche, operations manager for WEPS(FM) in Elgin, Ill., is the winner of our prize this issue. The station, at 88.9 MHz, is operated by U-46, the second largest school district in Illinois. It serves 39,000 students, kindergarten through high school, from 11 communities in Chicago's northwest suburbs.



I glanced at the school's on-air schedule recently and was most impressed. Check it out at *www.u46.k12.il.us/radio_station.html.*

Mike wins an ERI Lightning Spur, "a lightning dissipation system with the economy of a lightning rod." It is an efficient hybrid lightning dissipator. When operating as a shield, it reduces the potential between the tower and storm cell by transferring electrical charge to the adjacent ionizing air molecules. This transference represents dissipation or the controlled leakage of the charge, reducing the probability of a strike.

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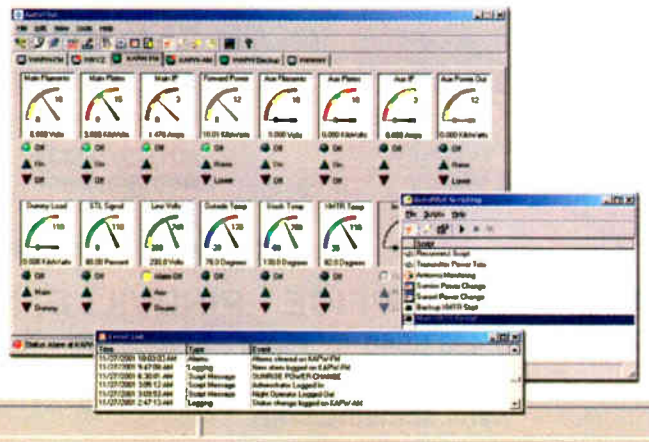

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DIGITAL NEWS

Sirius Reports $45 Million Q1 Loss

NEW YORK Sirius Satellite Radio lost money in the first quarter; and to save money, it has moved out of one of the three floors at its headquarters.

For the three months of the year, Sirius reported its earnings before interest, taxes, depreciation, amortization and non-cash stock compensation at a loss of $45.3 million, with a net loss applicable to common stockholders of $90.1 million, or $1.22 per share.

The company's 2002 first-quarter net loss applicable to common stockholders included a $9 million non-cash benefit resulting principally from the previously announced re-pricing of certain employee stock options.

In comparison, for the first quarter of 2001, Sirius reported an EBITDA loss of $36.3 million and a net loss applicable to common stockholders of $64.4 million, or $1.34 per share.

On March 31, Sirius had $423 million in cash, which it expects will take the company into the second quarter of 2003.

To save costs, the company moved out of one of the three floors it was occupying in Rockefeller Center.

Sirius launched a dealer program in Phoenix in May. It will target 1,500 dealers from July 1 through the end of the year. Executives declined to be specific about the dealer incentives to carry Sirius radios other than to say its subscriber acquisition costs in the dealer program are lower than in retail locations. Average retail SAC costs for the year were estimated at $155 per customer. Executives declined comment on factory-installed subscriber acquisition costs.

The company plans to have product available nationwide July 1 and receivers on 3,500 retail floors by that date.

Company President/CEO Joe Clayton told analysts in May that ramping up production lines "continues to be the biggest challenge." He said Kenwood increased its commitment and expanded its product line for a total of 21 types of Sirius-ready head units, including an FM modulated unit slated for late July release. Kenwood expects to have 30,000 units in the pipeline by July 1, as does Recoton using the Jensen brand name, said Clayton.

Sanyo, Kenwood and Recoton are talking to Sirius about introducing home units in 2003.

Executives predict Sirius will have roughly 150,000 subscribers by the end of this year and 300,000 by the end of next year.

Photos by Leslie Stimson

XM President/CEO Hugh Panero and musician Wynton Marsalis hold big scissors to cut a ribbon and open XM's performance studio as Vice President of Operations Tony Masiello looks on.

XM Opens Performance Studio

WASHINGTON XM Satellite Radio inaugurated its performance studio, an addition to its digital broadcast complex in Washington, with a concert by jazz musician Wynton Marsalis in May.

"Let the word go out: XM is America's home for live music," said XM President/CEO Hugh Panero.

Marsalis hosts a series of musical specials on XM and is a programming consultant to the satellite broadcaster.

The 1,500-square-foot performance studio can accommodate 50 people or a 40-piece orchestra. It cost $2 million to build. XM plans to rent out the space when not using it.

The studio creates an environment that simulates a chamber concert hall, including audience space, adding a warm sound to music performed there, said Tony Masiello, XM's vice president of operations, who helped design the complex and oversaw construction.

The studio is floating, to help eliminate sound bleed into neighboring studios. The studio combines glass, metal, ceramic, wood, fiberglass and other components, spaced and angled to diffuse and absorb signals to produce the studio's sound.

Among the design elements is a floor-to-ceiling glass wall along the broadcast corridor, which allows visitors to view studio sessions. In the separate, adjoining control room, performers' sound can be recorded, mixed and re-mastered.

Northeastern Communications Concepts worked on the control room and studio configurations. The Francis Daniel Consulting Alliance provided the acoustical design for the interiors of both rooms.

Eagle EKSC designed the audio monitoring system and Acoustic Systems built the studio shell. Studios Architecture served as overall project architect and James Davis Construction Corp. was the general contractor.

Wynton Marsalis performs at XM Satellite Radio.

DaimlerChrysler: Installed Sirius Radios by Fall

Sirius Satellite Radios will be available as a dealer-installed option from DaimlerChrysler Corp. beginning late this summer in a number of 2003 models. It is the second automotive company that agreed to an exclusive relationship with Sirius; BMW Corp. announced a similar deal in October of 2001.

A subsequent receiver interoperability pact between Sirius and XM means consumers can expect future receivers to accommodate both services.

DaimlerChrysler plans to offer Sirius service in new Chrysler, Jeep, Dodge and Mercedes-Benz vehicles this fall as a dealer-installed option and as a factory-installed option on select vehicles for the 2003 model year.

Mercedes-Benz also expects to offer Sirius in a number of vehicle lines at its U.S. dealerships in 2003.

— Leslie Stimson

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The full rear-panel remote control interface allows any console complete hybrid control. With the DI-2000 calls can ring-in, be answered, put on hold, screened and dropped, all via your console's channel on/off buttons. No external "black boxes" are needed!

THE CLASSIC TI-101 IS STILL AVAILABLE
And for those in search of a good, basic analog hybrid—Radio Systems still makes the classic and dependable Symetrix TI-101.

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Sirius

▶ Continued from page 1

radio might be the biggest success story of all, with initial sales heavily weighted towards older customers, who don't traditionally buy aftermarket mobile electronics equipment.

Satellite radio has been available in stores for nearly nine months, and its retail presence has improved greatly. Phoenix is one of the four markets where Sirius launched in February, and a check of stores there reveals better-informed sales people, better integration into car stereo displays and a competitive dynamic that should continue to push satellite radio sales.

XM clearly is benefiting and, given that its immediate goal is to test its selling proposition, so is Sirius.

I've had an XM radio nearly since they first became available, and continue to enjoy it. It was no fun to get into a rental car in Phoenix, and spend the first ten or fifteen minutes of my day tuning up and down the FM dial trying to find something I enjoyed.

I finally settled on KOOL(FM), an Infinity oldies station. But even with a reduced midday spot load, I quickly became annoyed with the commercials I was hearing.

One goose egg

The scorecard for the six stores I visited gives XM a 4-to-1 lead over Sirius, with one forfeit. The complete goose egg came at a Sears in Phoenix, where neither company had a presence.

That's consistent with results elsewhere. Even in San Diego, where XM launched last September, Sears has proven hopeless at selling satellite radio. Retail displays are non-existent, merchandise is hidden and sales people lack basic product knowledge.

Next door to the Phoenix Sears, at Ultimate Electronics, the story was better. A sit-down mobile multimedia display was front-and-center in the car stereo department, and just past it was a two-sided satellite radio kiosk. The front side had an operational Sirius unit, made by Recoton under the Jensen brand name. XM was relegated to a nearly hidden backside, and the equipment was non-functional.

However, if you made your way into the main demonstration room, it was XM that was live and Sirius that was silent.

Ultimate's car stereo specialists were nowhere to be found, but I finally grabbed someone from the adjacent TV department who knew something about satellite radio. He ran through Sirius' features and demonstrated the programming at the kiosk. He glossed over the difference in subscription prices (XM is about $10 a month, Sirius about $13) and kept the conversation focused on Sirius, saying that the absent mobile electronics guys preferred Sirius for their own cars.

When asked about XM, he talked about the benefits of satellite radio in general, saying both systems work extremely well.

Sirius clearly was winning the battle for presence of mind at Ultimate Electronics, but it was a different story elsewhere in the Phoenix area. A couple of miles down the road at Sun Valley Stereo, an XM-only kiosk was in the lobby and XM was active on the front-most demonstration wall, with Sirius in the back.

In an encounter that would be largely repeated at the next three stores I visited, the salesperson knew quite a bit about the technology, but focused on selling the programming benefits, as he should. He also kept the conversation centered on XM.

When asked about the difference between the two, he said that Sirius supposedly has better sound quality, "but I can't hear it." Most of his sales had been XM systems, and he had one himself.

Streamline Audio in Scottsdale had both Sirius and XM displays, but only XM product in stock. Understandably, the salesman pushed XM hard. When asked to compare the two, he said Sirius' music was less compressed, "but I haven't heard the difference." The salesman at Best Buy agreed, saying, "The only difference that you're going to notice is that (Sirius) is $13 a month and (XM) is $10 a month."

The best sales floor experience of the day came at Circuit City in Scottsdale, where the sales guy claimed 29 years of experience, and it showed. He asked me about my music preferences, answered my questions correctly and concisely, and gently but persistently tried to close the sale. He remained focused on selling me an XM radio, telling me how much he liked his and finally handing me an XM brochure as I was leaving.

Sirius still is in the process of perfecting the chipset that drives its radios. The two Jensen units I tested had trouble locking onto a channel while tuning. A fix is supposed to be on the way, with the final version due just in time for production to ramp up over the summer.

Price points

The hardware price positioning for Sirius and XM is lower than last year, when it would have been tough to find a unit for less than $500 installed. This time around, the entry-level, installed price for either system was typically in the $350 to $400 range, and the cost discussions tended to be about monthly subscriptions rather than hardware. Sirius was losing that battle, with sales people making little differentiation other than price between the two.

Even Sirius' highly promoted commercial-free music channels received scant attention, as sales people minimized differences with XM. A typical, if incorrect, pitch was that Sirius has "four more" commercial-free music channels but XM has more specialty programming.

(All of Sirius' 60 music channels are commercial-free, while more than 30 of XM's 71 music channels do not contain commercials.)

Sellers seemed to buy into XM's claim that the commercials it does have are virtually unnoticeable.

With a large retiree community, Scottsdale would not traditionally be considered a prime location for aftermarket autosound sales. Satellite radio seems to be bucking that pattern. While I had to wait several times for salespeo-

See SIRIUS, page 10 ▶

World Radio History

EAS Gets Further Scrutiny

WASHINGTON At least two emergency preparedness groups in which broadcasters participate are interested in improving the Emergency Alert System, especially since the terrorist attacks.

"I can't tell you we're not on borrowed time now," said Peter LaPorte, head of the District of Columbia's Emergency Management Department to attendees of the EAS National Advisory Committee meeting in Washington in May. He said emergency preparedness is essential for any disaster.

Rose Parkes, deputy chief information officer for the Federal Emergency Management Agency, offered the agency's condolences to the families of engineers who died at the World Trade Center.

Attendees discussed the new EAS civil emergency, weather and natural disaster event codes approved and recently implemented by the FCC. Broadcasters and local emergency management groups will decide what codes to implement and upgrade station's EAS encoders/decoders as well as train staff about the changes in codes, attendees said.

Clear Channel Radio's Al Kenyon, senior vice president of projects and technology, was elected NAC Chairman, replacing Richard Rudman, former chief engineer of Infinity's KFWB(AM) in Los Angeles, who retired earlier this month.

A week later, members of a new federal advisory committee charged with giving the FCC advice on how to keep broadcasters on the air in the event of further terrorist attacks or natural disasters met for the first time and decided to keep their mission simple.

Security Improvements

"If the media is going to be able to do its job, we need to make sure the infrastructure can work," said committee chair Dennis FitzSimons, president and COO of Tribune Co. He said the main point of the Media Security and Reliability Council is to learn from Sept. 11 and figure out what can be improved.

The group formed subgroups to look at security measures for station towers and studios and another group to study communications to the public.

"Shame on us if we don't learn ... from 9/11," said FCC Chairman Michael Powell, a member of the council.

Several TV broadcasters from New York City said if they had learned anything from that day, it was that they need redundant systems in a separate location from their main studios.

The group will look at how to improve EAS. McHenry Tichenor Jr., president and CEO of Hispanic Broadcasting Corp., said, "EAS is broken, and this is an opportunity to fix it," referring to what he said is often a lack of communication between stations and local emergency personnel.

MSRC will study ways to assure reliability and security of radio, TV and cable signals in the event of another terrorist attack or natural disaster. A similar group exists for the wired and wireless telephone industries.

Among the other members of MSRC are Bruce Allan, CEO of Harris Broadcast Communications; Peter Brubaker, president/CEO of Susquehanna Communications; Lew Dickey Jr., chairman/CEO of Cumulus Radio; Michael Eisner, chairman/CEO of Walt Disney Co.; Eddie Fritts, president/CEO of NAB; Catherine Hughes, chair of Radio One Inc.; Mel Karmazin, president/COO of Viacom Inc.; Jim Kennedy, chairman/CEO of Cox Enterprises Inc.; Kevin Klose, president/CEO of NPR; L. Lowry Mays, CEO of Clear Channel Communications Inc.; Hugh Panero, president/CEO of XM Satellite Radio Inc.; Timothy Putprush of FEMA; Jeffrey Smulyan, chairman of Emmis Communications Corp.; and Jim Taiclet, president/CEO of American Tower Corp.

The next meeting is planned for November.

— Leslie Stimson

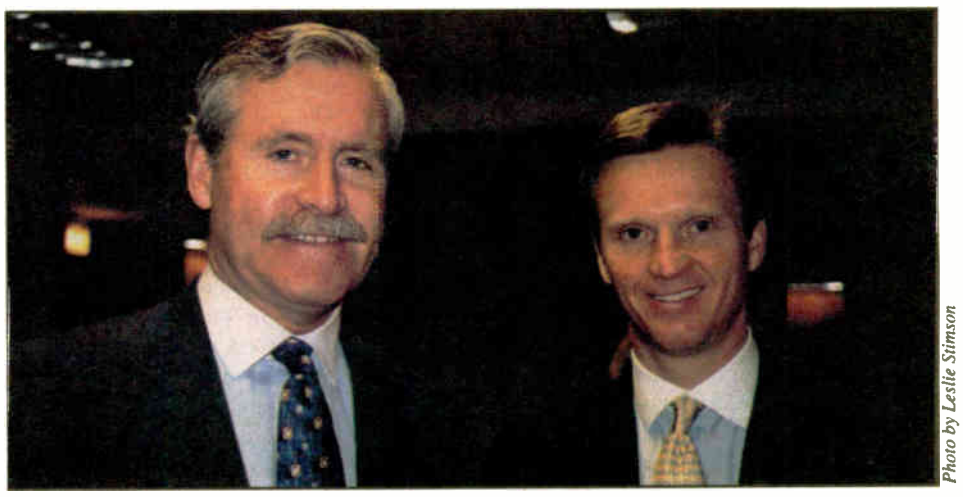

Photo by Leslie Stimson

From left: MSRC Chair Dennis FitzSimons, president and COO of the Tribune Co., and Lew Dickey, Jr., chairman and CEO of Cumulus Radio, take a break before the meeting.

Last-minute remotes?

No stress for John Kennedy of Entercom Boston.

The Patriots win the Superbowl! A major cause for celebration in Boston. And potentially major stress for John Kennedy, Engineering Director for Entercom Boston. With no advance warning, John had less than 24 hours to orchestrate coverage of the festivities on numerous stations — including live remotes along the Patriots' parade route. Fortunately, John knew he could count on Comrex Matrix to deliver — even last-minute. With Comrex in your toolbox, last-minute remotes are successful, not stressful.

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World Radio History

CFA

▶ Continued from page 1

Crossed-Field Antennas Ltd., based in Farmington, Conn., no longer holds "exclusive marketing rights" to the CFA design, said Dr. Fathi Kabbary, one of the CFA's principal developers.

Kabbary cited CFA Ltd.'s lack of progress in gaining FCC approval for the antenna design as one of the reasons for the change. He also said he was unhappy that the company has not generated profits in three years.

Kabbary and businessman Robert Richer formed the CFA Ltd. partnership in 1999 with the intent to pursue worldwide distribution for the antenna.

Global plans

Richer said the company still holds the exclusive rights to sell the CFA system worldwide, except in Kabbary's native Egypt.

"We have some critical points of disagreement right now," said Richer, president of CFA Ltd.

If any legal action should ensue, Richer said, he does not expect it to hamper efforts in the development of the CFA.

The antenna's developers claim it can outperform conventional AM arrays while using shorter towers, typically less than 30 feet. Users could enjoy reduced costs due to smaller real estate requirements; they could employ rooftop installations for their AM stations instead of large, expensive arrays.

Critics have questioned whether the design, which uses small discs and round radiating elements to create the RF signal, is an effective radiator.

Construction of a CFA test site in Shropshire in the United Kingdom remained unfinished in May even though it began in early 2000. Bad weather, illness and hoof in mouth disease in the area are among the reasons given for the delays.

"The facility in Shropshire is operating, but we're just not getting the efficiency we need yet. We expect to have the antenna properly phased by the end of June. Once it's working properly, we will proceed with testing." Richer said.

Richer said Kabbary is no longer involved with the Shropshire project. The work is being completed by ntl Group Ltd., a communications facilities construction company based in the U.K.

Kabbary and Dr. Maurice Hately developed the CFA in the 1980s. Patents for the CFA are held in the names of Kabbary and Hately, Richer said.

Dr. Fathi Kabbary said he plans to establish a new company to market the CFA.

"Dr. Hately has given us his support to move ahead with our plans to market the CFA. He is disenchanted with Kabbary at this point. He never gave Kabbary carte blanche to go out and make all of these deals and to act as the front man," Richer said.

Richer said Hately has promised to sign over the CFA patents to CFA Ltd. in the near future. Attempts by Radio World to reach Hately were unsuccessful.

According to Richer, the agreement he struck with Kabbary in 1999 called for the transfer of all CFA patents and intellectual property rights from Kabbary to the new company. In exchange, Kabbary received 40 percent ownership in CFA Ltd.

Richer said the transfer of the patents never occurred and that no expiration date was stipulated in the agreement.

"Kabbary acknowledged the formation of the corporation. He acknowledged the transfer of the patents in the agreement he signed. But I later discovered that Kabbary has been going out and making agreements with people all over the world despite the fact that we have the worldwide rights. He is in gross violation of the contract," Richer said.

Kabbary said CFA Ltd. promised to pay him and Kabbary Antenna Technology consultancy fees for technical support and work on the Shropshire project but never did.

"It's a financial problem. CFA Ltd. did not pay the rest of the fee to my company for the CFA (in Shropshire) even though it was completed at the site," Kabbary said.

Kabbary said he asked Richer in February to reduce his share in CFA Ltd. to 20 percent "as a consequence of dropping the CFA license" from CFA Ltd. With "no profit through the last three years," Kabbary said he plans to establish a new company to market the CFA.

"Because no progress through the first three years was found, I had to drop the CFA license in CFA Ltd. I may work with a Finnish company to establish a new company. The Finnish company has an agreement to market the CFA in Finland and China," Kabbary said.

"Since CFA Ltd. is mainly dependent on my company and KAT no longer gives technical support to CFA Ltd., this is enough to void the agreement."

Kabbary said, "CFA Ltd. has no rights to the CFA patent. No license has been awarded to CFA Ltd. to put the CFA in operation. They have no license for CFA manufacturing. Only my company can do CFA manufacturing. (CFA Ltd.) has no exclusive marketing agreement for the USA or worldwide."

Agreements for commercial use of the CFA are in place with broadcasters in Italy, Finland, Japan, Brazil, China, Italy and Germany, Kabbary said.

Kabbary said he has begun negotiations with the University of Illinois to help develop the CFA in the United States and gain FCC approval. A group from the school visited Egypt last summer to inspect a CFA in operation there, he said.

Donald Mullally, Ph.D., director of broadcasting and general manager for WILL(AM-FM) at the University of Illinois, said, "We viewed several antennas that were on rooftops. The transmitters were really in horrible shape, though, and the stations sounded bad. Whether that was antenna- or transmitter-related or both, I'm not sure.

"We had a hard time determining whether (CFA) behaved as just another small antenna or as a revolutionary new antenna. I'm a bit skeptical."

Mullally said he proposed an agreement to Kabbary for the school to build a CFA and test it as part of a research project.

"I told Kabbary that, as part of the research project, we would publish our results, good or bad, and determine once and for all whether the design works as they have described. (Kabbary) knows they need a large body of data if they ever want to get it on the air in the United States," Mullally said.

No response

Mullally said he had not had a response to the offer from Kabbary for several months. In May, the FCC had yet to act on the school's request for an experimental license to construct the CFA.

"Our lawyers sent the University of Illinois a letter stating that if they intend to purchase a crossed-field antenna, they must do so through (CFA Ltd.). If they want to build one, then that's a different story," Richer said.

Richer said CFA Ltd. has no plans to pursue an experimental license from the FCC to construct a test CFA in the United States.

"The commission has told us that they'll give us a test license in a heartbeat, but we haven't felt the need to do that because we've spent a lot of money and time on the project in England. (The agency) said if we send in a certified U.S. engineer to test it to FCC standards, they'll be happy to accept those results."

Richer estimates CFA Ltd. has spent "close to $500,000" on the Shropshire project.

Broadcast engineers say skepticism among AM broadcasters in this country grows with each delay in the Shropshire project.

"If there is eventually valid test data that shows it performs, then the scientific community will believe it's viable. Right now, most consider it an unrealistic thing," said Ben Dawson, partner in the Hatfield & Dawson consulting engineering firm.

CFA Ltd. has contracted with Hatfield & Dawson to conduct an analysis of the Shropshire project. Richer said he expects to have Dawson test the Shropshire CFA by the end of this summer. Original plans called for Dawson to complete the testing by the spring of 2001.

"There will be resistance, but we also expect there will be station owners and operators flocking to us once we get FCC approval. I receive inquiries nearly every day from U.S. broadcasters," Richer said.

World Radio History

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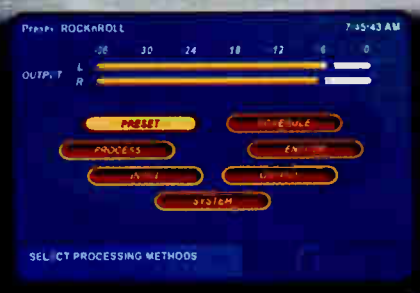

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World Radio History

Sirius

▶ Continued from page 6

ple to help 20-something men with amplifiers, high-end speakers and the like, the only other customer I encountered who was interested in satellite radio was a man in his 50s.

Anecdotal evidence

The anecdotal evidence is supported by XM's research. In January, XM said 24 percent of its subscribers were age 50 and over, while 23 percent were in their forties and 26 percent in their thirties.

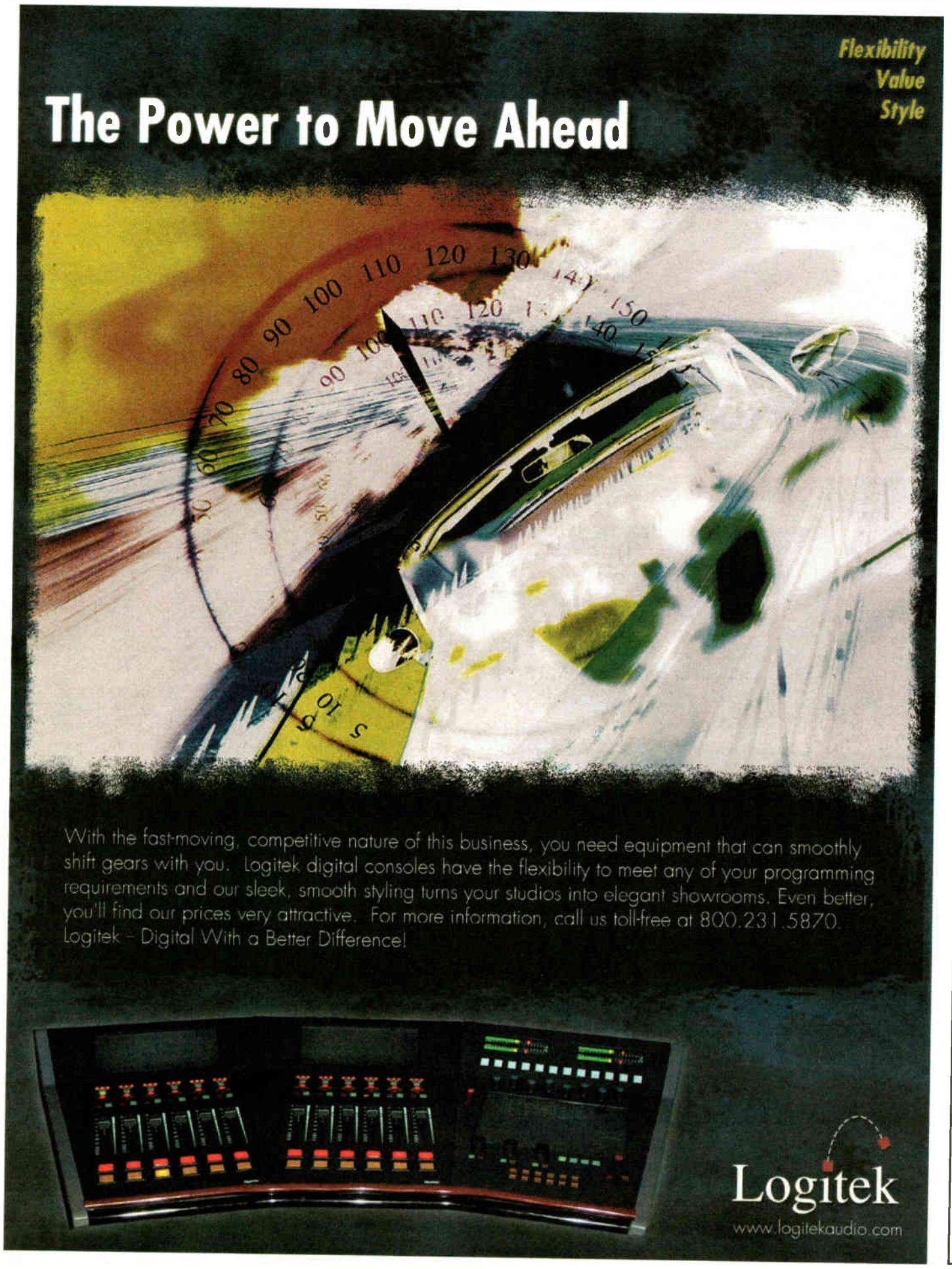
Neither Sirius nor XM are relying solely on traditional car stereo dealers to sell their radios. Both companies talk up the potential of factory-installed radios, with more manufacturers offering satellite radio options in more models this coming fall.

Dealerships also are targeted, with both companies trying to get car dealers to install satellite radios in models not yet supported by manufacturers. XM has announced lower hardware prices, along with plans to begin selling at Wal-Mart (Radio World May 22, page 8). Distribution is also expanding into slam-dunk channels like truck stops.

XM says it intends to have 350,000 subscribers by the end of the year. With full rollout not coming until sometime this summer, Sirius isn't as bullish. But even so, it seems likely that 2002 will end with more than half a million people getting their radio programming directly via satellite.

For local broadcasters, that's roughly the equivalent of losing the entire Stockton, Calif., Arbitron Radio Metro market, which Duncan's American Radio projected at a population of about 600,000 for this year. That would be hard on my former colleagues at KJOY(FM)/ KJAX(AM) in Stockton, Calif., but not significant nationally. Yet.

Sirius is sponsoring two NASCAR Winston Cup events this summer.



BUSINESS DIGEST

Harman Restructures Orban/CRL Debt

SAN LEANDRO, Calif. Processor manufacturer Circuit Research Labs Inc. now has more time to pay off the debt it incurred when it purchased Orban.

CRL reached agreement with Harman International Industries Inc. to restructure Orban/CRL's debt obligations.

The amended loan agreement gives Orban/CRL until Dec. 31, 2003, to satisfy both short- and long-term loans totaling $8.5 million owed to Harman, according to filings with the Securities and Exchange Commission. In the interim, Orban/CRL will make interest-only payments.

Circuit Research Labs Inc. paid $10.5 million for Orban in June 2000 in a leveraged buyout and since has received several payment extensions from Harman.

CRL President and CEO Jay Brentlinger said, "Harman has always been very supportive of our operations and is committed to helping Orban/CRL in restructuring our debt to them."

The company has been watched closely since Brentlinger took control of CRL and then acquired Orban, one of the most familiar brands in the radio hardware industry.

Orban laid off approximately 15 percent of its workforce at its San Leandro, Calif., facility last fall.

Orban/CRL reported to the Security and Exchange Commission a net loss of $402,664, or 12 cents per share, for the quarter ending March 31. The company's first quarter net sales were down approximately 26 percent at $2.9 million, compared to $3.9 million a year ago.

The company reported a net loss of just over $2 million, or 88 cents per share, in 2001 on sales of $13.1 million, according to SEC filings.

Circuit Research Labs Inc. common stock is traded on the OTC Bulletin Board (NASDAQ:CRLI).

— by Randy J. Stine

World Radio History

Radio Systems on Top of the World

by
Cliff Mikkelson
Director of Engineering
Clear Channel Communications
Colorado Springs, Colorado

At the base of America's mountain, Pikes Peak, lie a multitude of radio stations. As is typically the case in our business, these stations are highly competitive in the local market. When the time came for choosing a high quality, reliable and budget friendly studio console, the choice was Radio Systems Millenium and StudioHub system.

At one time, our stations were run down, neglected and being operated with unreliable and maintenance-intensive equipment. After being acquired by a much larger company the decision was made, "tear it all out and start over." To accomplish this we first had to get studios built in a very short period of time. I called Dan Braverman and simply stated; "I'm in an emergency situation and need help!"

With the small talk behind us Dan had a plan. The console arrived before any of the other studio equipment. The advantage here was allowing myself to become familiar with Radio Systems equipment. The result was rewarding. I had been able to read the manual (yes, occasionally we engineers break out the books) and had a game plan in place to eliminate wasted time. The point of reading the manual was important in two ways. First the manual was written very well, easy to understand and second, I had found available options I thought came only in the higher priced consoles.

It just so happened that our stations were the beta site for one very convenient option. This option was called "StudioHub." Since we were one of the first stations to use this system I was very skeptical. Here I had to have myself and my engineers build a studio with an unfamiliar console, equipment that was not yet on the market and in a beta form, have it completed in a very short amount of time and stay under budget. Much to my surprise, it worked - without a hitch. The StudioHub and RS-18 can be a "plug and play" task with the right coordination.

In the beginning, Dan had asked about the remaining studio equipment and the basic configuration. He had prepared all of the cables to the proper length and had formatted ends to match the equipment. As you can visualize, the room went together very quickly and with no punch blocks to worry about. There were no wiring problems or tangled messes. There were mistakes made on our end about placement of equipment. No worry, StudioHub allows you to make changes in minutes rather than hours.

The concern of compatibly with our automation was quickly put to rest. Since our company owns our music automation program, the equipment from Dan HAD to play nicely with our automation system. Without a doubt, we were running fully automated in no time. Turning the console channels on and off with a simple command was easy. Swapping sources was a piece of cake. Running off-site live traffic updates while having an un-manned studio was seamless (unless the traffic person failed to be on time!).

To me one important issue remained. That dreaded word "Failure." Somehow, to this date, no one has made a console "Spill Proof." I know Dan has this in his sights and I am sure he and his staff are working on a resolution. However, soft drinks are great to have while doing a morning show, but faders are prone to failure when beverages are introduced.

This did happen shortly after the installation. Once again the design of the Meillenium Console proved worthy. I changed-out the fader during a 4 minute break and had a minute to spare. Yes, I changed a fader out in 3 minutes! The rest of the boards can be changed out in 30 minutes or less. A real working engineer must have designed this system. How many times have you repaired something and wished you had designed it? Take my word for it; this system is easy to work on.

I am currently building yet another studio. Our 5th. The steps have not changed since my first console almost 3 years ago. I call Dan, he asks the questions, and I place the order, and install the equipment. It's that simple. No hassles, no beating around the bush, just results.

It is said that power comes from below. Believe me Dan has a great staff and it shows when help is needed. From technical support to paying the bill, I have never been neglected. With Roger, Jo-Ann and Gerrett, to handle any issues that may pop up, I feel comfortable contacting them any time I have a question. There is another advantage of doing business with Radio Systems. Try calling a major manufacturer and ask to speak with the President. It probably won't happen. You have a much better chance getting in touch with Dan – because he's there and so is his personal touch and expertise. If you have a problem that you don't feel is being resolved, the president of this company will take the time...believe me.

I recently returned from a radio station sponsored Caribbean cruise. Something strange happened. I met up with an Engineer that assisted me on the installation of my first group of Radio Systems' equipment. The unique question he had asked of all subjects we discussed was "how were the Radio Systems' consoles holding up?" I replied "just fine." Here's what my friend had to say; "you know, that Radio System stuff is great. It's inexpensive, it's reliable and best of all... IT WORKS." It seems quite strange that we spoke about Radio Systems with all of the other possibilities of conversation. I think it was just one of the good memories I had to share.

For cost, reliability, and ease of installation, I've chosen Radio Systems equipment.

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World Radio History

Workbench

Radio World, June 19, 2002

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

Get to Know the Rules on RFI

by John Bisset

Doing things right might take a little longer, but the long-term benefits are indescribable.

Fig.1 shows the master block system installed by Tom Ringer of Salem in Washington, at WWUZ(FM) in Ladysmith, Va. The plywood is cheap, and the D-rings keep things in order.

On a little larger scale is the master control wire center for West Virginia Radio Corp.'s Morgantown hub, seen in Fig. 2. The attention to detail makes circuit tracing painless for engineers Ralph Messer and James Belt.

Note the punchblock labels; there's no question which block goes where.

Fig. 1: Tom Ringer's master block system is at Virginia station WWUZ(FM).

★ ★ ★

It's probably one of the most disturbing phone calls you'll receive as a chief engineer. A neighbor calls and explains he is picking up your AM or FM station on their new television, and the new TV is encased in this nice big piece of furniture they bought from Sears.

Fig. 2: West Virginia Radio Corp.'s Morgantown hub is a study in attention to detail.

The neighbor picks up a power-line filter, thinking the RFI is coming in through the power cord. While at the retailer, the sales guy says it's the responsibility of the radio station to "do whatever it is they do to mask this interference," and by the way, they don't have power-line filters.

On to Radio Shack, where the clerk repeats the radio station responsibility line. The neighbor now calls Sony, and after trying some of the hints in the instruction manual, the Sony technician also agrees it's the station's problem.

What to do?

Contract and special projects engineer Mike McCarthy of McCarthy Radio near Chicago suggests showing the neighbor a copy of the blanketing rule. This rule shows, in black and white, what the station's responsibilities are for curing RFI. Explain the rule and do the math in the rule to show him how blanketing works.

Mike also reminds us to point out the one-year rule, high-gain antenna provision and other preclusions.

Then write a letter to the Sears and Radio Shack on station letterhead, signed by the GM, with a photocopy of the rule. Tell them they are misleading the public by acting as practitioners of law by suggesting that the station is at fault without

See WORKBENCH, page 14 ▶

World Radio History

Smooth.
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World Radio History

IBOC DAB, in the Public Eye

Radio Pubcasters Press for Standardized New Services and Elimination of License Fees

by Skip Pizzi

At the recent Public Radio Conference in Washington, Ibiquity Digital Corp.'s plans for IBOC digital radio received a thorough pummeling.

The public radio constituency has been most vocal in its preference for new services in IBOC, including second audio channels. They have also been as expressive as any broadcasters in their discomfort with Ibiquity's software licensing plans, even though they will receive a price break over most commercial stations.

(Currently, Ibiquity plans to charge all public radio operators a one-time, $3,750 fee per full-service transmitter, regardless of market size or class of service, plus the same 3 percent on datacasting revenues levied on commercial broadcasters.)

Despite PRC host NPR's attempt to put the best face on things, public radio station representatives repeatedly voiced their objection to the licensing fees, and stressed their desire for the standardized ability to offer multiple services via IBOC.

Split service

They cited not only the value of new secondary audio services, but also the preference for programming the *primary* digital service separately from the analog service on the hybrid IBOC channel. The example given was classical music on the digital service and news/info on the analog, while on-demand voice services were provided via the secondary audio feature of digital auxiliary data.

One questioner noted that such a separate primary service suite had been demonstrated at Ibiquity's NAB2002 on-air demonstration, which an Ibiquity representative acknowledged was true and possible, but Ibiquity has steadfastly refused to support this approach in its proposals.

The discussion was a profound indication of how Ibiquity's approach is skewed to the particular private interest of its commercial radio backers, and how the interests of the listening public (of which public broadcasters are the prime bellwethers) seem to be of secondary consideration at best.

Meanwhile, an FCC representative at the PRC emphasized that the commission had made no decisions regarding Ibiquity's proposals, nor even whether IBOC would be the approach taken for U.S. digital radio.

Background discussions at NAB and the PRC indicated that Ibiquity's software licensing proposals are not completely set in stone. Interestingly, there were hints that Ibiquity's management would have preferred a more traditional approach in which all licensing revenues were derived from transmission and receiving hardware royalties. However, the voice of transmission hardware manufacturers — one of which holds an equity position in Ibiquity — apparently influenced Ibiquity to adopt its current position that includes broadcasters directly in the licensing regime.

At the PRC, Ibiquity stressed that the proposed fees to be paid by broadcasters are the smallest relative to those levied on transmitter and receiver manufacturers. While this may be true in a direct fashion, it is clearly evident that a broadcaster will pay these fees along with buying transmission equipment, and the latter will most likely include a pass-along of licensing fees levied on the transmitter manufacturer.

So ultimately the broadcaster pays twice, once at a flat rate (on transmission hardware), and once at a graduated rate (for Ibiquity's unique software licensing, except for public broadcasters, who would pay the flat fee noted above. In fact, this double standard can be interpreted as discriminatory in multiple ways: either the large-market commercial broadcasters or small-market public broadcasters are paying unfairly high royalties.

Given such inequities and resistance, and the FCC's so-far tacit monitoring of the debate, it seems possible that Ibiquity's licensing proposal for broadcasters ultimately may be substantially modified or even abandoned. This is not to say that the company will not or should not be compensated for its considerable development work, but that the compensation should instead come via more traditional routes.

Another element of the discussion acknowledges that Ibiquity's broadcast investors did not develop the format as a purely speculative venture. The company is acting as if it is some sort of VC-backed developer that has proposed a new technology to broadcasters, for which it should be rightfully compensated, when in fact it was largely a subsidiary of corporate broadcast interests

See PIZZI, page 22 ▶

The Big Picture

Photo: Gary Hayes, BBC

by Skip Pizzi

Workbench

▶ Continued from page 12

knowing the rules or the whole picture. If you are uncertain, ask the manager to check with the station's communications legal counsel.

Mike wishes there were a form of legal recourse for suing those who spread incorrect information like this. The worst part is this falls in the engineer's lap. Don't ignore it; many a station has been inspected when a consumer's complaint fell on deaf ears, and they figured out whom to contact at the FCC.

In one case, a complainant contacted his congressman, who just happened to sit on the subcommittee that funds the FCC. You can bet the station got visited. Have to keep those constituents happy.

When I was chiefing stations, I kept a form at the front desk for the receptionist to complete for any interference call. It included a section for the complaint, and a section that my assistant or I completed as to what action we took. We kept the completed forms in a file, just in case.

★ ★ ★

Here's an item to add to your resource list.

Howard Kahan is vice president of HLK and Associates in Ohio at (800) 222-3855. In addition to providing a line of Bud Industries racks and enclosures, Howard specializes in locating obsolete and hard-to-find electronic parts.

You'll find the Web page at *www.hlkassoc.com.*

★ ★ ★

Over a decade ago, many stations went through the arduous and costly task of removing PCB capacitors from transmitters and power supplies.

Not everyone participated, and some engineers find PCB-laden transmitters still in use. A chief recently inquired of the *radio-tech* listserv of *broadcast.net* how to handle the PCB problem.

Perhaps one of the best replies came from Frank Giardina. He suggested calling your local power company. General Electric Industrial Apparatus Service can handle disposal, but many power companies have to deal with this problem, and should have some suggestions.

★ ★ ★

Everyone likes to save money, and Hal Kneller, chief engineer for WZZS(FM), WZTK(AM) and WZSP(FM) in Zolfo Springs, Fla., offers a tip for engineers maintaining the Harris Gates or SX series of transmitters.

You may have found that the MOSFETs used in these rigs are getting expensive to replace. The IRF-350 will work just fine, and can be purchased from *www.mouser.com* for about $10 each.

Gary Liebisch, AM applications engineer for Harris, agrees. He has used them himself when he was a chief. Don't forget to tell your manager that you're saving her some money.

Fig. 3: Aaron Winski's test leads were soldered from Radio Shack alligator test clips.

★ ★ ★

Aaron Winski is 25 and the director of engineering for an 18-station group with stations mostly in Illinois. With that many stations, time is always of the essence, so shortcuts and gadgets play a major role in Aaron's workday.

After years of profiting from tips in *Workbench*, Aaron shares one of his own. Fig. 3 shows a set of test leads made using male and female XLR and 1/4-inch tip-ring-sleeve (TRS) connectors. The leads were soldered from a package of Radio Shack alligator test clips. They help when you are testing, injecting tones or connecting a scope, and belong in everyone's tool bag.

In fact, now that remote season is underway, put a set in the remote kit. Aaron stores the adapters in a small canvas zipper case from the local electronic supply house.

You can take Aaron's idea a step further by making up mating connector cables for your Potomac generator and analyzer and your favorite equipment. Back in the days of "all cart machines all the time," DB or cinch plugs connected to the connectors used on the Potomac equipment made adjustments and alignments a quick process. And you didn't need to remove the equipment from the control room. Just make sure you make the cables *lonnggggg*.

Making up test cables like this is a perfect intern's job. He or she will learn how to solder; you get the cables manufactured. So what if they have to solder the connections a hundred times until they get it right? Everyone benefits.

What, no intern? Check your phone book for electronics schools, community colleges or trade schools. Many of these programs have work-study arrangements that can be a real benefit to you.

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) 323-8011.

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.

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World Radio History

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Understand Sidemount FM Patterns

by Richard J. Fry, CPBE

Omnidirectional FM broadcast antennas are assumed to have a free-space radiation pattern that is perfectly circular in the azimuth (horizontal) plane. For many modern antenna designs, the shape of the free-space radiation pattern in the elevation (vertical) plane from each element (bay) of the antenna is assumed to be nearly a cosine function.

But are these assumptions justified? I undertook a study to provide insight into this subject.

Basic concepts

Fig. 1 is a far-field surface plot of the total radiation from a dual-polarized element having the pattern assumptions described above.

The X and Y axes are two right-angle directions in the azimuth plane. The Z axis is at 90 degrees to X and Y in the elevation plane. The antenna element is located at the intersection of the three axes, but is omitted here for clarity.

While the driven radiators of a well-designed antenna element alone could produce these nearly perfect patterns, additional components are needed to supply RF power to the radiators and to support them physically on a tower. These components necessarily must be electrically connected to, and physically close to, the driven radiators of each element.

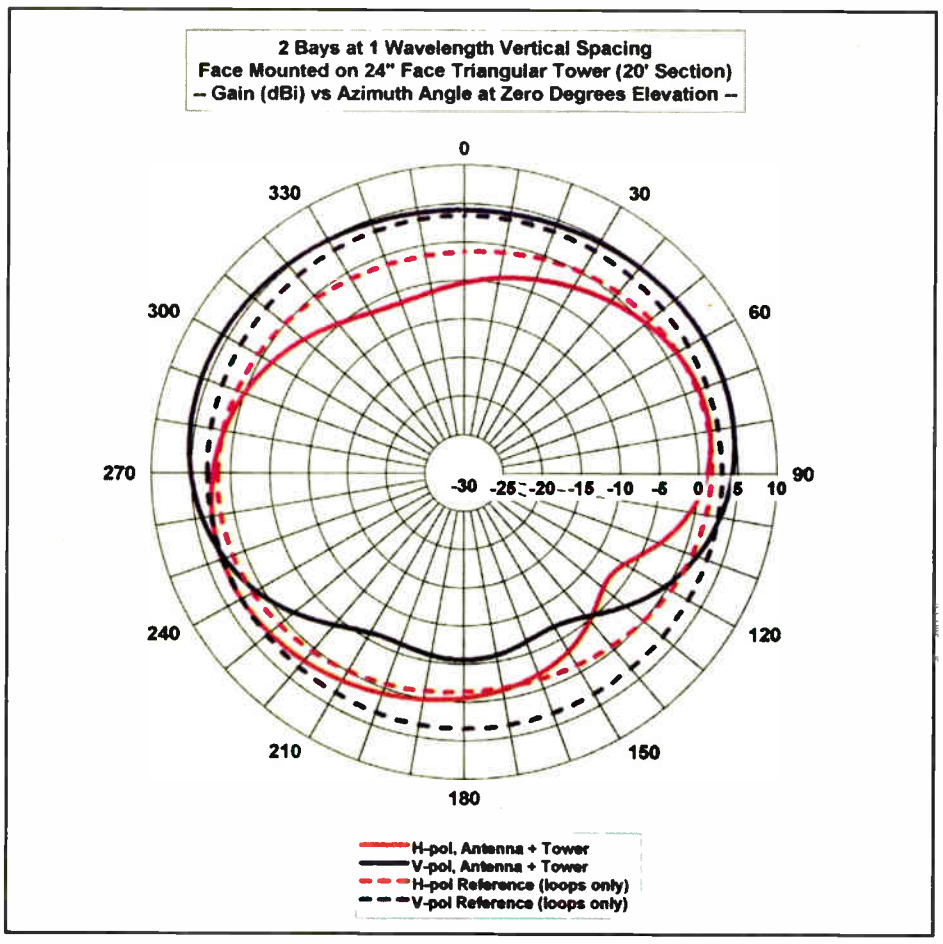

Fig. 4

Significant RF currents will flow on these additional components and on the tower as well, the added radiation of which changes the shape of the original patterns from the driven radiators. The overall result is that the real-world radiation patterns from a side-mounted FM antenna can differ substantially from the theoretical patterns assumed for them.

As an illustration of real-world antenna patterns, Fig. 2 is a calculated surface plot of the total H+V radiation of a two-bay, full-wave spaced "omni" antenna complete with its feed system and mounts, installed on a 20-foot length of 24-inch-face, triangular cross-section tower.

Fig. 3 is a rendering of the computer model used in the calculations. A form of the "rototiller" element was used because it is easy to model, and used widely. Similar patterns likely are produced by other element designs, as well.

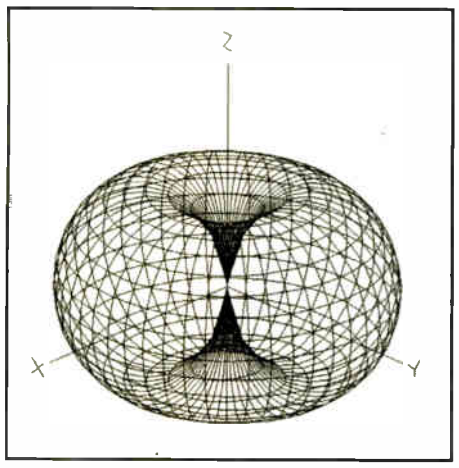

Fig. 1

The surface pattern in Fig. 2 clearly shows the nulls in the elevation plane near +/-30 degrees in this model, where the fields from the two bays are equal in magnitude and opposite in phase, thus canceling each other.

The position and depth of the nulls near +/-90 degrees elevation have been altered, compared to the theoretical patterns expected for this array. Although not as visible in Fig. 2, azimuth plane patterns have been affected as well. These effects are the result of the additional radiation from the antenna feed system, antenna mounts and the tower.

Figs. 4 and 5 are plots of the azimuth and elevation patterns, respectively, for the surface plot shown in Fig. 2. Here, the horizontally polarized (h-pol) and vertically-polarized (v-pol) fields are shown separately, along with the corresponding reference fields that would be produced by the driven radiating elements alone with no feed system, antenna mounts or tower present.

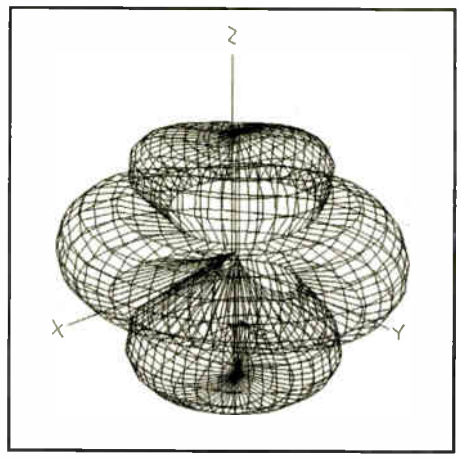

Fig. 2

Gains in Figs. 4 and 5 are shown along the scale +10 to -30, in decibels with respect to an isotropic radiator. Subtract 2.15 dB from the values plotted to convert them to gain with respect to a 1/2-wave dipole (dBd).

Fig. 4 is a view from the top of the antenna looking at the radiation directed in the horizontal plane, i.e., toward zero degrees elevation. Fig. 5 is a side view of a 0 to +/-180 degree elevation angle slice of the radiation pattern along the zero/180 degree azimuth axis. The data values seen for 0 and +/-180 degrees on the elevation plot will be the same as those for 0 and 180 degrees on the azimuth plot. For all other angles, data values on the two plots can be (and usually are) different.

The azimuth patterns shown in Fig. 4 still have fairly good circularity. The elevation patterns in Fig. 5 show more dramatic effects from the tower, with v-pol more affected than h-pol.

Recall that, for most installations, virtually all FM listeners are served by the portion of the elevation pattern from the horizontal plane to a depression angle of less than 10 degrees. In Fig. 5, those sectors

Fig. 3

are shown from 0 to -10 degrees, and +/-180 to -170 degrees. All radiation at higher and lower elevation angles essentially is wasted.

The elevation patterns in this study are shown only for the zero/180 degree azimuth axis. A large number of them covering many other azimuths would be needed to adequately describe the full envelope of the elevation patterns.

Larger tower

Now that we have seen patterns for an FM antenna on a relatively small-faced tower, and have reviewed the process needed to interpret them, let's look at the same two-bay array mounted on a tower with a 42-inch face. Fig. 6 shows the azimuth patterns, and Fig. 7 shows the elevation patterns.

The azimuth patterns shown for a 42-inch-face tower in Fig. 6 on page 20 have significant variations. In fact for this model, h-pol ERP in the null at ~142 degrees azimuth would be less than 1 percent of its value at azimuths of ~25 degrees. The v-pol ERP shown in Fig. 6 also has significant nulls. Obviously these patterns could

See SIDEMOUNT FMS, page 20 ▶

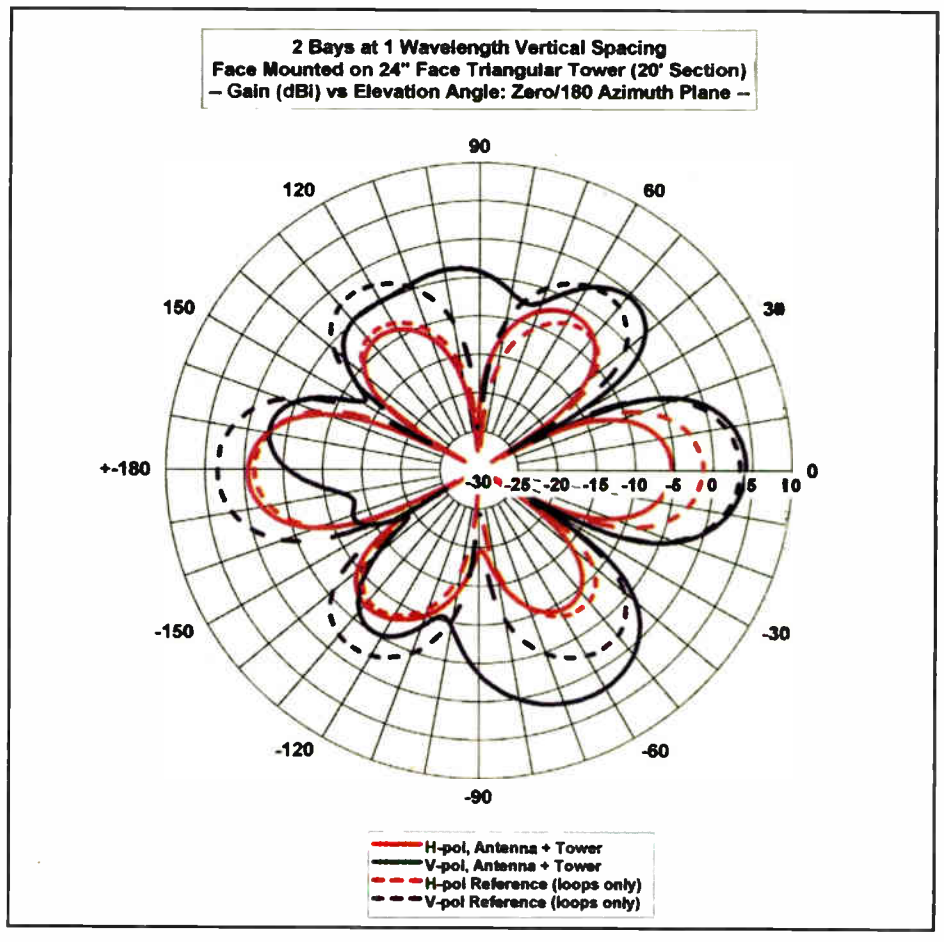

Fig. 5

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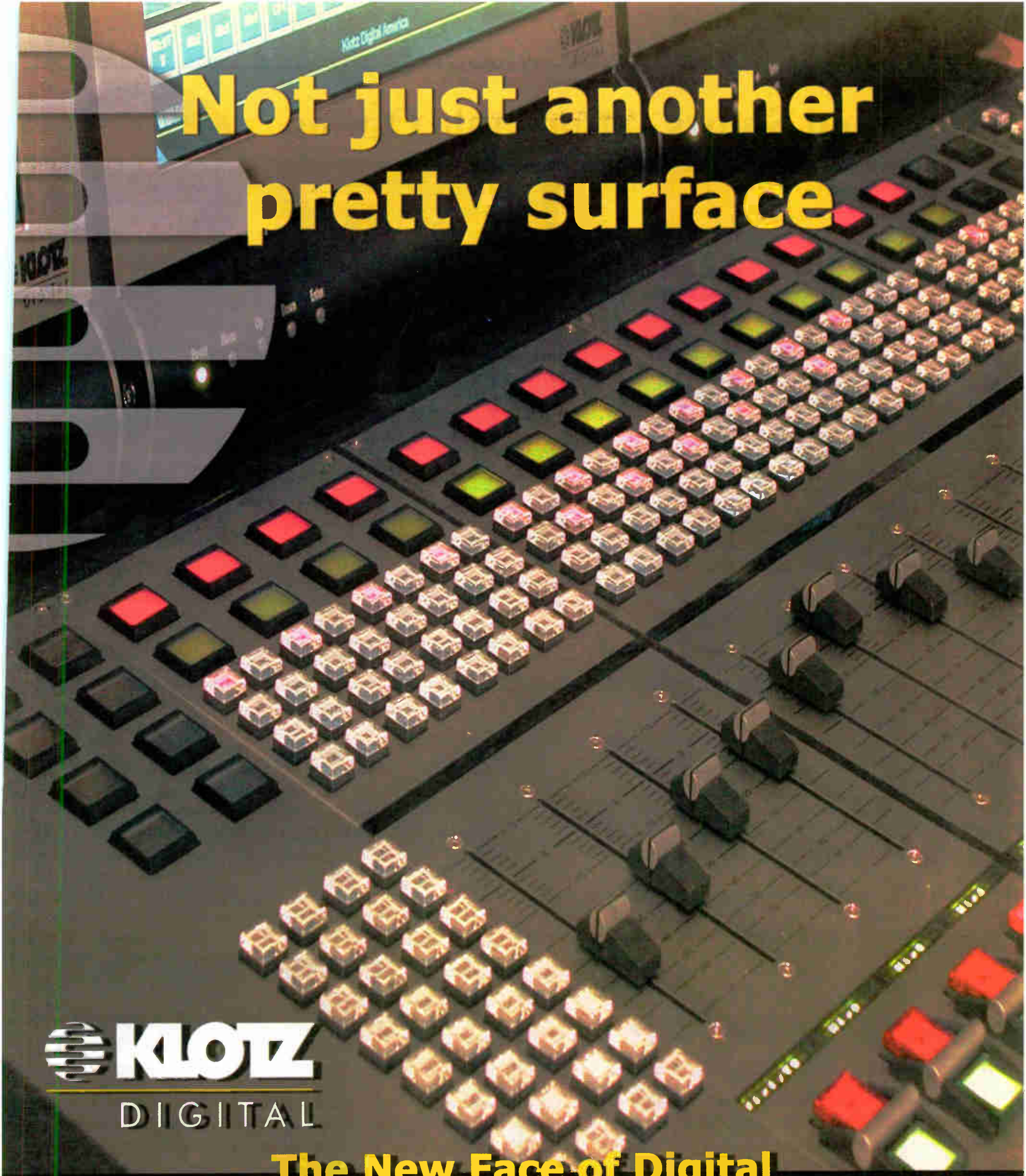


World Radio History

SBE NEWS

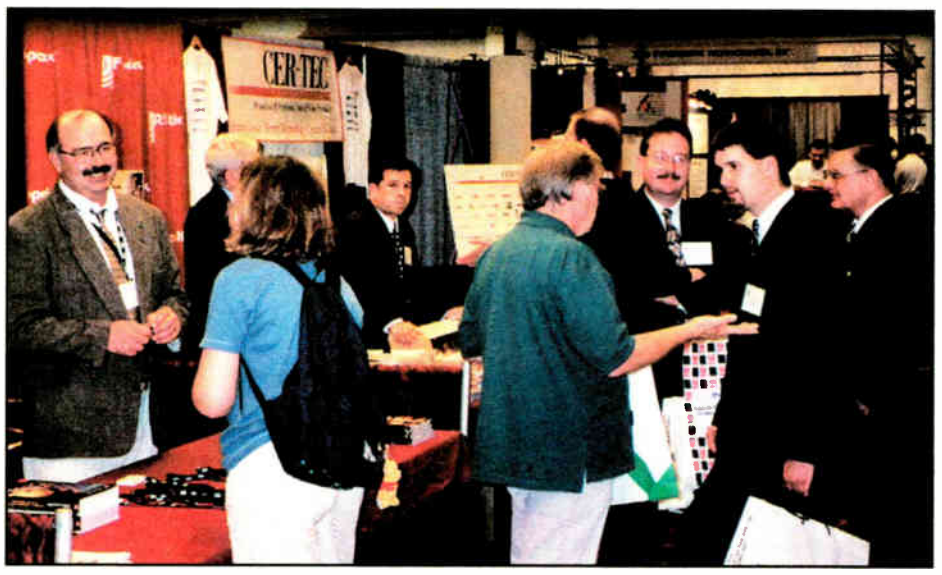
Regional Shows, Affordable Option

by John L. Poray

The author is executive director of the Society of Broadcast Engineers. Radio World offers this space to the SBE as a service to the industry.

Whether it's the economy, time constraints or both, many radio engineers just aren't able to dedicate a week to attend one of the national conventions and exhibitions.

As good as they are for providing seemingly unending aisles of equipment exhibits and days of educational technical presentations, a lot of radio engineers cannot attend. Travel budgets have been cut or eliminated and engineering staffs aren't the size they use to be. It's tough to get away across the country for even a few days if you are the only engineer the station has.



Engineers attend a typical SBE regional convention, this one in Pittsburgh. Convenient locations, short duration and low cost make them easy and affordable.

Keep current

The need to stay on top of new technology, to see and understand how new equipment works, to make comparisons between manufacturer's products, doesn't all go away just because you can't make the "big show." In fact, it's probably more important than ever.

For many years, a number of good local and regional equipment exhibits and conferences have existed. The number of these events has increased in recent years, along with their popularity with both attendees and exhibitors, because they are inexpensive to attend, sometimes even free, and don't take you away from the station for the better part of a week.

Chapters of the Society of Broadcast Engineers are among the organizations that have sponsored these events. Most of these events are organized by volunteers, cater to attendees and exhibitors alike, and dot the country and calendar so there is a likelihood that there is one nearby at a time that is convenient to go.

Attendance ranges from 200 to 2,000, so there is ample opportunity to talk to sales reps, see, touch and try out the latest equipment and take in a technical paper or two, all in one day. For many people, they are within easy driving distance; an overnight stay may not be necessary. For most, there is no cost for the broadcast engineer to attend, though preregistration sometimes is required.

Starting in August and running through the end of October, there are no fewer than seven SBE regional conventions held throughout the country. A list of these events can be found in the accompanying box along with dates, location and contact information so you can plan your attendance.

Coming up

Each year, SBE holds its National Meeting in cooperation with one of these regional events. In 2002, it will be held Oct. 16-17 in Phoenix with the SBE Chapter 9 Regional Convention at the Phoenix Civic Plaza.

Chapter 9 stages this event in conjunction with the Arizona Broadcasters Association Annual Convention. In addition to the exhibits and technical papers organized by the local chapter, attendees will be able to take part in the National Meeting events, including the Annual Membership Meeting and National Awards Dinner.

Be sure to take in one of these regional SBE events later this year. No matter which one you choose, you'll find attending will be beneficial and cost effective for you and your employer, as well as an enjoyable experience.

2002 Regional Events

Texas Assn. of Broadcasters/SBE Annual Convention & Trade Show
Dates: Aug. 21-23
Location: Renaissance Hotel, Austin, Texas
Contact for conference and trade show: Beth Bobbitt, Texas Association of Broadcasters. Call (512) 322-9944, e-mail to *beth@tab.org* or visit *www.tab.org*

Central New York 30th Annual SBE Regional Convention
Dates: Sept. 26
Location: Turning Stone Casino Resort, Verona, N.Y.
Contact for conference: Tom McNicholl. Call (315) 768-1023, e-mail to *tmcnicholl@wktv.com* or visit *www.sbe22.org*

Pittsburgh Chapter 20 Regional SBE Convention
Dates: Oct. 2
Location: ExpoMart, Monroeville, Pa.
Contact for conference and trade show: Tom Bills. Call (412) 828-1414; e-mail to *sbe20pittsburghpgh@yahoo.com* or visit *www.broadcast.net/~sbe20*

2002 Broadcaster's Clinic
Dates: Oct. 15-17, 2002
Location: Marriott Hotel West, Madison, Wis.
Contact for conference or trade show: Wisconsin Broadcasters Association. Call (608) 255-2600 or (800) 236-1922

SBE Chapter 9/Arizona Broadcasters Annual Convention & SBE National Meeting
Dates: Oct. 16-17
Location: Phoenix Civic Plaza, downtown Phoenix
Contact for conference, presentation of papers and trade show: Gerry Grunig, CBTE. Call (602) 262-5106; e-mail to *ggrun926@fox.com* or visit *www.broadcast.net/~sbe9*
Contact for National Meeting: John Poray. Call (317) 846-9000; e-mail to *jporay@sbe.org* or visit *www.sbe.org*

Electronic Equipment Expo
Dates: Oct. 23-24
Location: Washington State Convention & Trade Center, downtown Seattle
Contact for conference and trade show: Gary Engard, CPBE. Call (206) 784-2049, e-mail to *sbe16expo@attglobal.net* or visit *www.emexpo.org*

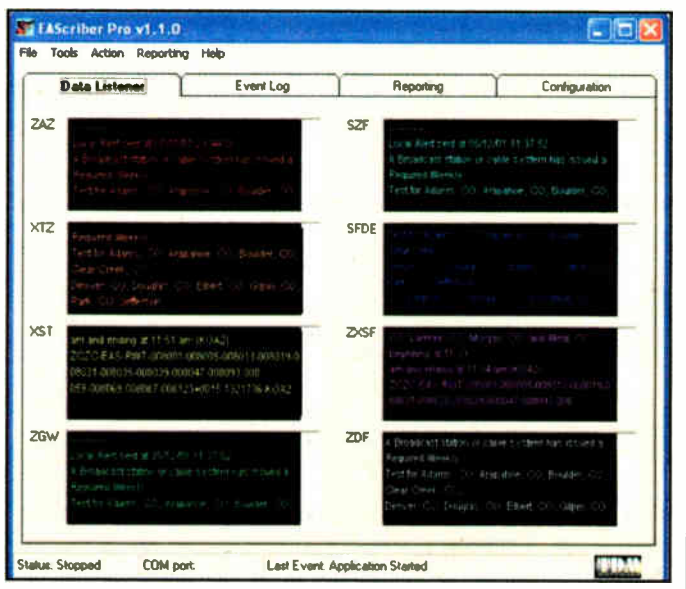
Boston SBE Regional Convention
Dates: Oct. 29-30
Location: Best Western Royal Plaza and Trade Center, Marlborough, Mass.
Contact for conference and trade show: Bob Hess, CPBE. Call (617) 787-7050 or e-mail to *bhess@boston.cbs.com*

MARKET PLACE

EAScriber Pro Adds CC Stations

TDM Software said its EAScriber Pro application is finding converts in the Clear Channel Communications chain. The product was introduced last July; Clear Channel's Denver operation has been using it to log EAS activity for seven stations. The company says other stations are adding the product now.

EAScriber Pro installs on a PC and monitors EAS activity through the access ports included with most EAS receivers. EAS alerts and required monthly and weekly tests are captured and logged into a database.



The information gathered includes EAS report information required by the FCC under Part 11: time and date of the alert, the stations involved and the activation code. The software will print reports for use during FCC audits.

The company said the product is saving Denver's Clear Channel staff hours each week gathering EAS information from "printer tapes" prior to automating. Logs now are generated automatically and are accessible from the corporate Web site.

In addition to the next version, TDM Software said it is working with Clear Channel on potential installations in four other states.

Contact the company in Colorado at (303) 995-9221 or visit the company Web site at www.tdmdatasolutions.com.

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Great Software from BSI

BSI makes Simian digital automation, but did you know that we have a whole family of products for Radio?

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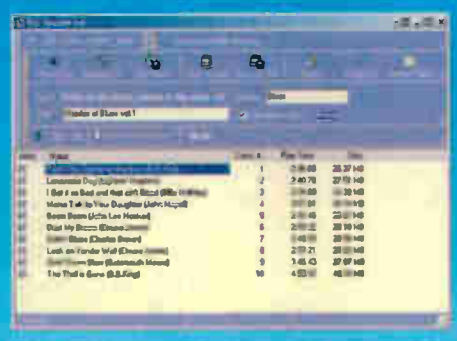
Any and all of our programs are available on our website for download. So install our software and play with it for as long as you want. Once you've decided that it's the software for your station, give us a call or order online.



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WaveCart
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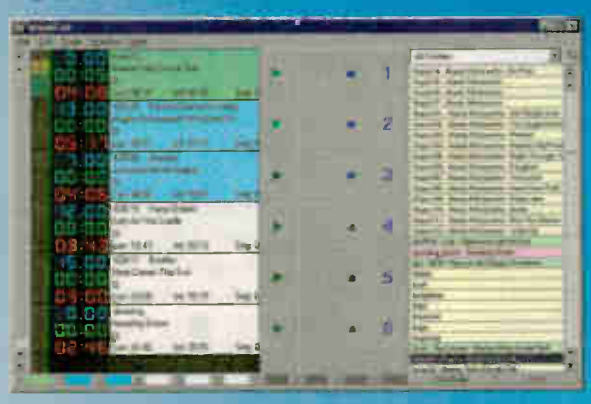
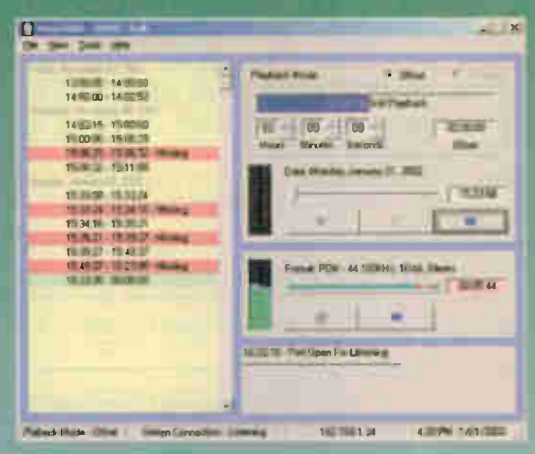


$299

Simian **$1499**
digital automation



TimeShift **$999**
continuous record of audio and tones with time-delay or random-access playback.

WebConnect Pro
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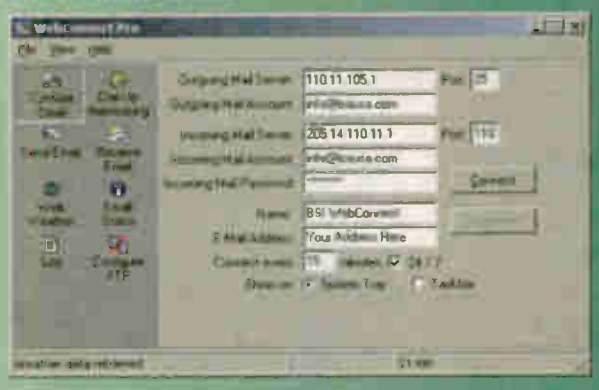

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World Radio History

Arrays Are Esoteric, Misunderstood

by Mario Hieb

Two experts in the area of AM directional systems shared their collective wisdom on this esoteric and often misunderstood subject at the recent NAB convention.

Ron Rackley of du Triel, Lundin & Rackley Inc. and Ben Dawson of Hatfield and Dawson Consulting Engineers conducted the "AM Directional Antenna Essentials" seminar.

Rackley began by describing the basic building blocks of the AM directional array. Several power divider configurations were described with the pros and cons of each explained.

"It's common today to have different type power dividers for each tower," Rackley said. "The type of divider used in a leg is dependent on the power level transmitted through that leg.

"A general rule-of-thumb is that fewer components is better." Fewer components, he said, means less stored energy, which equates to better impedance bandwidth.

Sampling loops or toroids are used to provide a signal sample from each tower to the antenna monitor. It is good practice to locate the sample loop at the current maximum point on the tower.

"Toroids are sometimes used on certain tower types, but are subject to shunt effects," Rackley said.

Looking down the road, the proposed AM IBOC system will raise several considerations for directional arrays.

"Impedance bandwidth will be an issue, sidebands need to be balanced and, like AM stereo, incidental phase modulation is a factor," Rackley said.

Failure modes in AM arrays can be internal or external.

"Internal problems include drifting component values, ground system deterioration and antenna monitoring malfunctions," he said.

Troubleshooting

External factors include seasonal variations, building development, water table changes and structure re-radiation. Large, metal structures near to the array need to be detuned. These include unused array towers, nearby communication and power-line towers.

When troubleshooting a DA system, Rackley advised, "First, check and record antenna monitor parameters, monitor point field strengths and common point impedance."

Always record settings and readings before making changes, and refrain from turning phasor controls as the first remedy.

"A change in one tower only could be a sampling problem, except if it's a reference tower change," Rackley said. "If you have a network failure, you'll see a change in all towers. Study the tower with the largest changes first."

Dawson began his talk by claiming that "30 to 50 percent of arrays are out of tolerance, and usually one or two monitor points or antenna monitor parameters are out of tolerance.

"Some arrays wont make monitor point values and even some licenses have errors in parameters," he continued. "Every array should be periodically inspected at least quarterly; and monitor point measurements should be made quarterly."

The FCC offers a self-inspection document that can be downloaded at *www.fcc.gov/eb/bc-chklsts;* this document is an excellent guide for determining whether your station is in compliance.

Also important: keep the transmitter site clean, prevent plants from growing near the towers; and clean the inside of the transmitter buildings and antenna tuning units regularly.

On the subject of antenna sample systems, repeatability is vital.

"If the sampling system isn't stable, how do you know if the antenna system is?" Dawson asked.

The antenna monitor must be in a clean, dry environment. Use the right connectors with the sampling cabling. If torroids are used for sampling, they must be terminated with the proper resistor.

Lightning often will destroy or degrade these resistors, so if sample readings change, these should be checked.

Monitor points should be selected for long-term stability. The points should be described physically by landmarks, not by coordinates. If a point doesn't measure correctly, take a half-dozen readings along the same radial to see if they have changed also.

Mechanical parts, particularly switching contractors, are a significant source of trouble. RF needs to be interrupted when switched, or the contacts eventually will burn up.

Vibration is another problem. The cycling of the contactor can loosen nuts and bolts; check them occasionally for tightness.

Meter tips

Dawson instructed the audience to remove base current meters and replace them with J-plugs.

"They are no longer required by the FCC and are a source of trouble."

Low-cost LCR meters are helpful in locating damaged components, and LAN TDRs could be used to test sample and feed lines. Desensitized field strength meters can be used to check the ground system and to measure current distribution on towers.

Sometimes a station must operate outside of the parameters allowed by a construction permit or station license. This requires a request for Special Temporary Authorization.

"When filing STA requests with the FCC, be honest and candid with them, giving a detailed explanation as to why the request is required," Dawson said.

Tapes of this session are available from www.mobiletape.com. Click on Technology and follow the prompts for the NAB2002 show to the session "AM Directional Antenna Essentials."

Sidemount FMs

▶ Continued from page 16

produce listener and advertiser complaints, and would not provide the coverage that the FCC assumed and allocated for an omnidirectional FM station.

The elevation patterns in Fig. 7 also show more significant variations than seen for the same array on a tower with a 24-inch face. But as stated earlier, the only really important sector of the elevation pattern as far as most FM receivers are concerned lies from the horizontal plane to ~10 degrees below it.

The elevation patterns of Fig. 7 are quite substantial in this sector, and assuming they stay that way at all other azimuth angles, the large variations present at higher and lower elevation angles may be relatively unimportant — the exception being how the lobes directed toward the ground near the tower base may affect real power density levels there, vs. using perfect elevation patterns as a basis for "radhaz" evaluations. This can be an important component in complying with EPA and safety issues.

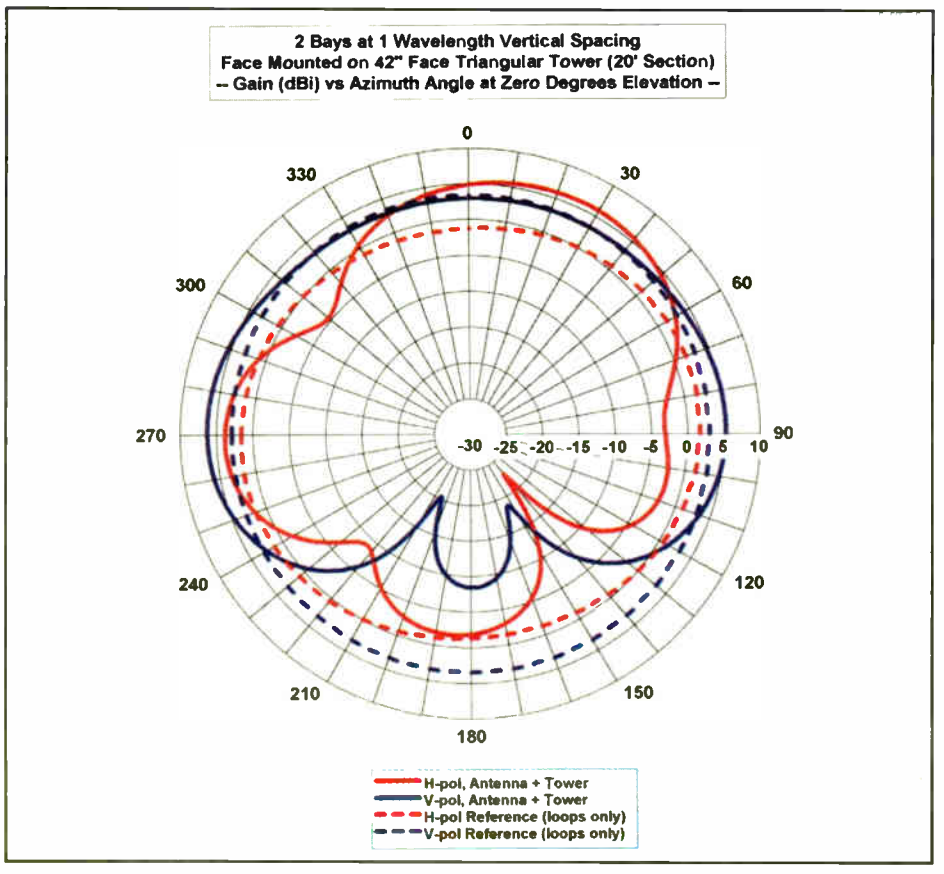

Fig. 6

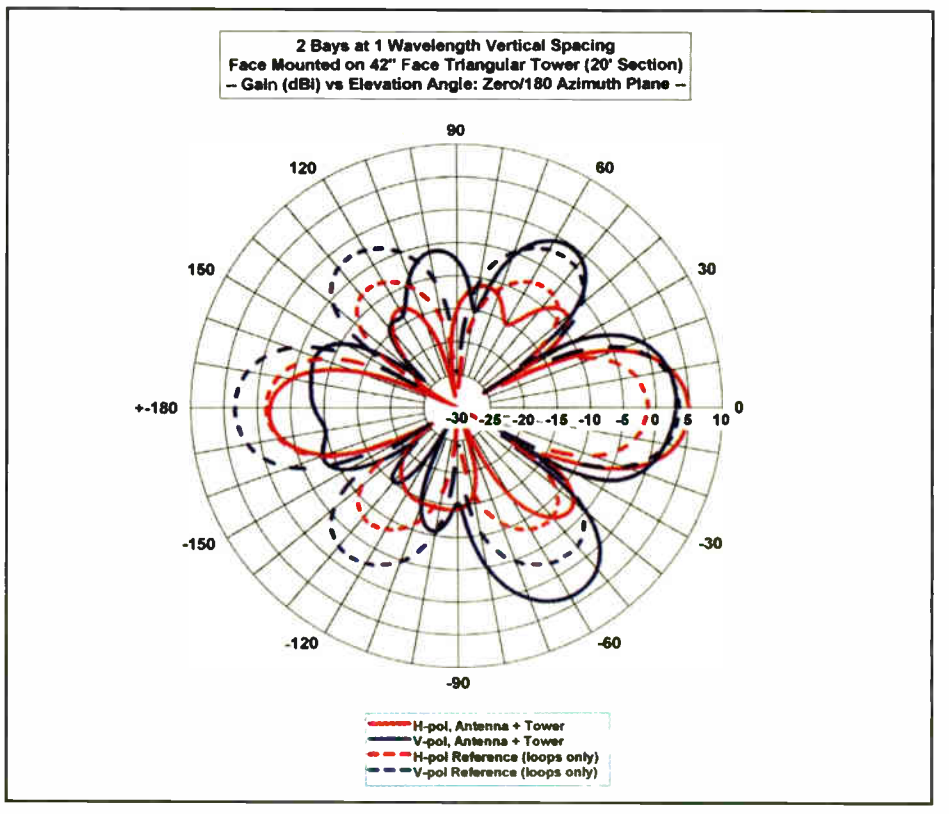

Fig. 7

This research has shown through a computer study the affect on radiation patterns of side-mounting a small FM broadcast antenna on two, simple tower structures. The study supports previous, typical pattern testing and coverage experience for the configurations analyzed.

The patterns are representative of the conditions stated, and will vary widely with tower face width, frequency, mounting configuration (distance and angle off the face or leg), the exact mechanical construction of the tower and its appurtenances (presence and location of ladder, conduits, other antennas, etc), and other factors. Locations and gains of pattern nulls and lobes change rapidly with different conditions. Each case is unique.

This study has illustrated the point that for best overall performance, the real-world patterns of omnidirectional, side-mounted FM antennas should be analyzed and chosen carefully, especially when larger cross-section towers are used. Many antenna manufacturers and consultants can assist in this process, and the benefits can be well worth their effort and cost.

The author is an FM RF system analyst and author of technical papers and software. Reach him via e-mail to rfry@adams.net.

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Pizzi

▶ Continued from page 14

that developed a format to protect those interests' migration into a friendly digital environment.

While this has been a sensible and laudably successful process from the perspective of incumbent commercial broadcasters, for this process to now attempt to take on the attitude of a third-party speculative software developer is disingenuous at best. The $100+ million spent to date on Ibiquity's work was expended primarily as a prophylactic investment by commercial broadcasters to ensure that their passage to the digital world would be made on their own terms.

The success of this endeavor to date is its own reward. To expect additional financial remuneration for such protectionist efforts on the backs of fellow broadcasters (including non-profit brethren) seems excessive.

An FCC representative emphasized that the commission had made no decisions regarding Ibiquity's proposals, nor even whether IBOC would be the approach taken for U.S. digital radio.

Performance

Moving to purely technical assessments, the on-air demonstrations at the PRC were far more successful than those at NAB2002.

Using the signal of NPR member WETA(FM), PRC attendees were offered 20-minute rides in one of Ibiquity's test vehicles in which the analog and digital signals were alternately auditioned on the roads of Washington, while riders watched the video output of a spectrum analyzer tuned to the channel.

The route taken by the demo van was nearly free from multipath effects, but it showed at the very least that the host analog signal was not deleteriously affected by the presence of the IBOC subcarriers. On the other hand, it also indicated to demonstration subjects that there was little perceptible difference on a high-quality FM station between the analog and digital signal quality.

In a related development at the PRC, public radio broadcasters began to realize that they may have backed the wrong horse in the satellite radio marketplace. NPR and Public Radio International both provide news/talk services on Sirius Satellite Radio exclusively.

At the time these deals were drawn up, this seemed like an appropriate choice. In the meantime, however, Sirius's deployment was delayed and concerns about the audio quality of their channels began to circulate among some public broadcasters during service tests.

At the PRC, both Sirius and XM Satellite Radio were demonstrated in side-by-side kiosks (XM also offered mobile demos), and it was obvious that these qualitative concerns were well founded.

Both the news and music channels on Sirius seemed severely impaired with quite obvious coding artifacts (as reported by other listeners in areas were the service already has been commercially launched). Some PRC listeners equated Sirius's subjective audio quality to below that of many streaming Internet audio services.

In contrast, the same listeners considered XM's quality adequate and roughly equivalent to downloaded MP3 files. Given XM's lead in time-to-market and its lower cost ($9.95/month compared to Sirius's $12.95/month), this qualitative difference adds to the growing concern of some public broadcasters that they were blindsided by an improper choice of partners.

Meanwhile, XM representatives at the PRC emphasized that they would welcome the addition of public radio content to their service offerings in the future.

Deeper discussions at the PRC indicated the need to incorporate *standardized* functionality in the auxiliary data elements of IBOC. Representatives from Impulse Radio, the proponent of an auxiliary data service for IBOC, were at the PRC in force, and their presentations were welcomed by most public radio attendees.

Impulse Radio showed that its developments would allow text, graphic and secondary audio (both streaming and on-demand) service to be added to Ibiquity's IBOC service. PRC attendees seemed pleased with the potential, but were concerned that Impulse's contributions must be included in the IBOC standard. Impulse Radio's representatives agreed to the importance of this, but acknowledged that at present this is not assured.

There was broad support for the IBOC specifications to include a scalable auxiliary data standard, which would allow differentiation in receiver product under specified profiles (e.g., text-only, advanced GUI or interactive system with return channel). This implied that broadcast data should be parsable by all of these receiver types (with elements ignored if they could not be displayed), and it should be a standardized yet extensible element of the national IBOC specification.

Impulse

Ibiquity representatives at the PRC indicated that it was their intention to include Impulse Radio's vision in their specification — hopefully this was not just lip service before the public radio audience — but that it would not be seen in the first-generation IBOC receivers that will be presented at CES 2003. Ibiquity's view is that such auxiliary data features would be included in second-generation receivers offered later in 2003 or beyond.

If this process comes to fruition, it bodes well for the prospects if IBOC. As has been duly noted in this column, and confirmed in other venues, early adopters may be interested in IBOC's audio quality improvements, but mainstream audiences will only convert if additional services are offered. Public radio stations will be motivated to provide such content if a universally standardized receiver is available.

Meanwhile, the public radio discussion seemed to conclude that the FCC should adjust the specific commercial radio-friendly elements of Ibiquity's proposal to provide greater flexibility for serving the public interest with the format that is ultimately selected. Only then will IBOC have a hope for real success in the marketplace.

Skip Pizzi is contributing editor of Radio World. RW welcomes other points of view.

MARKET PLACE

StratosAudio Signs Deals With Vendors

StratosAudio has inked deals with Scott Studios and its sister company, Computer Concepts.

StratosAudio makes a technology to allow listeners and mobile phone users to buy music and respond to ads and talk shows while listening to radio. It hopes to bring service to selected stations in the United States and Europe later this year.

The system vendors signed deals "to engage in enabling interactivity with conventional AM/FM radio with the first live installations in place later this year." They will provide real-time program data feeds to StratosAudio and refer broadcast customers.

Dave Scott, president of Scott Studios, said in a statement, "Extending interactivity to conventional radio is a natural extension of services we already support such as ad insertion and streaming. Interactive services for conventional radio allows our customers to stay competitive with alternate broadcast solutions such as satellite."

For information contact StratosAudio in California at (626) 289-0770 or send e-mail to kelly@stratosaudio.com.

Mayah Puts CT-aacPlus to Work

Mayah Communications now is offering CT-aacPlus in its Centauri product family.

CT-aacPlus is a new technology in MPEG-4 audio from Swedish-German company Coding Technologies; it also made headlines recently when XM Satellite Radio and Digital Radio Mondiale each chose it as their coding scheme.

Centauri 3001

Mayah will present CT-aacPlus at bit rates of 24, 48 and 64 kilobits per second in its Centauri 3001 codec and StreamingServer 4001, and will consider using it in other new products, particularly those aimed at analog phone transmission.

CT-aacPlus is built on Advanced Audio Coding, or AAC. It claims a further 30 percent efficiency using Coding Technologies' Spectral Band Replication technology.

For information contact the company in Germany via e-mail to info@mayah.com *or visit* www.mayah.com.

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World Radio History

GM Journal

Radio World — Resource for Business, Programming & Sales — June 19, 2002

Americans Tune To Talk Radio
See Page 27

Neither Results Nor Ratings

Too Good to Be True? Small-Market Broadcasters Enticed by Offer of Low-Cost Research

by Sandy Wells

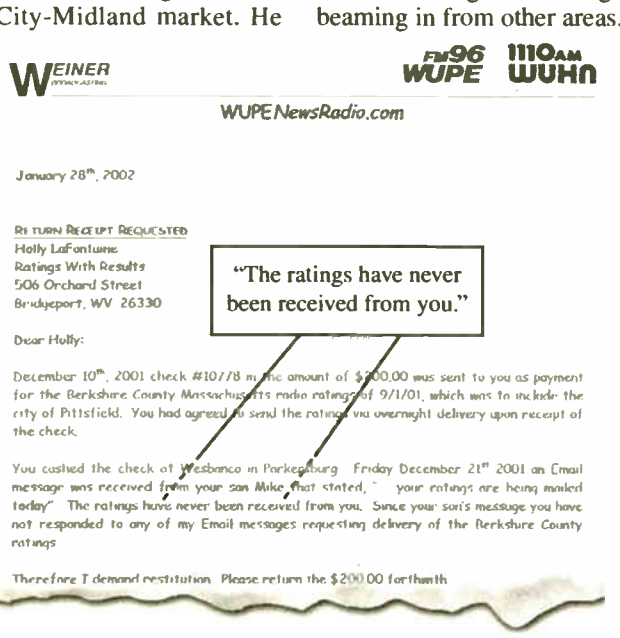
A fax delivered some welcome news to a radio station operator in Mt. Pleasant, Mich., last November.

"Your station is being faxed this sheet because you placed high in diary returns," read the text.

Mike Carey is the owner and general manager of WMMI(AM)/WCGY(FM), a successful small-market combo barely within earshot of the larger, rated Saginaw-Bay City-Midland market. He read the letter with interest and showed it to his PD Dan Bragg.

The two stations serve a population of 50,000 people in Michigan's Isabella and Midland counties. The 3 kW FM serves a menu of light rock off the satellite dish from Jones Network, while the 1 kW AM daytimer provides news/talk featuring Dr. Laura Schlessinger, Rush Limbaugh and the Michigan Talk Network.

The stations compete with a half-dozen local signals and a greater number beaming in from other areas.


WEINER
FM96 WUPE 1110AM WUHN
WUPENewsRadio.com

January 28th, 2002

Return Receipt Requested

Holly LaFontaine
Ratings With Results
506 Orchard Street
Bridgeport, WV 26330

"The ratings have never been received from you."

Dear Holly:

December 10th, 2001 check #10778 in the amount of $200.00 was sent to you as payment for the Berkshire County Massachusetts radio ratings of 9/1/01, which was to include the city of Pittsfield. You had agreed to send the ratings via overnight delivery upon receipt of the check.

You cashed the check at Wesbanco in Parkersburg Friday December 21st 2001 an Email message was received from your son Mike that stated, " your ratings are being mailed today" The ratings have never been received from you. Since your son's message you have not responded to any of my Email messages requesting delivery of the Berkshire County ratings

Therefore I demand restitution. Please return the $200.00 forthwith

Bragg wanted to get a closer look at the research offered by the service, based in Bridgeport, W.Va. He decided to give Ratings With Results a call.

Bragg said he spoke with the owner, Holly Lafontaine.

"I told her, 'Let's subscribe, because Arbitron doesn't serve us.' She said, 'You did great in Isabella County and you also did well in Midland County,'" adding that the faxed pages included a sample of ratings for a five-station market somewhere west of the Mississippi. "Sample only and false ratings," warned a disclaimer above the chart.

Show me the ratings

All Bragg needed was to send a $200 check and the reports would be sent overnight to the station. He sent the money.

Now he says his check cleared, but the ratings never came.

"I called and faxed her for two weeks," said Bragg. "I never heard a word."

Paul Gardner, owner and general manager of KELK(FM) and KLKO(FM), Elko, Nev., is a member of International Broadcasters Idea Bank, a group of about 100 broadcasters in the United States, Canada, Australia and New Zealand.

Ratings With Results and Holly Lafontaine were a topic of discussion at a meeting last year.

"Somebody should buy this service and see what it's all about," Gardner suggested to the group. "Phil Weiner said, 'I'll buy it if someone else will, so we can see if they're the same.'" Weiner is general manager of WUPE(FM) and WUHN(AM) in Pittsfield, Mass.

Gardner said members were skeptical about what Ratings With Results was promising.

"For $200, if you do the math, (Lafontaine) says she sends out 3,500 surveys. Say it's 2 cents per piece of paper minimum and then add the phone calls. Was she using it as a loss-leader to get us in the door? Now we know how. She doesn't do the work!"

See RATINGS, page 27 ▶

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NPR: Will Success Spoil the Mix?

by Carl Lindemann

Commercial radio programmers might envy Jay Kernis' problems. As NPR's senior vice president for programming, Kernis is riding high with skyrocketing ratings.

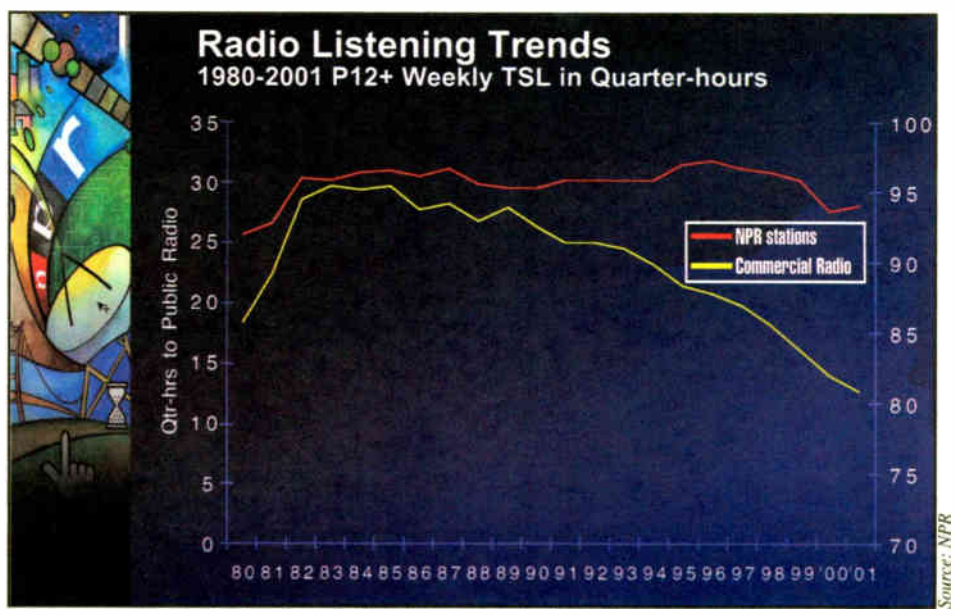
In March, according to Arbitron's nationwide estimates for Fall 2001, NPR announced record audiences, with 19.5 million weekly listeners tuning in to NPR programming on public radio stations each week — a 19-percent increase compared with fall 2000 figures.

Simmering shift

Arbitron's nationwide estimates for fall 2001 showed an average gain of 19 percent for NPR newsmagazines, 32 percent for NPR talk programs and 15 percent for NPR entertainment programs. The problem is, such growth has not been across-the-board. The cume for NPR's classical programs only increased a modest 6 percent. Jazz programming dropped 5 percent.

The disparate numbers reflect a simmering shift in NPR's potpourri of news, culture

See NPR, page 30 ▶



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Ratings

▶ Continued from page 24

Gardner said he sent in his $200 and received nothing after getting the usual promise of overnight delivery.

Weiner mailed $200 for reports on the scenic Berkshire Mountains region of Western Massachusetts covered by his stations.

"I expected to get a report," said Weiner. "(Although) I expected it to be pure garbage, I was surprised to get nothing."

His plan was to report back to the Idea Bank on his findings about this curious enterprise.

"For the price and claims she made, I thought it would be of questionable accuracy."

Lafontaine did not respond to e-mails for this story. Radio World contacted her by phone late one evening; she said Ratings With Results remains in business but would not discuss her company and did not return further calls.

"This is not uncommon," said Michigan Association of Broadcasters President Karole White. "It happens too often in the broadcasting industry. A company will run a flight of ads and then never pay. It then turns out the agency doesn't exist."

Michelle Crist, executive director of the West Virginia Broadcasters Association, said she'd heard reports of up to a dozen or so stations within her state calling or writing with questions about the service.

"They always call because they say it sounds too good to be true," said Crist. "But with the money asked for, they go ahead and take a chance. We tell people we don't know much about them."

While most small-market stations rely on direct selling and face time with local businesses, the curiosity about the size and quality of the audience produces frustration that gnaws at program directors and owners from time to time.

In a pitch letter, Lafontaine claimed to have worked in the radio business since the late 1970s and to have held a job at Arbitron in the early '90s. Arbitron would not confirm or deny whether a woman by that name had worked for the company.

Word of mouth

Mike Gould, president of Eastlan Resources, a research company that serves stations in 70 markets, said he'd heard about the service from the manager at a station he owns in Oregon who reported getting a fax from Lafontaine pitching her service.

For Gould, a service like Lafontaine's was not likely to pass muster with agencies.

"If the ad agencies don't accept the methodology as valid, those customers aren't coming back."

Arbitron does pay some attention to the unrated markets through its annual county surveys.

"Given where their ad dollars come from, ratings are not as big a factor," said Arbitron Vice President of Communications Thom Mocarsky. Even so, he points out that markets below the top 100 tend to need more local information.

Arbitron officials had no comment about Ratings With Results.

Lafontaine seems to have a knack for establishing a rapport with station managers on the phone.

"She sure talked a good game," said Gardner. "She was terrific."

Radio World could not find any stations that have received actual ratings books from Ratings With Results.

On its Web site, the West Virginia/Canton chapter of the Better Business Bureau listed four complaints filed against Ratings With Results since December of 2000. All but one had been resolved.

Michael Paris, president of the West Virginia/Canton chapter of the BBB, said the three resolved cases involved "delivery issues." Although Paris said he was not at liberty to name the complainants, "resolved" status means the consumer says the company did what it had promised to do.

The unresolved case is over a contractual dispute. Paris said that as long a company responds to letters of complaint from the bureau, it is not listed as "unsatisfactory."

The bureau eventually refers a company with an "unsatisfactory" rating to the appropriate attorney general's office.

Lafontaine also claimed in her pitch letter her husband is a translator for the FBI who "speaks 12 languages," suggesting that this ability would facilitate diary interpretation in markets with ethnic populations.

Phil Weiner

Ratings With Results received a mention in the Michigan Association of Broadcasters Legislative Monitor last November.

"The report warned that some members had said they'd receive one report, then did not hear anything more," said the MAB's White. "Fifty percent of our members are in small markets. It appears that that was the target for this service."

For now, the individual stations aren't considering legal action because of the small sums of money involved.

"At $200 a sucker, it would be hard for anyone to pursue it," said Gardner.

Weiner would like some strong action to be taken at some point down the road.

"I'm hoping the West Virginia District Attorney will go after this lady," he said. "Not that I expect to get any money back."

The West Virginia Office of the Attorney General has no complaints on file about Ratings With Results.

"I wanted to put the word out so it wouldn't happen to anyone else," said WMMI/WCGY's Bragg, who said Lafontaine continues to contact stations.

Bragg said his friend Dave Carmine, owner of WKKM(FM) in Harrison, Mich., called her and received a call back.

"However in the middle of their conversation they somehow got disconnected. She has never returned any of his calls. But then, he already knew the story."

Philip Weiner,

My name is Holly Lafontaine . I am the owner of Ratings with Results. Our new ratings book came out 9/03/01. The Survey was taken July - August 2001. It included the following counties: Berkshire (MA) & Surrounding Counties

We phone place the diaries to make sure no one in the media resides there. Next we ask how many people are over the age 12 and if they would participate. We explain the only questions asked pertain to radio. We ask what time they start listening and stop. We ask for the call letters, if they don't know those, the frequency or the slogan of the station. We ask if they are male or female and how old they are or what age group they are in. We also ask for comments as the diaries go back to the stations and will be read by the stations. We send out 3500 diaries per county unless the population for the county is under 10,000 and then we do a percentage. We do not ever ask financial information or ethnic information as I personally feel the diaries will be thrown out or the people will lie. We also have a spring book available as well. Both books are $300 or one for $200. It includes all the counties mentioned above as well as all the diaries xeroxed. I am trying to get new clients as we are a small ratings company. If you need an invoice or would like to see a sample please call me and I can fax you both. The Sample sheet is only of daypart breakdown. We do AQH / CUME and all your diaries returned. The reason you are recieving this letter is your station or stations placed high in returned diaries.

Again, thank you for taking the time out to listen and if your not interested this time maybe next.

My Best!
Holly Lafontaine
Ratings with Results

Scarborough: Nearly a Quarter of Americans Tune In to Talk Radio

A format study from Scarborough Research shows that nearly a quarter (22 percent) of American adults 18-plus listen to news/talk radio.

St. Louis, Milwaukee, Seattle/Tacoma, Boston and Cincinnati have the highest penetration of news/talk listeners.

Statistics show that 52 is the median age of a news/talk listener. Twenty-four percent of news/talk listeners are 45-54 years old. Adults between the ages of 55 and 64 are 47 percent more likely to listen to news/talk. Seniors 65-plus are 50 percent more likely to tune in to the format.

Slightly more than half of news/talk listeners are white collar. Those with post-graduate degrees are 82 percent more likely to tune in than the market average, and 37 percent of people who have a household income of $250,000 or more listen to the news/talk format. More than 80 percent of format listeners own their own home.

"Non-news/talk format stations are now considering their options to provide their listeners with news and information that they had once not offered in the past," stated Howard Goldberg, senior vice president, radio, Scarborough Research.

"This will place an additional emphasis on the news/talk format stations to meet the programming needs of their core listeners."

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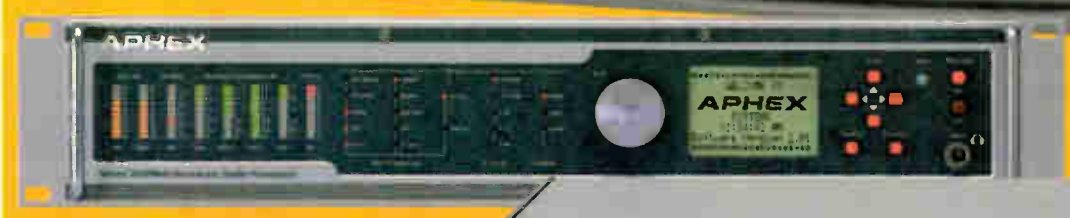

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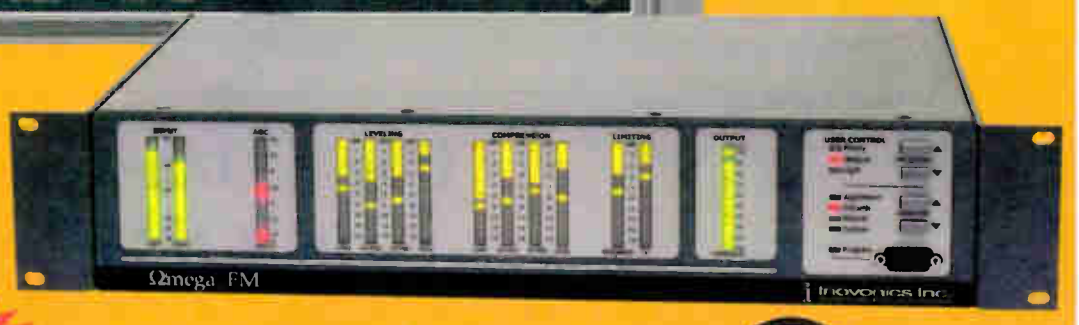

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286A $199.00

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This durable tester accepts XLR, mono and TRS phone (1/4", 1/8", TT), RCA and MIDI. The LED display shows which input pin is connected to which output pin. Separate shield and phantom power LEDs indicate proper shield connection and phantom power presence. The CT100 requires insertion of only one plug and indicates shorts and opens, as well a continuity check. A test tone generator (1 kHz and 440 Hz) is also included. Don't just buy one…at this price buy several!

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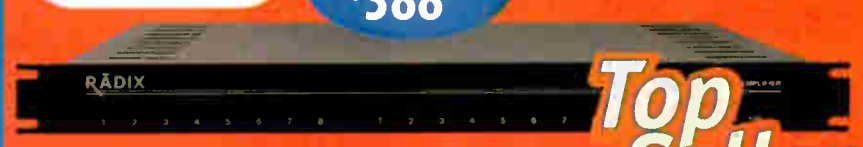
RADIX



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World Radio History

NPR

▶ Continued from page 24

and entertainment programs. Kernis, who started his career at NPR, has returned after a 14-year career as a TV producer for CBS. He is charged with the task of transforming the hodgepodge of programs into a more coherent programming philosophy.

Jay Kernis

"This comes from (NPR's) strategic plan," said Kernis. "Basically, this acknowledges how people use radio. When most people use radio, they go to a particular station expecting a specific kind of programming. When you go to a news station, you expect to find news. By moving the focus from programs to programming, we're trying to achieve greater coherence."

In February, Kernis sent out a memo to precipitate discussion on how to go about implementing this. On April 11, after extensive consultations throughout the public radio system, a reorganization and realignment of cultural programming was announced.

The upshot? Fifteen jobs cut from cultural programming — and a heated debate among employees, critics and other NPR-watchers over whether the organization is shifting emphasis to news/talk and, in doing so, losing sight of its mission.

National stage

"They're letting go of an aspiration that public radio's had for a long time — to be a national stage, to be a place for the exchange of culture," said Steve Rathe, president of Murray Street Productions, the producers of NPR's "Jazz From Lincoln Center."

"Instead of serving our greatest aspirations, they're looking to serve our greatest audiences."

For Rathe, the heart of the matter is a debate between quality and quantity.

"The question is, how do you define the public interest and how do you define the service?" said Rathe. "NPR has said that they're interested in serving more people more often. It's hard to argue with that except to consider other valuable services that NPR provides."

In practical terms, Rathe sees this as backing away from offering actual performances to providing features about such cultural events to enhance news programs.

"They're completely right to enrich the news programming and get the maximum exposure for the cultural stories," said Rathe. "But reportage should not be mistaken for the thing itself."

Particularly disheartening for Rathe is that fact that these changes come as JFLC listenership surges. While other NPR jazz programs have watched their numbers dip, JFLC has seen a 27-percent jump in cume. Despite such success, he expects that JFLC will be cut from NPR's lineup next year.

"It's a tough time for cultural producers," said Rathe. "We're faced with the necessity — and opportunity — to rethink everything we've done.

"It's not entirely bad. We're going to be hearing from audiences. We'll be looking closely at what they want and the way they want it delivered."

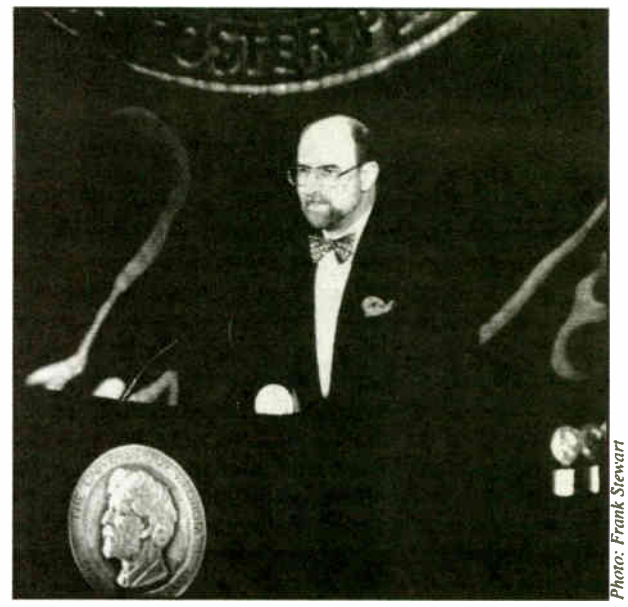

Photo: Frank Stewart

Steve Rathe is shown accepting the Peabody Award in 1998 for 'Jazz From Lincoln Center.' His company, Murray Street, has won two Peabodys as well as a trio of Grammys.

Bruce Drake, NPR's vice president for news and information, says that from the listener's perspective, such changes are a net gain for cultural programming.

"Inside NPR, we see a cultural division and news division," said Drake. "The station surveys showed that this is something of a false dichotomy. When stations think of cultural programming, they think of both performances and interviews with performers. There's no better way to get cultural coverage than getting such features on 'Morning Edition' and 'All Things Considered.' They reach many millions of listeners."

"I don't tell the stations how to program their schedules," said Kernis. "I just hope they find value in what NPR produces and that they purchase it."

Steve Curwood is executive producer of NPR's environmental news program "Living on Earth" and host of the network's "World of Opera." Ironically, he will be departing from "World of Opera" because the show is being expanded from 26 to 52 weeks and the added commitment would take away from his news work.

With his perspective of having a foot in both news and cultural programming, he sees a need for a wider interpretation of NPR's mission, especially given the economic pressures at member stations.

There's nothing in the mission that says we're supposed to do programming that no one hears.

— Jay Kernis

Michael Arnold, director of programming for NPR member station WUNC(FM) and chairman of the Public Radio Program Directors Association, also sees this as a change for the better.

"Many NPR cultural shows may have won awards, but they did very little to truly serve the audience or any art form very well," said Arnold. "Most of them wound up being aired late at night on the weekends on stations. For some reason, very little was done to make sure that these programs actually served an audience. (That's) a horrible waste of production time and talent — particularly for an organization with limited resources."

Kernis believes that much of the criticism comes from a misapprehension of NPR's mission. The call, he says, is to serve, not create listeners.

"I know there is that expectation," said Kernis. "I think we can support a classical music audience. I don't know that we can create a classical music audience. I think that happens in the home, in schools. There's nothing in the mission that says we're supposed to do programming that no one hears."

Moreover, the changes have come at the direction of member stations and the listeners who support them. This is not a direction he's given to NPR's programming but rather one that the system itself is taking.

Carl Lindemann writes frequently about media, new media and technology. E-mail him at carl@cyberscene.com.

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World Radio History

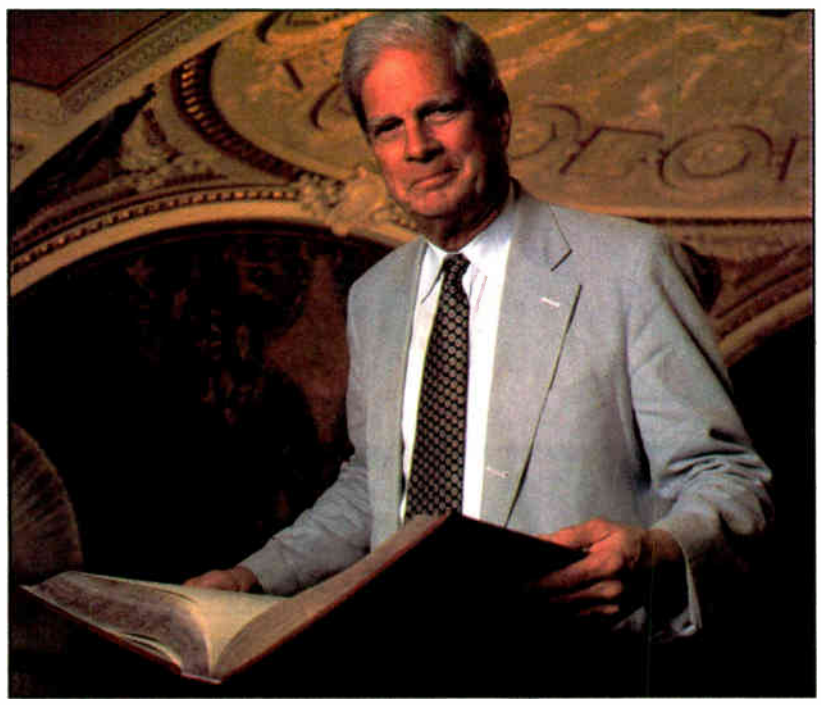
CARP Debate Not Over

by Craig Johnston

Few correctly predicted the action of Dr. James H. Billington, U.S. Librarian of Congress, when he issued a long-awaited announcement regarding the recommended Webcast music copyright provisions on May 21.

Billington rejected the Copyright Arbitration Royalty Panel's report, but did so with no additional information, noting that the governing statute gave him another 30 days — until June 20 — in which to decide what Webcast music copyright provisions should be.

The Librarian's terse statement contained no clues as to which way he was leaning. as of the end of May. Both sides — Webcasters and the recording industry — had appealed the CARP's recommended rates of fourteen-hundredths of one cent per-song, per-listener for Internet-only Webcasts, and seven-hundredths of one cent per song, per listener for terrestrial radio stations Webcasting their same over-the-air program.



Librarian of Congress James Billington

Reax

Typical of the reaction of the broadcasters was a statement from the National Association of Broadcasters' Jeff Baumann, executive vice president for Law and Regulator Policy.

"NAB is pleased the Librarian of Congress has rejected the rates and terms recommended by the Copyright Arbitration Royalty Panel for the use of sound recordings for Webcasting. We are hopeful the Librarian's final determination will result in rates and terms that reflect market reality."

On the flip side, the Recording Industry of America Association reminded everyone the ultimate decision could go either way.

"The Librarian has rejected the arbitration panel's determination, but we do not know why or what decision the Librarian will ultimately make based on the evidence presented," stated Cary Sherman, RIAA president.

"Since both sides appealed the panel's determination, anything is possible. We look forward to the conclusion of this process on June 20, and to the day when artists and labels finally get paid for the use of their music."

Following the CARP's announcement of its recommended provisions in February, Webcasters mounted a massive public relations and lobbying campaign. Their primary message: The proposed copyright fees would bankrupt the industry because they amount to 200 percent of present revenues. The campaign yielded dozens of news articles and editorials, letters to Billington from U.S. representatives, and a hearing in the U.S. Senate.

Some press accounts of the rejection of the CARP report termed it a reprieve for Webcasters. While the rejection did delay the decision on provisions for a month, whatever royalty rates Billington eventually chooses must be paid on music streamed over the Internet retroactive to Oct. 28, 1998, the effective date of the Digital Millennium Copyright Act.

SMW Turnout an Industry Indicator?

by Craig Johnston

If a trade show mirrors its industry, then Streaming Media West, held in Los Angeles in late April, is a sign the streaming media industry is shrinking.

RealNetworks Inc. Chairman and CEO Rob Glaser, in his annual keynote to Streaming Media West, took issue with that notion. The industry saw a financial bubble, and when it burst, the money to send people to trade shows was reduced severely. He suggested everyone note two continuing uptrends in streaming media metrix.

Streaming Media West shared the Los Angeles Convention Center with Internet World Spring.

"Ultimately the number of people consuming our content and the amount of content they are consuming are the key drivers," said Glaser. "We already have come a long way, and we should be proud of that."

Penton Media Inc., owner of the Streaming Media conferences, combined SMW with its Internet World Spring convention to better fill the Los Angeles Convention Center.

Still, the streaming media portion of the exhibit area appeared to be half that of the 2001 SMW in

See SMW, page 36 ▶

World Radio History

Net Music Royalty Battle Rages On

by Craig Johnston

There's an old saying that two things you don't want to watch being made are sausage and laws. This certainly must apply as well to the establishment of copyright royalty provisions for music played over Internet radio.

Last month, Web Watcher admitted he had no idea what the Librarian of Congress would do, but was at least happy an answer was forthcoming in May. I apparently had not read the fine print, because the Librarian, ducking for cover under 17 U.S.C., section 802(f), took an additional month to tell Internet radio what the medicine will be.

At least the one prediction made in this column last month, that all heck would break loose after the Librarian ruled on the CARP recommendations, has begun to come true. Congressman Howard Coble announced his House Subcommittee on Courts, the Internet and Intellectual Property would hold a June 13 hearing to "look at the structure of the CARP process and how it can be reformed." And the week prior to the Librarian's ruling, Sen. Patrick Leahy held a hearing in the Senate on the same subject.

Web Watcher did find at least one person to venture a guess on the next step. One of his most trusted off-the-record sources, code named Deep Thought, suggests broadcasters may not come out too well in the Librarian's ruling.

Uncertain situation

As much as terrestrial broadcasters complained about the seven-hundredths of one cent per song per listener for streaming their programming over the Internet, it was only half of the fourteen-hundredths of one cent per song per listener rate proposed for Internet-only Webstreamers. Deep Thought conjectures that the Librarian may level the rates between the two.

If the music royalty situation for Internet radio is likely to stay up in the air for a while, there is some finality to the fates of Kazaa BV and StreamCast Networks, the file-swapping software companies that had locked horns with the recording industry. Recording companies threw lawyers by the dozen at the companies, blaming the online CD swapping they enabled for the current decline in record sales.

The two companies waved white flags in the courtroom, not admitting they were wrong, but that they were unable to afford to continue to defend themselves against the well-heeled recording companies.

Dan Hess

Timing is everything, of course. Web Watcher notes that almost simultaneously with the surrender of these CD-swap enablers, Jupiter Media Metrix released a report indicating CD swapping may, in fact, be a boon to record sales. Specifically, the study finds that people who use such music download networks to obtain music at no charge over the Internet are more likely to have increased their spending on music than are average online music fans.

Friends and fans

This would seem to say that the recording industry has just squashed two of its best friends. Since the comparison is made to "average online music fans," the study may also be showing that the recording industry is correct in claiming Internet radio is of little help in selling records.

A second Jupiter study may portend well for advertiser-supported Internet radio. It found that more than 69 percent of U.S. consumers would not pay for any "services" on the Internet, including enhanced e-mail, instant messaging or file-sharing capabilities. A slightly smaller number, 63 percent, would not pay for "content," which includes subscription music.

Web Watcher interprets that to mean those two-thirds who say they won't pay could remain firmly in the camp of advertiser-supported Internet radio. There will be plenty of listeners, but the trick will be to convert those listeners into ad dollars and to limit expenses.

See WEB WATCH, page 39 ▶

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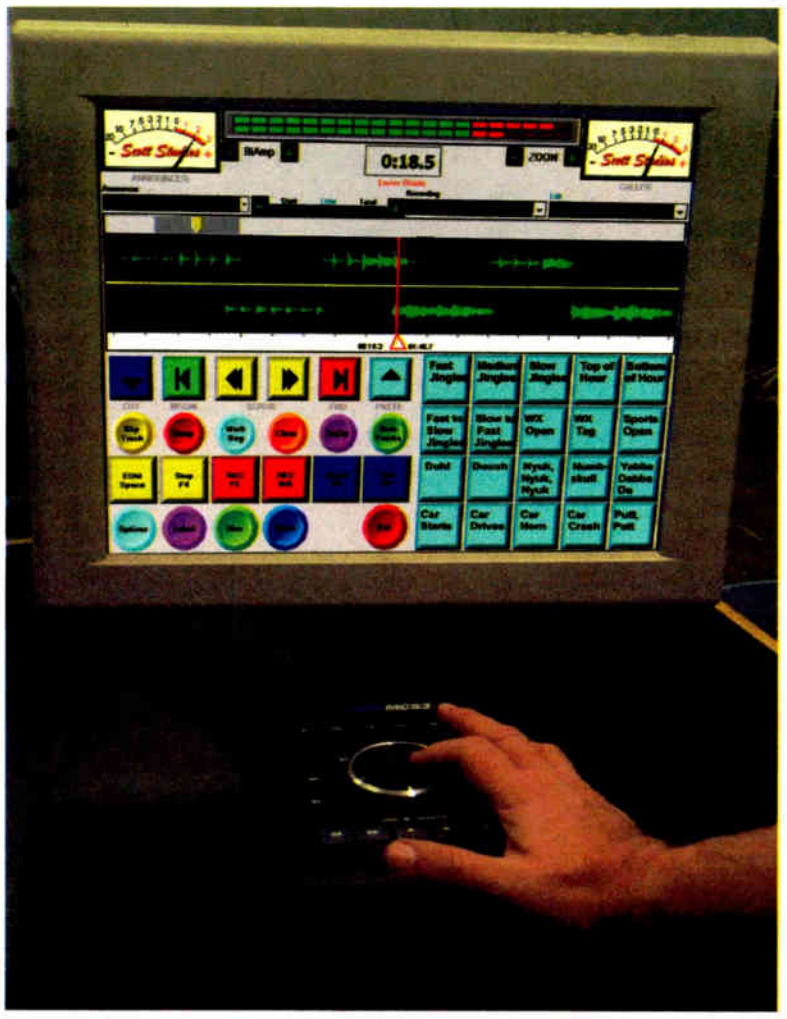

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World Radio History

Streaming's Future: Success, Uncertainty

As CARP Debate Expands and Bandwidth Costs Rise, Experts Look at What's Ahead For the Streaming Radio Industry

by Susan Ashworth

While debate continues over copyright rules and limited advertising dollars, online radio executives at a recent Streaming Media West conference agreed on one thing.

"Internet radio streaming is an opportunity to reinvent radio," said Karl Spangenberg, president and CEO of Lightningcast, which creates technology that can insert targeted advertising into streaming media.

"Streaming for radio broadcasters allows you to get the interactivity of an online product and the targeting aspects of other kinds of advertising."

Combo deal

This combination should bode well for the streaming market, according to Spangenberg and four other panelists speaking at the session "Streaming for Radio Broadcasters" at the April Streaming Media West conference in Los Angeles.

Add to this the surprising initial ruling handed down from the Copyright Arbitration Royalty Panel (CARP) in mid-May, which rejected a proposal requiring online radio streamers to pay a license fee as well as a flat per-song, per-listener fee for online radio broadcasts.

Yet online radio still sees obstacles.

"True, there are some advantages that streaming has over traditional radio, among them are targeting for advertising and interactivity," said session moderator Max Bloom, founder of Integrated Streaming, a Web site development, hosting and encoding company.

Internet radio streaming is an opportunity to reinvent radio.

— Karl Spangenberg
Lightningcast

"But, as traditional broadcasters know, the more people who listen to a transmitted signal, the better. With streaming radio that isn't the case."

In a positive move for the online radio industry, on May 21 CARP moved to reject a proposal that would require online radio streamers to pay a license fee as well as a per-song, per-listener fee. (See story, page 33.)

Suggested royalties included a minimum $500 license fee as well as rates of fourteen-hundreths of one cent per song per listener for Internet-only Webcasts, and seven-hundreths of one cent per song per listener for terrestrial radio stations Webcasting their same over-the-air program.

The radio broadcasting industry had lobbied hard for the rejection of this statute, and in recent weeks received some federal support. Members of the U.S. House of Representatives sent a letter to the Librarian of Congress urging him to consider the goal of the statutory royalty rate; the Senate Judiciary Committee met to discuss issues revolving around the proper royalty rate for Internet radio.

Panelists at Streaming Media West discussed challenges facing their industry. From left are Jay Hayes, CEO of Blue Falcon Networks; David Frerichs, founder of iM Networks; and Karl Spangenberg, president and CEO of Lightningcast.

Yet the the panel had 30 days to propose another set of royalty fees. A final decision was expected by June 20; at press time, it was unclear which way it would go.

"I don't think anyone (in the streaming industry) is saying that they don't want to pay for the music, but they're saying let's at least make it a percentage of the revenue we're earning, as opposed to a flat fee," said David Frerichs, founder of iM Networks, a provider of Internet radio and audio programming solutions.

According to Jay Hayes, CEO of Blue Falcon Networks, a developer of streaming media network software, the initial fee suggestions ignored the enormous end-user demand and potential growth for the online radio industry.

"Online radio is an enormous new vehicle that listeners are demanding, and the (CARP ruling) will create a gigantic economic problem on top of economic problems that already exist."

Added Frerichs, "Everyone recognizes that this is going to be a massive revenue-making industry and everyone is scrambling to own it."

In addition to ongoing concerns over the final CARP ruling, online radio broadcasters have felt the pinch of limited advertising over the last few months. The industry is engaged in a heavy push to increase consumer and corporate knowledge of streaming audio's capabilities.

"The reason that many of these stations aren't profitable is simply because they're not big enough," Frerichs said. "To create a profitable streaming radio business, you need about 10 million listener hours per month.

"(Success right now) has nothing to do with the fact that people aren't paying enough money or the effects of Sept. 11," he said. "It has to do with not yet having a big enough audience."

While premises like "make more revenue than your online costs" may seem like an oversimplification of the path to success, it's important to keep the online "paradox of popularity" in mind, said Hayes.

"As you grow, bandwidth costs grow more, which is the exact opposite of what radio stations are familiar with in the terrestrial world. Therefore, one of the problems (with online radio stations) is that the entire supply chain for bandwidth is an incredibly capital-intensive project to put together."

Cost, copyright concerns

Yet despite concerns over rising bandwidth costs and ongoing copyright issues, online radio has a bright future, the panelists believe. Audience tracking of top 25 stations was up 563 percent since January 2001, "which is a pretty good indication that regardless of stations that come and go on the Internet, the people who are listeners out there are loyal listeners," said Ed Hardy, CEO of MeasureCast, a streaming audience measurement company. When one station shuts down, he said, online audiences are finding other places to listen.

"In fact, listeners during the midday period are significantly higher than we've ever seen in terms of over-the-air radio. That provides a unique advertising vehicle for streaming advertisers because those listeners were not reachable by traditional radio in the past."

Susan Ashworth is former editor of TV Technology and is a contributing technology writer/editor based in San Francisco. Reach her via e-mail to sunjeep@aol.com.

SMW

▶ Continued from page 33

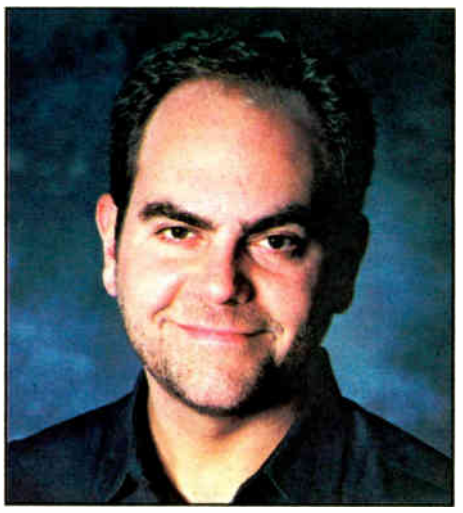
Long Beach, Calif., and less than a quarter that of the 2000 SMW in San Jose. The combined exhibition hall did allow some exhibitors to kill two birds with one stone, and made for easy crossover between the two for attendees.

The 2002 convention contained announcements of leading edge technological leaps and discussion of critical issues for the industry, sometimes to standing-room-only crowds.

Rob Glaser

Penton announced last year the convention was moved to the Los Angeles area for its proximity to Hollywood. While the movie industry was little in evidence at the show, sessions did address Internet radio's ongoing copyright issues and the Interteractive Advertising Bureau presented a day-long series of panels under the title "The Next-Generation Advertising Platform."

Closest to Internet radio's heart was the final day's keynote by Andy Schuon, president and CEO of Pressplay, the subscription music service formed by Sony Music Entertainment and the Universal Music Group.



Pressplay's chief Andy Schuon told SMW attendees that as with terrestrial radio, success in his subscription Internet radio operation depends on programming.

From his prior experience in the radio business and at MTV, Schuon explained that he had learned that the secret to presenting music is programming. He compared Internet radio's challenge to that faced by MTV once the novelty of seeing music videos wore off. "At MTV and VH1, like Pressplay today, it represented a new consumer proposition."

Schuon said the most critical decision made at MTV was to abandon the incremental approach to simply connecting music and TV.

See SMW, page 37 ▶

World Radio History

SMW

▶ Continued from page 36

"When people saw a video they didn't like, they changed the channel," said Schuon. "So we packaged MTV and VH1 with music shows."

"What that did was build shows, smoke and mirrors, long-form programs," he said. "It was all about the programming."

Creativity counts

That is reflected in the charge he's given his staff at Pressplay. "We must be more creative than the next guy, because in the end, it is show business," Schuon said. "We're not a dot-com, we're not a music download site. Out company is built on, and built by, experienced people."

overcoming advertisers' objections to perceived Internet media limitations, including lack of impact, clutter, branding not valued, lack of respect for the CPM model and waning interactive performance.

Those selling advertising sales were encouraged to emphasize that streaming media delivers a desirable audience, is the dominant at-work medium, and is both brand-building and response-driven.

Streaming success stories such as the Britney Spears Pepsi campaign were profiled, noting the 3 million streams accessed over two weeks and the nearly half-million votes cast.

The Streaming Media East conference will be held Oct. 1-4 at the Jacob Javits Center in New York City. It will share the Javits facility with Penton's Internet World Fall.

The combined Streaming Media West and Internet World exhibition floor gave the show a sense of greater mass.

Ultimately the number of people consuming our content and the amount of content they are consuming are the key drivers.

— Rob Glaser
RealNetworks

RealNetworks uses Rob Glaser's annual keynote to make new codec and technology announcements. Glaser took the stage to demonstrate RealVideo 9, which he reported gives a 30-percent performance increase over its predecessor RealVideo 8.

The video, presented on large screens flanking Glaser on the stage, appeared crisp and without compression artifacts. The audio, which thundered throughout the auditorium, was presented in RealAudio Surround, also announced at the show.

Audio improvement

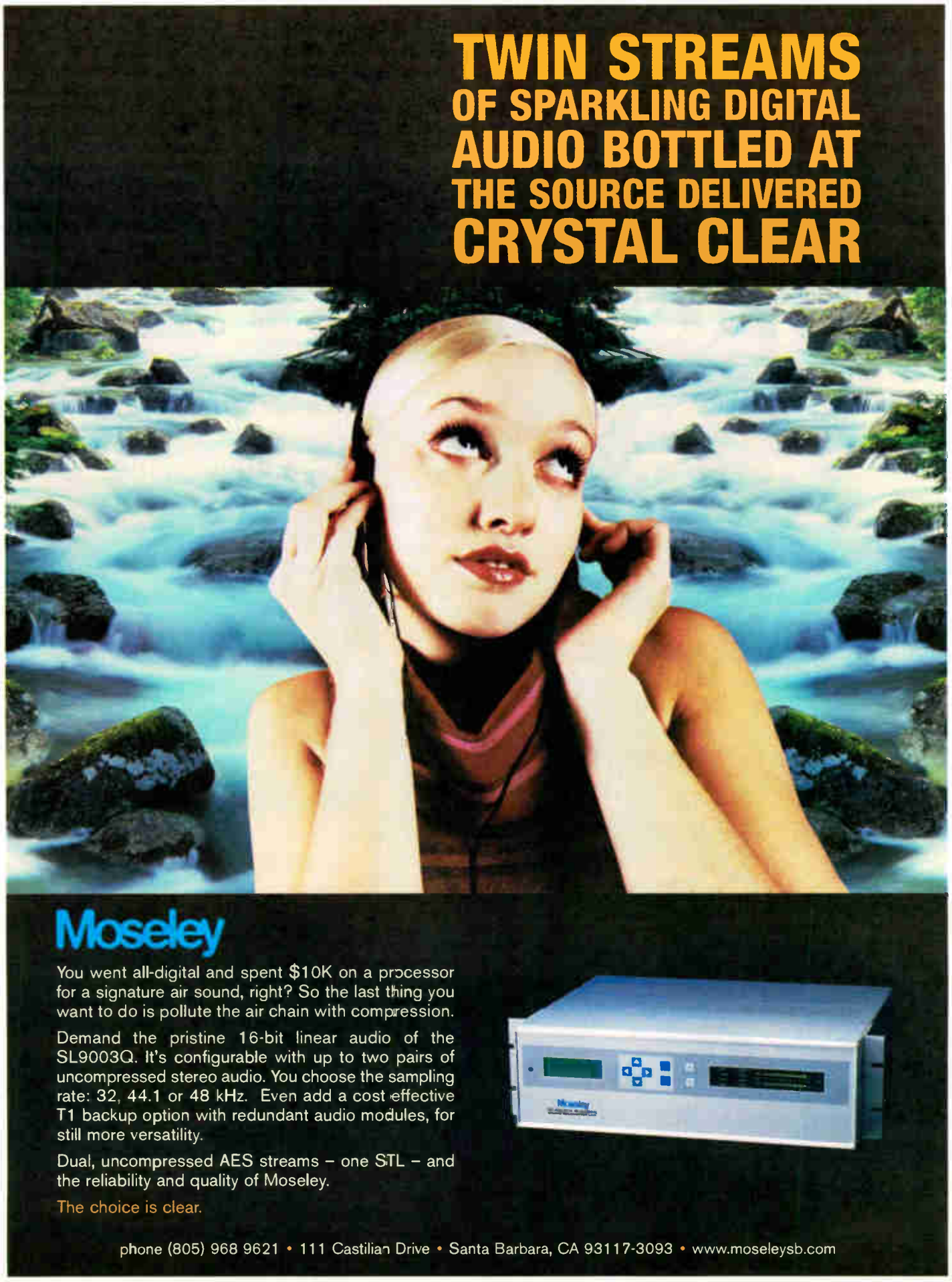
Glaser explained that the improvement to the audio codec has all been dedicated to the addition of the surround material, with quality of the non-surround material remaining at its previous high level.

The other major player in the streaming media codec field, Microsoft, was not an exhibitor and made no announcements at SMW, though it provided several panelists.

Though non-proprietary MPEG-4 is not, today, a streaming format used by Internet radio, it is worth keeping an eye on. A day-long MPEG-4 forum introduced the technology and outlined its uses for streaming. A final panel in the track presented a discussion of the ongoing argument over licensing of MPEG-4, which shows that non-proprietary does not mean free.

The IAB's Interactive Broadcasting Forum echoed the concerns of Internet radio stations struggling to make advertising support their streaming efforts. One telling slide pointed out the grim fact that though Internet use represents 12 percent of all media consumption, Internet ad spending on the Internet represents only 2 percent of total ad spending.

Panelists offered their suggestions on



World Radio History

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World Radio History

Web Watch

▶ Continued from page 34

One key to getting those ad dollars is having a better way of measuring Internet listening and other behavior. In fact, Arbritron Inc.'s Bill Rose, vice president and general manager of Arbitron Webcast Services, told Web Watcher the company's clients asked it for as much.

"(Our customers) are attempting to sell advertising on their Web sites, and often times don't have the information they need to get planners and buyers of Internet advertising enough information for them to make say 'yes, I want to use your Web site,'" Rose said.

He noted that many of the measurement tools available do not differentiate between Web visitation coming from within the market, and visitors coming from elsewhere in the country or around the world.

Bill Rose

The recent Streaming Media West event turned out to be a good place to learn. (See story, page 33.) Web Watcher sat down with David Frerichs, president, chief technical officer and founder of iM Networks, which licenses its iM Tuner technology to Panasonic, Philips Electronics Nv, Creative Technology Ltd. and Acer Inc., among others.

Web Watcher explains how Internet radio stations get on the dial of Internet radio listening devices like this Philips FW/i10.

Partnership

This led Arbitron to partner with online consumer measurement firm comScore Networks Inc. Arbitron will market comScore's localScore product to radio and television stations, newspapers, cable and Internet entertainment sites and portals.

"What we set out to do was build a measurement system which would help us get to the behaviors online, and tie in to offline behaviors that really mattered," said Dan Hess, comScore vice president of industry analysis.

LocalScore uses 1.5 million Internet users who have consented to have their behavior on the Internet tracked by comScore. The aggregated data is available for the 78 largest Designated Market Areas of the country.

"The massive sample size of one and a half million people allows us to get down to these very specific and important groups," said Hess. "By integrating local sales data that's delivered by the U.S. government, we have modeled the interaction between site visiting and the propensity to buy certain products offline."

Web Watcher keeps hearing about non-PC devices that look for all the world like a regular radio, but let listeners tune in to Internet radio stations. Even having seen a few of these devices,

Web Watcher wanted to know what Internet radio operators had to do to get "on the dial."

So how does an Internet radio operator get included in the iM listings? It turns out iM is out there looking for you, and you can sign up with them.

Scouring for stations

Frerichs said iM has a team "scouring" the Internet for Internet stations to be included. But you don't have to wait for them to come to you. "We have a form, and if you know about us, you can come and submit on our Web page to be considered," said Frerichs.

"We build relationships with those providers, from agreements to list, all the way to revenue sharing agreements, depending on the relationship. And then we give them carriage beyond the PC, across all iM radio devices."

So does this mean money out of your pocket? Not according to Frerichs. "Right now our primary relationship is just an agreement to list," he said. "We're building the market up."

Who says Web Watcher isn't out there trying to help you? (Visit *www.imnetworks.com*, and click the Content Providers button.)

Craig Johnston is a Seattle-based Internet and Multimedia developer.

Reach him via e-mail to craig@craigjohnston.com.

CLEAR CHANNEL, VIRGIN RADIO AGAIN TOP MEASURECAST RANKINGS

Clear Channel ranked as the leading Internet radio network in the month of April, according to MeasureCast.

Its 197 AM and FM stations delivered 6.9 million hours of entertainment in April. Radio Free Virgin moved up a notch from the March ratings into second place by streaming 3.3 million hours.

For the second month in a row, Virgin Radio secured the top spot in the monthly MeasureCast Top 50 Internet radio stations ranking. The London-based Webcaster streamed 1.3 million hours of programming to 158,858 people. JazzFM came in second based on hours of programming streamed, but enjoyed the largest audience of any Web radio station measured by MeasureCast.

The New York Times' WQXR(FM) took third place in the April rankings.

Peak Web radio listening levels were marked on Tuesday, April 30, the day before the "Day of Silence" — when many online radio stations protested proposed royalty fees (CARP — see story page 33) by going silent.

THE MEASURECAST TOP 10 INTERNET RADIO NETWORKS
APRIL 2002

Rank	Network	URL	Total TSL[1] (in hours)	Cume Persons[2]
1	Clear Channel Worldwide	*www.clearchannel.com*	6,941,043	826,067
2	Radio Free Virgin	*www.radiofreevirgin.com*	3,263,211	505,251
3	Warp Radio	*www.warpradio.com*	2,861,706	395,940
4	Stream Audio	*www.streamaudio.com*	2,404,397	307,754
5	Virgin Radio	*www.virginradio.co.uk*	1,861,150	270,968
6	Internet Radio Inc.	*www.internetradioinc.com*	1,611,970	485,433
7	SurferNetwork	*www.surfernetwork.com*	1,251,571	125,440
8	Public Interactive	*www.publicinteractive.com*	795,698	149,283
9	New York Times – WQXR	*www.wqxr.com/cgibin/iowa/index.html*	738,208	93,373
10	Standard Broadcasting		654,980	87,191

THE MEASURECAST TOP 10 INTERNET RADIO STATIONS
APRIL 2002

MAR	APR	Station	Format	Owner/Network	URL	Total TSL[1] (in hours)	Cume Persons[2]
1	1	Virgin Radio/1215 AM & 105.8 FM (London, UK)	Hot Adult Contemporary	Virgin Radio New Media	*www.virginradio.co.uk*	1,269,079	158,858
2	2	JazzFM/102.2 FM & 100.4 FM (London)	Jazz	Clear Channel World Wide	*www.jazzfm.com*	1,164,308	224,451
4	3	WQXR-FM/96.3 (New York)	Classical	New York Times	*www.wqxr.com*	738,208	93,373
3	4	KING-FM/98.1 (Seattle)	Classical	Classic Radio Inc. Real Broadcast Networks	*www.king.org*	581,495	66,260
9	5	MEDIAmazing (Internet-only)	Listener Formatted	MEDIAmazing	*www.mediamazing.com*	345,446	166,175
6	6	3WK Undergroundradio (Internet-only)	Alternative Rock	3WK	*www.3wk.com*	305,798	70,844
13	7	KKDA-FM/104.5 (Dallas)	Urban Adult Contemporary	Service Broadcasting	*www.k104fm.com*	297,245	18,619
5	8	KNAC.COM (Internet-only)	Pure Rock	KNAC.COM	*www.knac.com*	294,270	44,462
18	9	WCPE-FM/ 89.7 (Wake Forest, NC)	Classical	Educational Information Corporation	*www.wcpe.org*	251,846	27,280
7	10	WFXZ-FM/93.7 (Wilmington, NC)	Classic Rock	Sea-Comm Media / Warp Radio	*www.937thebone.com*	249,535	21,542

Notes:

1. Total TSL (Total Time Spent Listening) is the total number of hours streamed by the broadcaster in the reported time period.
2. Cume Persons is an estimate of the total number of unique listeners who had one or more listening sessions lasting five minutes or longer during the reported time period. This estimate is derived using an algorithm that takes into account unique media player GUIDs, unique IP addresses, and other variables during the reported time period.

measurecast.

About MeasureCast, Inc.

MeasureCast, Inc. is the first company to provide internet broadcasters, advertisers, and media buyers with true third-party audience size and demographic information with the MeasureCast Streaming Audience Measurement Service™. MeasureCast employs patent-pending Active Event Monitoring™, a unique server-side technology, to record the exact number of streams requested from Internet broadcasters' streaming servers. Accurate, secure reports are available to customers within 24 hours of a webcast via a password protected web site. MeasureCast supports Microsoft Windows Media Technologies, RealNetworks RealSystem servers and other proprietary streaming technologies. MeasureCast products and services are available through its direct sales force, and through Nielsen Media Research as part of a strategic partnership with Nielsen Media Research and NetRatings. MeasureCast issues a weekly MeasureCast Top 25™ ranking of Internet radio broadcasters, a weekly MeasureCast Internet Radio Index™, which tracks the growth of on-line radio listening, and a monthly Top 50 ranking of Internet radio broadcasters. For additional information and a demonstration, visit *www.measurecast.com*. Corporate headquarters is located at 921 SW Washington St., Suite 800, Portland, Oregon 97205.

MLB.COM DEBUTS IN ARBITRON WEBCAST RATINGS

Ranking at No. 5 in the Arbitron Webcast ratings, the MLB.com network made its appearance in the top-10 April numbers (not shown).

Baseball's service was a hit, with 1.2 million aggregate tuning hours (ATH), the total of hours that listeners tune to a given channel or combination of channels.

Live365 continued its run in the top spot with 8.4 million ATH. Clear Channel Worldwide ranked No. 2 and ChainCast/StreamAudio took third.

Among individual channels, Virgin Radio maintained its top channel ratings spot with 1.1 million ATH. JazzFM U.K. trailed right behind, and WQXR(FM) ranked No. 3.

ARBITRON WEBCAST CHANNEL TOP 10 RATINGS REPORT
APRIL 2002

Channel	URL (Corporate Affiliate)	Format	ATH
1 Virgin Radio	*www.virginradio.co.uk* (SMG plc)	Hot Adult Contemporary	1,080,600
2 Jazz FM UK	*www.jazzfm.com* (Clear Channel Worldwide)	Jazz	861,600
3 WQXR-FM*	*www.wqxr.com* (New York Times)	Classical	692,500
4 KING-FM	*www.king.org* (Classic Radio, Inc.)	Classical	611,600
5 KPLU - Jazz	*www.kplu.org* (Pacific Lutheran University)	Jazz	399,100
6 Radio Margaritaville	*www.radiomargaritaville.com* (Radio Margaritaville, LLC)	Adult Contemporary	344,100
7 MEDIAmazing	*www.mediaamazing.com* (MEDIAmazing)	Variety	316,900
8 KNAC.COM	*www.knac.com* (KNAC.COM)	Album Oriented Rock	260,700
9 WHTZ-FM	*www.z100.com* (Clear Channel Worldwide)	Contemporary Hit Radio	256,900
10 Ministry of Sound	*www.ministryofsound.com* (Ministry of Sound)	Electronica	237,800

* Arbitron has been informed that it received only partial data for this channel/station during the reported period. Please contact the webcaster for further information.

ARBITRON

World Radio History

How to avoid paying for free speech.

The BD960 Broadcast Delay.

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World Radio History

Studio Sessions

Rescuing Audio From Wax & Wire
Page 45

PRODUCT EVALUATION

Sony CDR-W66 Covers All the Bases

by Daniel Kumin

I'll admit that I have never been a big fan of stand-alone CD burners; I can use my Mac's CD-R/RW drive for data as well as music (at up to 8x) — and it enables me to use blank discs costing pennies instead of dollars.

Pause for purchase

Now, however, Sony has given me reason to reconsider.

Its CDR-W66 stand-alone pro burner adds enough unique functionality — and lets you use low-cost "data" CD-R/RW blanks — to give it legitimate studio presence: balanced as well as unbalanced I/O, digital I/O in both consumer S/PDIF and pro AES/EBU formats, and onboard DSP to perform EQ and dynamics processing to your burned discs.

Visually, the CDR-W66 does not look all that different from preceding Sony CD players and recorders; but a few pro touches make all the difference.

Most obvious are its removable rack ears and its vaguely military look, with a gray drab matte finish and large, bright-white (and comparatively legible) lettering. I found the multifunction knob and keys used for most setup and user-parameter functions easy and clear, and I liked the fact that most "consumer-feature" pushbuttons (shuffle play, programming, repeat and so on) are grouped a bit apart under the disc tray.

Flip the slim recorder around, however, and you will never confuse it with any home-audio design.

The rear panel is crowded with jacks: analog inputs and outputs in both unbalanced (RCA) and balanced (XLR) formats (the latter even include level trims), plus three digital I/O choices among optical or coaxial S/PDIF and AES/EBU on XLRs.

There is also word sync on a BNC jack, parallel and serial ports for wired remote and external control, an eight-pin DIN "duplicate" jack, used to daisy-chain a second CDR-W66 unit to enable double-speed dubbing and a mini jack for Sony's consumer Control-S intercomponent-control format.

Although the infrared remote handset supplied with the CDR-W66 looks to be a consumer-audio design, it has all the functions onboard, including one unusually handy aspect in its direct access keys for tracks numbered all the way up to 25.

Nevertheless, many professional studio installations might instead choose to put the IR handset away and make up a wired remote to connect to the deck's "parallel input/output" (not a parallel port *per se*; it is on a female nine-pin jack). The CDR-W66 executes most of its basic functions in response to grounding the appropriate pins.

Functionally, I quite liked the unit, in large part because it covers the bases of both a home audio CD-recorder, and those I demand of a pro design.

For example, the recorder can be set to "synchro-record" in response to incoming signal (either analog or digital), and set track markers automatically, either by codes in the original (digital input), or via sensing of "silent" intervals in the original recording — you can even adjust the threshold sensitivity of this.

Sony naturally includes all the usual CD player options: programming, "shuffle-play" and so on. (The Sony also can do radio-style autopause, automatically entering the Pause mode after every track.)

Displays & dubs

It also both displays and dubs CD-Text subcode data, and permits you to enter your own data for your own recordings, whatever their source. There is even a front-panel mini-DIN jack for a PC-standard keyboard to make the task of data entry far less onerous.

More to the point, however, are the W66's pro features, which are legion. Its sample rate converter can sync and record digital signals at any sampling frequency between 32 and 96 kHz; you can choose to use this to reclock 44.1 kHz sources or to bypass the converter for direct input copying.

Even more unusual, the W66 allows you to use an external clock source, using either its word clock BNC jack, or locking to the signal present at its AES/EBU digital input. Another neat touch is the W66's ability to display the values shown by its relatively coarse bar-graph meters in a much more precise, numeric form: By employing the Check key you can bring up a numeric display of left/right meter readings, with 0.5 dB precision — very cool.

Making recordings on the W66 required no great study or skills; I

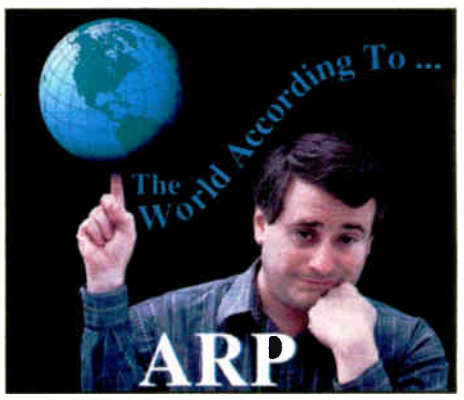
See SONY, page 48 ▶

That Old Program I Never Wrote

by Alan R. Peterson

A major home cleanup effort recently brought out a pile of computer books I had not cracked in a little while.

Once I broke open the seal on the box, I was actually a little surprised by the complexity of the subject matter I was perusing at that point. There were books on Linux, how to program in C+, Visual Basic, A+ certification — topics that would lull the jitteriest caffeine-infused jock right off to Dreamland.



The text provided me with enough of a background to intelligently deliver a panel talk at NAB2000 about alternative operating systems for radio automation. It left me wanting to understand it all a little better. But there was a more concrete reason I had dropped those bucks on those books.

Only a short time ago, I was once interested in creating my own PC cart emulator.

See ARP, page 43 ▶

World Radio History

PRODUCT GUIDE

Handle Up to 96 Channels With Apache Patchbay

The Apache professional lightpipe patchbay from Frontier Design Group has 12 optical inputs and 12 optical outputs, providing the capability of routing up to 96 channels of audio.

One can connect four 24-channel devices, such as a hard-disk recorder, computer, digital mixer and a multiple-ADAT tape system, and route audio among the four units in any combination without disconnecting and repatching cables.

Apache reclocks incoming ADAT signals for trouble-free patching at all resolutions. It can route two-channel TOSLink (optical S/PDIF) signals, which use the same connectors and cables as eight-channel lightpipe (optical ADAT) signals.

The unit has one-button access to each input and output. LCD hunting or menu-scrolling is not necessary. The front panel indicates which optical ports are active and a scanning status mode provides continuous information about current patches.

Twelve user-defined setups can be stored on Apache and recalled. Apache can be controlled from a computer, permitting the user to save and recall patches and complete setups via MIDI system-exclusive commands.

The 1RU Apache has an IEC power connector and is 110/220-V compatible. Resolutions of 16 to 24 bits are supported.

Price: $799.

For more information from Frontier Design Group, contact the company in Hew Hampshire at (603) 448-6283, e-mail infro@frontierdesign.com *or visit* www.frontierdesign.com.

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World Radio History

ARP

▶ Continued from page 41

Frankly, there is seemingly less of a need for me to pursue this task now than there was before.

Cart replacement computers are everywhere, with software ranging from the $199 Stinger hotkey program from BSI to the colorful turquoise-toned SpotMax from BTSG, right down to the DigiLink Free for, well, *free*.

Almost every automation bundle out there today includes some kind of cart wall or audio event array. The OMT QuicPix, Scott Studios' SS32, Enco's DADpro32 all have banks of buttons to kick desired audio into play when desired.

Many teeth

A big grin to the RCS Master Control system for including cute little graphics and smiley faces on the buttons.

A check of *radio411.com* or *hitsquad.com* reveals plenty of shareware WAV and MPEG playback programs that would be right at home in a radio studio. Here, private programmers dish up their own cart-style playback systems at hobbyist prices.

With so many programs available, you might wonder why on earth would I want to reinvent the wheel and add another cart emulator to the pile? Especially since now all I would have to do is just write a layer that directly addresses the Microsoft audio player already in Windows.

I guess I had my own ideas about how a cart replacement program should behave and look.

Maybe I'm just being silly (who, *moi*?), but the first thing I'd like a cart emulator to do is resemble an *actual* cart deck.

Many such programs boast a "cart-like" appearance, which is seldom little more than a rectangular box with some rectangular slots where the WAV file titles are loaded.

BSI founder and retired boss-man Ron Burley made this happen some years back when he unveiled his "Cart Machine" shareware program for Windows 3.1. It worked great, but programmers since then have not ventured far beyond this very basic layout.

New broadcasters now coming on the scene have never had actual hands-on experience with any kind of genuine cart deck. For them, the notion of playing audio off a computer by clicking on-screen icons is accepted without comment. After all, what would they know about cart machines?

As for me, I would really like to have an accurate on-screen image of one of the old clunkers. That means *skins*.

For the uninitiated, "skinning" means overlaying a customized or otherwise creative graphic image over an existing on-screen object. Prime examples can be found at *nullsoft.com*, the outfit that distributes the versatile Winamp media player.

One of my favorite skins is the printed circuit board overlay that can be placed on top of the Web Jockey automation program. See Fig. 1.

Fig. 1: A very slick example of 'skinning' is this layout found on Web Jockey, a radio automation program distributed by LPB Communications.

Such an image adds nothing to a program's audio quality, but does provide a grin factor and makes it pleasant to work with.

The first criteria for the cart emulator I never wrote was that it could be skinned — that I could overlay some type of artwork to lend the appearance of a classic cart deck we have all used before.

Playing the skins game

My first choice of skins would be the old ITC Delta III triple-decker.

It is getting difficult to find pictures of the old classics at a studio or on the Web these days, and I truly wish I could show you a shot of this marvelous old favorite. But because most of us know well what this unit looks like — complete with lop-sided decals for each slot and a gummy area beneath slot No. 3 where some memo used to be — it is not much of a stretch to recall one in your mind.

To one side of the player, I would have a "cart rack" which would contain the entire inventory of audio for the station. When an audio file would be dragged from the rack into a slot, the Windows cursor would actually be a little animated cart icon.

Sure, this looks goofy in print, but admit it — the idea sounds like fun, doesn't it?

My second choice of skins would have been a trio of Tapecaster X-700 units lined up on a rickety wooden shelf.

Pictures of this old deck also are hard to come by, but many readers will remember it fondly. These great old decks had simple yellow start and stop buttons, a big black knob on the front panel, heavy steel construction and a nifty white Eject button above the Play key.

My version would have had an animated cartridge spit out the front slot, with the accompanying clatter of one striking the floor emanating from the console cue speaker.

Just for that vintage ambiance (and for the general hell of it), I would also have had the cue speaker periodically make grinding and whining noises, such as those from a failing motor or a dried bearing.

Patching and potting

A special feature I first saw in the music program Reason (from Propellerhead Software) lets you double-click on the screen and allow a virtual equipment rack to flip around, showing the patching arrangements between modules.

I think I would also have done this to reveal patching, trim pot levels and enable deck-to-deck sequencing between cart players.

I think I also would have added a pile of dust bunnies, paperclips and a lost pen or two — just like what is found behind real cart machines.

Lest you believe my ambitious project was to be totally frivolous, I also wanted it to be a functional piece of on-air gear. That meant serious features.

For years, I have fielded calls from listeners asking me about a telephone number or address they heard in a spot. This happens to me still to this day at WAVA(FM).

In the old days, we would tape a second label to the top of the cart with such information. My virtual cart player design would instead allow a user to right-click on a cart and bring up such a "second label," avoiding the need to play a spot all the way through to obtain a phone number.

Today's BWF Cart Chunk standard certainly resolves such situations, as almost anything can be included in a text field that may be called up. My original concept did not begin to address how to associate such an information field with a WAV file, as I never cultivated enough programming chops to pull it off.

I also wanted to set up a little relay tree to stick out of the game port (Game port! Now I'm *really* showing my age!) to flash an overhead light and flag the jock when an audio event was five seconds away from ending — again, just as on an actual cart machine array.

That last feature is totally unnecessary today. With most radio shows no longer done in linear time, a jock warning light is about as important to have as a second appendix.

Naaahh ...

I never had any major expectations as to marketing such a cart-replacement program. The fact I never gave it a project name should tell you that. And the fact that I basically gave away the operator's manual just now should suggest I will never get to it.

So the computer books remain for me to perhaps one day resume my reading, maybe to understand our little silicon friends all the better.

In the meantime, should someone reading this find the time and inspiration to pick up the ball and actually come up with a workable product as described — cart deck skins and all — you are welcome to do so.

I don't want a dime for your hard work. Just remember me in the Help>About menu as, "From an idea by Alan Peterson."

Radio thanks you, and I thank you.

Alan Peterson can be reached via e-mail to alanpeterson@earthlink.net.

A jock warning light is about as important to have today as a second appendix.

Seeking Radio Nightmares

We've all had them: the dreaded radio nightmare. You're an engineer who suddenly has no tools except bubble gum and baling wire. You're the jock with no arms ordered to pot up his mic. You're an anchor whose copy flies out the window and is left with nothing but dead air.

Radio World wants to hear about your wacko radio dreams for an upcoming story. Send ideas to *srae@imaspub.com*.

Digital Rapids Selects Supplier

Digital Rapids Corp. has chosen the Crystal Group to supply its rackmount and desktop computing platforms. Digital Rapids is a developer of hardware and software used in the production and distribution of streaming media content from traditional broadcast sources.

The Crystal CS 200 1U rackmount chassis will be part of the Digital Rapids Stream Forge product line. The CS 200 offers batch digitizing and encoding.

For more information from Digital Rapids contact the company in Ontario, Canada at (908) 884-8028 or visit www.digitalrapids.ca.

For more information from Crystal Group contact the company in Iowa at (319) 378-1636 or visit www.crystalpc.com.

World Radio History

Products & Services SHOWCASE

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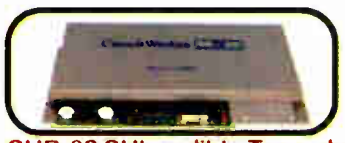

The SUB-03 SUbaudible Tone decoder

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PSC-II


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World Radio History

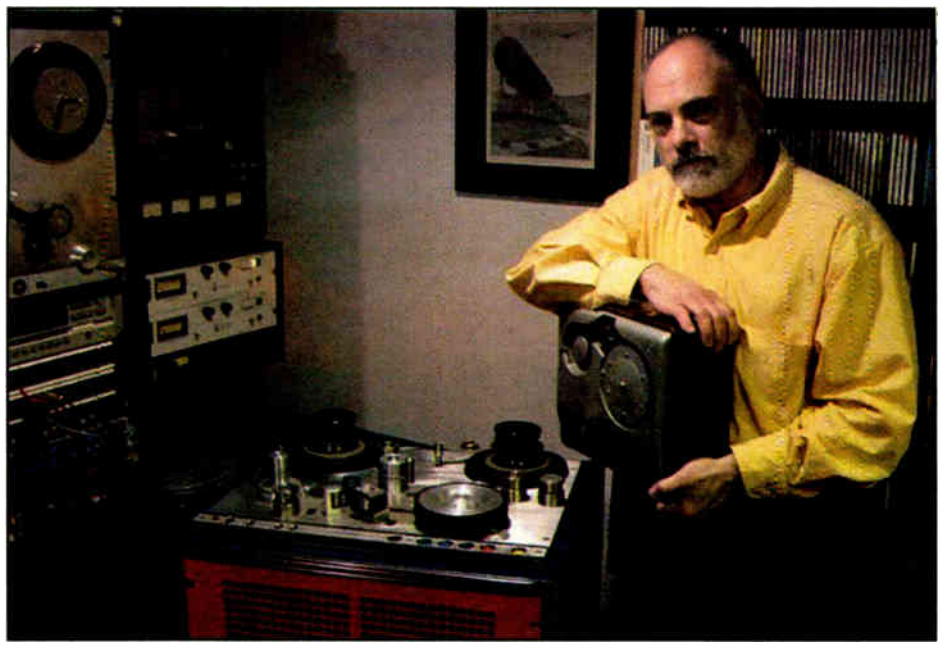
Wax & Wire Audio Lives on in N.Y.

by Ty Ford

If you are very fortunate, somewhere in a back closet, attic or basement you may run into a box of spools of wire and cylinders of wax.

In their day, wire and cylinder recorders were used mostly by the rich and the U.S. government. Because there were not a lot of these expensive machines around to begin with, these rare recordings are now of interest from an historical perspective.

Rescuing the audio is no easy feat. That is where Art Shifrin (*www.shifrin.net*) comes in. He has had a long and varied career in the professional electronics industry and has a passion for rescuing lost sounds.



Art Shifrin is shown with an original Webcor RMA 375 next to his Ampex 440.

The guy to go to

That passion has burned him a niche as the "go-to guy" for wire and wax cylinder recording retrieval.

In the early 1980s, Shifrin built wax cylinder players for the Swedish Radio Corp. in Stockholm for recordings it had, some of which, Shifrin said, were recorded as early as 1890.

While he was there, he discovered 28 Edison Kinetophone synchronous audio film soundtrack cylinders from 1913.

"There I was in Stockholm with these enormous cylinders, 10 inches long and 4 inches in diameter, blue celluloid on a plastic core," Shifrin said. "The experts had been saying that in 1896 there was a coin-operated device you looked through with ear tubes for hearing the sound, but blue celluloid was not used by Edison until 1913."

Shifrin's find got the attention of Edison Labs in West Orange, N.J., which had no information on any of the blue celluloid cylinders.

Shifrin persisted, asking if the museum had any business correspondence that might refer to Kinetophone.

Bingo! Out spilled thousands of pieces of paper. Apparently, sound and picture were shot at the same time, just like today. A belt drive between the camera and Kinetophone kept the picture and sound in sync. A similar belt and projector was used to sync the sound in the theaters for playback.

There may be only four dozen Kinetophone cylinders surviving around the world and about a dozen reels of film that correspond to those cylinders."

Shifrin began working with Shure and Stanton stereo cartridges with custom styli made by Expert Stylus in England.

"I put them on a Rabco tangential phono arm to track audio on the wax cylinders," said Shifrin. He sold one of his machines to the Rogers and Hammerstein Archives at the New York Public Library. The Swedish Radio Corp. bought another.

The third one was sold to a member of the wealthy Getty family, who had a large opera library on cylinders. The surviving Kinetophone cylinders include Andrew Carnegie reading from his book "The Gospel of Wealth" and another, circa 1909, of Mayor William J. Gaynor of New York City.

A universal playback machine was no easy feat because various companies created different formats. Shifrin said concert cylinders marketed by Edison, Pathe, Columbia and Lambert were 5 inches in diameter by 4 inches long. A Standard was 2 inches in diameter and about 4 inches long. Shifrin noted that in 1900, one cylinder cost $8 — what some people earned in one week.

In 1981 Shifrin's day job was selling professional video equipment for Ampex in New York and the Northeast United States.

"I got to know Pete Hammar, who had been hired as a consultant to put together the Ampex Museum of magnetic recording. Ampex had an extraordinary collection of early magnetic recorders," said Shifrin.

"Hammar was personally responsible for rescuing the Ampex archives in Colorado Springs, Colo."

Shifrin also spent some time in Redwood City, Calif., with Ampex.

Harold Layer, now a retired San Francisco Bay Area professor, had been collecting wire recorders; salvaging them from garbage bins. He loaned his collection to the Ampex Museum in Redwood City.

The people at the museum packed it up when they closed down and moved it to Colorado Springs. The collection now is at Stanford University due to the efforts of Pete Hammar.

Shifrin said he, Hammar and a couple of engineers thought there had to be a better way to make them sound better.

"We thought of using a good tape transport converted for the special purpose of playing wire," Shifrin said. "Don Ososke, who was making calibration tapes, insisted the Ampex ATR100 would be best because it was a servo-based system.

"I had a Webcor machine from which I took a tap from the playback head and made some line outputs. By 1998, I had joined VidiPax in New York, a video restoration company. The owner and founder, Jim Lindner, asked me to join the company because of my experience with audio restoration."

By then, Ampex had closed its museum, and the machines made their way to Lindner at VidiPax. After some persuasion, Shifrin convinced Lindner to develop a new wire machine.

"At that point," Shifrin said, "the best wire recorder/player in the United States was a 1946 Magnecord with a 600-ohm balanced I/O. It was called the 'The SD1,' which stood for 'Super Duper First Product.'

"The SD1, unlike other wire recorders, had a 1-inch to 1.5-inch diameter wooden capstan. Wood was a good choice because a metal shaft would resonate and wood gripped the wire better."

In 2000 Shifrin, by then working freelance, went back to the idea of using an Ampex ATR100.

Friction controls speed

"Because the ATR100 uses a servo motor, it can run at any speed, but you need an enormous capstan to get enough surface to grip the wire and that wheel would have to rotate very slowly. Charles Neuscheler, a brilliant machinist on Long Island accomplished that for me."

ATR100s are expensive, so Shifrin finally settled on an Ampex 440.

"We ended up with an approximately 6-inch diameter aluminum disc with a rubber tire running at an RPM that would yield 24 ips," Shifrin said. "Wire machines typically ran at 24 ips and sometimes at 48 ips. The newly designed capstan provides enough friction to control the speed."

According to Shifrin, the crinkling sounds usually heard on wire recordings — caused by the rippled wire making poor contact with the head — do not occur on his machine because the captsan overcomes the necessarily high holdback tension needed to straighten out the wire as it passes over the head.

Shifrin said there are high-frequency limitations on wire recordings because the wire spins on its axis, so the azimuth constantly shifts.

"Twenty-four ips was a good compromise for voice recording, especially for things like recording cockpit chatter in airplanes.

"Don Mozely, a CBS pool reporter, was sent to Bikini Atoll to cover the testing on the Atomic Bomb during the summer of 1946. Last year he provided me with that precious spool of wire, recorded at 48 ips, of Vice Admiral (W.H.P.) Blandy talking to the reporter about what the tests would show.

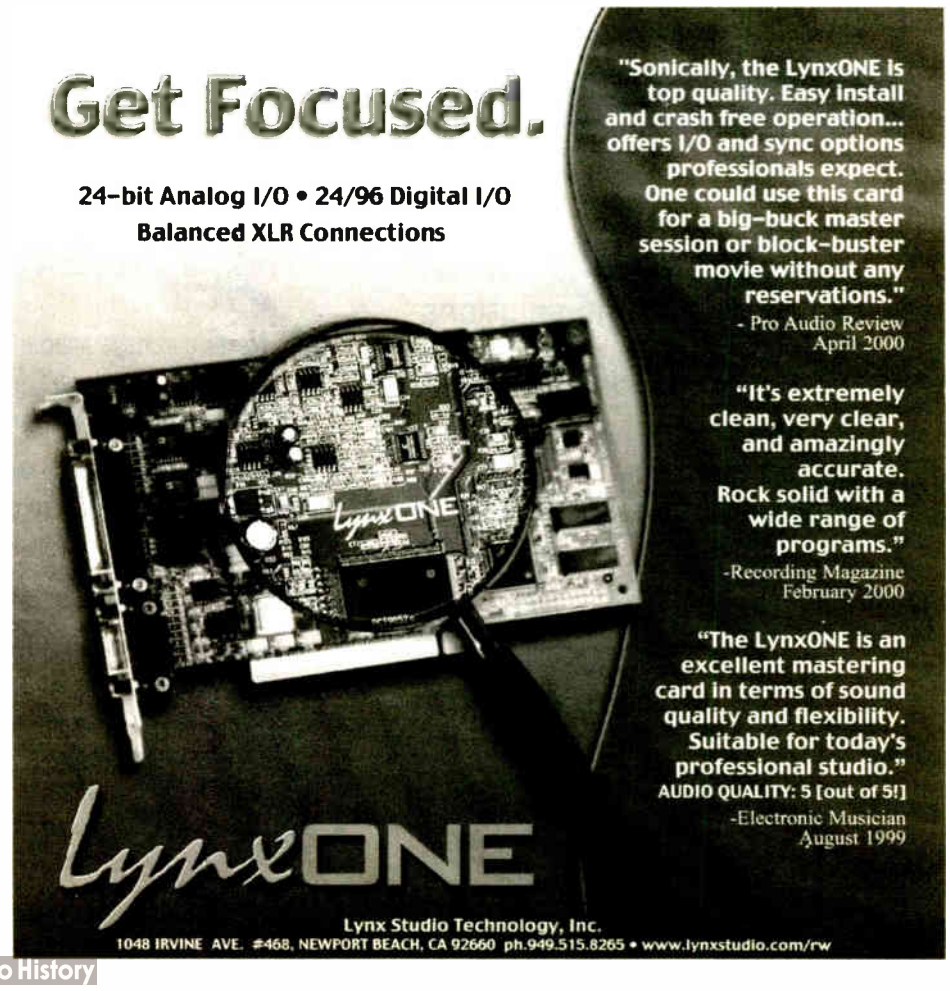
"The Navy had the wire recorder and let the reporter use it," Shifrin said. "According to Mozely, Blandy later got reamed by Truman for talking about the project to the press and, as a result, Blandy failed to get to sent up to Chief of Staff. I have an excerpt from that recording on my Web site, *www.shifrin.net*."

Shifrin also has restored a late 1940 recording of folksinger Woody Guthrie in concert in New Jersey.

"There are no other known concert recordings of Guthrie. Jorge Arevelo and Marge Guthrie brought the spools over; the spools contained 80 minutes of sound. The 24 ips fidelity is amazing because the guy's equipment was obviously working right that night. Wire recorders can sound surprisingly good and I am still in search of lost recordings."

Art Shifrin can be contacted in New York at (718) 464 7076 or via e-mail to goldens2@shifrin.net.

Ty Ford's Web site is www.jagunet.com/~tford. *Visit for voiceover samples and audio equipment reviews.*



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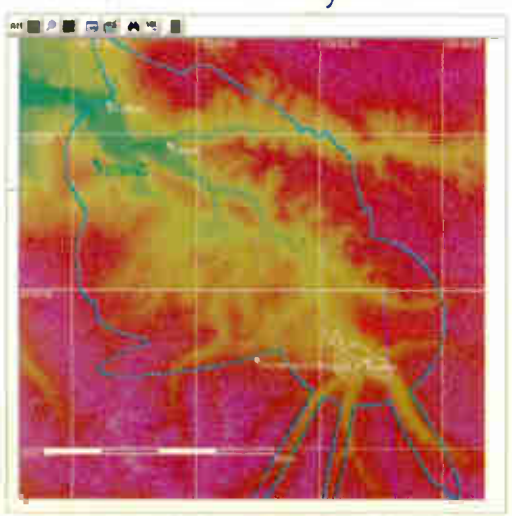

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World Radio History

APT, Mayah Forge Market Agreement

In Germany during the AES convention, Munich-based Mayah Communications and Belfast's Audio Processing Technology announced a licensing deal that the companies hope will make it easier for broadcasters to use audio codecs.

APT has agreed to supply Mayah with its apt-X data compression algorithm. Mayah will incorporate apt-X into products that transmit compressed audio over terrestrial and Internet transmission chains in the broadcast and telemarketing markets.

The agreement is the first time APT has licensed its technology at full-bandwidth audio to another company supplying ISDN and X.21 data interfaces. The deal gives Mayah access to apt-X, Enhanced apt-X and MUCAS, APT's bonding algorithm.

Mayah President and Founder Detlef Wiese at AES in Munich

According to Jon McClintock, commercial director at APT, "We recognize that releasing a full bandwidth version will significantly increase market penetration for its apt-X technology. There is a strong requirement for a low delay, nondestructive algorithm in the broadcast industry, a requirement that apt-X readily fulfils."

In a related announcement, Mayah has agreed to provide two of its models as OEM products to APT. The WorldNet Chicago, based on a Centauri 3001, and the WorldNet Tokyo, which is based on a Centauri 3000, were introduced at the AES.

Detlef Wiese, founder and president of Mayah, stated, "We believe in a strong partnership with APT. Time-to-market is important with new technologies. A simultaneous worldwide presence by distribution and strategic partnerships will help speed products to market."

For more information from APT contact the company in Northern Ireland at +44-28-9037-1110 or visit www.aptx.com. *For more information from Mayah, contact the company in Germany at +49-811-551-745 or* visit www.mayah.com.

News Updates Every Business Day

RW Online

http://www.rwonline.com

Associated Broadcast Group Streamlines Creative Process

Los Angeles-based Associated Broadcast Group recently began offering broadcast, production, syndication and creative services to the broadcast and entertainment markets.

According to CEO Marty Miller, the business of broadcasting is evolving as fast as the technology.

"With consolidations and mergers, the ever-shorter list of major station owners must streamline their creative and production departments. Resources are at a premium, and companies often find that in-house staff and facilities must be supplemented with outsourcing," said Miller.

This is where Associated Broadcast Group sees its niche, servicing clients in the United States and abroad.

The group's services include syndication, broadcast and infomercial production, single commercials and campaigns.

"Our services are very aggressive and we're encouraged by the results we've achieved for our clients," Miller said.

For information call the company in California at (888) 772-8224, e-mail abglosangeles@aol.com *or visit* www.associatedbroadcastgroup.com.

Marty Miller

Enter to win one of 26 great prizes in Radio World's reader appreciation contest giveaway!

Dear *Radio World* Reader: Last year, many of the greatest names in our industry teamed up with *Radio World* for a year-long sweepstakes extravaganza that resulted in almost $50,000 in prizes given away. Due to the overwhelming response from you, we've decided to do it all again in 2002 as a way of showing our appreciation to our loyal readers.

Throughout 2002, *Radio World* will conduct 26 random drawings. Prizes and winners will be announced in every issue of Radio World. ***That's 26 chances to win!***

2002 Radio World READERS' CHOICE Sweepstakes

To enter the contest you need to complete these three easy steps:

1. Go to our Web site: www.rwonline.com
2. Click the Readers' Choice icon on our home page.
3. Follow the instructions and fill out the electronic entry form — *that's it, you're done!*

This is your chance to participate in our Readers' Choice program and win great prizes from these fine *Radio World* supporters:

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Contest Rules: To enter the drawing, simply register online at www.rwonline.com sweeps. 26 drawings will be held throughout the year. Contest registration expires Dec. 4, 2002. Final contest prize announcement on Jan. 1, 2003. One prize per winner. All contestants MUST reside in the United States and have a valid mailing address. Winners should receive prizes within 30 days of notification; however, actual delivery time may vary and is not guaranteed by IMAS Publishing. Federal, state and local tax laws may apply to prizes and are the sole responsibility of the winner. Employees and affiliates of IMAS Publishing are not eligible.

World Radio History

Sony

▶ Continued from page 41

found the machine quick and easy to grasp. I should mention again that the Sony does not require high-priced, tariff-applied "For Music Recording" blanks, but worked just fine with whatever data disc CD-Rs and CD-RWs I had on hand.

Honor system

Of course, as befits any "pro" CD burner, the Sony makes SCMS purely an honor system: You may set the copy-bit on discs you record (or copy) to Prerecorded or Inhibit status — the latter is what a second-generation dub of a commercial disc would normally carry, or "permit," enabling free copying on burners that correctly follow the standard.

I am afraid I have less to say about the W66's sound than you might expect — and this is always good news. Digital dubs of CDs were indistinguishable from the sources, even when played on the original machine.

A little more surprisingly, I found CD copies that I made via analog connection to be virtually as transparent — other than a scant increase in background noise, really audible only on headphones — as long as I was careful about maintaining good record levels while avoiding overs. (It is worth noting that my usual reference CD player is also a Sony — its top ES model from nearly 10 years ago, but still one of the best-sounding units I have encountered.)

My studio is strictly a 16-bit shop, so I was not able to try the Sony's Super Bit-Mapping capabilities with extended word-length material; but based on a few experiences with SBM at other sites, and with Sony's own SBM CD productions from back catalog recordings, I would be willing to bet that this would prove a valuable feature.

As noted, when recording 44.1 kHz sources, the Sony can pass the bitstream through directly or can process and reclock the signal through its SBM digital filter. I dubbed a couple of snippets of an acoustic guitar-and-voice stereo master with which I am extremely familiar from my digital mixer to the Sony, both ways.

In general, I preferred the nondirect dubs — those using the SBM filter — to the 44.1kHz direct dubs. They were not exactly quieter *per se*, but I did sense — barely — a smoother, less-grainy quality overall. Very interesting.

The W66's onboard limiter and EQ worked pretty much as expected. The recorder's DSP tone-shaping worked just fine, and did not appear to impinge on signal integrity. Even most home studios today will have access to DSP EQ and limiting that are at least as flexible as those incorporated into the Sony.

Onboard convenience

I suspect that most users would stick with these when mastering down to CD, preferring the familiar, but it is handy to have these functions onboard the burner, for situations away from home, or when the "big rig" is not available or not worth the bother of booting up.

The limiter sounded good, too: quite transparent and artifact-free when "softening" analog source recordings I tried with deliberately overbaked levels. Sony's manual claims, "Limiter soft clipping is an effect resembling saturation on a tape recorder ..." I do not think the CDR-W66's 2:1 limiting is going to replace anybody's favorite tube/optical limiter in the mastering chain, but it is a useful tool.

In the end, I wound up liking Sony's pro CD recorder a good deal. I expect I would still use my Mac-based burner for churning out quick-and-dirty refs, casual copies of my own stuff, or car trip compilations — all at up to 8x real time.

But if called upon to send a demo to the A&R guy at Evil-Empire Records Ltd., I would definitely use the CDR-W66; it might just sound better and I would want to exploit every potential edge, real or imagined, available to me.

This is a rather nice piece of gear: well-conceived, very well-executed and fairly priced. If you already have an audio burner in use, you probably don't literally need one, but if you do not, or if you are due for an upgrade, Sony's got your number.

Daniel Kumin, a musician and composer, is a contributor to Pro Audio Review *and contributing technical editor for* Sound and Vision *magazine.*

Review Setup

Pioneer DV38A DVD Player (Source); B&K Components AVR307 Amplifier; Snell Acoustics K5 Monitors

Product Capsule:
Sony CDR-W66 Compact Disc Recorder

Thumbs Up
- ✓ Super Bit Mapping and DSP processes
- ✓ 24-bit A/D-D/A; 32-48 kHz sample rates
- ✓ Can use inexpensive data-grade CD-R/RWs
- ✓ Supports CD-Text; PC keyboard input for text entry

Thumbs Down
- ✓ Consumer-style wireless remote (but wired-remote RS-232 nine-pin)

Price: $1,275

Contact Sony Broadcast and Professional Products at (800) 686-7669 or visit www.sony.com/professional.

PRODUCT GUIDE

Omnia Audio Processor For Audio Mastering Studios

Omnia Audio recently introduced a line of audio processors for audio mastering studios.

The Omnia-6cd mastering processor is a multiband processor based on the Omnia-6fm. It uses a final limiter design that eliminates processor-induced aliasing distortion. The company says it provides precise peak control so that mastering can be done at 0 dBfs.

According to Telos Systems President Frank Foti, this Omnia was developed as a result of a trend in recording studio mastering practices.

"About three years ago, we began noticing that CDs arriving at radio stations had been predistorted in production or mastering to increase their apparent loudness."

This practice, he said, is counter-productive. "Broadcast audio processors react to predistorted CDs exactly the same way they react to accidentally clipped material: They exaggerate the distortion. The end result is more grunge, not more loudness."

With the Omnia-6cd, harmonic energy from the clipping process is controlled and managed in the final limiter's filtering process.

For more information from Omnia, a Telos Co., call (216) 241-7225, e-mail info@telos-systems.com *or visit* www.omniaaudio.com.

AudioControl Releases Anniversary Analyzer

As part of its 25th anniversary, AudioControl Industrial released a limited edition of the SA-3052 real-time spectrum analyzer.

The Anniversary Edition SA-3052 features dramatic cosmetics, most notably 300 blue LEDs. Tom Walker, president of AudioControl, said that when the company started, blue LEDs were not available. Nor, he contends, was there an easy-to-use, reliable and affordable real-time analyzer on the market.

AudioControl Industrial develops components, measuring equipment, signal processors and multizone amplifiers.

The Anniversary Edition SA-3052 costs $1,559 and is available for purchase.

For more information from AudioControl Industrial contact the company in Washington state at (425) 775-8461 or visit www.audiocontrol.com.

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Hughes & Kettner tubeman pre-amp, $150, very little use. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

AMPLIFIERS

Want to Buy

McIntosh C-20 stereo preamplifier. Mike Stosich, Esoteric Sound, 4813 Wallbank Ave, Downers Grove IL 60515. 708-431-4560.

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ANTENNAS/ TOWERS/CABLES

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Dielectric 3-5/8" motorized four port coaxial switch . Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

Cablewave transmission line, 3-1/8", 500', with three patches, on spool & in good shape. Mike Raley, Bible Bdctg Network, 8030 Arrowridge Blvd, Charlotte NC 28273. 704-523-5555.

Collins 37CP-12 12 bay FM antenna w/radomes, in use with 3/8" line, approximately 400', $5000. Dwight Morgan, 1360 E Sherwood Dr, Grand Junction CO 81501. 970-241-9230.

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ERI SHP-4AC large element, 4-bay, C-pol, 39KW, tuned to 99.1, available in July, $6000. Ron Habegger, WAWZ, 14 Chapel Dr, Zarephath NJ 08890. 732-469-0991.

Utility 520 AMFM 446' AM tower in use but moving to new site, $10,000. Dwight Morgan, 1360 E Sherwood Dr, Grand Junction CO 81501. 970-241-9230.

AUDIO PRODUCTION

Want to Sell

Four channel mike mixer, 3 Lo-Z, one Hi-Z with bridging input. Dual monitor phone jacks. Complete in carrying case with cables; Magnasync, never used, $500. Excellent for remote or production console. John Robinson, WMSK, 270-389-1500 or JB Crawley, 270-465-5762.

AUTOMATION EQUIPMENT

Want to Sell

Computer Concepts DCS (3) automation computers. Each is a 486 class unit with 9g SCSI drive, DA & APTX audio cards, network card & all software. Novell server also available, if needed. $1500 ea. Arthur Morris, KSWM, 126 S Jefferson St, Aurora MO 65605. 417-678-0216 or email: art@magiccircleradio.com.

AXS automation system including production room & on-air computers, monitors & Broadcast Tools 8-channel stereo switcher for satellite control, $7500. Bruce Campbell, KORQ, 915-673-5289.

CART MACHINES

Want to Sell

Broadcast Electronics 10 spot, never used. Includes manual, $800/BO. J Lalino, WLAL, 319 Rt 29, Middleville NY 13406. 315-891-3110.

Beaucart stereo play, 4 units, $75 each or $250/all. J Lalino, WLAL, 319 State Rt 29, Middleville NY 13406. 315-891-3110.

Dynamax CTR-33, 3 decks, 2 play, 1 record, excellent condition with manual, $500/BO. J Lalino, WLAL, 319 State Rt 29, Middleville NY 13406. 315-891-3110.

Spotmaster Cart Winder with clock, like new, $150/BO. J Lalino, WLAL, 319 State Rt 29, Middleville NY 13406. 315-891-3110.

Want to Buy

ITC Delta, single or triple deck, mono or stereo w/3 tones. Prefer ones with Jones plugs for remote connections & must be working. Bob Sassaman, WNIR, Box 2170, Akron OH 44309. 330-673-2323.

Manual for Audicord R/P stereo 526, spare parts & used carts. G.P. Brefini, GPMJ Broadcast, 12 Bailey St, Foxboro MA 02035. 508-543-0158 or email: gpmjbcast@aol.com.

CD PLAYERS

Want to Sell

Denon DN-961FA drawer loading CD player, $695. 877-722-1031.

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CONSOLES

Want to Sell

Arrakis 12000, 28 mainframe, 3 yrs old, includes 10 line, 2 mic modules. Worked fine before minor water spill. Monitors sizzle, switches pop. Great for parts or may be an easy fix, BO. Barry Armstrong, WRXT, Box 20065, Roanoke VA 24018. 434-237-9798.

Arrakis 150 SC 6-channel stereo console, $450. Bruce Campbell, KORQ, 915-673-5289.

Autogram 10-channel audio console with telephone punch down block, attached to wiring, $1500. Bruce Campbell, KORQ, 915-673-5289.

Want to Buy

Western Electric 25B. Paying up to $10,000 for this console & other WE amps, speakers & mics. James Phillips, WOOO, POB 438, Paulding OH 45879. 419-782-8592.

Input line amplifier cards for a Radio Systems ESA-10 console. Will consider purchasing an old ESA-10 console for parts. Brian Walsh, GBC Media, Warsaw IN. 574-372-3064 or email: cowcountry@kconline.com.

FURNITURE

Want to Buy

Digitech DSP-256XL digital multi-effects processor/reverb/delay 100 presets 100 user presets, $175; dbx 166 2 channel gated limiter compressor, like new, $200/BO. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

LIMITERS/AUDIO PROCESSING

Want to Sell

Orban 8100A & XT chassis, good working cond, BO. James Phillips, WOOO, POB 438, Paulding OH 45879. 419-782-8592.

Orban 8100A/ST studio chassis, 2 available, $495 & $550. 877-722-1031.

Telos Omnia Toolvox mic processors, 3 available, new in box, $995. 877-722-1031.

Want to Buy

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST, 972-271-7625.

EV644 with shockmount & cable, very nice, $200. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

MICROPHONES

Want to Sell

Electro-Voice 642 boom mic cardline. Never used, includes case, $600/BO. J Lalino, WLAL, 319 State Rt 29, Middleville NY 13406. 315-891-3110.

Want to Buy

RCA 77-DX, 44-BX, KU-3A's, WE-639's, On-Air & recording lights wanted, top dollar paid! 615-352-3456, FAX: 615-352-1922. E-mail: billbryantmgmt@yahoo.com.

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 972-271-7625.

RCA 44 & 77 mics & RCA on air light. Highest price paid. James Phillips, WOOO, POB 438, Paulding OH 45879. 419-782-8592.

Motorola TA-42 input & output terminals, T&R 2-25 amp fuses, 1-15 amp fuse, $25. Will Dougherty, WLD, Music Valley Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

SAMS Project Studio Blueprint by Greg Galluccio, 236 pages; The Studio Business Book by Jim Mandrell, 335 pages, $25/both. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

Switchcraft A3F XLR 3 pin female plugs, new, $3C. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

Two boxes (19 total) of new motors. Oriental motor, Japan S-301 motors, 7.5W 115V 1500/1800 rpm, $25/all. Will Dougherty, WLD, Music Valley, Rt 1, Box 1548, Mill Spring MO 63952. 573-998-2681.

MISCELLANEOUS

Want to Sell

ROTRON BLOWERS AND PLATE BLOCKERS, new & rebuilt for Elcom, Harris, CCA, CSI, McMartin, Goodrich Ent. 11435 Manderson St. Omaha, NE 68164 402 493 1886 FAX 402 493 6821

Honeywell Med. Intensity strobe model KG 225. Good for spare parts, $5000. Mike Raley, Bible Bdctg Network, 8030 Arrowridge Blvd, Charlotte NC 28273. 704-523-5555.

Telos 100 Delta digital phone hybrids, 8 available, 1 year factory warranty, $895. 877-722-1031.

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Want to Buy

RF amp meter, reading 0-1.5 amps or slightly higher, new or used, size or mfg not important. William Boyer, WMOP, 3349 NE 28 Ave, Ocala FL 34479. 352-629-5147.

MONITORS

Want to Sell

Used Mod Monitors, McMartin & Belar. Many to choose from, tuned & calibrated on your frequency, full guaranteed. Goodrich Ent. 402-493-1886.

Want to Buy

Potomac Instruments AM19 (204), 4 tower, dual mode day & night. David Senzio, WWJQ, 5658 143rd Ave, Holland MI 49423. 616-394-1260.

RECORDERS

Want to Sell

Otari MX 50 (7) & 5050 (5) for light production work. Great shape, $100 a piece, as is; Revox r-r, $75 each, as is; Tascam BR 20, $100 as is; Audicord cart machines, R/P rebuilt, as is, $200 each. Mike Raley, Bible Bdctg Network, 8030 Arrowridge Blvd, Charlotte NC 28273. 704-523-5555.

Tascam 32B, like new, used only 5 hrs, $850/BO. J Lalino, WLAL, 319 Rt 29, Middleville NY 13406. 315-891-3110.

Otari MX-5050 r-r in desk top case, $650. Bruce Campbell, KORQ, 915-673-5289.

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Comtech Uplink Dishes (2), one mobile; SSE C-band transceiver, (2) PLL LNB's, (2) CM701 modems, (2) DAC 400 encoders, (10) ABR Comstream digital receivers. Great condition, $45K/BO. Bruce Hale, 804-745-0300.

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TAPES/CARTS/ REELS/CD's

Want to Sell

Used carts, 50 cents each; new carts, $2 each. J Lalino, WLAL, 319 Rt 29 Middleville NY 13406. 315-891-3110.

Various metal 10.5" reels with tape, some without, plastic reels with tape. Metal, $5; Plastic, $2 +shpg. Don Niccom, KBIM Radio, 1301 N. Main, Roswell NM 88201. 505-623-9100.

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Want to Sell

AEL FM-25-KE 25KW grounded grid FM. Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

BE FM-30-B 30KW FM. Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

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Gates BCI-F in good condition, $1500 or technical help to switch frequency to 1.8 & 3.8 MHz. Richard Shelar, WYMR, 710 Columbia St, Leetonia OH 44431. 330-427-2303.

Gates 1964 BC5H 5KW AM broadcast transmitter. Needs work. Located in Western North Carolina. BO. Tim Radford, WKRK, 427 Hill Street, Murphy NC 28906. 828-837-4332.

Gates 1974 FM 10Y3, TE-3 exciter, good working aux, new plate transformer, no PCBS, available in August, LP filter included, 10KW, 99.1mHz, $10,000. Ron Habegger, WAWZ, 14 Chapel Dr, Zarephath NJ 08890. 732-469-0991.

Gates BC1G on 620, needs work, BO. Dwight Morgan, 1360 E Sherwood Dr, Grand Junction CO 81501. 970-241-9230.

Harris 5 KW AM xmtr tuned to 1290 kHz, missing plate transformer, $2500. George Arroyo, WONO/WRMO, 1033 Semoran Blvd #253, Casselberry FL 32707. 407-830-0800 x110.

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Harris 5KW AM xmtr tuned to 1140 kHz, presently on air, $10,000. George Arroyo, WONO/WRMO, 1033 Semoran Blvd #253, Casselberry FL 32707. 407-830-0800 x110.

Harris Gates II, 2500W, solid state AM xmtr with lots of extras, 1510kHz, never used in excel cond, $21,500/BO. Angie Sugalski, Wilkins Comm Network, POB 444, Spartanburg SC 29304. 888-989-2299 or angie@wilkinsradio.com.

Harris Z 3.5 CD transmitter with or without digital exciter. Cost new roughly 7 yrs ago, $40,000, asking $25,000/BO. Other equipment available. Rick Biddle, WOWL, Luka MS 38852. 662-423-9919.

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10KW	FM	1974	Harris FM10HVK
15KW	FM	1980	McMartin BF15,000
20KW	FM	1974	Harris FM20K
25KW	FM	1980	CSI T-25-F
25KW	FM	1978	Collins 831G-2C
27.5KW	FM	1990	Continental 816R-4
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35KW	FM	1988	BE FM 30A
50KW	FM	1982	Harris Combiner w/auto exciter-transmitter switcher

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10KW	AM	1982	Continental 316F
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World Radio History

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World Radio History

◆ READER'S FORUM ◆

Radio World, June 19, 2002

Digital radio wars

Thanks for a wonderful publication and the timely May 8 issue.

I was at NAB for the first time in over five years. To those of you who were not there but who may have already guessed, the entire buzz was IBOC, digital radio, streaming and where the whole industry is heading.

To be perfectly honest, the (stationary) FM-IBOC listening tests were a bit of a letdown. However, the AM-IBOC reception was indeed impressive.

Although I am not surprised, what was not mentioned in the May 8 issue were the actual live demos of the Digital Radio Mondiale system at NAB. This is the digital-only AM and HF (shortwave) system being proposed by the rest of the world. It also received very little fanfare at the NAB show.

The listening tests of DRM were nothing short of startling. With your shortwave coverage in the issue, and with the disappointing news about the state of AM-IBOC at night, it seemed to be a topic worthy of inclusion and debate.

Now I am not a particularly strong proponent of AM and shortwave broadcasting, but perhaps a solution to the AM-IBOC nighttime/skywave dilemma is: let the stations stay on at night in a digital-only mode and drop the analog component if they choose. See how the listeners react. Or, perhaps look at another solution to the AM problem.

On an interesting side note, it is my understanding that the DRM technical details and protocols have been made public domain. How un-American!

Glenn Finney
System engineer
Control-Comm Systems
Macon, Ga.

I'm responding to Guy Wire's article on IBOC on your Web site (RW Online, March, "Deriving the Real IBOC Equation").

The fees will kill it. This will be a toy for the big groups in the major markets.

When the AM stereo wars were going on in the early 1980s, many AM stations were still profitable, and small-town FM stations were doing quite well.

Now we have twice as many FM stations in many markets, most AMs are moribund, and overall radio sales are down in many markets because local businesses have been eaten alive by the large discounters (read: Wal-Mart).

So now we should not only make a massive investment in transmitting equipment but also pay an exorbitant fee for digital? Why?

It isn't going to help FM. As Skip Pizzi noted, with a "blend" circuit that reverts to analog, digital audio will be as heavily processed as analog as a matter of market survival. There may be minor improvements to multipath, but for many stations multipath is just not a widespread problem. IBOC is not a technical advance, it is a marketing ploy.

Perhaps IBOC is driven by marketeers who notice the loss of younger listeners to MP3. Ahh — MP3 is one of those digital things, so radio must be digital to bring back this audience. Might be helpful, though, to find out what the kids are listening to on those MP3 players. Much of it can't be carried on broadcast radio, unless one wishes to meet the FCC in court.

Ibiquity's demand for fees up front is a sure sign that they know that IBOC is doomed to failure.

— Tom Taggart

Ibiquity's demand for fees up front is a sure sign that they know that IBOC is doomed to failure. Otherwise, they would be content to collect a royalty of a few pennies on the sale of each IBOC receiver. But they know that turkeys can't fly, so they are going to be paid up front and get out.

Tom Taggart
Part Owner
WRRR(FM)/WNMR(FM)
St. Marys/New Martinsville, W.Va.

Despite all the drumbeating, it would not be a surprise if the uptake of FM IBOC goes very slowly at the station level and even slower at the consumer level.

From a station manager's point of view, the return on investment in new equipment and Ibiquity licensing fees necessary to broadcast IBOC digital is very hard to find. Even if convinced IBOC is good for the industry in the long run, radio management is not famous for placing much value on anything further off than the next quarter.

From a consumer's perspective, the benefit of IBOC is likely to be rather subtle — from all reports, less perceptible than mono vs. stereo in a car.

The initial push to FM listening in the 1960s and 1970s was driven more by programming unavailable on the AM band, particularly beautiful music and album rock, than by better sound or even stereo. The lure of exclusively digital programming will not be available to FM IBOC broadcasters because, by definition, the analog and digital programming needs to be identical.

The real value of IBOC may come from an unexpected quarter: AM radio.

— Julian Breen

In England, where consumer acceptance of Eureka 147 DAB on L-band has been indifferent at best, the BBC has introduced an exclusively digital channel, Radio 6, to try to kick-start the new medium. Canada is permitting broadcasters some exclusively digital programming, also on L-band, for the same reason.

Even assuming FM IBOC works as advertised and does not cause adjacent channel interference disasters as some claim it will, why should consumers care? And, if they don't care, why should broadcasters write the checks to prove it?

The real value of IBOC may come from an unexpected quarter: AM radio. As late as 1970, AM radio commanded more than 70 percent of all radio listening in the top 10 markets. By 2000, AM listening had dropped below 20 percent.

Although the AM IBOC tests concluded it was practical for only daytime use because of interference on the AM band at night, the digital audio quality was reported to be vastly superior to analog. Some say broadcasting a digital-only signal with no analog component would solve the nighttime interference problem.

Just imagine an exclusively digital service delivering high-quality audio with the reach of high-power AM stations and offering innovative programming unavailable to analog listeners. Now that would generate some consumer enthusiasm even if FM IBOC does not.

Should anyone want to discuss the issue, I can be reached at *julian@breen.com.*

Julian Breen
Proprietor
Breen Broadcast
Pennington, N.J.

More on IBOC

The other shoe dropped in the continuing IBOCcle story with Skip Pizzi's reporting of the licensing fees to broadcasters proposed by Iniquity ("IBOC Raises Eyebrows," March 27).

In fact, this story already broke, like wind when someone cuts the cheese, at a recent SBE chapter meeting here. At least you would have thought that's what happened by the reaction around the room. Fortunately, we didn't shoot the messenger, who shall remain nameless here. We appreciated his honesty in volunteering this information, heretofore unannounced.

Now with the news that AM IBOCcle should be shut down at night, it seems its fate should be sealed. I write this prior to the NAB convention, and can hardly wait for the reports of the reaction there, assuming the reaction is accurately reported. Reaction from those closely associated with Iniquity, including anyone working for those companies that provide financial backing to it, should be taken with the appropriate grain of salt, or discarded altogether.

After all, those companies won't be taking as much risk since they'll be effectively paying the ridiculous licensing fee to themselves.

The various misspellings, as well as additions to well known acronyms, were intentional and meant to infer my opinion of the whole impending IBOCcle.

Mike Shane, CBRE
Operations Director
KCRO(AM) Radio 660 The Truth
Omaha, Neb.

Regarding Skip Pizzi's column on IBOC ("Concerns About IBOC Grow," May 22) — why don't you just "fix" the analog services and *add* digital signal processing to existing analog stereo AM and analog stereo FM stations? IBOC AM will take up 50 percent more bandwidth than the NRSC 10.2 kHz bandwidth that AM stations have today, so that is not an improvement.

Speaking of bandwidth, before NRSC, I heard WJR(AM) with a 15-kHz stereo signal, and the sound was breathtaking (they still sound great in stereo Sunday mornings even with the 10.2-kHz limit). C-Quam AM stereo sounds wonderful on the 50-kW stations, and without a loss of coverage area like an FM stereo station would have.

I have to believe that if all of the digital technology involved with IBOC went to designing algorithms for C-Quam AM stereo, noise blanking and dynamic range enhancements, analog AM and FM could both be broadcasting superb signals.

It's more than just technical on the receiver end, too. Analog FM stations today have the processing cranked so far up that there's no dynamic range and almost no stereo separation anymore; FM radio "sounded" better back in 1975! And something else: everybody played different music then, not a behemoth owning 1,200 cookie-cutter non-human automated stations.

Analog AM and FM can be "fixed" for another generation with the addition of digital technology to receivers, diverse local programming and common-sense audio processing level. That's my 2 cents' worth, Skip.

John Pavlica
Systems Engineer
Toledo, Ohio

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World Radio History

◆READER'S FORUM◆

Funding radio

Joe Davis, in his letter "Poor Public Radio" (*Reader's Forum*, May 8) paints with too broad a brush.

I've spent time in both public and commercial radio. Economic pressures in public radio are not absent; they're different than the ones commercial radio faces.

When commercial radio faces a budget shortfall, it cuts expenses and staff, maybe changes a format and sends its sales staff out to the street with a new rate card. When public radio's funds fall short, it cuts expenses and staff and tries to retool the programming to attract more donors. Neither route is easy or risk-free; they're just different.

I've spent time in both public and commercial radio. Economic pressures in public radio are not absent; they're different.

— Mark Tomlonson

Running a station in New York City is different than in a small town. The larger the market, the larger the staff needed to adequately serve it.

When I worked in a small town, I had three to six job titles at any given time. I suppose I could still hold down all those titles in this market, if there were 40 hours in a day. Name any basic operating expense — janitorial services for example — and it's more expensive in the big cities.

I don't know why WXXI asked for $8 million and got $3.5 million. A good guess would be a management not adequately assessing the market. That's not a condition unique to public radio.

As far as serving the public goes, in both the public and commercial worlds there are operators who hook up the satellite feed to the transmitter, lock the doors and then go home. That's not public service, no matter how you cut it.

So, Mr. Davis, you want to start working in public radio? Just remember what they say about looking at grass through a fence.

Mark Tomlonson
Chief Engineer
WMUK(FM)/WIDR(FM)
Kalamazoo, Mich.

Equal time

In reference to Jon McClintock's letter in the May 8 issue ("APT and DAB"), I'd like to compliment you on publishing what possibly might be the most biased and self-serving letter in many moons. If I read it correctly, Honest Jon would like everyone to buy an APT codec and use it in their broadcast chain because it will improve their sound.

However, Jon conveniently fails to mention that competitive MPEG codecs can also improve stations' audio quality when operated at higher bitrates, while maintaining compatibility with tens of thousands of MPEG-speaking codecs installed worldwide (and those numbers are ours, alone).

Also, Jon is hoping that you will help him spread the word about the benefits of his product. Frankly, if Jon has a commercial message, he ought to buy an ad.

However, since Radio World is willing to publish letters like Jon's, I'd like to request equal time. (Ahem!) "Please buy and use our codecs. Join the ranks of thousands of Golden Ears who have already tested them, and found them worthy." Many thanks!

Art Constantine
VP, Business Development
Corporate Computer Systems Inc.
d/b/a Musicam USA
Holmdel, N.J.

The first car radio

When did the "car radio" first start showing up as an option in cars? I suspect that it would be sometime in the 1930s, but don't have a clue as to the exact year or which carmaker introduced the radio into the automotive world.

John Arndt, CPBE, CBNT
Assistant Chief Engineer
Greater Philadelphia Radio Group
Bala Cynwyd, Pa.

Ed. Note: We passed this question around to our contributors; here are two replies. Yours are welcome at radioworld@imaspub.com.

My correspondent at Ford writes:

"The first commercial auto radio was designed and produced by William Heina, who founded the Heinaphone Company in 1925."

The first radio fitted to a car was apparently in Wales in 1921.

Barry Mishkind
Tuscon, Ariz.

Bill Lear is credited with inventing the car radio c. 1930.

The (perhaps apocryphal) story goes that the conventional wisdom at the time held that a tuning cap couldn't be made small enough to allow the miniaturization required for a car receiver. Lear, having not completed high school, did not know this, and set about to simply scale down a console radio to fit into a car dashboard.

After he did it, the industry was astounded and only then did Bill learn that he had done what was considered impossible.

Lear partnered with Paul Galvin, who developed the car radio into a marketable product, founding Motorola in the process. Car radios were all aftermarket at first, and didn't start appearing from car manufacturers until many years afterward. (Lear is considered the father of the eight-track, too.)

Skip Pizzi
Manager, TV Standards &
Regulatory Affairs
Microsoft TV Platform Marketing
Microsoft Corp.
Fairfax, Va.

Ed's note: Pizzi also is contributing editor for RW.

Voice Tracking's Wakeup Call

Situations in New York and Chicago involving AFTRA have put new attention on the practice of voice tracking, the process of pre-recording jock breaks for later on-air assembly by an automation system.

Last month, union air talent from three major Clear Channel FM radio stations in New York — WKTU, WLTW and WWPR — petitioned the company to discontinue voice tracking at those stations, claiming it to be a disservice to their listeners. The union is negotiating new contracts with those stations.

In Chicago, a stipulation reportedly on the table at WKSC(FM) proposes that no additional compensation be paid to talent for any live or tracked material originating from there for broadcast, Webcast or rebroadcast in another city.

Few stations today have union affiliations, and non-union employees dissatisfied with their work agreements are welcome to look elsewhere, as they always have. Still, on its face, the offer sounds lopsided.

But greater than the issues is the inescapable conclusion that they draw: Radio "the way it used to be" is never coming back.

Voice-tracking technology was meant to streamline on-air operations, provide unprecedented remote broadcast capability and keep operating costs in line with economic reality. As some markets are finding out, it has become a quick fix at economically unsound operations and often displaces localism by simplifying importation of out-of-market talent, often paid a fraction of a decent per-station salary.

Unpalatable perhaps, but the reality of radio today.

RW takes the following positions:

• AFTRA must do the right thing and stand up for its members. Unions are supposed to do that.

• Voice tracking was inevitable. For better or worse, it is out of the bottle and will never go back in. AFTRA and other relevant unions will have to work with broadcasters to come to an equitable solution.

• As unpleasant as it is to say this, the *classic* disk jockey is going the way of the gaslamp lighter. If you work on-air, you can gripe and lose your job, or smarten up and survive. If you are a manager, use today's technology as a creative tool and not as a free ride to lose good people or an excuse to not serve your community effectively.

The issues raised by voice tracking do not spell the end of radio. But it is shaking up some of the beliefs held stubbornly until now. Take a cue from your morning team and wake up: These decisions soon will affect you.

— RW

More Letters on Page 53

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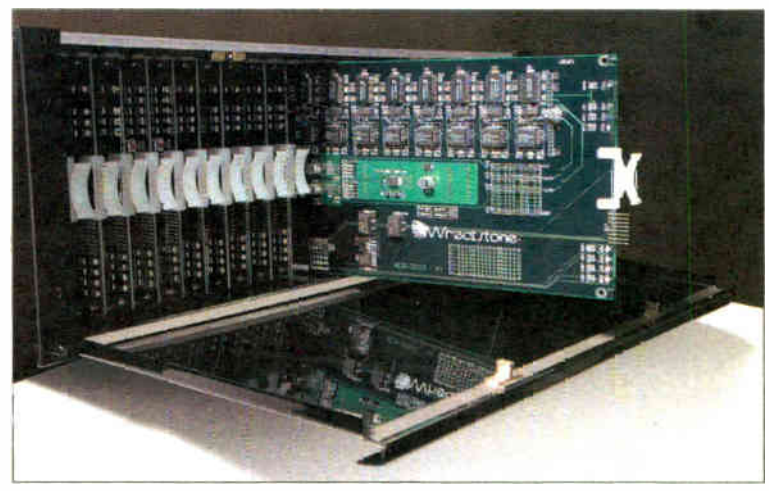

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