MOTOROLA'S SYMPHONY RADIO. Page 14

Beams and Nulls
Cris Alexander explains overshoots, close-in coverage and better FM performance.
Page 10

Bosworth Online
A conversation with Clear Channel's Orlando Internet marketing manager.
Page 21

Radio World®
$2.50 The Newspaper for Radio Managers and Engineers November 6, 2002

INSIDE

ENGINEERING

▼ Antenna system issues explored.
Page 12

▼ Tom McGinley sits in on a Harris IBOC seminar.
Page 16

GM JOURNAL

▼ Is there a hot new radio format waiting in the wings?
Page 21

STUDIO SESSIONS

▼ Mackie's powered loudspeakers for remotes, the WaveLab 4.0 Audio Editor from Steinberg Media, and ARP on why you still need an audition demo.

In This Issue

THIS ONE IS E-Z

▼ Aeta and Radio World send a versatile new codec to an engineer in North Dakota.
Page 4

NEWS ANALYSIS

Stations Make Plans in Wake of IBOC Action

by Leslie Stimson

WASHINGTON Will numerous radio stations apply to the FCC for permission to transmit in-band, on-channel signals, now that the commission has issued an initial endorsement of the service?

No, the transition won't be that dramatic, according to industry observers, although some stations, at least, were eager to start immediately after the commission approved IBOC for an interim period.

The directors of engineering for several radio groups, all of whom wished to remain anonymous, said their radio groups were in negotiations with IBOC developer Ibiquity Digital Corp. and expected that some of their stations would order equipment, if not be on the air with IBOC/HD Radio, this calendar year.

At least one IBOC equipment manufacturer backed that assessment, reporting

See IBOC, page 6 ▶

FM Mini-Master for Empire?

by Randy J. Stine

NEW YORK Alterations to the master FM combiner at the Empire State Building — along with plans for a new "mini-master" antenna — appear to have satisfied the demand for additional tower space here following the loss of transmission facilities in the World Trade Center collapse.

Sources familiar with the current availability of tower space in New York City said the main FM combiner system at the Empire State Building eventually will be able to accommodate the displaced radio stations from WTC and possibly others.

WKTU(FM), WPAT(FM), WKCR(FM) and WNYC(FM) lost main transmission facilities from the tower on top of 2 World Trade Center on Sept. 11, 2001. Three of the stations have secured permanent new homes on the Empire State Building.

Combined operation

Joe Giardina, president of DSI RF Systems Inc., which is assisting the master FM antenna group at Empire, said WPAT and WNYC eventually would be added to the Electronics Research Inc. master combiner system. WKTU began broadcasting from the Empire master this September.

See EMPIRE, page 5 ▶

◆ NEWSWATCH ◆

Sirius to Get Cash Infusion

NEW YORK Sirius Satellite Radio hopes to be recapitalized in the amount of $1.2 billion. The satcaster struck a deal with holders of more than $1 billion of its debt and preferred stock, to convert most of its $700 million of debt and all of its $525 million of preferred stock into common stock, and raise $200 million from the sale of new stock.

Sirius said it was seeking such a deal, after confirming it missed an interest payment worth approximately $720,000 that was "technically" due Sept. 30. Sirius said the missed payment would have placed the company in default. It said the additional $200 million, combined with $240 million cash on hand, is expected to fund operation into mid-2004.

McCain Revives Certificate Measure

WASHINGTON Sen. John McCain, R-Ariz., ranking Republican of the Commerce Committee, introduced a bill designed to open up telecom ownership to owners of all sizes. The Telecommunications Ownership Diversification Act of 2002 would give sellers of telecom businesses a tax deferral when their assets are bought for cash by small-business telecoms.

FCC Chairman Michael Powell and NAB President/CEO Eddie Fritts endorsed the measure.

The bill is similar to the former minority tax certificate program, killed by Congress for alleged abuses. This bill applies to all telecom companies, not just broadcasters.

"The market-based incentives in this bill are the most effective way of leveling the playing field between small-business owners and CEOs of huge corporations trying to purchase a telecommunications business," said McCain.

The measure also would encourage the entry of new players and the growth of existing small businesses by enabling the seller of a telecom business to claim a tax deferral on capital gains if it invests the proceeds in purchasing an interest in an eligible small telecom business.

To limit the potential for abuse, the act would require the eligible purchaser to hold any property acquired for three years.

FCC Vows to Continue Strong Rule Enforcement

WASHINGTON The FCC's Enforcement Bureau levied more than $28 million in enforcement actions in fiscal 2002 and Bureau Chief David Solomon pledged to continue to take strong measures against commission rule violators.

Of that total, $3.5 million was levied to enforce public safety rules. The bureau vowed to continue to take action against unlicensed station operators and is increasing efforts to crack down on excessive RF radiation from towers.

CC Reorganizes Radio Engineering

SAN ANTONIO, Texas Clear Channel Radio CEO John Hogan unveiled organizational changes to the group's corporate engineering staff designed to speed information flow. Senior Vice President of Engineering Services Jeff Littlejohn will add engineering administration to his responsibilities, including consolidating the reporting function for radio's corporate engineering staff.

Reporting to Littlejohn are Senior

See NEWSWATCH, page 3 ▶

Index

DIGITAL NEWS

Satcasters Seek Local Tax Exemption

WASHINGTON The House Subcommittee on Commercial and Administrative Law is reviewing legislation that would exempt satellite radio from the need to collect taxes from consumers. Introduced by Rep. Tom Davis, R-Va., the "Satellite Services Act" would extend a law that preempts local taxation of satellite TV services to satellite radio.

"Satellite television services have been with us for a number of years, and we are now seeing the emergence of satellite radio service providers," said Davis during a hearing in September. "An extraordinary administrative obstacle would arise if satellite radio providers were forced to collect and remit local taxes in approximately 15,000 different jurisdictions."

H.R.-5429 targets local taxes; states would have the option to tax satellite radio services, similar to the option they have to tax satellite TV companies. So, subscribers who live where the satcasters are headquartered, New York and the District of Columbia, might be taxed for subscriptions from Sirius Satellite Radio and XM Satellite Radio, respectively.

Proponent Andy Wright, president of the Satellite Broadcasting and Communications Association, said a similar policy has been "vital" for the direct broadcast satellite industry, allowing satellite TV to "become more efficient and better able to provide new and advanced services to consumers."

"Satellite radio is quickly emerging as a bright spot among high-technology consumer services," said Wright.

Satellite radio is provided directly to a subscriber, with little or no contact with the infrastructure (streets, sidewalks or other right-of-way) of county, municipal or other local government, said Wright, whose association supported the exemption for satellite TV in the 1996 Telecommunications Act.

Delphi Promotes XM Portables Plug and Plays

NEW YORK Delphi and XM Satellite Radio have unveiled plug-and-play and portable satellite radios.

This Delphi XM product can be adapted for the dash or purchased as a portable radio.

The Delphi XM SKYFi Radio, along with vehicle and home accessory kits, were expected to be available at retailers in October. SKYFi will list for $129.99 for the receiver and remote control. A required home or vehicle kit that includes an antenna complete the system for $69.99.

Delphi and XM also have introduced the Delphi XM SKYFi Audio System, a portable audio unit that integrates with the SKYFi receiver. The audio system (excluding the receiver) will be sold at retail stores later this year for $99.99.

The system is a "boombox" that contains a pair of speakers with an integrated high-gain antenna and a dock for the receiver. It can be powered by an AC adaptor to create a countertop/bookshelf XM system for the home or office, or used with batteries.

Robert Acker, vice president of product marketing and strategy for XM Satellite Radio, said the Delphi radios offer portability, a large display, direct channel entry, the ability to preview and search XM channels by artists and song titles and 20 channel presets.

— Leslie Stimson

NEWSWATCH

▶ Continued from page 2

Vice Presidents Steve Davis and Al Kenyon, and Vice President J.T. Anderton. Davis' responsibilities include capital budget, expense tracking and regulatory technical filings. Kenyon, SVP Engineering Projects and Technology, has the responsibilities of evaluating the technical facilities of proposed station purchases and managing studio build-outs and consolidation projects. Anderton leads the division's station upgrade and analysis work. All of them work out of the Covington, Ky., office.

Harris Lowers Projections, Citing DTV Delays

MELBOURNE, Fla. Harris Corp., parent to the broadcast equipment supplier, reported fiscal 2003 first-quarter net income of $19.9 million compared to $17.1 million in the same period last year. Earnings per share were 30 cents compared to 26 cents in the prior-year quarter. But the company lowered its fiscal year earnings-per-share forecast.

Among its several business sectors, the company reported "weaker than expected" results in its broadcast business from postponed digital television equipment purchases.

"As a result, the Broadcast Communications segment reported a 17 percent decline in first-quarter sales, compared to strong performance in the first quarter of the prior year," it stated. The decline in sales reduced first-quarter operating income to $1.9 million, compared to the prior year's $7.5 million.

Chairman/CEO Phillip Farmer expressed optimism about Harris' broadcast fundamentals and its competitive position in the digital TV transition, and he noted that "the digital conversion for radio broadcasting is now underway" as well.

Ibiquity Touts 'Dot PAC'

COLUMBIA, Md. and WARREN, N.J. Ibiquity Digital Corp. has unveiled a digital audio file format based on its Perceptual Audio Coder audio compression technology. Ibiquity says the file format, called .PAC or "dot PAC," has been designed to support emerging trends in digital music distribution and comply with industry-supported copyright protection technology.

According to a statement, "The emergence of SDARS and HD Radio digital audio broadcast systems and the continued evolution of Internet-based digital audio distribution promises to enable new and valuable consumer audio services with Ibiquity's .PAC file format, providing the foundation for a number of these new services."

Dr. Deepen Sinha, director of audio coding for Ibiquity Digital, said the format will provide the music industry with a tool for the management and protection of digital music content.

"Much of our development has been focused on providing sufficient flexibility to consumers while ensuring that accepted copyright protection techniques can be easily integrated with our core algorithms."

Ibiquity's PAC compression software is implemented in the Sirius Satellite Radio service and is being deployed in HD Radio technology for AM and FM broadcasters.

Southwest AM Pair Powers Up

With all the attention given to the evils of media consolidation, it's refreshing to talk to Ron Pierson and Rick Keefer, part-owners and co-managers of a small radio group located out on the high plains in Clovis, N.M.

Pierson wrote to tell me about an upgrade project planned by Broadcast Entertainment Corp., with five stations serving eastern New Mexico and western Texas.

"In this day and age of consolidation and of the big getting bigger," he wrote, "we believe this project lends credence to the fact that small-market radio can grow and prosper. ... We just wanted to let our fellow small-market operators know there are opportunities out there, and entrepreneurs to make it happen."

I decided to call and learn more.

To start with, the group's rock station KICA(FM) and hot country KKYC(FM) now have the OK to increase power to 100 kW each, from 50 kW and 25 kW respectively. Those two stations will share space on a pending 495-foot tower west of Ranchvale, N.M., on some of the highest ground in the county.

Cool. But that's just the start.

"As we started into that upgrade of the FMs," Pierson told me by phone, "we uncovered some opportunities on our two AMs."

Some opportunities, indeed. Working with Timothy Cutforth of the Vir James consulting firm, the owners have won approval for not one but two significant power hikes for their AM properties, each of which had been operating at 1 kW.

Rick Keefer, left, and Ron Pierson

News/talk station KICA at 980 kHz is the second-oldest station in New Mexico. It has won permission to increase power to 50 kW during the day. The owners expect to serve a five-state area as one of only three 50 kW AM licenses in New Mexico — and the *only* station in the United States with that power level at 980 kHz.

Meanwhile, sister station KMUL(AM) will move from 1380 kHz to clear-channel 830, and also has permission to increase power from 1 kW to 50 kW. The owners say this will make the Hispanic-formatted station the Texas Panhandle's only 50 kW AM. The group also owns KMUL(FM), a 6 kW station with country programming in Muleshoe, Texas.

These changes mean new choices on the AM dial for listeners — not only in New Mexico and Texas, but in Oklahoma, Colorado and Kansas too.

Construction is to begin next year. The owners are in the final stages of funding the project, which is expected to cost roughly $1.5 million.

"We've earned our stripes with our local lenders. All will be funded with local bankers," Pierson said. "They see what we'll be doing in our local communities, our region and the southwest."

This has been quick work for two guys who started out as owners just four years ago.

Pierson, 44, and his partner Keefer, 48, who is also the company's director of engineering, both had worked for TKC Inc., a group in Wisconsin. There, Pierson was sales manager; Keefer was corporate engineer and ops manager. The two are close friends.

"He and I have known each other for 20 years," Pierson told me. "One day we got bit by the same bug everybody did, and thought we could do this for ourselves and start our own portfolio."

They shopped around and found Tom Crane, owner of Southwest Entertainment Group. Since 1998, the three have been partners in Broadcast Entertainment Corp. Crane retains part ownership of the new company from a distance, living on the East Coast.

"Tom had the vision to resurrect some dark or infant stations. I give him credit for realizing we might be able to assemble a little group here," Pierson said.

Pierson said that when they set out to upgrade the signals, he and Keefer knew that "considerable" signal protection for KICA had been grandfathered in by the FCC. But they expected a much smaller power hike, and were surprised to come up with permission for 50 kW.

Pair of aces

Then their homework paid off again with KMUL.

"We were excited about the prospect of having one 50 kW in the future. The prospect of two exceeded our expectations. We're absolutely thrilled."

Pierson gives a nod to consultant Cutforth, whom he calls a genius, for helping to find the opportunities, and to Brendan Holland of law firm Shaw Pittman for driving the applications through the commission.

"I understand the FCC is bogged down in a lot of projects," Pierson said. "To get even one of these approved was a miracle."

Pierson told me the cluster will serve a large segment of the region's population that does not receive adequate radio service. Further, it's a potentially lucrative market.

"There is a tremendous Hispanic and minority population down here," Pierson said. Cannon Air Force Base is near town; Eastern New Mexico University is nearby. He expects the cluster can expand its population base to more than 1 million from the current

See SOUTHWEST, page 18 ▶

From the Editor

Paul J. McLane

2002 Radio World Readers' Choice Sweepstakes

As of this issue, Radio World and the broadcast supply industry have given away on this page more than *$110,000* worth of prizes since the beginning of 2001. Thanks to everyone who has signed up online, and to all of the companies who have provided prizes.

Mark Borchert, engineer for Triad Broadcasting in Fargo, N.D., wins a Scoop E-Z codec from Aeta and Radio World in our Reader's Choice Sweepstakes this week.

The Scoop E-Z is a versatile portable codec for live outside broadcast. It handles analog POTS, digital ISDN, wireless GSM and satellite INMARSAT formats.

POTS and ISDN are built in; no adapters or extra modules are needed. The Scoop E-Z has battery back-up capabilities and weighs only 4 pounds including batteries.

List price on this fine prize: $3,695.

Empire

▶ Continued from page 1

"That will bring our total number of stations on the ERI combiner to 16. We will also add a maintenance combiner, a backup combiner if you will, to allow for longer periods of work on the master combiner," Giardina said.

Both WPAT and WNYC are still broadcasting from their backup sites on the 52-story Conde Nast building at 4 Times Square. WKCR continues to broadcast from a temporary rooftop position on Columbia University's campus.

Tom Silliman, president of ERI, said construction of any new transmission projects on the master combiner at the Empire State Building has been stalled momentarily.

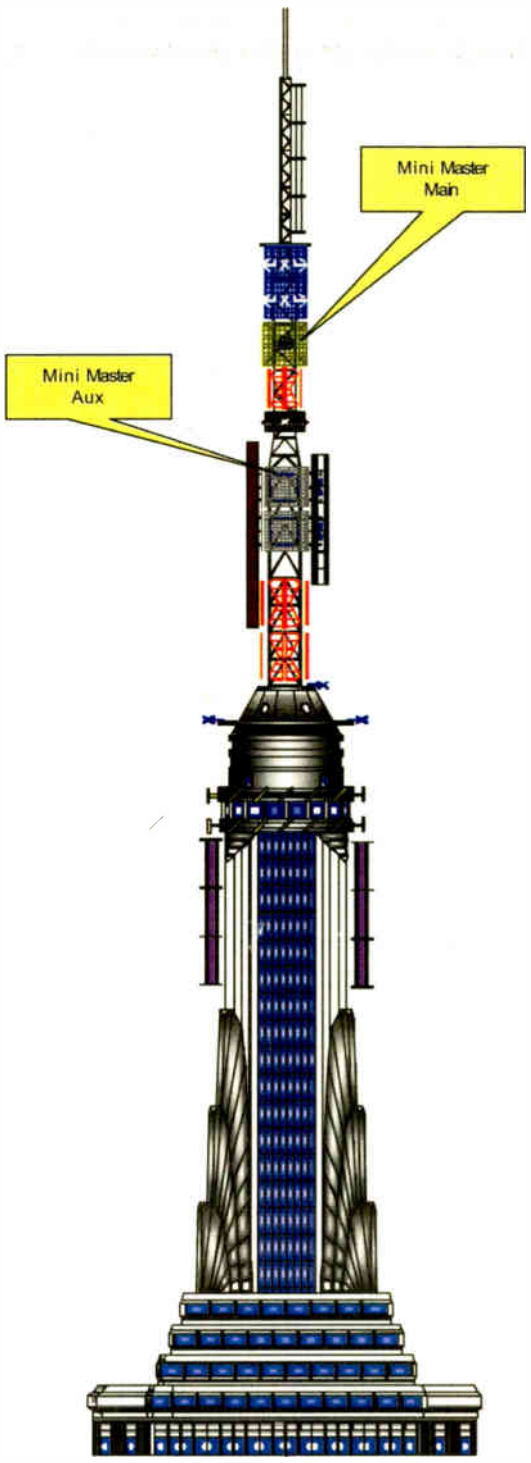
"The building is nearly overloaded right now. It's possible some things could be moved to accommodate others. We are waiting for a final structural analysis and the possibility of doing some structural enhancements to the building. We'll get it done," Silliman said.

One of those moves could be removing an older RCA FM antenna, which serves WPLJ(FM) and WQHT(FM), and replace it with a new mini-master, Silliman said.

"We are also looking at replacing the aux antenna with a newer panel antenna," Silliman said.

A handful of stations are considering the mini-master concept and are in final negotiations with Helmsley-Spear, owner of the Empire State Building, to lease space for the new independent antenna system, said Kevin Plumb, director of engineering for ABC Radio in New York City, who has spearheaded the project.

"It would be a five-station single-bay antenna, dubbed the mini-master system," Plumb said.



This five-station single-bay antenna is dubbed the mini-master system, to add additional FMs to the Empire State Building.

Plumb said the new antenna would likely include WPLJ, WQHT, WCBS(FM), WQCD(FM) and WKCR.

"Everything is coming together at this point. We think we can get the deal done with the five stations," Plumb said.

Mike Tocco, chief engineer for Spanish Broadcasting's WPAT, said the station will be on the master at Empire as soon as the maintenance combiner is completed.

"We're hoping that will be around the end of the first quarter of 2003," Tocco said.

An engineer familiar with the ERI combiner at the Empire State Building, speaking on condition of anonymity, said designers have allowed for additional slots for each FM broadcaster in the city.

"In the eventuality we need it, there will be space left for each station with a piece of transmission line in place of the filter. After calculating the power levels for both analog and digital, there should still be an acceptable safety level," the source said.

Looking for tenants

The Durst Organization, owner of the Conde Nast building at 4 Times Square, has publicized plans to expand its transmission capabilities. That facility already serves as the auxiliary site for Clear Channel's five-station group, Spanish Broadcasting's WSKQ(FM) and WPAT(FM), and public radio WNYC(FM).

"The game plan is to remove the 132-foot tower, which was originally designed to accommodate 12 stations, and replace that with a new 358-foot tower," said John Lyons, manager of communications and broadcast operations for the Durst Organization. "We would then have the room to serve as an aux site for every FM in the city."

Photo by John Lyons

The Conde Nast Building and Antenna at 4 Times Square

Lyons said a new three-bay antenna would be interlaced with a digital antenna on the same aperture to satisfy broadcasters' eventual needs for in-band, on-channel digital transmission.

"We already have FAA approval and hope to begin work early next year with the project being completed by June," Lyons said.

"Having 4 Times Square serve as a true backup site for all of the city's FMs makes sense," he said. "That way not all of the eggs are in the same basket at Empire."

Conde Nast's tower project also will include aux sites for New York City television stations. Lyons said the Durst Organization was in negotiations with various television broadcasters to secure slots on the new tower.

Jersey Tower Effort Focuses on TV

JERSEY CITY, N.J. It looks like New Jersey will be the home of a new 2,000-foot broadcast tower, replacing the World Trade Center transmission facility destroyed on Sept. 11 of last year.

Officials with the Metropolitan Television Alliance, a consortium of New York City television stations formed to find a suitable tower replacement, say the new project could include radio.

"There is currently nothing that would rule out radio broadcasters leasing space on the new structure," said Pat Smith, spokesman for the MTVA. "However, right now it is not planned for that purpose ... the tower is being designed with television in mind."

Smith said there has been "some expression of interest" from radio broadcasters.

Despite rumors, it's unlikely any new tower would include a restaurant or observation deck, Smith said.

"A lot of different designs are being floated right now by different architects. Our focus is to find a suitable site and build a tower for our group and improve the reception for the 700,000 New York City residents without cable. The goal is not to put together a tourist attraction," Smith said.

The MTVA is in discussions with several municipalities in New Jersey, including Jersey City, to construct the tower.

One New York City radio engineer, speaking on the condition of anonymity, said most of the city's FMs have had sufficiently bad enough experience with TV broadcasters in the past to shy away from joining the new project.

"We were second-fiddle to (TV) at WTC, and we've had to fight very hard to ensure that our interests at Empire are guarded," he said.

— Randy J. Stine

IBOC

▶ Continued from page 1

that discussions with clients took a more serious turn after the FCC's action. Stations sought specific information about equipment availability and shipping dates.

However the conversion figure for this calendar year might be lower than Ibiquity hopes, given the dismal revenue situation for stations in the past two years, some observers feel — this despite the licensing fee waiver Ibiquity is offering for stations that order equipment in 2002.

Many observers are watching what Clear Channel Worldwide does, given its vast station holdings. Bill Suffa, senior vice president of capital management for Clear Channel, declined to disclose the company's intentions.

"We're still working to figure out what the economics are going to be," he said.

Rules to come

The FCC's initial endorsement of IBOC as the technology U.S. radio will employ to go digital was seen as a green light by its supporters, while other observers, perhaps more skeptical of the technology after its more than 10-year development percolation, were not as enthused.

"It looks like an endorsement, when it's not," one skeptic said. "(But) to the Wall Street guy, it sure sounds like an endorsement."

However, most involved observers said that the October FCC action does mean the United States will adopt IBOC as its digital radio technology.

On Oct. 10, the agency approved IBOC on an interim basis. In the text explaining its decision, the FCC stated it will seek further information on Ibiquity's AM and FM IBOC systems and a technical standards recommendation from the National Radio Systems Committee, before crafting final service and licensing rules.

By its action, the commission stated, it selected the hybrid AM and FM IBOC systems as a de facto standard for interim digital operations and "will no longer entertain in this proceeding any proposal for digital radio broadcasting other than IBOC."

The NRSC formed a special committee to draft the standards, headed by the IBB's Don Messer and Sony's Paul Feinberg. The group has received every piece of information on Ibiquity's technical specs it asked for, said NAB VP Science and Technology John Marino. The group planned to begin reviewing the new information at its meeting in late October.

Commissioners were enthusiastic about IBOC's spectral efficiency when they voted for the endorsement, and indeed, Commissioner Kathleen Abernathy called the technology a "win-win." Commissioner Michael Copps said TV could learn from radio's digital transition.

After the FCC vote, the commission staff was developing a form for stations to use when applying for Special Temporary Authorization to go digital. The STA is a temporary necessity; by January, stations seeking to activate IBOC/HD Radio would be required simply to write the FCC a letter with specified information.

One piece of that information is certification of total power output for analog and digital signals. To reduce potential interference to stations that haven't made the transition, the FCC wants stations to certify on their STA request that their analog TPO is unchanged, said Ed De La Hunt, assistant chief of the FCC's Audio Division.

Antenna complications

He said several implementation questions must be addressed in eventual licensing procedures. For now, the commission told stations simply that interference issues must be addressed.

The commission is allowing AMs concerned about causing interference to neighbor stations to adjust the power of the digital carriers down by 6 dB with FCC notification. The agency expects stations to resolve interference disputes on their own. Failing that, the order states the commission will step in. It may order a station to reduce its digital power, or, "in extreme cases," terminate IBOC transmission.

The FCC was conservative in authorizing initial IBOC operations. It mandates stations to broadcast the same programming on both analog and digital signals, and said stations must use their authorized antenna systems for transmitting the digital portion of the hybrid IBOC signal.

This throws a curve at stations thinking about using a new dual antenna concept being tested by some IBOC equipment makers who promoted the concept at the NAB Radio Show (RW, Oct. 23, page 3).

"This was an option at several of our smaller stations and as a result may be on hold," said Greater Media Vice President for Radio Engineering Milford Smith. He said in larger cities where multiple group owners share common antennas, arrangements for antenna modifications necessary for IBOC conversion become more complicated.

"It's more than the delivery of a box," he said, noting that for IBOC modifications to such shared towers, lining up tower crews and agreeing on when or if stations need to be shut down for modifications requires cooperation among owners.

Still to be decided within the commission is how it will keep track of stations that go digital. At present, some stations hold special authorizations for testing which may still be valid, while authorizations for others may have expired. The commission would need to review each of those applications for specifics to reach a count, a source close to the agency said.

Interestingly, the FCC said no comments

See IBOC, page 7 ▶

WOR Goes 'HD'

NEW YORK WOR(AM) began transmitting a digital signal in addition to its analog on Oct. 11, the day after the FCC gave its initial endorsement to IBOC. The station had received experimental authority to go digital before the commission formally acted on Oct. 10.

WOR claims to be the first 50 kW AM in that state to go digital and has changed its slogan to "710 WOR-HD." The station's experience is being watched closely because of its size, because it is in New York and because it is on AM.

Engineers for the Buckley Broadcasting station expressed pleasure with both the analog and digital signals they were hearing.

"It sounds like FM," said Chief Engineer Kerry Richards. WOR personnel could hear the digital signal on HD Radios as they rode around the area in Ibiquity's test van. Ibiquity provided another digital radio for the transmitter site.

What does he think of HD Radio? "Give me radios. We need them now. For AM broadcasters, this is a Godsend," said Richards.

As AM IBOC is authorized only for daytime use at this time, WOR is transmitting the hybrid signals during the day, and operating analog-only at night.

The analog signal is being transmitted at full power; the aggregate power level of the digital signal is 6 dB lower than recommended, at 22 dB below the main carrier. Buckley Director of Engineering Tom Ray said Ibiquity requested that the station use the lower level, so its engineers could study the effects on WOR's analog signal and that of its neighbor stations.

WOR is using a four-year-old Harris DX 50 transmitter with two CAT-5 cables running from the Ibiquity exciter into a three-tower directional array with no pattern change to the antenna. The conversion took approximately three hours with one modification to the transmitter, fixing a relay in the oscillator circuit.

Ray and Richards disputed published reports in some trade press which surmised that the first digital exciter Ibiquity provided to WOR had "overheated." The unit failed on Oct. 14; WOR turned off the digital signal before noon and switched to the auxiliary transmitter. The station was back on the air with just its analog signal. The reason for the failure was undetermined at press time.

The next day, Ibiquity supplied another exciter, and the station returned to IBOC transmission by day.

The WOR engineers said they received only one complaint in the first few days about increased noise on the analog signal, from someone listening on a wide-band radio. It received no immediate complaints about interference from other stations in the area. Both Richards and Ray said several engineers from surrounding stations had asked them about the conversion.

They both reported receiving calls from listeners who said the station sounded better. The engineers surmised the analog probably sounded louder because they had lowered the station's bandwidth to 5 kHz.

The approximately 8.4-second delay built into the technology is not a problem for talent monitoring WOR, the engineers said; the format is talk, so the air staff already works with a delay.

WOR has invited listeners to tell the station what they think of HD Radio, and has provided a form on its Web site at *www.wor710.com*.

WOR plans to participate in Ibiquity's nighttime AM tests, but was not sure when those would begin.

— Leslie Stimson

Reading Services Concerned About Digital Radio

Radio reading services are worried about radio's transition to digital.

The International Association of Audio Information Services does not want to see the quality of FM subcarriers suffer. These services provide spoken-word programming aimed at the visually impaired; they traditionally "piggyback" their signals on those of FM radio stations, using the subcarriers of those stations. Listeners hear the programming on specially tuned SCA receivers.

Compounding the group's concerns is the IBOC/HD Radio timetable. No one is sure how long stations will be sending hybrid analog and digital signals before going all-digital.

The quality of audio on FM subcarriers isn't great now, and the IAAIS is worried it may degrade further when stations begin transmitting in HD Radio. The FCC is concerned, too; it said it will solicit comment on how to protect SCA services in its subsequent IBOC order.

Tests developed by Ibiquity, NPR and the IAAIS and conducted earlier this year by the Advanced Television Technology Center showed, in some cases, analog SCA receivers "may receive significant new interference" from IBOC stations operating on second-adjacent channels, the FCC stated in its recent IBOC order.

Additional SCA receiver tests commissioned by NPR in the top 16 radio markets showed additional interference from IBOC could affect 2.6 percent of eligible receivers within an FM station's service area, stated the commission.

Several DAB sources said the performance of SCA receivers varies widely. One possible solution to interference would be to replace SCA receivers with models less sensitive to interference.

Ibiquity General Counsel Al Shuldiner said the company is working with the IAAIS to seek a solution. "Even in the hybrid mode, we want to make sure reading services upgrade to digital," he said. Noble agreed that Ibiquity is working with IAAIS, but believes it's taking too long.

Another fix may be for stations to devote more of their spectrum to auxiliary services. But that approach would mean fewer available bits to carry the main channel programming.

Stations could also use Ibiquity's so-called "extended FM hybrid mode" of implementation, where the digital sidebands on either side of the analog carrier are more spread out, adding bits to the digital carrier for data services. The tradeoff here, sources said, is increasing the potential for interference to the host analog signal.

IAAIS' Chairman of Government Affairs Dave Noble believes stations would be unlikely to choose either of these options, for competitive reasons. The IAAIS wants the FCC either to mandate SCA receiver capability in HD Radios or to persuade receiver makers to incorporate that ability without federal intervention. (See related commentary, page 45.)

— Leslie Stimson

IBOC

▶ Continued from page 6

submitted for this proceeding identified other viable spectrum options for radio, and therefore, it wrote, an out-of-band approach "is no more viable today than we first sought comment in this proceeding" three years ago.

The commission shut the door on using TV Channel 6 spectrum for radio. It's not sure when TV will surrender that analog spectrum.

Also, the FCC does not consider Eureka-147, the digital technology used overseas and in some Canadian cities, a viable option for this country.

"In dramatic contrast to IBOC, Eureka-147 has no active domestic proponent and no appreciable support within the broadcast industry," stated the FCC. Further, it said, no new spectrum for such a system is available.

Elsewhere

Radio watchers abroad noted the FCC action. Among Canadians attending a convention of the Institute of Electrical and Electronic Engineers in Washington in October, some speculated privately that their country likely would consider implementing IBOC, especially in the cities near the U.S. border, citing a low Eureka receiver uptake in that country after several years of availability.

Asked at the IEEE about interest in the technology by other countries, Ibiquity President/CEO Robert Struble said the company has received recent interest from Mexico, Argentina and Australia. He said while the Ibiquity technology would work worldwide, he expected it to be used as one technology, but not necessarily the only implementation of digital radio, in other countries.

(Ibiquity especially wants to license its Perceptual Audio Coder for IBOC audio implementations in other devices, such as phones and hand-held devices, worldwide.)

Some observers are taking heart that the commission is not dismissing out-of-band options entirely, in the event that new spectrum is identified for broadcast use. The commission has a task force reviewing all spectrum use for all the industries the agency regulates in terms of efficiencies. But other observers said it's not realistic to hold out hope that such a solution would be found in time to be included in final rules governing radio's digital transition, expected sometime in 2003.

Workbench

Radio World, November 6, 2002

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

A Story of Radio Mice and Men

by John Bisset

How does that nursery rhyme go, "Hickory, dickory, doc-tor ... the mouse climbed up the contac-tor!"

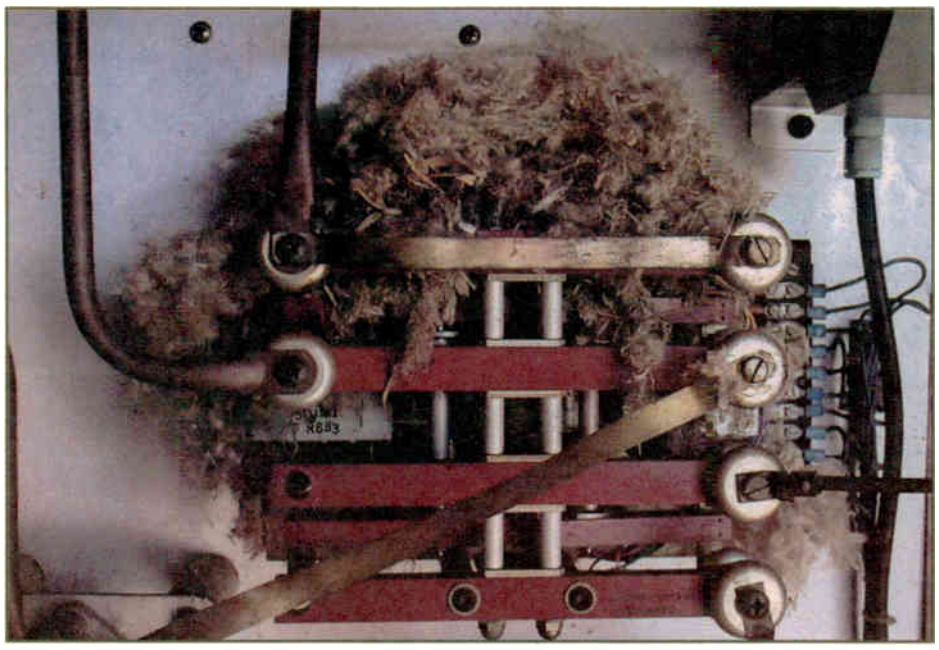


Fig. 1: Nests made by mice are a fire hazard.

If you've ever wondered how AM coupling units could catch on fire, Fig. 1 offers one method.

Mice seem to find the most comfortable array of fluff and feathers for making their nest. "Tinder-box material" describes it best.

They locate the nest in the worst places. In the case of Fig. 1, the contactor becomes a pretty loud alarm clock as it switches twice a day, jarring the nest's occupants in the process. The picture is a reminder to check inside your phasor and base coupling networks periodically.

After the nest was cleared away, Fig. 2 shows one of the occupants posing for the camera, as he looked for his now-missing home! Mice are industrious, however; and unless every crack and crevice is plugged, they will return and rebuild their nests overnight.

When I was doing contract work, we were called in to clean out the coupling networks of a four-tower array. The station had been off the air for several months, but the owners intended to return the station to regular broadcasting.

We diligently swept, vacuumed and scrubbed the components till everything was clean. We secured the doors and left. A couple of days later, the GM came by to inspect our work. Imagine the surprise when I'm greeted by a cursing customer, saying we had ripped him off!

I had no idea what he was talking about. We went back to the site, opened the network doors and behold: new nests, like they'd never been removed in the first place. One of my associates wisely had snapped a few pictures while we worked, and of the once-clean coupling networks as well. Our reputation rescued, we used some sealant to fill all the cracks and holes. This prevented the mice from returning.

The pictures even got us an apology from the manager. Keep a little disposable camera in your toolbox, especially if you are doing contract work.

Looking to keep this from happening to you? The first line of defense is to seal up the coupling networks or doghouses.

A good way to check for rodent or insect access holes is to visit the site at night. While the station is off the air, plug in a bright trouble lamp, close the door of the coupling network or doghouse and inspect the outside, looking for light leaks. If you carry a caulk gun or expandable foam tube, you can spot-plug any small holes as you find them.

You'll be amazed at the holes, cracks, and crevices that the light will reveal. Each offers an entrance for vermin, so seal them up.

★ ★ ★

EZ Maintenance is a Windows-based software package designed for tracking vehicle maintenance. It can be used for tracking your equipment as well.

The program includes scheduling and tracking capability, but also includes a historical section. It will even create workorders for equipment.

The software also produces maintenance calendars. Entry of equipment and subsequent maintenance can be bar-coded,

See WORKBENCH, page 10 ▶

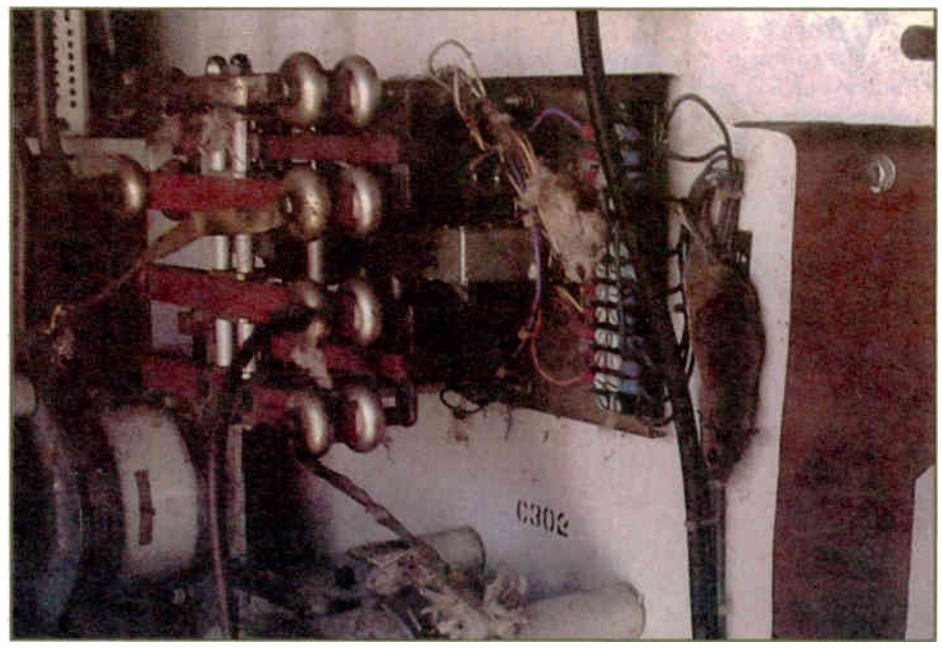


Fig. 2: This fellow won't be without a nest for long, if you let him rebuild.

Most of the top FM stations have already upgraded to Omnia.

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Most of the 100 highest rated FM stations in the most competitive US markets* have already upgraded to Omnia. And more are upgrading all the time.

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* Omnia is used by the majority of the 10 highest rated FM stations in each of the Top 10 US markets. Spring 2002 Arbitron Ratings. 12+ Mon-Sun 6a to midnight.

FEED LINE

Overshoots and Close-In Coverage

by W.C. Alexander

This is the third in a series of articles about FM transmission systems. Earlier articles are available at www.rwonline.com.

In the Oct. 23 installment, we looked at the question of antenna gain vs. transmitter power. In this segment, we will discuss methods of dealing with the problem of overshooting the target coverage area and problems with close-in coverage.

Consider that with an FM antenna, we achieve "gain" by increasing the number of elements in the antenna. Antenna "gain" is referenced to the field produced by a horizontally-polarized half-wave dipole in free space.

A horizontally-polarized antenna with one bay, for example, would nominally exhibit a power gain of one; adding an additional element to the antenna would increase its power gain to two. Additional bays would likewise continue to increase the gain of the antenna.

Circularly-polarized (CP) antennas would exhibit half this nominal gain, as half the power of the antenna is vertically polarized (i.e., a two-element CP antenna has a nominal power gain of one). As a rule, only the horizontally-polarized mode is considered when discussing antenna gain.

A single-element antenna exhibits a large vertical-plane lobe with the radiation being distributed evenly both below and above the horizon. As additional elements are added to increase antenna gain, the vertical plane lobe is narrowed, focusing the main lobe energy on the horizon.

Spotlight analogy

Think of a single-element antenna as a floodlight that fairly well lights up an entire room with a relatively low light intensity. Increase the "gain" of the floodlight by focusing it with a reflector, turning it into a spotlight. The same amount of light energy is emitted by the bulb, but now it produces a much greater intensity in a much smaller area. Continue to focus the light until it is a brilliant pinpoint and you have done in essence the same thing as stacking 12 or more elements in an FM transmitting antenna.

There are several places where this analogy falls apart, but it illustrates the general principle.

Maximum coverage is achieved by focusing the "beam" of the vertical-plane lobe on or just below the horizon. Increasing the antenna height naturally pushes the horizon out by allowing the antenna to look slightly beyond the curvature of the earth.

If a tight vertical-plane "beam" of a multi-element antenna mounted on a tall tower is focused on the horizon (i.e., perpendicular to the tower and antenna), most of the energy radiated from the antenna will overshoot the target coverage area, being wasted out into space.

This isn't much of a problem in cases where the antenna has few elements or is mounted less than 500 feet above average terrain. However, in cases where a multi-element antenna is mounted 1,000, 1,500 or even upwards of 2,000 feet above average terrain, steps must be taken to mitigate the overshoot.

The seemingly obvious solution would be to tilt the antenna mechanically so that its vertical-plane "beam" is focused in the desired location, just below the horizon. While this technique does work, it has a serious drawback in that it only lowers the beam on the side toward which the antenna is tilted and it raises the beam an equal amount on the opposite side, in effect robbing Peter to pay Paul.

In certain situations, this may be an acceptable course of action, for instance where an antenna is located with all the populated area to one side or where the antenna has a significant amount of terrain shielding on the side away from the populated area. In both such cases, the loss of signal on the opposite side would not matter.

A better way of achieving "beam tilt" is electrically, by delaying the currents to the lower antenna elements. This is achieved by simply inserting a "delay line," a short, additional length of transmission line between the power divider and the lower antenna elements. Electrical beam tilt has the advantage of lowering the vertical-plane lobe equally in all directions. Typical values of electrical beam tilt are 0.5 to 1 degree.

Null impact

Another byproduct of increasing antenna gain is that of elevation plane nulls.

Any antenna with two or more elements will, in addition to the main vertical-plane lobe, have other secondary lobes both above and below the horizon. Along with these secondary lobes come vertical-plane nulls. Nulls above the horizon are of no consequence because they have no effect on coverage. Nulls below the horizon are a different story as it is below the horizon where the desired coverage area lies.

With an increasing number of elements, the elevation angle of the first null (i.e., the first vertical-plane null below the horizon) increases. As a result, the distance from the tower to the point on the ground where the first null lands increases.

This null area, even though relatively close to the tower, often is an area of real signal problems. With virtually no direct-path signal, all the remaining signal comes from reflections and refractions and the net signal is plagued with multipath effects. If there is significant population

See FM SYSTEMS, page 12 ▶

Workbench

▶ Continued from page 8

expediting the initial description or subsequent maintenance and repairs.

In a day of consolidation, keeping a master list of equipment, maintenance and repair issues sounds like a time-consuming ordeal. It's not. Initial data entry can be performed by an intern or secretary. The benefit to you is getting a handle on all your equipment and maintenance issues.

The EZ Maintenance software package runs $1,495. You can obtain more information at (661) 286-0041, or via e-mail to *info@xactmailer.net.*

If the pricetag of this software scares you, Excel can be used to develop a poor-man's maintenance record. Either way, the ability to track equipment, problems and spare parts will make your day more efficient.

★ ★ ★

Jeff Caudell of the Clear Channel cluster in Harrisonburg, Va., is a frequent contributor to *Workbench*. Fig. 3 shows a bargain wire trough that Jeff installed in his rack room to get wiring from his punchblock wall to the equipment racks.

Home Depot or Lowes can provide vinyl-covered metal closet shelving. This shelving is modular and is braced with heavy-channeled metal extrusions.

In Jeff's application, the shelves were overlapped and wire-tied together to provide a wider trough for his wiring. Cable dressing doesn't have to be messy, and inexpensive shelving like this helps to organize pulls, as well as dress the wires overhead as they pass into the racks.

If Fig. 3 demonstrates the right way, Fig. 4 shows what to avoid. Here you see the metal conduit that Jeff inherited when his studio complex was built years before the acquisition. He shared this to warn readers against using this kind of armored conduit in future wire plants.

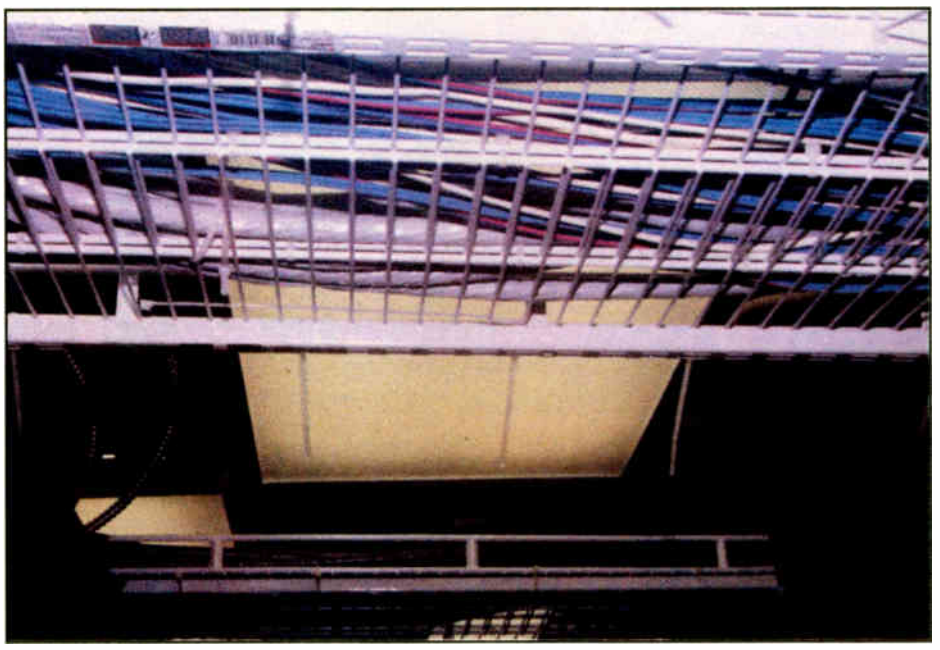

Fig. 3: Jeff Caudell shares this bargain wire trough.

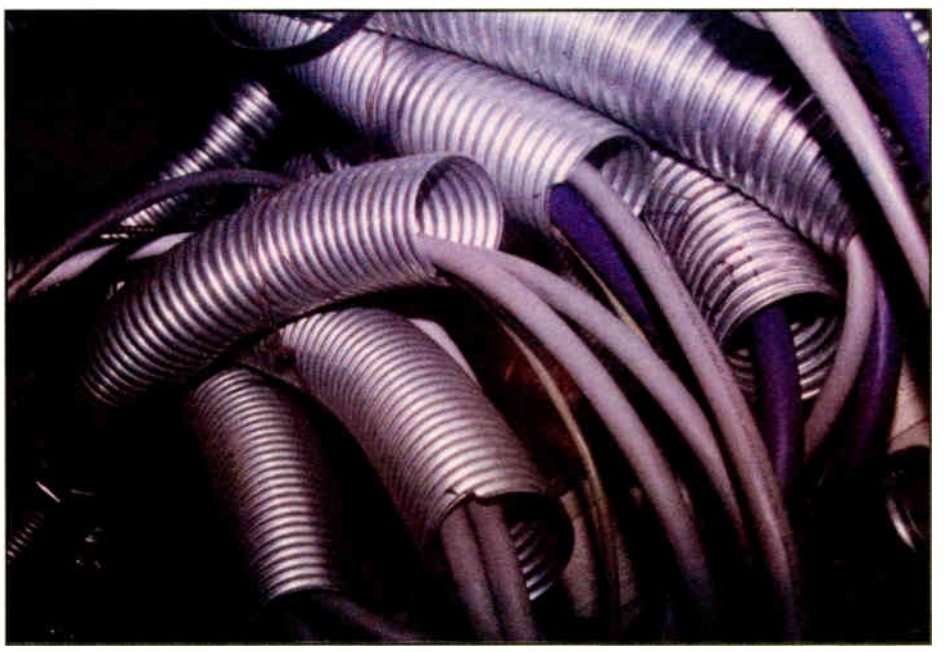

Fig. 4: Avoid this kind of armored conduit in your wire planning.

Although the conduit is flexible and easy to route, adding new cable is next to impossible. The multiple ridges catch the end of the cable, causing it to snag repeatedly. The ridges even foil a fishtape, so save yourself the aggravation. If you're using non-plenum-rated cable, smooth-walled metal conduit is the way to go.

★ ★ ★

It won't be long before dry weather permeates your studio, and static discharges will multiply like rabbits. When replacing a studio floor, consider carpeting or carpet squares that are permeated with an anti-static compound.

At the very least, if your carpeting is untreated, dilute some liquid fabric softener in water, placing the mixture in a spray bottle, and periodically treat the carpeting. You don't need a lot of fabric softener to fight the static; in fact, a 20:1 dilution of 20 parts water to one part fabric softener in a spray bottle should be plenty. Heavier concentrations of the fabric softener will cause the carpeting to develop a slick finish, causing staff to slip and fall.

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.

DAs and FM Performance Discussed

by Mario Hieb

Didn't get to any of this fall's conventions?

Here's a quick overview of one of the more technical happenings, the day-long AM/FM Antenna Certification Workshop at the NAB Radio Show in Seattle.

The first presentation featured Ben Dawson, president of Hatfield & Dawson, and Ronald Rackley, vice president of du Treil, Lundin and Rackley, speaking on the topic of AM directional antennas. A reprise of their presentation at the NAB 2002 show, topics included AM directional RF circuits and components, preventive maintenance, tactical troubleshooting for Das and dealing with the FCC.

Of special interest to those exploring digital broadcasting in the AM band was "Bandwidth Optimization Concepts for AM Transmission" by Rackley. He explained how directional AM antenna parameters vary at different frequencies resulting in a signal pattern that varies in shape from one sideband to another.

"The more advanced modulation systems, like AM stereo that came along 20 years ago, and more so today with in-band, on-channel, are much more sensitive to change" he said. "You should have problems with those modulation systems before you ever notice them with AM modulation."

To make IBOC work, the antenna system must be linear and incidental phase modulation (IPM) must be eliminated.

There are other bandwidth-related problems in directional AM systems.

"Also, we have the input impedance bandwidth effects," he said. "And that is how the bandwidth of the loading that is presented to the final amplifier of the transmitter affects the relationship of the carrier and the sidebands."

He said input impedance effects usually can be fixed with a network between the antenna system and the transmitter. But then there are problems with bandwidth effects that require specific attention to pattern bandwidth beyond the common point of the phasing system.

"The input impedance correction is usually good for optimizing the signal in most systems in the major lobe of the pattern," Rackley said. "The pattern bandwidth effects show up most often in the null structure of minor lobes of the pattern."

FM design

The second presentation of the day featured Bob Surette, manager of RF Engineering of Shively Labs, and Thomas Silliman, president of Electronic Research Inc. "Tom and Bob" began their show with a discussion of FM antenna design and implementation, specifically FM transmission line matching.

"Some tests were done back in the '80s where you had a 1.2:1 standing wave on an antenna that was about 700 feet away from the transmitter," Surette said. "You'd have enough phase distortion that you'd be transmitting multipath. You want to correct discrepancies for VSWRs and antenna systems as close to that mismatch as you possibly can."

"Sounds easy, but not practical," countered Silliman. "An FM signal is not just one frequency, but covers a band of 150 kHz with sidebands."

The longer the line between the matching circuit and the matching device, the more bandwidth you will lose. But there are solutions, he said.

"I like ceramic slugs for several reasons," Silliman said. "One reason I like them is because once you set them they usually don't change. Another reason that I like them is because they don't

See ANTENNA, page 18 ▶

FM Systems

▶ Continued from page 10

within the null area (or if there is a major thoroughfare through the area), something must be done to mitigate these effects and make the station listenable there.

The best solution is to take steps in the antenna design to prevent the signal in the null from going all the way to zero. A small amount of null fill, usually 5 percent or so, is more than adequate to provide plenty of direct-path signal to overcome the reflections and refractions.

Null fill does not come without a penalty, however. That power put back into the vertical-plane null must come from somewhere, and it mostly comes from the main vertical-plane lobe. As such, null fill generally slightly lowers the gain of the antenna

How does one determine the distance to the first null? A quick method of determining the approximate distance is:

$$\text{Null Radius (mi.)} = \frac{\text{Antenna Height (ft.)}}{\text{Number of Bays}/5{,}280}$$

The antenna manufacturer can provide a complete vertical-plane pattern for the antenna being considered, and with this you can find not only the location of the null but its width. Overlaying that on a map can help you determine whether or not null fill is even needed.

As we continue this series on FM transmission systems, we will focus next time on antenna bandwidth and some of the problems that can result from inadequate antenna bandwidth.

Cris Alexander is director of engineering for Crawford Broadcasting. He welcomes questions and ideas for this series via e-mail to crisa@crawfordbroadcasting.com.

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Is That a Symphony I Hear?

Motorola's New DSP-Based Receiver Core Could Be Music to the Ears of Broadcasters

by Skip Pizzi

By now you may have heard a little about Motorola's "Symphony" concept for a DSP-based radio receiver, and perhaps you've wondered if any of the hype about extended range and improved audio quality was warranted.

Well, after some deeper technical exploration and discussion with Motorola engineers, there indeed seems to be something for broadcasters to get excited about. Just as much of AM's woes today are due to poor receiver design, the stock of both AM and FM stock could be buoyed by the improvements offered in the Symphony design. If the technology takes hold broadly throughout the receiver marketplace, Symphony could have as much or more real impact on listener perceptions of radio quality than IBOC will, and sooner, at no cost to broadcasters.

The plan for Symphony uses such a chip as its central core, with some additional specialized elements and a couple of other off-the-shelf Motorola chips, to provide unprecedented performance in an integrated (and therefore inexpensive) package.

Diversity

Fig. 1 shows the basic plan of the receiver and its three-chip design. The first chip is an RF front end, which allows external filter insertion and digital tuning control. The Symphony design allows either one or two of these chips to be used, the latter applied to diversity antenna implementations.

Unlike traditional automotive diversity receivers, however, the system doesn't simply switch between the antennas for the better signal, but combines the two signals optimally in the manner of a phased-array design.

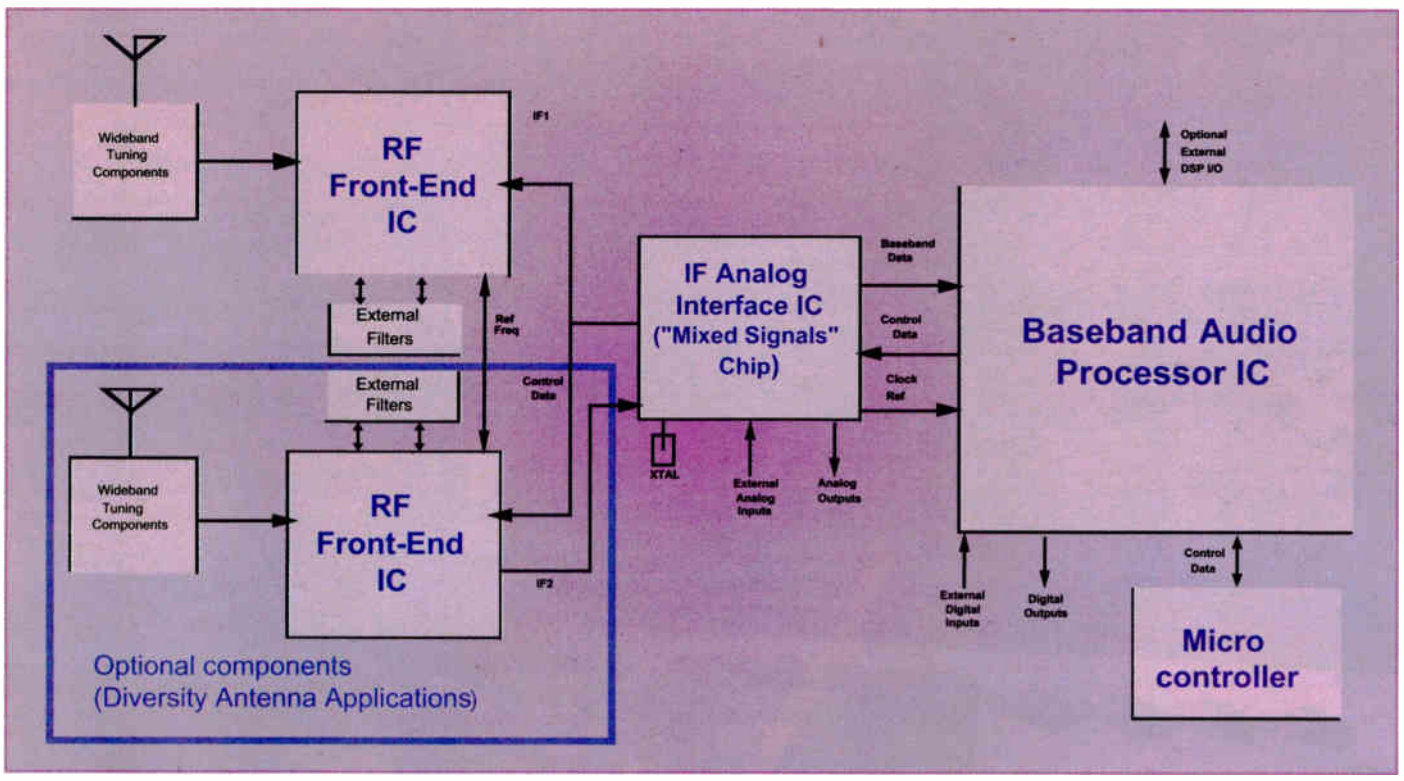

Fig. 1: Motorola's Symphony digital radio chipset is shown in its typical configuration.

Of course, Motorola is quick to point out that Symphony could work with IBOC (although not in its initial design), to further improve the listening experience. In fact, Symphony could work with any number of radio and audio formats, both analog and digital, to provide a cost-effective and extremely flexible sound platform for fixed and mobile receivers.

Among audio geeks, the Motorola 56000 DSP family is the stuff of legend. The company has spawned a dynasty of programmable chips that are to the audio hardware industry what Java and C++ are to computer software programmers.

In the past, the radio broadcast community has only benefited from this product line by way of audio workstations and some professional audio processing gear. Now, thanks to improved production efficiencies and economies of scale, the cost of the Motorola's latest 563xx series has been driven to the point where it can be competitive for consumer radio receivers, adding a negligible cost increment to traditional designs, but greatly increasing functionality and quality.

The IF output of this stage proceeds to the so-called "mixed signals" chip, where the received signal is converted to the digital domain, and stays that way until its output to audio amplifiers and speakers. This chip also provides A/D conversion for external audio inputs, and handles the D/A conversion for the final output.

Once the IF signal has been digitized, it is relatively easy to implement an adaptive IF filter that can dynamically vary its bandwidth to accommodate a wide range of spectral conditions. The Symphony system detects the width and energy of signals adjacent to the desired channel, and adjusts IF filter bandwidth accordingly, doing so in small increments so bandwidth is not narrowed any more than necessary. This allows an optimum balance between noise, distortion and frequency/phase response performance. Receiver manufacturers can also adjust the behavior of this filter to suit their design goals.

Finally, the powerful 56300 chip takes the baseband AM or FM signal from the IF chip and finishes the job. The AM/FM demodulator in this stage also is digitally defined, and therefore provides increased sensitivity while maintaining a low noise floor. This has the effect of extending the useful range of the receiver, allowing it to receive listenable signals at greater distances than most traditional radios.

Subcarrier performance can also be improved through digital-domain processing. There could be applications of the Symphony design by some implementers that provide higher-quality and more uniform performance for the reception of FM subcarrier audio services. The *Symphony* system also supports RDS intrinsically.

Fig. 2 on page 16 shows how this baseband audio processor can work with one *or two* simultaneous incoming analog or digital signals and perform the necessary decoding, audio processing, integration with other audio sources (e.g., cell phone or navigation system in the car), and routing to multiple amplifiers and speakers.

Note that the system can inherently manage two simultaneous sources, sending one to a vehicle's front speakers, for example, and the other to headphone outputs in the back seat. (No more fighting with the kids about which station to listen to!) The system can also handle multichannel audio sources for matrixed surround or 5.1 channel listening.

Multipath

One of Motorola's claimed benefits of the system is reduced audibility of multipath artifacts in FM reception.

Steve Tremmel, operations manager of Motorola's Austin-based Driver Information Systems Division, explained that this functionality results from two primary design components. The first is the diversity combining process noted earlier, and the second is "multipath mitigation via post-IF equalization algorithms," according to Tremmel. These proprietary techniques are executed in the 56300 chip, and are designed to provide substantial reduction in the audible impact of multipath interference in FM reception.

Tremmel explained that the baseband chip was "a standard, 24-bit, 56300 core, with new, custom and very small hardware acceleration added in an integrated design." This is the key advance that makes the Symphony design possible, in his view.

Regarding IBOC, Tremmel pointed out that manufacturers could opt to add a post-digitized-IF I/O port, into which a future external hardware decoder could be inserted to handle HD Radio or any other new format. Later Symphony chipsets might handle IBOC decoding internally, he added, probably with the addition of another hardware acceleration block.

Audio elements

The value of the Symphony design will be most noticeable to users in terms of audio performance. For example, the FM stereo decoder on the 56300 baseband chip can provide better stereo separation and signal-to-noise ratios than typical conventional receivers without significantly increasing manufacturing cost.

Moreover, the chip is programmable, allowing it to take on varying sonic characteristics as the radio manufacturer desires. This process is accomplished by a plug-in architecture, using code components offered by Motorola or from third parties. Motorola calls these plug-ins Post Processing Phases. Up to 25 "slots" for plugging in PPPs are available on the chip, typically with eight reserved for selections from Motorola's standard library (e.g., equalization, dynamic range compression), and the remaining 13 available for the implementer's use in customizing feature sets.

A number of these optional PPPs are available for downloading by implementers (e.g., Lucasfilm THX, virtual 3D soundfields, Karaoke). Motorola also provides implementers and third-party developers with a software architecture for creating their own new features. This process is based on the well-established 56000 programming language, and it includes an API that provides rules for PPP insertion into the processing environment.

Such a design allows substantial product differentiation on a single, high-performance platform, and enables manufacturers to create unique functionality with minimal investment. Ultimately, consumers, manufacturers and broadcasters all reap the benefits of this common platform approach.

As you may have noticed, Motorola's claims for Symphony's improved FM multipath performance and generally increased audio quality are the same primary claims made by Ibiquity's HD Radio system.

But while the latter requires substantial prospective investment by broadcasters and an unknown incremental cost to consumers, the Symphony method costs broadcasters nothing, and maximizes the value of any other audio chain improvements made at their radio facilities.

See PIZZI, page 16 ▶

The Big Picture

by Skip Pizzi

If You Feel Like This

You Need This

Looks like you've got your hands full again. Except you're running out of hands. And because you have many facilities you could use a few more legs, too.

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HARRIS

FIRST PERSON

Harris Takes HD Radio on the Road

by Tom McGinley

This fall, Harris Corp. launched a series of day-long seminars about IBOC and HD Radio to help educate radio station owners and engineers. I attended the first one, here in Seattle, to find out how the company is presenting the technology and what questions managers were asking.

The Harris presentation eventually traveled to six of the Ibiquity rollout cities, including Miami, New York, San Francisco, Los Angeles and Chicago. Harris is but one investor in Ibiquity, but among the many other companies involved, it seems to have taken the lead in ramping up awareness and acceptance of HD technology with these seminars.

Aimed at station owners, managers and engineers, the event presented a range of information that stations will need in order to prepare for implementation and promotion of HD radio. About 50 people attended the Seattle affair at a downtown Hyatt. Harris provided hardware demonstrations and a comprehensive loose-leaf binder for attendees including the PowerPoint material presented. There was plenty of food and there were plenty of sales brochures.

Money matters

The morning session focused on the business of HD Radio, including those issues of most concern to owners and GMs. After a long commercial showcasing the Harris $40 million commitment to HD Radio, various key figures from the company's radio division and Ibiquity's management team outlined the advantages of HD Radio and its potential for opening up new revenue streams.

In a nutshell, they told us, HD Radio will give radio the technical muscle to reinvent itself. All presenters emphasized that HD provides a realistic transition to a digital future and is able to build on current infrastructure without making existing radios obsolete.

Scott Stull, business development manager for Ibiquity, assured attendees that HD would not be another AM stereo.

"HD is the most-tested and -supported new technology system ever invented for radio," he said.

Ibiquity's strategy for picking the six target markets for initial rollout was based on careful research, it said. These are the markets where a larger percentage of consumers tend to become early adopters of new technology. By implementing HD transmissions on key stations in those markets, over 50 percent of the listeners there will have access to the benefits of HD Radio from the beginning. Receiver manufacturers in those markets will heavily stock vendors with receivers and promote HD.

The session I attended happened to be the first time that Ibiquity announced its fee waiver. Stull announced that Ibiquity would "mitigate licensing fees for all early adopters through the end of this year." That means stations committing to HD Radio equipment orders by the end of 2002 will pay no licensing fees.

He also conceded that Ibiquity was "moving away from the percentage-based model for data licensing." "It just wouldn't work," he said.

Virginia Lee Williams, director of North American Radio Sales for Harris, revealed at this meeting that Radio One was the first major group to commit four of its markets to HD radio transmission equipment purchases. These two announcements were a big part of Harris' sales presentations during the ensuing NAB Radio Show.

Killer app

All of the presenters acknowledged that improved fidelity and multipath interference reduction will not by themselves sell radio listeners and buyers on HD Radio.

All of the presenters acknowledged that improved fidelity and multipath interference reduction will not by themselves sell radio listeners and buyers on HD Radio.

"Great sound is a minimal expectation by consumers for anything digital," Stull admitted. The killer-app or "sizzle on the steak" lying within this technology will be based on its data content.

A big part of HD Radio's data feature set is based on Ibiquity's partnership with Impulse Radio, an upstart venture-capital type of company. Deriving its name from impulse buying, Impulse Radio has established a standardized open operating system for programming, transmitting and receiving HD data called XDS.

Mark Walsh, the chairman of Impulse Radio, delivered a passionate and persuasive overview of how and why data conveyed over HD can bring new revenue-producing opportunities to radio's future. As a former cable TV and AOL exec, Walsh said most other electronic mass media have added channels that include profitable interactive digital components. It's radio's turn to step up to the plate or fall behind, he suggested.

Walsh described XDS as the operating system or OS that broadcasters will use to accommodate new applications for data-based offerings residing within their present business models. Impulse has developed Datacast server software, which allows broadcasters to log and load commercial inventory with data inventory within normal traffic and billing procedures. He cited song/artist info as well as traffic, weather and stock market reports scrolling on the HD text display as starting point ideas.

When AOL first launched its e-mail and Instant Messaging services, he said, it had no idea how powerful and popular those applications would be. Walsh thinks the real killer app for HD data may not yet be known and, like Instant Messenger, that it could be simpler than we think.

Impulse showed examples of how a text display on the dashboard radio and a full video screen for backseat viewers might contain data applications that can be both program-associated and program-independent of the main audio channel.

One of the newest and hottest selling options in cars and family vans is a video or TV/DVD screen built in for backseat viewing. There is no reason HD Radio data could not be a resource to deliver such content.

Buy button

One of the primary new arenas that Ibiquity and Impulse Radio envision HD data being able to exploit is mobile commerce. Considerable discussion dealt with the concept of a "buy button" on the new generation of HD Radios. Hearing a commercial and then buying the product via this feature could work like the Cadillac OnStar interactive monitoring service. The onboard cellphone automatically would send back the user's choices and other data to a collection point for fulfillment. Encrypted credit card and address info would be on file. The opportunities here to enhance and enable new business are exciting.

Virginia Williams urged attendees to conduct an IBOC/HD site assessment on their stations and/or enlist the help of a Harris sales engineer to identify needed hardware and what mode of HD transmission they should choose. Harris also is offering courses and certification for staff engineers and consultants on HD technology.

See HARRIS, page 18 ▶

Pizzi

▶ Continued from page 14

Symphony also seems unlikely to introduce significant cost burdens to consumers, thus hastening adoption.

Although a Symphony-based receiver might make an IBOC signal sound even better, once first generation Symphony devices get into consumer's hands there might be even less incentive than today for many consumers to convert to (possibly more expensive) IBOC radios.

Marketing value

Meanwhile, the audible improvements of a Symphony-based receiver could also help terrestrial broadcasters compete with the compressed digital signals of satellite radio services, at least on a qualitative level. Many "golden ears" claim that an ideal (or even a very good) FM broadcast can sound noticeably better than audio subjected to the high compression ratios of digital codecs currently used by satellite radios (this may also apply to IBOC's somewhat less aggressive compression), and Symphony products could help make those beneficial conditions more prevalent.

Of course, this implies that the station's audio chain quality is up to the task, so improvements in this area are worthwhile in the meantime, and will benefit all listeners to some extent.

One major radio receiver maker, Hyundai Autonet, has announced plans to build radios using the Symphony chipset. This company makes radios for several Asian car manufacturers, and offers aftermarket devices under the Audiovox brand. At press time, Motorola reportedly was in negotiation with other important manufacturers, and expected to announce completion of these deals soon.

Meanwhile, Blaupunkt recently announced its Digiceiver radio (based on a different Motorola chipset but offering some similar features); and Philips, Texas Instruments and ST Microelectronics are developing chips aimed at the digital radio market. Analysts point out that with the expected flood of "digital radios" in the market next year, it will be ever harder for broadcasters to differentiate the benefits of IBOC's digital *transmission* from digitally processed analog AM and FM signals in the receiver.

This should make life interesting for the deployment of HD Radio. The fate — and, in fact, the very definition — of "digital radio" may hang in the balance of consumer electronics' next few years of product deployments and marketing tactics. The race is on.

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

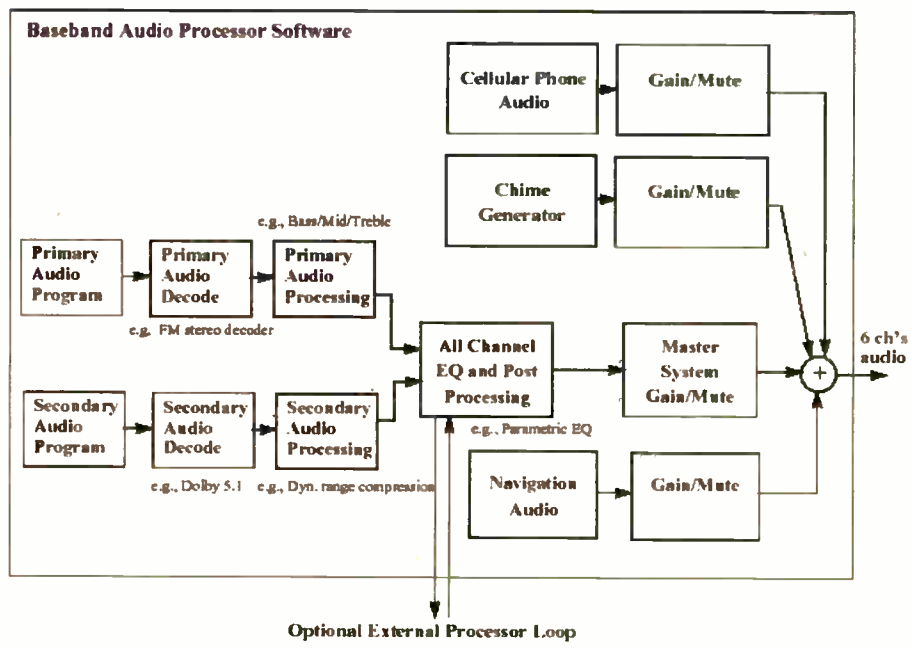

Fig. 2: This is a logical block diagram of the baseband audio processor's functionality.

Jeff Gulick
Regional Engineering
Services Manager
Clear Channel Radio

Jan Chadwell
AM Chief Engineer
Clear Channel Radio

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Jeff: "We looked at everybody... and nobody had what Klotz Digital has."
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Harris

▶ Continued from page 16

Lunch included demonstrations of a Sony HD Radio and the new Harris Dexstar HD exciter. The afternoon was devoted to a technical presentation of how HD Radio works. Gary Liebisch, Harris RF transmission applications engineer, covered topics including HD signal generation for AM and FM, high-level and low-level combining modes, STL and audio processing considerations, digital audio compression issues, exciter configurations, the RF mask and interference issues, handling the seven-second delayed audio issue, and space planning.

Liebisch suggested that pre-processing HD audio will need to focus on reducing the distortion artifacts as opposed to adding more of them as has traditionally been done in analog to achieve more loudness. Ibiquity Vice President of Engineering Glynn Walden explained how the next version of HD software will effectively equalize the levels of HD digital audio with the analog so that as radios transition in and out of digital, loudness will remain essentially the same no matter what processing is used.

Paul Signorelli, the chief technology officer of Impulse Radio, offered more technical details on the XDS open standard interactivity including conformance by receiver manufacturers and how it can be customized to achieve what broadcasters want and need. He demonstrated how the Impulse Datacaster software is programmed using the Data Avail on several examples of datacasting applications. That tool essentially lets you sell the same time twice.

Signorelli reminded attendees that the goal of HD data was not to merely scroll a simple text message to the receiver but to support the broadcasters' business model with new revenue streams they can manage easily.

The Harris event concluded with the unveiling of the new DAX line of Harris HD optimized AM transmitters and other HD transmission equipment as well as a lively question-and-answer session. Many attendees said afterward that they felt the day was time well-spent, gleaning a better understanding of what HD radio will deliver in the beginning and what it might deliver over the long haul.

Some were skeptical of whether the data applications would ever be significant to their bottom line. One station GM who did not want to be quoted by name said, "The Impulse Radio deal looks interesting. But it's akin to Bill Gates telling us he's just invented MS DOS but that to make money we now have to invent and write the applications ourselves." Clearly the Impulse Radio folks came away from this event realizing that the selling of data as the killer app for HD to station managers could be an uphill battle.

Harris said it was considering expanding the HD Radio seminars to other markets as the rollout signs more early adopters.

The author is technical adviser to Radio World and DOE for Infinity Radio Seattle.

Antenna

▶ Continued from page 12

have a lot of mechanical parts."

The disadvantage of this device is that, to adjust it, you have to open the transmission line and move the slug. This could be a tedious operation if you don't know where the slug goes.

"However, with the mathematics involved, looking at a line with today's equipment, you can predict exactly with two measurements where this thing goes," Silliman said.

The next part of the session dealt with grounding systems.

"The key thing is to use lots of rods and lots of connections," he continued, "Spread out your ground rods. Spreading them out gives you two advantages. One advantage is that each rod is going to conduct to a cylinder theoretically of ground."

The other advantage is that by spreading them out and connecting them by a copper strap, you get a very broad impedance ground.

"An antenna that is mounted to a tower, but not grounded to that tower, will not operate properly," said Surette. " Some azimuth patterns will not develop if grounding is not correct."

Some antenna failures can be traced to the structural characteristics of the tower, Silliman said.

"I had my structural engineers do a finite-element analysis of what it was mounted on and I found amazingly that there was a deflection point in the structure exactly where the antenna failed.

"So that got me thinking and I later came up with a recommended standard that we published in Radio World of a radius of curvature."

Surette agreed, "Tower movement is a complex function. You can get towers with guy wires and the tower will move kind of like an S-curve or like a snake is moving."

Test approaches

Shiveley and ERI use different methods to test their antennas. On the subject, Surette said, "If you try to compare very carefully, whether it be full-size or model, the analysis is very complex mathematically. If you don't put all of those little tiny characteristics in, then it's garbage in, garbage out."

Shively tests its antennas using scale models, whereas ERI uses full-size ones.

"The most accurate way that you can measure anything today is mathematically," Silliman said. "The best far-field and the best scale model range you can build will closely approximate what you can do in a near-field probe range. If you scale anything you have error. You have error in conductivity; you have error in permeativity. Then if you measure from a range, you have the range measurement error."

With more FM stations moving towards community antennas, high-power filters are an important topic.

"Filters by themselves will allow you to put more stations, more antennas on one tower," Surette said. "Over the years, notch filters have gone away. Most of the filters designed today, I believe, are bandpass." Silliman concurred: "The constant impedance passband type is the type that Bob builds and I build. ... It's an excellent device."

Southwest

▶ Continued from page 4

100,000 or so. The KICA(AM) 0.5 mV/m groundwave contour, for instance, includes Lubbock and Amarillo as well as Clovis.

Rick Keefer has been an engineer for 29 years. He's delighted to find himself in this situation.

"It's been my dream all along — what engineer hasn't (had it) — to construct a super-high-power radio station. The 50 kW stations almost all were granted in the 1930s to the 1950s. The FCC has not created (many) new super-high-power stations in our lifetimes. I can think of one in the 1990s.

"In some cases, this is a first service for local listeners," he said. "This is such an open area that once you get 25 miles away, there's no local station."

The 830 opportunity existed thanks to protected co-channels between 850 KOA in Denver and 820 WBAP in Ft. Worth.

Describing the geographical location as "kind of in the corner," Keefer said, "We were able to get five-state coverage with only two towers on 830 clear channel. It's simple yet powerful."

The facility project will involve new transmitters, antennas and feed lines. Two stations will use digital automation for most of their programming; two will use satellite feeds. The Spanish station in Muleshoe is live.

Keefer said the conductivity of the soil is a boon for the AM properties.

"You work with what you get. In the north you may be at 4 or 8; here it's 15 to 30. One watt here goes much further. To get a power increase across that kind of conductivity really helps out."

The cluster creates an unusual challenge from a management perspective.

"We'll have something operators don't often find themselves in," Keefer said, "a pair of regional stations ... and three local stations — totally dissimilar programming and business plans. We're starting to break into two different angles."

Small staff

The group is based in Clovis. Its headquarters will remain there; four of the stations will have studios in town, with three RF sites to the west, while KICA(AM) will have a tower across the Texas border. Despite the big power numbers, the owners say theirs is still a small-market setting.

The four stations are run with seven full-time people, including Pierson and Keefer, who do air shifts. The PD/OM is Joe Daniels. Keefer said the group has tripled the cluster's income since taking over four years ago. It's now billing about $770,000 a year.

It's exciting to talk to owners like these guys, for whom AM is so important.

"We definitely dance to the beat of our own drum here," Pierson said. "We're kind of old-school radio. We both grew up and started in AM radio, then branched out. We worked for a variety of groups over the years, but both of us have a kinship and interest in AM radio."

Pierson summed up his company's outlook with a concept that all managers would do well to emulate."Our goal is to grow our local revenue and ingratiate ourselves into the community."

AM radio? Local service? Lean and mean?

Go get 'em, guys.

MARKET PLACE

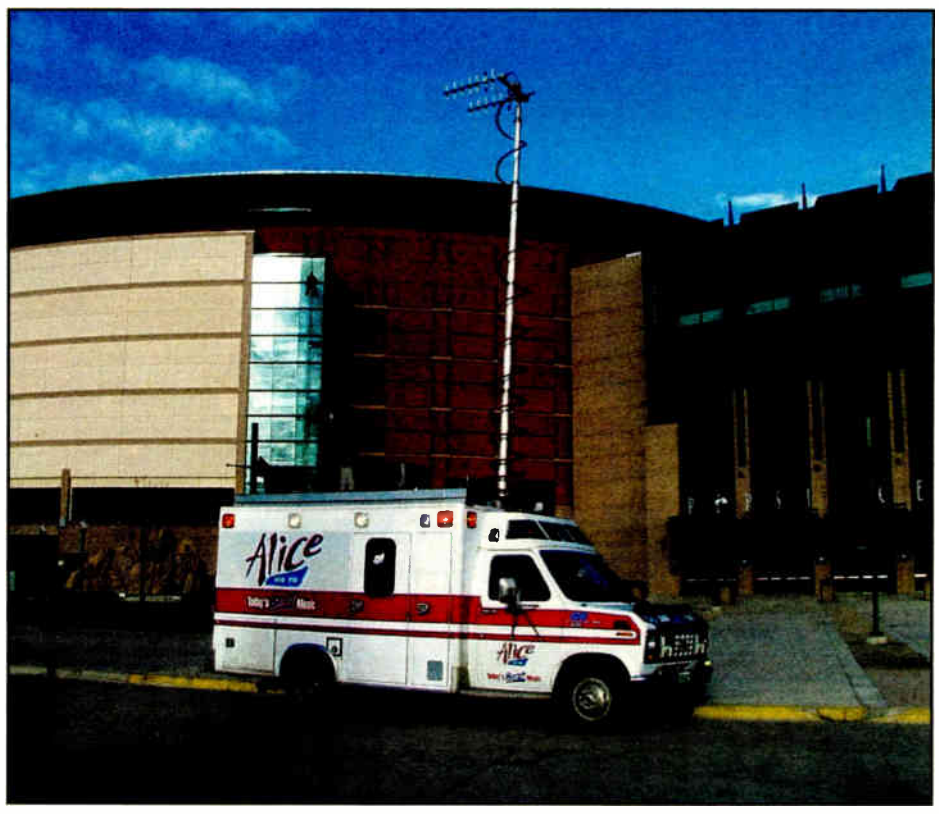
CSS Certified for Will-Burt Repair

Creative Studio Solutions in Denver is now a certified installation, repair and overhaul facility for Will-Burt telescoping mast systems like the one shown below.

CSS will serve the Rocky Mountain region's broadcast stations. It said it is the only certified Will-Burt repair/installation facility covering Colorado, Utah, Wyoming, Kansas and Nebraska.

"As the market currently exists, broadcasters in the Rocky Mountain region who need their masts serviced or installed have to travel a great distance to find a certified facility," said CSS CEO and Chief Engineer Andrew Rosenberg.

For information contact CSS in Colorado at (303) 425-5004 or visit creativestudiosolutions.com.



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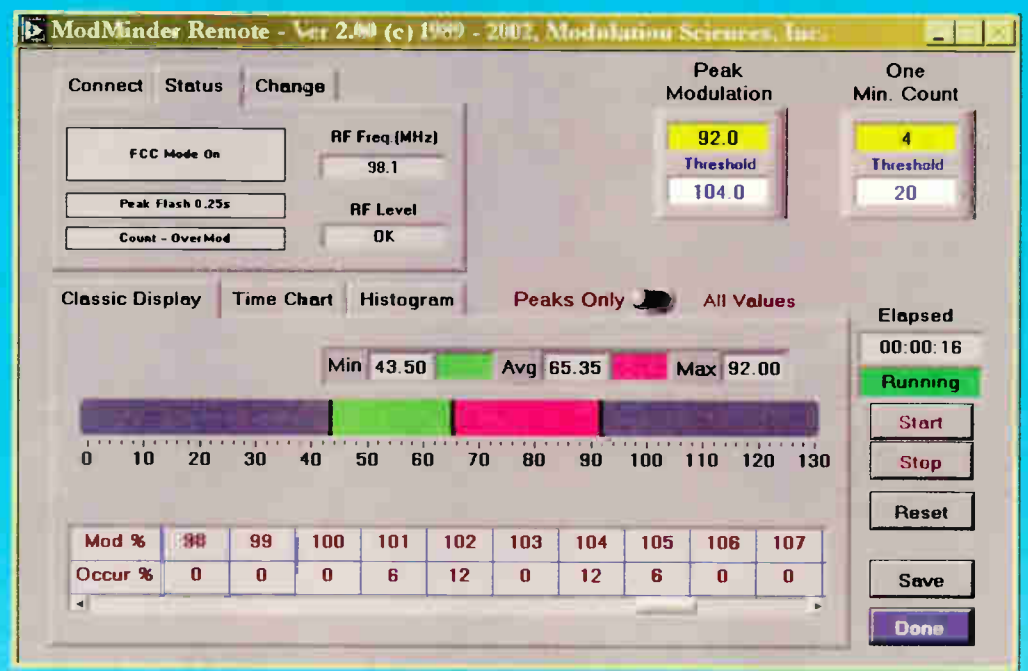

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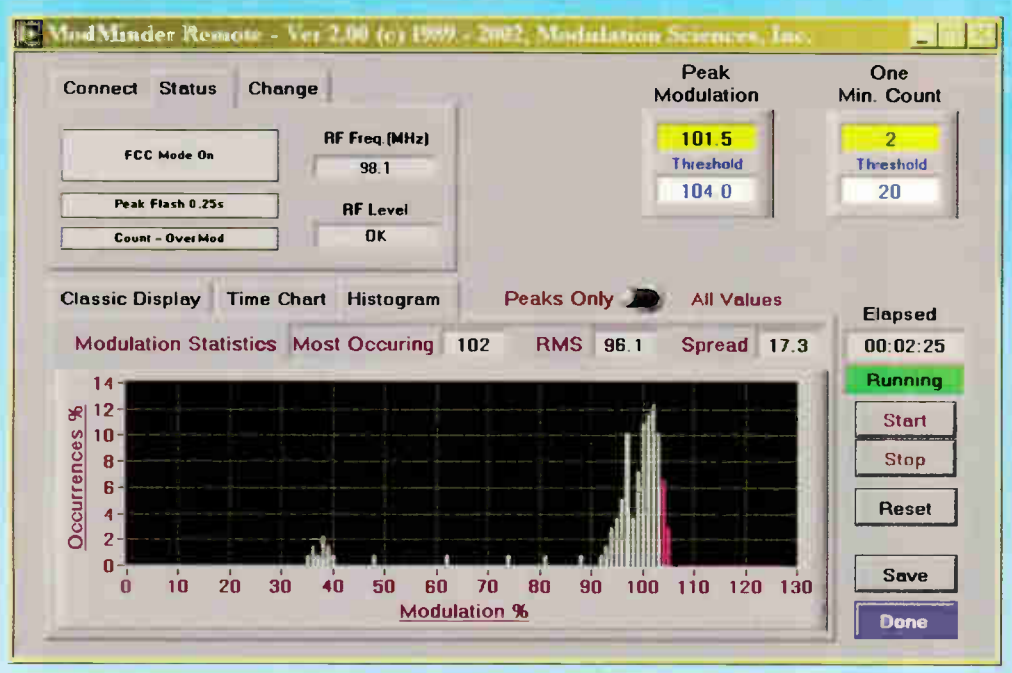

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Tower Consortium Aims High

by Scott Fybush

An attempt to build an industry coalition to fight for the rights of broadcasters and tower owners is moving forward, but supporters say there's a long way to go before their fledgling group reaches full altitude.

The National Antenna Consortium announced its arrival in 2001, when it incorporated with high hopes: to provide a clearinghouse for broadcasters and communications firms fighting to build new towers. Too often, the NAC's founders said, each new tower project brought with it a new local zoning battle, with little for broadcasters in legal precedent or national support.

The NAC held its first organizational meeting in the spring of this year at the NAB convention in Las Vegas, electing a slate of officers and board members.

Horror stories

Leading the NAC as its first chairman is Fred Baumgartner, a veteran broadcast engineer and fellow of the Society of Broadcast Engineers. Communications attorney and Radio World columnist Barry Umansky was named vice chairman. Umansky's firm, Thompson Hine, was named as the NAC's counsel.

Fred Baumgartner

Radio Relay League's "Antenna Zoning for the Radio Amateur"; Mike McCarthy of Chicago's McCarthy Radio Engineering; Clay Freinwald, senior facilities engineer for Entercom Radio in Seattle; Bill Wise, transmitter supervisor at KTVT(TV) in Fort Worth, Texas; Chris Hudgins, president of Radiance Towers of Dallas; and Russell Sarazen, a senior manager with VoiceStream Wireless.

But while the spring meeting brought together plenty of interest in defending tower projects against "not-in-my-backyard" opponents, chairman Baumgartner said his group will need help if it is to become an industry resource for would-be tower builders.

"We're hearing from a lot of people with horror stories who need help," he said, "but we don't have a lot of heavy lifters."

By that, Baumgartner means the financial and back-office support needed to turn the NAC from a good idea into a functioning trade group.

Seeking donors

Initially, the NAC sought support from a company that sponsors an annual tower trade show. The firm had offered to handle back-office responsibilities for the consortium, but Baumgartner said the company didn't realize what the offer would entail.

"As we entered membership mode, they realized how much work there was going to be," he said.

While the NAC looks for "heavy lifters" willing to donate $10,000 or more to help the group begin operations, it's also seeking interest from the broadcasters and other industry members who will become the group's rank-and-file membership.

"Where we are now is in the membership-gathering mode," Baumgartner said.

The need for the NAC has been demonstrated even more strongly by the aftermath of last year's attack on New York City. Since the destruction of the World Trade Center, home to most of New York's TV transmitters and several FMs as well, Big Apple broadcasters have spent a great deal of time and resources negotiating with city, state and federal officials to find a new site for a master antenna tower.

In other communities, including Denver and Chicago, the arrival of digital television has been significantly delayed by difficulties in siting new towers, in part because of the sort of neighborhood opposition the NAC hopes to counter.

The NAC also hopes to develop national precedents from cases such as Bob Vinikoor's fight to build a new AM station in Hanover, N.H. Vinikoor has been forced to go all the way to the New Hampshire Supreme Court in an attempt to overturn local zoning rules that threaten to prohibit any new radio station from signing on in his community. NAC board member Fred Hopengarten is representing Vinikoor in the case.

The NAC Web site is at *www.antenna-consortium.org.*

The National Antenna Consortium incorporated with high hopes: to provide a clearinghouse for broadcasters and others fighting to build towers.

John Paleski, founder of Subcarrier Communications of Old Bridge, N.J., was elected secretary-treasurer.

The NAC's first board of directors includes communications attorney Fred Hopengarten, author of the American

MARKET PLACE

Andrew Has One-Piece Anchor Rail Adapters

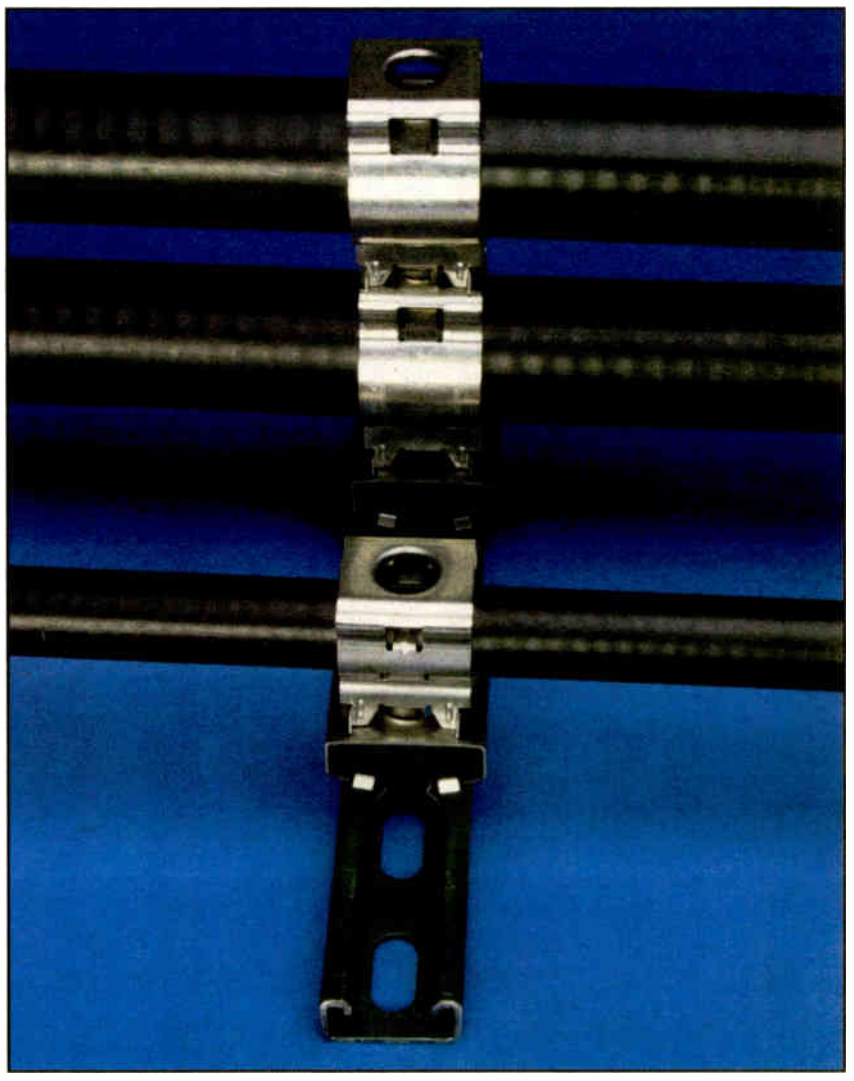
New anchor rail adapters from Andrew Corp. snap into common strut or anchor rail systems for mounting of coaxial cable runs on a support structure.

The adapters clamp into the rail, providing a secure platform to accept common snap-in hangers. Once snap-in hangers are installed, runs of coaxial cable can be mounted on towers in a space-efficient way.

The one-size stainless-steel adapters replace spring nuts, square washers, hardware and standard hangers. No tools are required; the installer can snap the adapter onto a strut with one hand.

The adapters are suitable for use with Andrew's SnapStak stackable snap-in hangers.

For more information, call the company in Illinois at (800) 255-1479 and request Bulletin 10837 or visit www.andrew.com.



GM Journal

Radio World — Resource for Business, Programming & Sales — November 6, 2002

Web Watch
See Page 22

A Look at Radio's Hottest Formats

With No Clearly Emerging New Formats, Radio Programmers Fight to Find an Edge

by Lyssa Graham

Radio programmers are facing tough decisions and complex choices as they work toward keeping listeners and attracting new ones. Experimenting with a station's format is risky, and while there are no sure bets, some new trends are visible on the horizon.

Arbitron's Spring 2002 format trends report showed no dramatic changes in the popularity of any one format, although some formats showed small increases.

Hot AC, rhythmic CHR, Spanish, urban AC and classic rock formats have all shown small, incremental increases, while other formats have remained steady or dropped slightly.

With no particular format leading the pack, what's a programmer to do?

"Here's a real shocker," said Warren Kurtzman of Coleman Research. "Do research. I don't just mean do music tests, I mean strategically understand the boundaries of your format."

Kurtzman believes consolidation has resulted in more focused and narrowly defined formats in radio. Although that may give listeners a broader choice on the dial, he said a format that is focused too tightly can affect audience share over a period of time.

Kurtzman said he is working with several clients on new formats for the coming year but declined to identify those formats. His strategy is to develop a balanced format, one that will, "allow you to compete in a market but still remain broad enough to allow you to draw a good cume."

One format that shows signs of a broader range is the oldies format. Donna Halper of Donna Halper and Associates and author of "Invisible Stars, A Social History of Women in Broadcasting," said the oldies format needs to change to keep up with the aging baby boomer population.

"I think that the big crisis for a lot of people in radio is what to do about the oldies format," she said. She sees an evolution away from the standard '50s doo-wop era format toward a more '70s-influenced musical choice.

"Now you've got these baby boomers who are, by and large, 50-plus and they still like rock and roll," Halper said. "I don't think that they relate particularly to rap and dance formats. On the other hand I see quite a few of them listening to the AAA and 'Alice' formats."

"Alice" stations typically feature a modern adult contemporary sound blended with an alternative format. "Alice" formats skew toward female listeners.

Format changes

Kurtzman said he sees some changes in the oldies format. He said many stations are working to keep both their older listeners and attract some younger listeners as well.

"A lot of people who run this format," Kurtzman said, "have been looking at how to maintain a strong 25-54 position with these listeners."

Alan Burns

One trend is adding a more '70s feel to the format.

"Many have dumped '50s (music) entirely," he said. Although he said '70s are "definitely a trend," Kurtzman isn't sure how much of a difference that change will make in listenership.

The problem, according to Kurtzman, has a lot to do with listener perception.

See FORMATS, page 26 ▶

NEWS MAKER

In Orlando, Bosworth Sticks to His Stream

The incremental costs of Internet radio streaming — music royalties and bandwidth primary among them — have caused hundreds of U.S. terrestrial radio stations to silence their streams. Yet many more are staying the course, assured there is a profitable business in simulcasting their programming over the Internet.

Some, like Clear Channel Communications' Orlando, Fla., cluster, have stuck to their streams and say they're now enjoying profitability from their Internet radio initiative. They've done it by selling Webcasts the same way they sell avails in their terrestrial broadcasts, but creating special commercials tailored for Web listeners.

Clear Channel Orlando uses Hiwire's ad-insertion system to replace its regular

See BOSWORH, page 30 ▶

Jeff Bosworth

Small Webcasters' Problems Remain

by Craig Johnston

Someday we'll all look back at the birth of Internet radio and say it was a little rough at the beginning, but then it straightened out and became a pretty good industry. But the here-and-now seems a bone-jarring ride.

Recently it appeared that Congress was going to take action to save the emerging Internet radio industry.

It came up short, with the bill held up by a single senator. The Oct. 20 date for retroactive payments of sound recording copyright fees came, and Internet radio had to pay up.

However, small Webcasters got temporary relief from an unexpected source: the bill collector.

SoundExchange, which collects fees on behalf of the recording industry, told qualifying small Webcasters they could make a smaller down payment and would wait for Congress to work things out after the election.

Negotiations

The chronology of recent events:

The recording industry had been negotiating a fee structure with small Webcasters, but the going had been slow and Oct. 20 was fast approaching. This was the date payments for Internet music play going back to the fall of 1998 were due. Many small Webcasters claimed the first payment would bankrupt them.

Seemingly just in the nick of time, Rep. James Sensenbrenner, R-Wis., chairman of the House Judiciary Committee, introduced a measure in late September. The Relief for Small-Business Webcasters Bill mandated a six-month delay of the Oct. 20 deadline. Facing the prospect of collecting no fees and who-knows-what from the courts and the next Congress, the recording industry and representatives of small Webcasters went into high-gear negotiations.

Though the parties worked like college boys cleaning their dorm rooms before Mom's Weekend, they missed Sensenbrenner's first deadline. Part of the delay was because big labor weighed in on the side of singers and musicians.

Rep. James Sensenbrenner

When the parties did arrive at agreement, Sensenbrenner substituted the language into his bill and it passed unanimously by voice vote in the House of Representatives.

The bill would set small-business Webcaster rates from the retroactive period beginning Oct. 28, 1998 through the end of 2004. It seeks to change the basis of royalty fees for the affected parties from a per-song/per-listener amount to a percentage of revenues or expenses, whichever is greater.

Who would qualify as a "small" Webcaster?

• For the retroactive payments, businesses with less than $1 million in gross revenues between Nov. 1, 1998 and June 30, 2002.

• Gross revenues of $500,000 or less in 2003.

• Gross revenues of $1.25 million in 2004.

Most broadcasters, unless they had set their Internet radio operation up as a separate business, would not qualify under the "small Webcaster" terms because their traditional broadcasting revenues are counted.

Stalled

As the House bill headed for the Senate, it became apparent somebody had been left out.

The NAB had read the new Sensenbrenner bill closely, and the association worried the language could set a dangerous precedent for its broadcaster/Webcaster members.

As time ran down toward the Senate's adjournment on Oct. 17, Web Watcher became C-SPAN Watcher. The Webcaster bill was nowhere to be found.

Ultimately it wasn't NAB that spiked the proposal.

"We didn't support the Sensenbrenner bill, but we didn't work to kill it," said Dennis Wharton, NAB vice president for corporate communications.

The next day, the smoking gun was found to be in the hand of former broadcaster Sen. Jesse Helms, R-N.C. To bring a bill quickly to the floor requires unanimous consent, so a single senator can (and did) stop it.

So as Oct. 20 loomed, it looked like all parties were back to the original fee schedule, including small Webcasters.

But that's when the labels, in the form of SoundExchange, announced a "temporary payment plan." Any entity that qualifies as an eligible small Webcaster under the proposal would not be required to pay the per-performance royalty; instead they would be allowed to pay a $500 minimum per year, to a maximum of $2,500.

SoundExhange made the announcement in the expectation that the Senate ultimately will pass H.R. 5469 when it reconvenes.

★ ★ ★

Given that most broadcasters are not covered by SoundExchange's offer anyway, where did this leave them?

The NAB has insisted from the beginning that streaming of over-the-air programming is not subject to sound recording copyright royalties, but they have lost that argument at every turn.

Just before Congress adjourned, the Copyright Office turned down the NAB's request for stay of broadcasters' Webcast royalty payments while they pursue their case through the courts. Their next day in court comes in December, when the U.S. District Court in Philadelphia hears their appeal.

It was not immediately clear how many broadcasters would pay the back fees in the meantime.

★ ★ ★

The well-heeled NAB wasn't the only group that felt left out of the negotiations on the Hill; college radio station Webcasters are also fighting to make their voices heard.

College stations are in the non-commercial category of Webcasters, facing copyright fees of two one-thousandths of a cent per-song, per-listener. A minimum annual fee is set at $500.

Will Robedee, general manager of KTRU(FM) at Rice University and vice-chair of Collegiate Broadcasters Inc., told Web Watcher of fear among college broadcasters that being left out now could mean long-term problems.

"If something comes through today that only solves the problem for a handful of small commercial people, all the other people that have problems will have lost some ground on the hill because the hill will think, 'Well, we've solved that problem,'" he said.

Robedee said that while there's much discussion about what copyright royalty fees a college station should pay, "The one thing that we've been shooting for is a $200 fixed fee." But he sees problems for the college station with the current copyright terms that go beyond the size of the fees, pointing to the record-keeping requirements and the content restrictions.

"A lot of stations have tiny budgets," said Robedee. They can't afford the sophisticated record-keeping requirements. "We'd like to see it parallel to what is done with the TROs (ASCAP, SESAC and BMI), which is essentially, stations are surveyed once a year, for a period of up to seven days. And they allow for written logs."

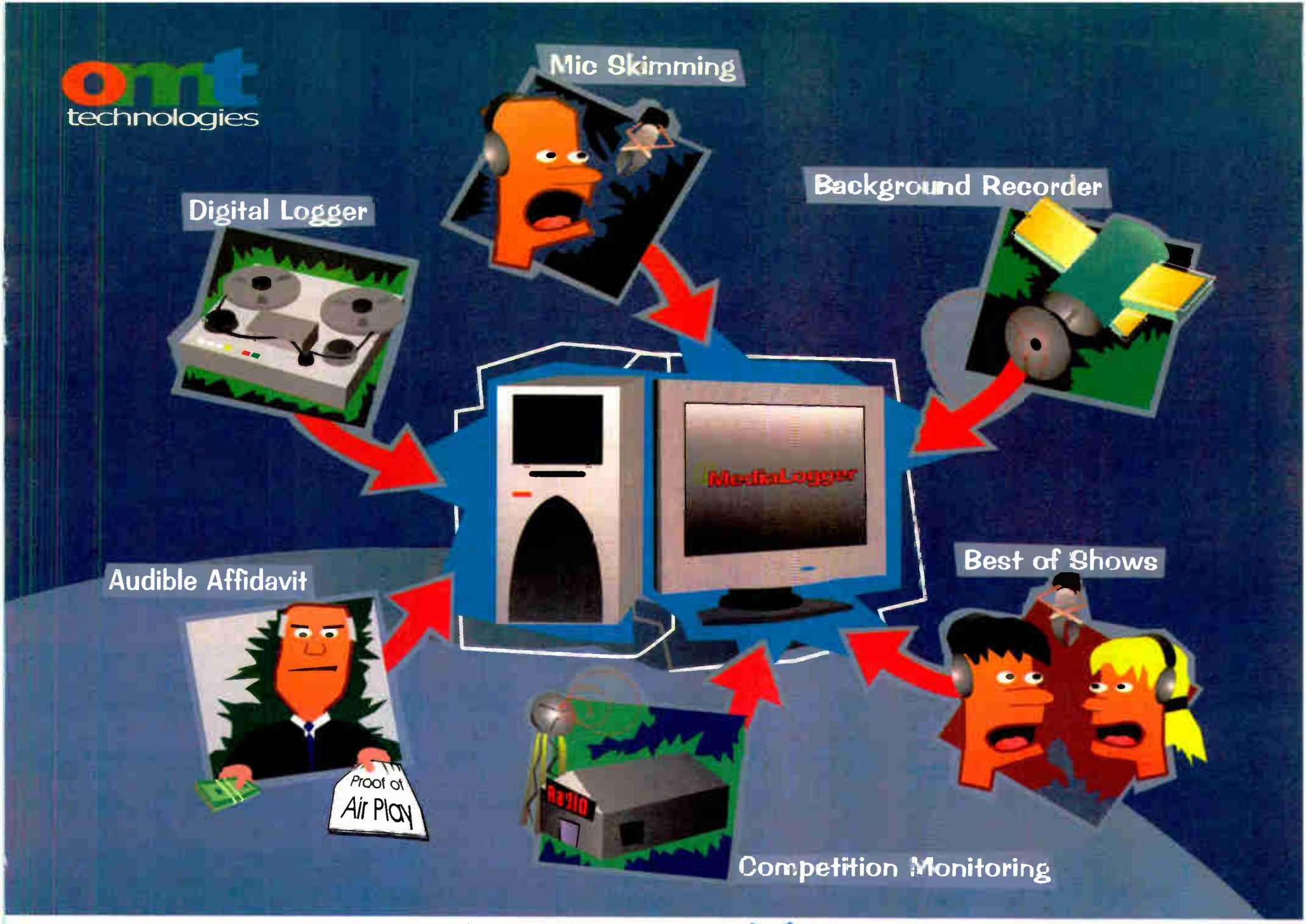
★ ★ ★

Meanwhile, if broadcaster/Webcasters were having a tough time with copyright matters last month, they got some helpful news from a Webcast services provider Loudeye Inc. As one of the few Internet radio exhibitors at the NAB Radio Show, it rolled out its Loudeye Radio V2.0, featuring a station-branded player.

"What we're really trying to do is brand that radio station to that consumer, pull the consumer into the radio station," Kjersten Johanson, Loudeye product manager told Web Watcher. The Internet radio player is customizable with the station's graphic look, and requires only a small download on the part of the listener at home. It features ad-insertion technology making it easy to offer Internet-only ads in the streams.

The player also features a "Go" button that allows the listener to get more information from an advertiser. "We've actually done some testing with this, and we've found that if you just run the ad, you get the standard response rate of a little less than 2 percent," said Johanson. "If you actually tell them 'press the Go button to find out more' at the beginning and at the end, we saw a 200-percent increase in the number of times people click."

See WEB WATCH, page 27 ▶



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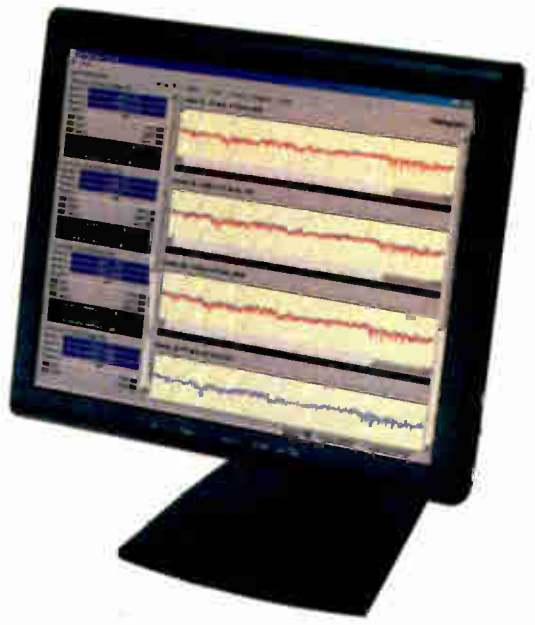

With today's ever increasing workload you have to do more with less and that's why having a multipurpose tool like iMediaLogger is key. Using a single computer workstation, iMediaLogger frees you from the costly maintenance of conventional and outdated equipment used for logging, recording, and skimming including reel to reel, DAT, and VCR recorders.

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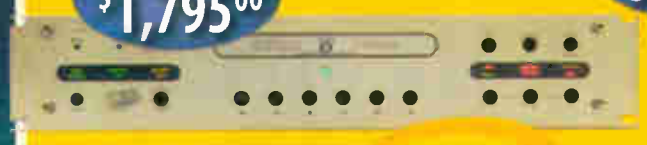

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The Danagger "Plan B" Silence Eliminator protects your station from losses due to unplanned outages and equipment failures by providing an alternate source of continuous backup programming. In other words, it's a great way to combat dead air...analog or digital. The Plan B's built-in CD drive plays all regular CD/-R/W discs, and even MP3-encoded CD's in a variety of playback modes. The integrated voice remote control system automatically reports to station personnel when there's a problem, wherever they are. The Plan B and external equipment can be easily monitored and controlled by telephone. Call for more information today.

PLANB List $1,995.00 **$1,795.00**

FREE line selector or copy stand with Audioarts R17 purchase

Exclusive Console Offer!

The popular Audioarts R-17 10-channel console offers high-quality mixing with all the necessary features of a full-sized on-air board in a compact package. It comes configured with 2 mic input modules and 8 stereo line input modules, master output and control room modules as well as a blank slot. Features: modular construction; program, audition and cue buses; illuminated machine start/stop switches; built-in cue speaker; studio talkback; external rack mount power supply. Hurry, right now BSW is offering a Free LS-17 Stereo Line Selector module (a $323.00 value) or Copy Stand (a $369.00 value) with your purchase.

R17-10 List $4,660.00 **$3,999.00**

Dixon Affordable Newsroom Mixer

The Dixon Systems NM-250 mixer is designed for busy newsrooms and contains almost all the features of a full broadcast console – at an incredible low price. Features: 2 mic inputs with on/off switch and 48-volt phantom power; monitor output mutes when mic is on; mono line input for telephone hybrid; input for computer sound card; input for DAT/cassette recorders; 2 balanced +4 line inputs; built-in mix-minus bus for telephone hybrid; built-in talkback system with 2 sends and receives; balanced XLR line, mic and phone inputs; unbalanced RCA I/Os.

NM250 List $1,195.00 **$969.00**

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Superb Studio Mic

By utilizing the tried and true transformerless circuit found in numerous Neumann microphones, the favorite TLM103 offers low self-noise (7 dBA) and the highest sound pressure level transmission. You'll really notice the difference. This large diaphragm condenser mic also features a cardioid pickup pattern and includes a swivel mount. Plus now you'll get a free shock mount! Call today.

TLM103 List $995.00 **$749.00**

lucid

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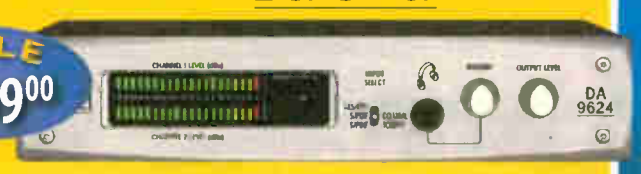
The dbx ProVocal takes all of the laborious guesswork out of selecting tools for providing great vocal tracking. It features a superb mic preamp coupled with state-of-the-art mic and pre-amp modeling. You also get classic dbx dynamic processing such as gating, compression, de-esser, and limiter...then on to chorus, flanger, delay and reverb. Features: MIDI control; 44.1 or 48 kHz operation; selectable mic/line switch; 20 dB pad, 48V phantom power; 24-bit S/PDIF digital output; balanced 1/4" or XLR outputs.

PROVOCAL List $499.95 **$299.95**



24-bit D-A Converter

Lucid's DA9624 offer true 24-bit resolution assuring full dynamic range. Features: 96 kHz conversion for maximum sampling bandwidth; true 24-bit resolution using high precision converters; simultaneous AES-3 (XLR), S/PDIF (coaxial), and S/PDIF (TosLink) digital outputs; 20-segment level LED ladders (input)..

DA9624 List $749.00 **$599.00**

BROADCAST SUPP

MAT

Quite Possi Codec You

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ide compability	a standard telephone line
codecs	• Available in portable or rack unit
2 for 15 kHz with	• Modular design enables use on
delay	future circuits
rsmit with G.722	• Will work at data rates as
educe delay	low as 9600 baud
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Hafler's super affordable TA1600 is a two channel, convection-cooled (no fans) power amp bringing new levels of clarity to studio monitoring. Features 60 watts/channel into 8 ohms; "soft start" protects speakers; thermal sensing network amp monitors the heatsink and transformer temperature. LED indicators.

TA1600 List $299.00 $198.00

SALE $39.99

Cable Tester

This Behringer cable tester accepts XLR, mono and TRS phone (1/4", 3/8" TT), RCA and VIDS. The LED display shows which input pin is connected to which output pin. 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.

CT100 $39.99

SALE $59.00

Hum Eliminator

Ebtechs 2-channel HE eliminates ground loop hum and converts back and forth between balanced and unbalanced signals at either end.

HE List $89.95 $59.00

O.C. White Co.

NEW

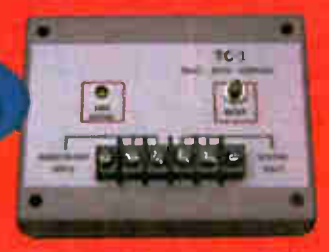
Super Affordable Mic Boom

SALE $89.00

ProBoom is the best value in studio microphone booms. This 41" arm comes complete with 12" riser for table top mounting and two sets of upper springs to accommodate microphones of all weights and sizes. Additional mounts for wall mounting are available as options. Choose black or beige color.

PROBOOM $89.00

SALE $139.00



TRZ

Best Value Auto Coupler

The TRZ Communications TC-1 Auto Answer Audio Coupler is a favorite of radio engineers or anyone who needs to access audio or transmit audio via a telephone line. No power supply is required as this unit is powered by the phone line. It's the least expensive auto answer audio coupler on the market. Features: dry relay contacts for Status output. Reset button allows user to disconnect unwanted callers; answers and seizes line and automatically releases line when caller hangs up; sends and receives audio (duplex operation).

TC-1 List $150 $139.00

SALE $399.00

4-Track Recorder

The new Korg 4-track PXR4 records directly to SmartMedia cards, and via its USB port, the PXR4 can also transfer data to and from your computer in stereo MPEG format. Features: 8 virtual tracks per track; editing capabilities: time compression/expansion; 77 different effects; front panel contains five faders, one per track plus one master fader; 1/4" jack with a hi/low impedance switch plus a stereo line/mic input; 1/8" stereo out jack; stereo headphone output and a USB output.

PXR4 List $500.00 $399.00

BEHRINGER

Low Cost Heaphone Amp

The Behringer HA4600 offers four stereo amps, each with a stereo aux input, mono/stereo and left/right mute switches, balance and volume controls, plus numerous master features. Additionally, it has excellent output power, an ultra musical 2-band EQ and an accurate 8 digit LED output level meter per channel.

HA4600 List $129.99 $99.99

Stereo Audio Switcher

The Broadcast Tools 6X1 passively switches or routes any one of 6 stereo inputs to a single stereo output. Features: front panel selection switches with LED indicators; front panel safety lockout; programmable power-up selection; local and remote control and status via contact closures and RS232 serial ports.

6X1 List $439.00 $389.00

BROADCAST tools

HURRY, Sale Ends 11/30/02

Formats

▶ Continued from page 21

Preconceived notions about an oldies station may rule out switching despite the addition of '70s-era music.

"In a lot of cases, what oldies stations have to deal with, especially if they've been the heritage station in their market, is what the listeners expect from them, whether they listen to them or not," Kurtzman said.

Do research. ***I don't just mean do music tests, I mean strategically understand the boundaries of your format.***

— Warren Kurtzman, Coleman Research

In order to make the switch, Kurtzman said stations must move aggressively into the '70s format, often re-launching the station completely.

"It's a real challenge," he said. "There is no easy solution."

Perception

Alan Burns of Alan Burns and Associates said that while he doesn't see any particular up-and-coming format, "I see and up-and-coming demo, 35-54, and I think we'll see some adjustments for that."

While that demographic has been traditionally perceived as "stodgy," Burns said he sees more effort to reach that group as perceptions change.

He also sees similar trends within the oldies format.

"A lot of them are reacting by becoming more '60s- and '70s-oriented," he said. Citing WBIG(FM) in Washington and WDRV(FM) in Chicago as examples of rising stars in the blended format, Burns said those blended formats have "a lot of potential."

WDRV(FM) ("The Drive") in Chicago is a Bonneville station, and does take a different approach to music programming. According to Program Manager Patty Martin, the format is the brainchild of the vice president of programming and operations, Greg Solk, and is focused on music from the '70s.

"The '70s are definitely where we live," Martin said. "We started this based on a hole in the market. People who liked this kind of music weren't being served."

Martin said "The Drive" is a cross between a classic rock station, an oldies station and a '70s progressive rock station. That format has enabled them to stay high in the 25-54 male demographic in Chicago.

"The idea is that people, basically 40- to 50-year-old men, the real core, grew up with lots of different music," Martin said. "We are definitely a broad-based radio station."

Additionally, Martin said, the station does not run contests, limits jock patter and focuses primarily on the music.

"We figure people are going to be more interested in the music than in hearing us talk about the music," she said.

Such an approach requires a lot of work, Martin said. It's not a "cookie-cutter format," and needs programming with a strong attention to detail.

"It's the whole package that makes it work," she said. "It's the whole thing that's connecting with the listener, not just the one thing. It's the respect for the music, the lack of clutter."

The 1990s saw a country music boom, and two years ago we had sudden interest in '80s formats. But industry insiders aren't seeing a specific format making waves today. Even country, which experienced a surge in popularity and the development of several tighter format options like new country and classic country, has seen a downturn over the last few years.

Donna Halper

Kurtzman said he feels the market isn't in the mood for country overall.

"Clearly the appetite for country is lower than it was roughly five years ago," he said.

Although the listening audience may have lost interest in country, Kurtzman doesn't think the cowbell is tolling for the format. Even though enthusiasm for the format is pretty low, he said it has "probably bottomed out."

Good programmers still need to rely on their particular market needs in order to program effectively. Jumping to the latest hot new format may not be the right move for many radio stations.

Burns said while good operators are in love with the one format that really does well for them, he hasn't seen any sign of corporate love for any particular format since the days when owner AM/FM became enamored with the "jammin' oldies" format.

"That's the last time I've seen a company just fall in love with a format and start slapping it everywhere," Burns said. "I believe people have awakened to the fact that you shouldn't fall in love with a format, you should fall in love with an opportunity."

Lyssa Graham is a free-lance journalist and morning radio personality based in the U.S. Virgin Islands. Reach her via e-mail to lyssagraham@msn.com.

Web Watch

▶ Continued from page 22

(Loudeye's experience with its Go button is mirrored by Clear Channel Orlando's Internet radio operation. See story on page 21.)

But the cost may be the best part. Loudeye's V2.0 offers savings from lowered bandwidth costs due to its peer-to-peer streaming technology.

The P2P technology, supplied by ChainCast Networks, works in a daisy-chain fashion. A few streams are sent over the Internet to the first listeners. The bandwidth for those streams has to be paid for. The V2.0 player on those listeners' PCs not only play the Webcast, they send the streams back on to the Internet and down the line to other listeners. That bandwidth beyond the first listeners in the chain does not have to be paid for.

Flax into gold

Web Watcher has to admit that P2P technology has always seemed like spinning flax into gold, but then Faraday, Maxwell and Marconi would have been disappointed with WW's inability to understand that sound and pictures can be sent through the air. There are too many Webcasters using P2P technology for Web Watcher to deny it is real.

Internet Radio plays on LG Electronics' refrigerator.

Johanson notes the ChainCast system has redundancies built-in. "The P2P has a backup uni-cast, so if, for some reason, somebody can't get on the P2P, it will automatically back-up to the uni-cast. If there are people in secure locations that can't use the P2P they'll get the uni-cast. As an end user, there really isn't anything that jumps out at you that says you're on P2P."

(It is unfortunate that Webcasting's "peer-to-peer" technology shares its name with the illegal file trading technology. They are not the same; Webcasting P2P is legal.)

And finally, with all the talk about consumers being able to buy cell phones and other small Internet-enabled devices, Web Watcher wants to point out one Korean company that is going against the flow. LG Electronics has introduced a Multi-Media Refrigerator, featuring a built-in 15-inch LCD screen.

Not only can the fridge be used to surf the Internet (including Internet radio), it can serve as a television set or a display for digital pictures. Oh, and it does have 26 cubic feet of refrigerator space. (No word yet about the effect of refrigerator magnets on the memory.)

Before you ask Santa Claus for one, be advised you'll have to find someone who wants to give you a present with an $8,000 price tag. Hmm, wonder what it will cost after Christmas?

Craig Johnston is a Seattle-based Internet and Multimedia developer who is a frequent contributor to RW. Reach him via e-mail to craig@craigjohnston.com.

NEWS WATCH

Study: African-Americans Lead Men in Media Use

Media use among men varies with ethnicity, a recent survey suggests.

It finds that, among men 25 to 54, African Americans spend the most time overall with media per day, 10 percent more than the average. Their use of magazines is some 40 percent higher than average, and their TV time is 25 percent higher.

The data come from MultiMedia Mentor, a service of Knowledge Networks/SRI. It conducts measurement of consumer use of TV, radio, the Internet and print media.

The company says Hispanic men of the same age group register near-average use of radio and television, while their time spent with the Web, newspapers and magazines is 18 to 28 percent below average. Its data also show that Hispanic men 25 to 54 spend about one-quarter of their media time with Spanish-language media.

Asian-American men 25 to 54 register "notably low" use of radio (less than 50 percent of average time spent) and the lowest score for television among the groups measured. They show a strong preference for the Internet and, to a lesser extent, newspapers.

"Not surprisingly, media use by Caucasian men 25 to 54 very closely tracks overall averages," the company said.

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RAB: Sales Training Comes of Age

by Ken R.

In the bad old days, a radio sales manager would hand his green new recruit a copy of the Yellow Pages.

"Anything between J and R is yours," he might say. "Go get 'em, tiger, but save the car dealers for me."

As radio became a more mature industry, it improved and formalized its sales training to compete more effectively with other media. The Radio Advertising Bureau is active in this area; its latest development is the RAB Sales Training Academy.

The academy came about because RAB President Gary Fries had a son who, upon college graduation, entered radio and encountered the sales manager described above.

"My son was ready to sell but was frustrated, and I knew there had to be a better way," he said.

A better way

The RAB offers three basic courses: Basic School for Salespeople, a one-week program with follow up after graduation; Advanced Sales Course, a three-day program that helps experienced salespeople become better performers; and Management Course, a three-day program for managers in creating manageable systems for recruiting, hiring, training and retaining salespeople for top performance. Upon completion of the latter, graduates can earn accreditation as a Certified Radio Marketing Consultant or Certified Radio Marketing Specialist.

All the years I was running those stations, I just didn't realize how little our salespeople really knew.

— Mike Mahone

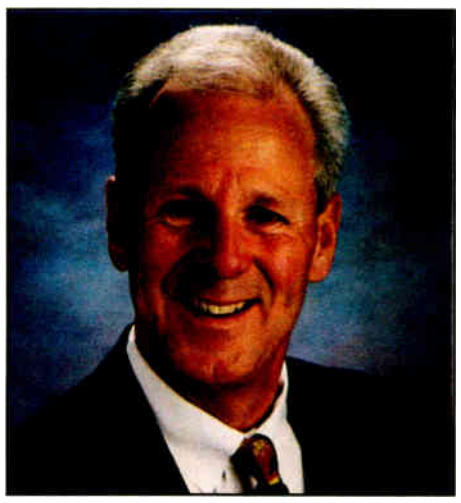
Mike Mahone, executive vice president for services at RAB, believes that without a program like this, sales just won't happen by themselves.

"Sales managers are busier than ever with cluster management responsibilities and it's vital that they have a plan for training," he said.

Fries said radio is no longer in a period of "one plan fits all" for our radio clients.

"We must customize for the strategies of the advertisers and teach salespeople to assess and respond to those needs," Fries said.

Radio World asked Fries if consolidation in the industry necessitated changes in sales training.



Mike Mahone

"Consolidation created larger masses so the salespeople could work in a bigger arena; but the real need sprang from the early-'90s recession, when we went from mass marketing to targeted marketing," he said. "Advertisers no longer wanted just bodies to hear their message; they wanted specific targets."

Mahone said there is no magic button someone can push to become a professional sales person.

"You have to gain a mastery of a basic skill set," he said. "This includes the ability to get on the phone and get an appointment, to conduct a needs analysis, to handle objections, to make presentations and of course to close the sale."

Gary Fries

Mahone said many students sell enough new business to pay for the cost of the training within two weeks after graduating from the RAB Academy.

JoAnne Alexander, general sales manager of KDCD(FM)/KMDX(FM), Regency Broadcasting properties in San Angelo, Texas, was another convert.

"I had one salesperson who worked for us one month before taking the RAB course. Now, one month post-training, he is at 117 percent of his sales goal and the month is only half over."

Another believer is Heidi Malawka, marketing consultant for Badger Communications in Marinette, Wis.

"I use an Excel worksheet program RAB taught us to determine what I need to do every day," she said.

Sales = communication

When salespeople walk into the class in Dallas, they're scared and worried about being "off the street" for a week, according to Mahone.

"We ask them to interview the person next to them about how they feel about a sales career in general," he said. "Many have the perception that sales people are crooks and don't care about the customer. We turn that around by Friday."

Mahone said the secret to sales is creating rapport. "We need to see things from the client's point of view, not from the radio station's point of view," he said. "Radio is actually one of the last things we get around to talking about. We focus on finding out what the client's objectives are and positioning the radio station as a piece of that solution."

Many of the largest group owners have sent their people to RAB for training.

Fries said Entercom, Cumulus, Citadel, Hispanic Broadcasting, Amigo Broadcasting and Clear Channel have been clients, although some salespeople have paid for their own training. RAB also has a minority scholarship program available.

What do you know?

Mahone is a former radio sales manager who thought he had a handle on the sales process when he was in the field.

"All the years I was running those stations, I just didn't realize how little our salespeople really knew," he said. "I can count on one hand the individuals who shouldn't come to the RAB Sales Training Academy because they already have the skills they need."

The care and feeding of salespeople starts when candidate first applies for the job.

Jim Lobaito is president of based Performance Training Co., a sales consultancy. He has a good relationship with RAB and spoke at its most recent conference.

"Interviewing prospective sales candidates is difficult, because some of the losers have a few of the same qualities as the winners," he said. "They tell you what you want to hear and they know how to sell themselves."

Lobaito said he has learned to probe for the hidden weaknesses that prevent candidates from performing to their fullest potential.

"They have to exhibit four crucial tendencies: desire, commitment, responsibility and outlook," he said. "The losers fall down

See RAB, page 31 ▶

Bosworth

▶ Continued from page 21

commercials with those tailored for the Internet. The system allows them to send different commercials to different demographic groups listening to the same Internet radio channel.

Radio World Internet Radio columnist Craig Johnston talked with Clear Channel Orlando Internet Marketing Manager Jeff Bosworth.

RW: As you stand back from Internet radio, you don't look at selling it as any different from radio sales.
Bosworth: It is radio. Anybody who's listening to a stream is coming into an office and turning on a computer instead of turning on a radio.

So with the Web it doesn't have to be all that difficult if you don't treat it that way, it's just a different mechanism to listen to the radio. I think you've got a real captured listener there if they're coming into the office, firing up their computer and picking up their favorite radio station. I think they've got to be a pretty huge fan of the radio station to do that.

RW: But you don't run radio spots on the Internet channel?
Bosworth: No. Matter of fact, we've been asked that (by the client) a number of times. Do we just get the radio spot and throw it on there? I just took the spot and re-wrote it, and wrote it for the Web.

It's a different type of medium. You're speaking to somebody at his or her computer, and we're just trying to get a return for the client every time we do something. We write new copy, and we have a new bridge-page. We try to come up with a call-to-action for them, and generate a return for each and everybody who does something with us.

RW: What are some of the things you can do with an Internet radio spot that you can't do with a regular radio spot?
Bosworth: To me, it's speaking to that person who's sitting at the computer.

Each stream is sent straight to a desktop. We're trying to get them to click. At the end of the day, we're trying to get them to click on something, pick up the media player and click on the banner so they'll get information or request more information.

(Sometimes) we've used (bridge-pages) to get the listener to call an 800 number or fill out a small form. At the end of the day, our task is really to get them to click. The only way we can show return to our client is if we can show that the person's picked up the mouse and clicked on the banner and said, "I want more information."

So in the spots that we write, a lot of times we're writing that call-to-action in there five or six times. Pick up the Media Player banner on your task bar, and click on the banner and visit us.

RW: You guys have served up some coupons for people.
Bosworth: Correct. We've designed them together with our customers. If you spend some time with a customer and find out exactly what their objective is, most of the time it's sales.

A lot of times they want to get more information from these customers, so they collect an e-mail address so they can have them in an e-mail-marketing program. The bridge-pages have worked well for us.

A lot of times we just don't link directly to a Web site because the call to action isn't laid out there. So we try to brainstorm something, something that has perceived value to it. "I'm sitting at my desktop and you're asking me to go to somebody's Web site? Give me a reason. Give me a special."

We're all creatures of habit and we want something like, I'm going to get a deal here.

RW: Can you give me an advertiser's success story?
Bosworth: We had one here locally that was sort of a half-day horse trip, where you get on some horses and run around the beautiful parts of Florida. We put a two-for-one in there and wrote, "This is a great place to go for the day and hang out for four hours." We wrote some copy about how to see the real Florida, and if you click now you'll get a two-for-one. They did very well.

We had another one with a Lipstick Depot, where it was streamed directly only to women of a certain age group. They received a free lipstick toner or something like that along with any order.

They're really meant to reach a specific demographic, and that's what I love about streaming. You can hit the perfect demographic with the message. If you build some sort of a call to action in there, you can get click-throughs for them.

RW: So you're actually using the targeted streaming for these things.
Bosworth: Correct.

RW: The account executives for a radio station are principally thinking about selling radio — that's been their bread and butter. How do you get them to sell this as well?
Bosworth: That comes with a lot of training.

I say to them, "Let's go do a deal. Find a customer who may not have the greatest budget in the world, or find a customer who wants to incorporate this as part of their media mix, and let's go visit with them."

We've got a list of requirements, a checklist that you have to do for a streaming order, and we go through that with a client. That was the best way for us to train, was for us to train on the spot. I just go out with them, spend some time with the client, and create this thing as we go along.

Creating the spot is where they key is, as it is with radio. But we just want them to generate the click, because that's the only way we'll be able to show the client a return.

Working with the account executives, they've got their own budgets, they've got their own tasks, but this is like a trump card in their pocket. If they're talking to somebody and the client just doesn't have enough revenue to do a big campaign, (the AE) can say, "Why don't you give this a shot? We can do an order for anything over $500."

Once they've tried it and we can show return, they've been renewing with us.

It does get cumbersome, if you're doing a $500 deal, to do all the pieces you have to do to fulfill an order, but if you can renew it every month, then you've got a renewal at $500 and you've got 30-40 AEs who are doing that, hopefully we'll get there. Then you can really generate some great revenue. The idea here is that the campaigns do work. You can show return. If you do hit the right demo with the right message, it's pretty hard to fail on it.

The listening hours prove themselves. We've done a number of million listening hours company-wide. The numbers are there. It's no different than having Arbitron doing your ratings. You've got somebody who's listening to the radio, they're listening over a computer instead of over a regular radio.

Clear Channel Orlando stations streaming programming include WTKS(FM), WXXL(FM), WJRR(FM), WMGF(FM), WSHE(FM) and WQTM(AM). Station WFLA(AM) does not currently stream its programming.

STATION SERVICES

DG Systems Touts On-Site Server Approach

DG Systems has launched enhancements to its distribution service for spots and music.

Its new Media Manager is a dedicated, on-site server. The company says this approach provides stations and agencies guaranteed delivery of spots and music.

Promised benefits include no user intervention or dedicated phone lines; Web-based desktop access to audio, traffic and delivery status; and cost savings. For example, cuts can be accessed from multiple workstations on a LAN, instead of using ISDN lines at multiple facilities.

For more information visit www.dgsystems.com.

Gentile Hunts for Paranormal Affiliates

"The Lou Gentile Show" is available for syndication.

"Gentile is a paranormal investigator who has personally experienced ghosts and violent hauntings for over 20 years," according to his press release. "He was born in Philadelphia and grew up in two haunted houses."

The host promises to explore topics such as "angels, ghosts, demons, devils, exorcism and possession, religious mysteries, cults and the occult, lost civilizations, UFOs and alien abductions, government cover-ups, hauntings and the like."

The show airs weeknights from 10 p.m. to midnight Eastern time via ABC StarGuide III.

For more information contact Gentile in Pennsylvania at (215) 624-1239 or visit www.lougentile.com.

RAB

▶ Continued from page 29

at one of those levels, and usually don't want to work outside their comfort zone. You have to push beyond your comfort zone to change and succeed."

What are some of the questions a sales manager can use to weed out the underachievers?

"Ask them for an example of something in their lives they had to change or overcome," suggested Lobaito. "If they managed to quit smoking, lose weight, get out of a bad marriage or be the first in their family to go to college for example, you know you have a hard worker."

Another question Lobaito asks: "Tell me why you want to sell."

"We are looking for things like 'there is no cap on my income,' 'money is how I keep score,' or 'I'm competitive and like to win,'" he said.

Lobaito suggested asking applicants if they are getting what they want out of life, and if not, why not.

"You want them to tell you whatever failures they have had were their own fault. You want to hear that they're not blaming it on other people, the boss, the company or the marketplace."

Lobaito said the RAB Academy is great, but it will do no good for people who do not have the crucial qualities mentioned above.

"Don't send your ducks to eagle school," said Lobaito.

Ken R. is a former broadcaster and frequent contributor to Radio World.

A Typical Five-Day RAB Academy Curriculum

DAY 1	
8 a.m.	Welcome to the RAB Radio Training Academy
9 a.m.	Your Role as a Radio Marketing Consultant
9:45 a.m.	Where to Begin: Systems & Time Management
10:15 a.m.	Prospecting: Your Key to Success in Radio Sales
11 a.m.	Setting and Achieving Your Goals
11:30 a.m.	Lunch
12:30 p.m.	Tour of RAB Facilities
1 p.m.	RAB Resources — A Fast Start to Sales Success
2:15 p.m.	Getting First Call Appointments
3 p.m.	Practice: Getting First Call Appointments
4:30 p.m.	Connecting with RAB.com
5:30 p.m.	Homework Assignments, etc.
DAY 2	
8 a.m.	Quiz #1
8:30 a.m.	Understanding Retailers
9:45 a.m.	How to Conduct a Client Needs Analysis
10:45 a.m.	Practice: Client Needs Analysis
12 p.m.	Lunch
1 p.m.	The Difference Between Features & Benefits
2:15 p.m.	Basic Principles of a Good Written Proposal
2:45 p.m.	A: Getting Acquainted with PROposal Wizard, B: How to Make Money with Cooperative Advertising
DAY 3	
8 a.m.	Quiz #2
8:30 a.m.	Getting a Grip on Competitive Media
10:15 a.m.	The Role of Creative
11:30 a.m.	Lunch
1 p.m.	An Introduction to NTR
2:30 p.m.	Negotiating & Handling Objections
3:15 p.m.	Practice: Negotiating & Objections
4:30 p.m.	The Art of Successful Scheduling
5:30 p.m.	Proposal Polishing
DAY 4	
7 a.m.	Proposal Polishing
8 a.m.	Quiz #3
8:30 a.m.	Radio: Blueprint for Results
9:15 a.m.	Practice: How to Make Winning Presentations
10:45 a.m.	Selling in a Slow Economy
11:45 a.m.	Lunch
1 p.m.	What Makes Us Tick — Understanding Buyer Types
2 p.m.	What You Need to Know About Ad Agencies
3 p.m.	More Practice: Presenting & Handling Objections
4:30 p.m.	Making Money With the Internet
DAY 5	
7:30 a.m.	Individual Presentations — Evaluation and Coaching
10 a.m.	Class Photo
10:15 a.m.	Final Written Exam
11:30 a.m.	Lunch / Wrap-up

STATION SERVICES

Greaseman: He's Tanned, Rested and Ready

Photo by Alan R. Peterson

The Grease is back.

Doug "The Greaseman" Tracht is back in syndication. Birach Broadcasting Corp.'s AMF Radio Networks has picked up the show to syndicate via satellite on StarGuide III — Clear Channel Satellite Services.

The Greaseman is heard in two dozen markets, including Washington, Detroit and Chicago. The program, based out of flagship station WGOP(AM), Washington, is available on a cash and barter basis.

WGOP and AMF Radio Networks are building new studio and uplink facilities in downtown Washington.

For more information call Glenn Leeder in Washington at (866) GREASE 1 or e-mail gleeder@dcradio700.com.

NET RADIO SERVICES

BE Offers Online Streaming Package

In an effort to offer what the company touts as a turnkey Internet audio streaming package, Broadcast Electronics has released its SoniXtream service.

BE picked up the audio streaming assets of Everstream and reconfigured the software and stream services to support streaming by radio customers.

BE's package includes custom tuners, both general and targeted ad insertion and stream hosting.

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

Christian Contemporary Programming Shows in Arbitron Webcast Ratings

A pair of contemporary Christian channels made their mark in the September Arbitron Webcast Ratings. K-LOVE was ranked No. 2 with 1,004,700 aggregate tuning hours, while Air 1 Radio came in at No. 15 with 222,100 ATH. Virgin Radio continued its hold in the No. 1 spot while JazzFM UK ranked third in the listings.

Educational Media Foundation made its debut in the Arbitron Webcast Ratings (chart not shown) in the No. 5 spot. Live365 ranked in the No. 1 network spot while Clear Channel Worldwide was No. 2 and ChainCast/StreamAudio secured the No. 3 position.

ARBITRON WEBCAST CHANNEL RATINGS REPORT
SEPTEMBER 2002

Channel	URL (Corporate Affiliate)	Format	ATH
1 Virgin Radio	www.virginradio.co.uk (SMG plc)	Hot Adult Contemp.	1,263,700
2 K-LOVE	www.klove.com (Educational Media Foundation)	Contemp. Christian	1,004,700
3 JazzFM UK	www.jazzfm.com (Guardian Media Group)	Jazz	977,800
4 WQXR-FM	www.wqxr.com (New York Times)	Classical	784,700
5 Radioio	www.radioio.com (Radioio.com)	Album Adult Alternative	738,900
6 KING-FM	www.king.org (Classic Radio, Inc.)	Classical	473,100
7 KPLU - Jazz	www.kplu.org (Pacific Lutheran Univ.)	Jazz	409,300
8 KNAC.COM	www.knac.com (KNAC.COM)	Album Oriented Rock	355,000
9 Radio Margaritaville	www.radiomargaritaville.com (Radio Margaritaville, LLC)	Adult Contemp.	316,800
10 Killer Oldies	www.killeroldies.com (Royal Programs, Inc.)	Oldies	294,700
11 WGMS-FM	www.wgms.com (Bonneville International Corp.)	Classical	250,800
12 WCPE-FM	www.wcpe.org (Educational Information Corporation)	Classical	245,300
13 Ministry of Sound	www.ministryofsound.com (Ministry of Sound)	Electronica	238,600
14 WHTZ-FM	www.z100.com (Clear Channel Worldwide)	Contemp. Hit Radio	226,100
15 Air 1 Radio	www.air1.com (Educational Media Foundation)	Contemp. Christian	222,100
16 WFUV-FM	www.wfuv.org (Fordham University)	Variety	209,600
17 WFXZ-FM	www.937thebone.com (Sea-Comm Media)	Classic Rock	202,300
18 WTOP News	www.wtopnews.com (Bonneville International Corp.)	News Talk Information	193,700
19 Tom Joyner Morning Show	www.tomjoyner.com (ABC Radio Networks)	Talk/Personality	185,100
20 JazzRadio Berlin	www.jazzradio.net (JazzRadio Berlin)	Jazz	183,300
21 WBUR	www.wbur.com (WBUR Group and Boston University)	News Talk Information	170,300
22 KSBJ-FM	www.ksbj.org (KSBJ Radio)	Contemp. Christian	164,900
23 WOXY-FM	www.woxy.com (Balogh Broadcasting Co.)	Alternative	156,800
24 WLTW-FM	www.1067litefm.com (Clear Channel Worldwide)	Adult Contemporary	153,600
25 Virgin Radio Classic Rock	www.virginradio.co.uk (SMG plc)	Classic Rock	153,300

ARBITRON

MusicMatch Tops MeasureCast Sept. Audience Report

The September MeasureCast Internet Radio Report shows that MusicMatch pulled in the biggest audience numbers of any Internet radio network measured by MeasureCast with 1,139,290 listeners. Internet Radio Inc. ranked No. 2 followed by Clear Channel Worldwide and Radio Free Virgin. Virgin Radio took the top Webcaster spot in the MeasureCast Internet radio stations ranking (not shown) by streaming 1,546,290 hours of programming to 264,788 listeners.

Clear Channel Worldwide streamed the most hours of entertainment in September, with MusicMatch coming in at second place. Stream Audio, Radio Free Virgin and Warp Radio rounded out the top five.

MEASURECAST TOP 10 INTERNET RADIO NETWORKS
SEPTEMBER 2002

Rank	Network	URL	Total TSL[1] (in hours)	Cume Persons[2]
1	Clear Channel Worldwide	www.clearchannel.com	4,995,393	696,171
2	MUSICMATCH	www.musicmatch.com	4,577,903	1,139,290
3	StreamAudio	www.streamaudio.com	4,035,618	341,535
4	Radio Free Virgin	www.radiofreevirgin.com	3,928,268	525,185
5	Warp Radio	www.warpradio.com	3,187,001	311,408
6	Internet Radio Inc.	www.internetradioinc.com	2,493,425	738,920
7	Virgin Radio	www.virginradio.co.uk	1,852,394	299,686
8	SurferNetwork	www.surfernetwork.com	1,415,931	85,027
9	JazzFM	www.jazzfm.com	1,308,612	243,123
10	ABC Radio Network	www.abcradio.com	1,236,751	219,592

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.

Studio Sessions

Radio World — Resource for Radio On-Air, Production and Recording — November 6, 2002

Al Says:
'I Can't
Hear You!'
ARP, Page 35

PRODUCT EVALUATION

Mackie System Takes on Heavy Use

by Carl Lindemann

The Mackie SRM450 powered PA loudspeakers are welcome companions for live remote broadcasts. Being amplified cabinets, they are not exactly light, but they are manageable due to careful design and layout.

The sound quality of the SRM450 is excellent right up to high volume levels. These are loud and clean and do an excellent job filling all but the largest auditoriums with the sound of a station.

The SRM450s are a midsized package (26 by 15.4 by 14.8 inches) that weigh in at 51 pounds. The molded plastic enclosure has integrated handles on both sides as well as one on the top.

A variety of positions are possible. The base has three rubber feet for standing on the floor as well as an insert for pole mounting. There are numerous fly points to suspend it securely. Its asymmetrical trapezoidal shape makes it work well as a floor monitor when set on its side.

The 12-inch woofer is protected by a steel mesh front panel. The tweeter is recessed deep in the case with the enclosure serving as a horn. The high-impact materials and the solid design make for a rugged package.

Takes a licking

Although I did not subject them to the "bounce" test, they appear to be ready to absorb most anything short of deliberate abuse. Diminutive staff members may have a hard time hefting these onto poles, but ours had no difficulty. The placement and size of the handles certainly helps.

The rear control panel includes peak-level and thermal warning LEDs, a master-level control, a low-cut filter as well as a sound contour switch.

The I/O is a standard XLR female alongside an XLR male, wired in parallel so that additional speakers can be daisy-chained to a single source. There is no need to bring the manual along to figure this out. A little experimentation shows what the options offer.

Inside, the biamplified design has a 300 W RMS low-frequency amp and a 100 W RMS amp for the high frequencies.

The woofer is rated to handle 450 W, so there is plenty of headroom to spare. A good-sized die-cast aluminum heatsink on the back helps both amplifier circuits run at high power for extended periods.

Both are protected by a thermal switch, which kicks in if they overheat. A timed turnoff feature puts the speaker into sleep mode following three minutes of silence.

I tested a pair of SRM450s in a variety of settings. I ran the first test in my home studio just to get some sense of the sound quality. I connected the loudspeakers to a Mackie 1202 board and played material through a Digital Audio Labs CardDeluxe in my production computer.

Listening to a variety of music and assorted production work, the clarity and three-dimensionality was impressive. The mid- to upper-frequency response was superb. Bass did become muddy in the lowest octave.

If you want to get a cleaner thump, Mackie recommends adding the SWA1501

See MACKIE, page 37 ▶

Mackie SRM450s on Location With Rick Bean, General Manager at WTSN(AM) 'The Bay'

PRODUCT EVALUATION

WaveLab Makes Mark as Alternative Audio Editor

by Alan R. Peterson

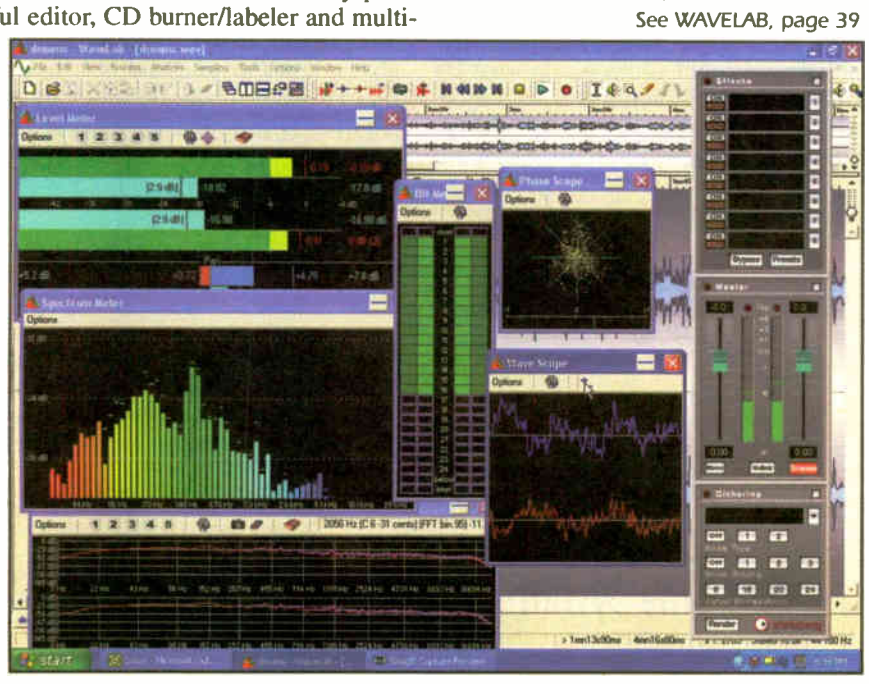
I often tell broadcast students that if they know one or two — maybe three — digital audio editors, they pretty much know them all. They can go for a job anywhere and use that knowledge base to work with whatever they have at their new station.

Up until the SAW software product line was discontinued, my general choices had been Cool Edit, SAW and Pro Tools. I am now amending that list to include WaveLab 4.0, a remarkably powerful editor, CD burner/labeler and multitrack production environment from Steinberg Media Technologies AG.

Steinberg has a considerable user base of musicians and remix artists, due to its Cubase and Nuendo MIDI/audio sequencers and "virtual" music synthesizers.

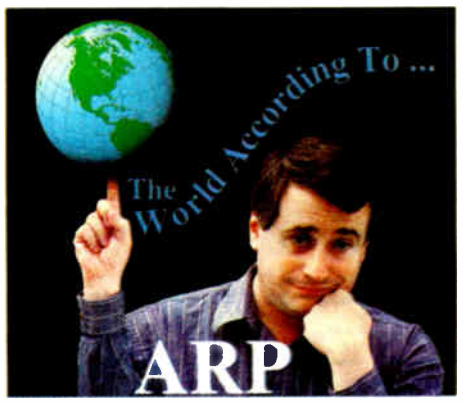
Steinberg also developed VST (Virtual Studio Technology), an open-ended standard for audio effect processing and music generation. Many a programmer has written a nifty-sounding reverb or plug-in synthesizer module based around the VST standard, and dozens can be

See WAVELAB, page 39 ▶



A Demo? You Really Want a Demo?

by Alan R. Peterson



It has been a few years since I've been the operations guy.

You may recall from our last get-together that I recently kicked off a new tenure as the operations manager for WGOP(AM), licensed to Walkersville, Md., and serving Washington. Last time I had to handle responsibilities this deep was when I was opping that cable FM and TV operation two years ago.

Now at WGOP, with the Greaseman holding down mornings and the rest of the day serviced primarily by staff from the Salem Radio Network and a local Washington talk talent, there is plenty to keep me busy.

Of course, when word of a new talker hits the streets and the trade press, the whole world and his brother Itzy comes out of the woodwork looking to try their hand at a talk show.

I have all the love in the world for new talent — I once was one myself — and I certainly want to hear what some of the legacy hosts and the up-and-comers have to say.

I only wish they would come out and say it.

Hit the basics

Case in point: a local fellow, anxious to start doing his own phone-in talk program, has contacted us more than once for the opportunity. Our response has been "send us a demo."

His response has been, "I haven't got one."

Well pardon me, Rush Jr., but don't you think a tape or a demo of what you do or sound like would be a good idea?

I have received e-mail from an all-female talk team with little more than, "Hi Al. What kind of employment opportunities are there?" then directing me to their Web site for a look-see, but again, no audio demo.

Pardon me again for saying so, but if you want a show in Washington all that badly, couldn't you cough up a few more words than that? And do I really have to be the one doing all the footwork to find your demo?

And my favorite of all: "How do I get a syndicated radio show?" Once again, do you do a show now?

"No."

Do you have a demo?

"No."

Buh-bye.

Catch-22: You need an audio demo to do a radio show, but you need a radio show to get a demo made.

I will address ways around that in a moment. First, allow me a few moments to grumble about this state of affairs.

Maybe it sounds as if I am being harsh, but ever since I started out — in fact, long before then — it has been customary for a prospective broadcast talent to walk through the door with a reasonably good demo tucked under his or her arm. I just know every place I ended up, I had to drop them a reel or cassette just to get near the door.

Be prepared

My first boss in upstate New York didn't have the right kind of deck to listen to my demo (I recorded it on a quarter-track Roberts machine and his Revox couldn't swing it). Bless 'im, he gave me an audition on the spot right in the production studio with some local news and commercial copy.

He never heard my real demo, but at least I had brought it.

The only work accomplished by a tapeless audition is a three-foot drop into the trash basket.

Many things have changed since then, but the demo remains the key. Today, we have a full plate of choices. Talent can forward an MP3 of an audio demo over the web, a streaming AVI of the morning team in action (in all of its jerky, low-res glory), black-and-white headshots and full MPEG movies on DVD-R showing the talent in full battle array.

The point is, they come through the door with *something*; bring nothing to the table, expect nothing in return. It's not my rule, but it's still the only one that counts.

Back in 1996, I wrote a piece for Radio World called "Please Send Photo: An Ethical Practice?" This dissected and analyzed a debate that began when a station advertised for a new jock and requested a photograph in addition to the standard T&R.

The debate ranged from accusations of discrimination to acknowledgments of the realities of radio today, that attractive people are *(gasp!)* more marketable. And a manager has a right to ask for whatever might be considered appropriate for the position.

If the ad asked for a résumé written backwards with a periwinkle Crayola, then you'd darn well better be raiding your little sister's crayon box for that piece of purple wax and get scribbling.

My point of all this? You probably won't get the job if you don't do what Da Man asks you to. And if it is a radio show you want, make the picture secondary: Your best calling card is still an audio sample of you in action.

Yes, this sounds completely obvious. But you know I wouldn't be writing about it if I had not experienced it myself.

I can appreciate the rejection a lot of talent goes through. Again, I have been there; I'm still a performer at heart and more than once I have expected doors to fly wide open to greet me when the word was on the street that I was looking.

I strode through those doors sans tape on several occasions and found my keister kissing the sidewalk moments later. Lesson learned.

Every time I have tried since then, whether it was an on-air position, a production gig, a bit part in a commercial or a voicetrack for a local planetarium show, I had audio in my hand. Even if they did not accept it, at least I brought it.

Whether it is a case of laziness — a sort of "I'll get around to it if I feel like it" — or the spirit being broken by one too many doors being slammed in one's face, there is a tendency emerging to not submit any audio until perhaps after the résumé or the pretty picture has done its work.

Often, unfortunately, the only work accomplished by a tapeless audition is a three-foot drop into the trash basket.

To those pros among us who understand all this and send out new tapes to dozens of stations a week, I apologize for such blatantly obvious comments. But I acknowledge that beginners and second-jobbers also read my articles and may not yet have discovered why it is so necessary to have that CD or cassette ready to rock out the door.

Beat down the door

So to you first-timers or at least hopeful talk talents on the way up, how do you get that demo done and ready for sending out? Maybe to me?

Scenario No. 1: Perhaps you are a music jock who is getting bored with 12-In-A-Row-Music-Supersets. Does that AM station across the hall do any live weekend talk? Seeing how you already *have* a job at that combo, you could always ask the weekend host to let you fill in when he or she decides a little family time is in order. Or at least partner

See ARP, page 37 ▶

PRODUCT GUIDE

Orban Software Revision Increases Security

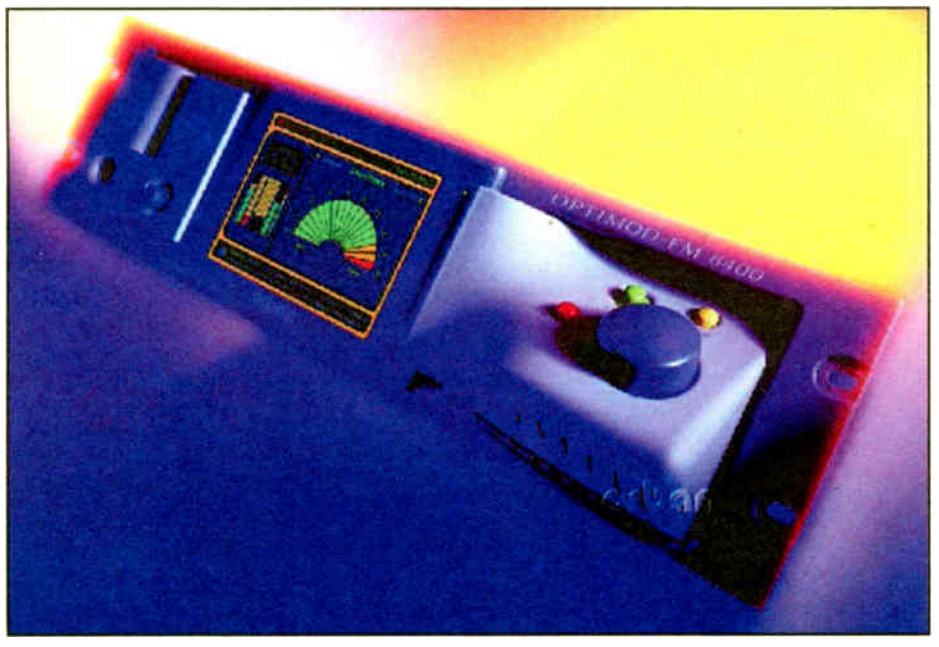
Version 2.1 of the Orban flagship FM audio processor, Optimod-FM 8400, adds five-level password-protected security. Depending on privilege level, a password can authorize actions that range from simple preset recall to access of all features.

The upgrade also offers a low-latency mode that reduces delay to 15 milliseconds with what the company says is minimal tradeoff in performance.

Operation modes can be switched between the new low-latency mode and the 20 ms delay mode that was introduced in Version 2.0, for the best combination of loudness, presence and low distortion.

Version 2.1 introduces a family of "Impact" presets that are oriented toward contemporary hit radio and other mass-appeal formats. Presets in the Loud-Hot family take advantage of the low-latency mode.

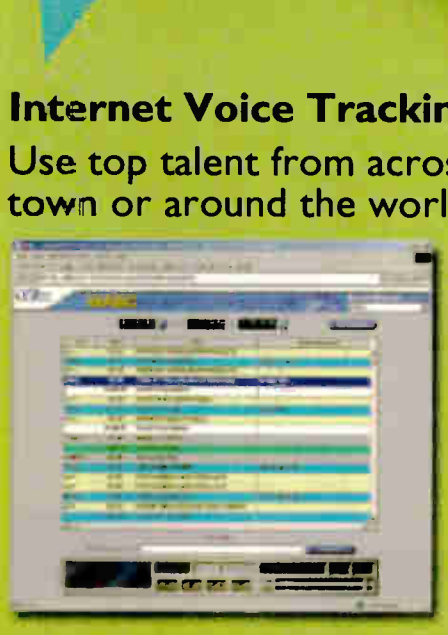
For more information contact the company in California at (510) 351-3500 or visit www.orban.com.



The New MASTER CONTROL™ XV

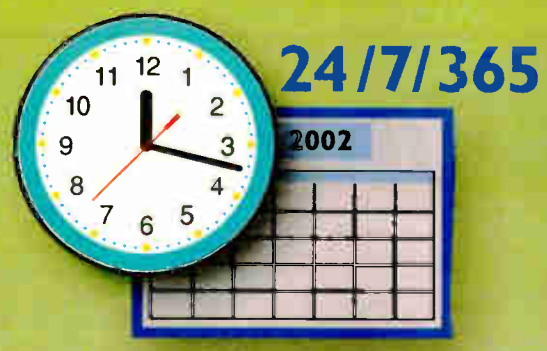
Three more reasons to make the switch!

Internet Voice Tracking
Use top talent from across town or around the world.



Living Log
No more copying log out and into the studio. All schedule changes are immediate.

24 Hour Support
The average RCS support call is answered by a real human being in 12.5 seconds.* If you have a question, we've got the answer no matter what time.



*From internal document (7/1/2001- 6/30/2002) based on more than 27,000 calls.

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Products & Services SHOWCASE

Control Solutions by CircuitWerkes

The SEN-6 Subaudible Tone Encoder

The *SEN-6* is a single channel Subaudible tone *encoder* with integral audio filtering that can produce 25Hz, 35Hz and combination tones from external closures.

Control your world with CircuitWerkes DTMF Tone decoders and controls

The DTMF-16 and DS-8 DTMF tone decoders provide economical remote control over audio lines. The DTMF-16 decodes single or dual codes while the programmable DS-8 accepts up to 8 four-digit sequences. Silencer option removes DTMF tones from audio.

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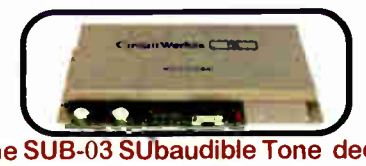

The SUB-03 SUbaudible Tone decoder

The SUb-03 is a single channel subaudible tone *decoder* that can detect 25Hz, 35Hz and combination tones on audio channels. Each tone gives a distinct relay closure. Integrated filters strip each tone from the SUB-03's audio output so no one hears it.

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SS 8.2
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8x2
Active audio switcher with eight stereo inputs, two stereo plus two mono outputs.

16x2
The 16x2, Sixteen input, Dual Output Stereo Switcher/Router passively switches or routes any one of 16 stereo inputs to either or both stereo outputs or vise-versa through gold contact relays.

16x1
Passive switcher/router with 16 stereo inputs and one stereo output, or vice-versa.

8x1 DAS
Routes any one of eight AES/EBU digital inputs to three common outputs.

10x1
Ten input, Single Output Stereo Switcher/Router passively switches or routes any one of 10 stereo inputs to one stereo output or vise-versa through gold contact relays.

6x1
Passive switcher/router with six stereo inputs and one stereo output, or vice-versa.

3x2
Active audio switcher with three stereo inputs and two stereo outputs.

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SS 3.1
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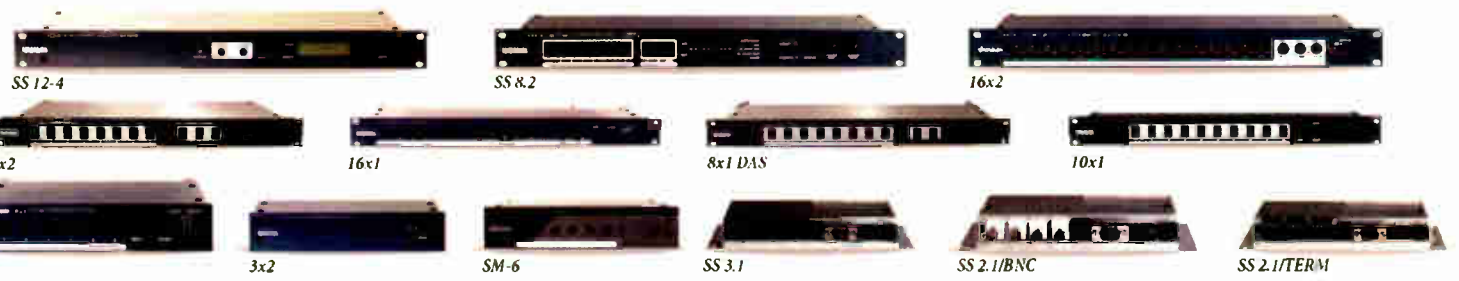
Passive switcher/router with two composite audio, video, or AES/EBU inputs to two composite video, or AES/EBU outputs, or vice-versa.

SS 2.1/TERM
Passive switcher/router with two stereo inputs and one stereo output or vice versa.



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◆ PRODUCT GUIDE ◆

Products for Radio Air & Production Studios

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

File Conversion With TrackFilerPlus for Dalet Systems

TrackFilerPlus, an audio acquisition tool shown by Dalet at the recent IBC 2002 convention in Amsterdam, allows files from a Nagra digital recorder or tracks from a CD to be ripped easily.

TrackFilerPlus automatically converts Nagra handheld audio files to a preselected format, copies audio files to the Dalet central server from local storage (CD or Nagra, via USB port) in an automatic batch and incorporates metadata for retrieval.

A standard USB port connects TrackFilerPlus with a Nagra handheld audio recorder/player ARES-P/RCX220. To transfer files, the user highlights the desired file in the TrackFilerPlus window and clicks to transfer. Transfer speed is several times the real time. The system works with any Dalet version.

The BBC Northern Ireland uses TrackFilerPlus to import central Dalet system sound files and associated metadata from Nagra digital recorders using a USB connection. In addition, the BBC imports sound files from CDs as well and it automatically downloads metadata about the CD song titles from the CDDB Web site.

For more information contact Dalet in New York at (212) 825-3322 or visit www.dalet.com.

Promotional Image of TrackFilerPlus at Work

Jutel Software Offers MAM Features

Jutel's RadioMan R5 is a scalable system for digital media. The latest version of the software can be configured to suit the specifics of its users, handling scheduling to live-assist broadcasting and the automation of multiple output channels.

RadioMan integrates programming and broadcast planning, digital audio production, reporting and archiving, as well as program transmissions into a package the company says offers significant cost savings.

The software enables content to be transmitted simultaneously through multiple channels, such as radio, the Internet, DAB, 3G, DVB and wireless media.

According to Jutel, "What sets RadioMan R5 apart from its competitors and even from the earlier generations" is its Media Asset Management features, which provide new functions for information management including copyright control.

Also new are personalized user profiles supporting multiple locations. New features include more effective music scheduling, a freely configurable Script Editor, automatic retransmissions and a redesigned user interface.

For more information, including pricing, contact Jutel in Finland at 011-358-8-5514805 or visit www.radioman.fi.

Mackie

▶ Continued from page 33

powered sub. That will load an additional 500-plus watts of bass into the mix. Aside from that, the home studio test showed that these sounded better than I expected. They are good enough that those on a budget might consider these for use as a studio monitor as well as a PA. Note that they are not magnetically shielded, so using them as nearfields next to a computer monitor would be problematic.

Other test settings included use as a stage monitor for a local country and western band called "Maine Squeeze" and at a business fair for WTSN(AM) and WBYY(FM) in Rochester, N.H.

Sonic purity

On stage, the SRM450s demonstrated an impressive resistance to feedback. If a deliberate effort is made, you will get feedback, but accidental feedback seemed greatly reduced.

In its literature, Mackie attributes this to the sonic purity of the drivers. What matters is that feedback issues are minimal. That can save a lot of trouble during live remote broadcasts.

The outing with WTSN and WBYY was a typical "meet and greet" fair with local businesses. The SRM450s were playing the WBYY signal from a boombox.

In this setting, the speakers had more than enough response to reproduce the frequency range of the broadcast signal. Setup was simple and fast. After hoisting the units on poles, they were easy to secure with the turnscrews incorporated into the base of the SRM450.

Product Capsule:
Mackie SRM450
Powered PA Speakers

Thumbs Up

✓Excellent handle layout
✓Great sound
✓ Rugged

Thumbs Down

✓ Heavy
✓Limited LF response

Price: $899

For more information contact Mackie Design in Washington state at (800) 258-6883 or visit www.mackie.com.

Volume levels were not pushed, in fairness to other exhibitors. At the max, these can generate SPLs reaching 120 dB up close — not good for business or your hearing! Basically, these were overkill for this app, but the handy design meant that they were not a burden to bring. After the fair, the Mackies were easy to toss into the shipping boxes and fit nicely into the backseat of my midsized coupe.

Mackie SRM450s are solidly built and carefully thought-through for the rigors of the road. Their musicality is limited only on the LF response and by the acoustic characteristics of where they are set up.

ARP

▶ Continued from page 35

with the host for one weekend to offer an opposing viewpoint. This will certainly give you enough airchecked material to work with.

Scenario No. 2: Start calling the talk show on that crosstown station and tape your calls right off the air. Present solid, valid points regarding your opinions or the facts on the topic as you know them. Be as articulate as possible; make sure you can deliver them with as few *urrs, umms* and *likes* as possible.

Begin dropping e-mail to the host, asking about upcoming topics and if he or she would consider an in-studio guest on one of those topics (hey, never hurts to ask ...).

If the answer is "no," don't give up. After about three weeks of calling the show to voice your opinion, go visit the station with a heavily edited CD in hand. Explain to the host who you are, why you call so often, that you wish to do your own talk segment someday, hand over the CD and *now* would he or she consider bringing you on for a few minutes live?

The answer may still be "no," but at least the suggestion has been planted. Someone over there at that station eventually will take notice and make a move.

How often have you listened to a talk station and asked, "Who's *this* guy?" when the regular host takes a vacation? You have to start somewhere.

Scenario No. 3: This one is barely worth mentioning, but in a pinch it may inspire somebody. Fake a show.

Just like we used to do as music jocks when we would disappear into the production room and emerge with a staged aircheck (that invariably sounded staged), you should trot off into an empty studio, roll a recorder, take up a topic and run with it. Have a girlfriend or a buddy call up and tell you what a jerk you are for your opinion and work it.

Do this steadily for a minimum of two weeks. If you cannot make it for the two weeks without running out of topics or steam, you need more practice.

Finally, Scenario No. 4: Offer yourself as an "instant expert" to the local community-access TV channel. Trust me. I engineered a cable-access station for a year and the hosts of access shows often scramble for topics and guests. Be ready to be brilliant and you will have a steady source of tape and topics to use for auditions.

Don't be quick to dismiss this suggestion. A local show in D.C., "The Sports Junkies," got its start in cable access and now they are syndicated.

If it is a matter of not having any audition material to show up at the door with, be inventive. Try some of the suggestions I mentioned here.

If you have convinced yourself the show could sell itself without a demo, you might be in for a wakeup call, especially if a manager or program director has never heard of your name to begin with.

"But I know I can do a really cool show!" one might say.

Fine. Show me you can ... on your demo. I'll call if we can use it.

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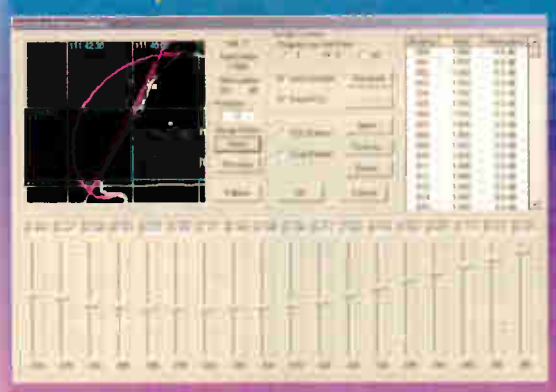

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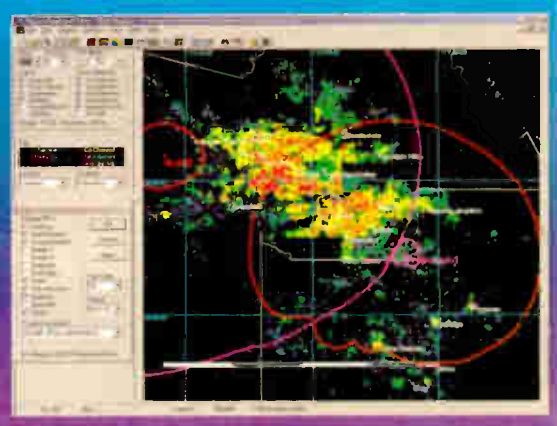

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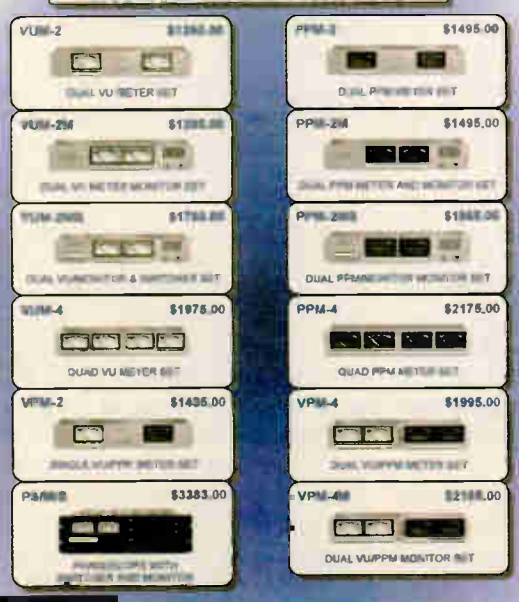

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WaveLab

▶ Continued from page 33

found for free on the Internet.

Because MIDI is not a great concern on the station level, Cubase would be considered overkill in the production room.

WaveLab, however, has power and features to spare for broadcast production, multimedia authoring and editing, sound design for sampling and, yes, music production. The newest version, 4.0, adds an abundant toolbox to an already outstanding digital audio editor.

Right now, I am using WaveLab to edit and burn the five-hour "Best of the Greaseman" syndicated weekend show from Washington. Your needs may not be as demanding, but WaveLab seems to be up to the task.

Several high-quality virtual effect processors lead off the list. Also included is a palette of audio analysis tools such as a virtual phase scope, FFT meter and a spectrum analyzer. One may also find a suite of CD burning, copying and labeling tools and a solid mastering section.

"Mastering" a piece of produced audio is often a neglected step, especially when lots of work has to be pushed quickly through the production room. Many times, a finished spot or promo is peak-limited at best for some overall sock, but that is about it.

Plug-ins

WaveLab includes a pop-up mastering section that allows the use of numerous plug-ins to buff up and sweeten a produced piece in one pass. Inside WaveLab, a completed file never has to pass through an outboard processor rack for any reason, including receiving its final polish for air.

Everything in WaveLab 4.0 is bundled behind one of the most serious GUIs out there for PC-based audio editors. With its blue waveforms backed by graduated polished silvery track spaces, WaveLab boasts a real buttoned-down, get-down-to-business look that other editors shy away from.

WaveLab 4.0 boasts sample rates up to 192 kHz/32-bit (floating), if your audio interface is up to the task. This again is overkill for broadcast production, but is highly useful for audio analysis and forensics should your interests someday take you there — the audio detail offered by sample rates that high can aid in interpreting "mystery" sounds on flight recorders and police phone tapes.

According to company literature, WaveLab will run on a slow (200 MHz) Pentium II or AMD K7 machine. In my opinion, that figure should be *quintupled* to a 1 GHz or better processor. The VU meters and phase scope follow the action much faster, more tracks can be played back with no dropouts, and effect rendering and MPEG compression/decompression work much faster too.

As with other audio editors, the majority of work is done in two views: the Wave window, which isolates single audio files for edit operations, and the Audio Montage window, where multitrack assembly and editing is done. Recording may be done in either view.

In the Wave window, hitting the Record icon in the control bar brings up a prompt asking for File name, Properties and a slew of options including auto-stop record and auto-create markers at silent points. A sensitive peak and average VU meter also comes up, along with a disk capacity marker showing how much recording time remains on a drive.

It is sobering to watch the VU meters moving when you know there is no audio entering your soundcard from the console. It gives a concrete idea just how noisy that bargain card really is!

Editing in the Wave window is extensive, including the necessary Cut, Paste, Copy, Trim and Insert Silence functions. For the most part, WaveLab follows the Windows convention of CTRL-X, C and V for cut, copy and paste functions, but adds in ALT and SHIFT commands for more particular items. You may be referring back to the manual a couple of times until you get it right.

Montage

Applying processing to a single file in WaveLab is similar to the process in Cool Edit or the Sonic Foundry "Vegas" product line, although the menu appears smaller. Pull down the Process menu item to apply pitch changes, compression/expansion, normalization, reversal and fades.

Other tricks such as reverb, flanging, denoising and declicking must be applied in the aforementioned Mastering section.

Multitrack editing and assembly has come a long way since the early days of "drop in and pray."

WaveLab has power and features to spare for broadcast production, multimedia authoring and editing, sound design for sampling and music production.

With features such as Magnetic bounds to snap audio *clips* (small segments of edited audio along each track) in place, drawn audio envelopes for panning and volume, and auto-grouping multiple clips for simultaneous dragging, editing in the WaveLab Montage is speedy and efficient.

A big feature in the Montage view is the ability to attach different processing to clips placed in a single track. Unlike earlier radio favorites such as SAW, where a plugged-in effect affected an entire track, up to 10 VST effects can instead be applied to a single clip at a time. Each clip can have entirely different processing from the one before it in the timeline applied to it, all in the same track. Further, apply a reverb to a clip and the tail will continue past the end boundary. No more cutoffs and no more adding in two seconds of silence for an effective ringout.

Crossfades can be done by overlapping two clips on the same track. Crossfade options and fade times are editable.

A Magnifying Glass icon lets you drag a rectangle onto your Montage, lasso a portion you wish to magnify and examine up close. To move quickly within a MON (the filename of a WaveLab Montage, or multitrack project), the upper pane above the tracks can be set for a full overview of the entire project.

Although I once wished every digital editor made had a Jog function, it really does not do much for me anymore. Hitting F10 and dragging the mouse causes WaveLab to scrub audio in slow motion to help locate edit points, similar to "rocking the reels" on a tape machine.

It has gotten to the point for me and for many other production rats to highlight entire blocks of audio and search for hits visually. It is fast and often very accurate this way. Lots of RAM and a fast processor would make jogging a good feature in WaveLab, but on a slow machine, it becomes an ordeal.

Production of commercials and promotional announcements is made much faster with the automatic ducking feature, which lets a clip on one track dip the volume on an adjacent track. Once the fade and recovery parameters are set, this is quite the timesaver.

Audio files and mixdowns are saved in a number of formats, including standard WAV and AIF files, MP3, Windows Media WMA and the Steinberg proprietary OSQ compressed file format.

If you wish to encode your file as Real Media or save as an open source Ogg Vorbis compressed file, you won't be able to right now. Hopefully these formats are not far ahead in a future version of WaveLab.

The Mastering section, with its multiband compressor and mastering EQ, assure a clean and polished final product.

Eight effect processing slots can be filled with the tools needed for the job, a pair of linkable Master Faders ride gain on the entire project, and the dithering plug-in may save the day when moving from a 24-bit file down to a 16-bit CD.

The plug-in can be the stock WaveLab algorithm or the Apogee UV22HR algorithm. If you are unsure that you need to use the dithering plug-in, open the Bit Meter and observe the bits being used on a file.

Burnin' for you

The CD creation tools in WaveLab are all-inclusive; you need not turn off one program just to launch a CD burner once, then a label maker afterwards.

If your experience begins and ends with the simple CD burning software packaged with aftermarket drives, be prepared for a new layer of versatility and complexity. WaveLab lets you record audio discs, data discs and CD-Extra and Mixed Mode CDs (the latter combining computer data and audio on one disc).

Unlike the one-size-fits-all approach of most CD writing packages, this one allows you to specify pause length between tracks other than the Red Book standard of 2 seconds and define sub-index markers to cue directly to specific points within a track (seen frequently on sound-effect CDs).

Running a CD burning session is not exactly click-and-go. New users will probably lose a disc at least once in discovering optimum settings.

Product Capsule:
WaveLab 4.0 Audio Editor From Steinberg Media Technologies AG

Thumbs Up

- ✓All-inclusive editor/multitrack/CD creator and labeler
- ✓High quality VST plug-ins
- ✓Apogee dithering algorithm
- ✓Can run on painfully slow PC if necessary
- ✓Multiple effects within one track

Thumbs Down

- ✓Mixed feelings about Jog feature
- ✓Does not save to Real Audio or Ogg Vorbis
- ✓Cost vs. other editors

Price: $599

For information contact Steinberg in California at (818) 678-5100 or visit www.steinberg.net.

Setting up WaveLab to work with your CD-R drive is somewhat more involved than getting those budget or shareware burners going. The program will ask for confirmation of numerous parameters, such as maximum record speed, and an incorrect value could cause a failed session. Similarly, attempting a disc-at-once burn without a practice run first could leave you with a coaster.

But the result is worth it. WaveLab not only lets you create a killer demo CD to hand to a client, but one containing slick graphics and a full presentation created in other programs, thanks to the ability to burn a Mixed-Mode disc.

Power

WaveLab is a powerful audio editor for broadcast production, buffing up audio tracks and events for video editing, and fine-quality mastering of your CD projects.

If your intent is to record a band or an event requiring several simultaneous tracks to be recorded, this is not the package for you. The manual even says so. The Audio Montage window in WaveLab allows you to assemble your multitrack project one element at a time, rather than create true multiple-input multitrack recording.

I had a problem with my display, viewing the small knobs on the VST plug-ins, but my CRT was cranked up to 1152 x 864 resolution. Cutting back to a typical 1024 x 768 may save some eyestrain.

It is nice to actually use VST effects in an editing program designed for them without having to use a converter plug-in or a "VST wrapper." While such a utility is handy in other non-Steinberg editor programs, results are occasionally spotty and, in some cases, unusable.

There is no shortage of PC-based audio editors these days. Invariable comparisons will be made to Cool Edit Pro, Samplitude or the Windows version of Pro Tools. While WaveLab is pricier than Cool Edit 2.0, its feature set is comparable and the program itself is quite stout and robust.

Steinberg already set MIDI music and music mixing on its ear with Cubase SX and Nuendo, so it may be worth your while to see what the company can do for your audio editing needs.

Alan Peterson is the operations manager at WGOP(AM), Washington, and occasionally contributes to Radio World's sister publication Pro Audio Review. Contact him via e-mail to alanpeterson@dcradio700.com.

PRODUCT GUIDE

Henry Engineering Superelay Now Shipping

The Superelay is an automatic switcher used in broadcast and recording studios to operate on-air warning lights when the microphone is on.

The unit, rack-mountable in 1/3-rack width and 1RU high, can control up to 200 W of warning lights and provides six relay outputs for utility use. The switcher is suitable for wherever AC and/or multiple low-voltage circuits need to be switched with a common control input.

Features include Euroblock connectors, a warning light flasher and AC power supply.

For more information call the company in California at (626) 355-3656 or visit www.henryeng.com.

BUSINESS DIGEST

Merger Brings Audemat to Digigram

At the end of the year, Audemat will merge with Aztec Radiomedia, a subsidiary of Digigram. The result will be a new company in the Digigram group called Audemat-Aztec Solutions.

Digigram Managing Director Philippe Delacroix said his company seeks more business in the broadcast and public address markets.

"This merger will accelerate growth, especially in the broadcast sector."

Audemat shareholders will own 60 percent of the new entity, with the rest held by Digigram. Daniel Werbrouck, Audemat's founder, will stay on and continue to serve as chairman and product director. Bruno Rost remains as managing director. They were the two major investors in the privately held company.

Rost said both Aztec's Strasbourg facility and Audemat's Bordeaux site will be maintained; the headquarters of Audemat-Aztec Solutions will be in Strasbourg. "Each site will remain as an important location for R&D departments and we will keep significant R&D teams at both locations," a spokesman for Digigram said.

Digigram makes networked audio devices, sound cards, FM broadcasting equipment, digital mixing consoles and audio management software. It is based in France, with several subsidiaries including one in North America, based in Virginia.

Audemat makes measurement equipment that allows broadcasters and regulation authorities to control and optimize transmission chains. It has 34 employees.

Aztec Radiomedia, a subsidiary of Digigram since 1999, makes FM broadcasting equipment and networking products for public address and intelligent transportation. It is based in France and employs 45 people.

RW Product Reviews Available Online

Approximately 50 reviews of products for radio stations are available in the Product Evaluation section of the Radio World Web site at *www.rwonline.com*. These articles have appeared in Radio World in 2001 and 2002.

Each review is written by a radio professional and includes the familiar Thumbs Up/Thumbs Down summary, as well as supplier contact information and pricing.

Among new products that have been reviewed recently are the rfSoftware rfDetective-FM search tool, ATI Nanoamp Series HDA600 stereo headphone amp, Stardraw Radio design and documentation software, Raduga radio automation software, Eventide BD960 digital broadcast delay and Waves Native audio restoration software.

Also the Audion VoxPro for Windows PCs, Behringer Eurorack MXB1002 portable mixer, Syntrillium Cool Edit Pro 2.0, Sony Sony CDR-W66 CD recorder, Sennheiser MD 46 field microphone, Joemeek MQ1 recording interface and dozens of others.

For information visit the Radio World Web site at www.rwonline.com *and click on the Product Evaluation tab on the left margin.*

BROADCAST Equipment Exchange

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

ACOUSTICS

Want to Sell

ANTENNAS/ TOWERS/CABLES

Want to Sell

ERI FM H (hi power) wide band antenna, tuned to 92.9, ready to ship, $4500. John Eisert, KDWD, 2303 W 18th St, Spencer IA 51301. 712-264-1074.

Want to Buy

FM Isocoupler, 92.5 mHz, 2500W. Mike Rabey, WIOU, 671 E 400 S, Kokomo IN 46904. 765-453-1212.

AUDIO PRODUCTION

Want to Sell

Two ATI Distribution amplifier 2016, $500 ea "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Two Technics Quartz direct drive SC 1200 MK 2, one without needle "as is", $100 ea +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

AUTOMATION EQUIPMENT

Want to Sell

Scott Studios AXS includes both studio & production room CPU's with Broadcast Tools 8x2 audio switcher, ideal for satellite control, new in 2000, $4500. Bruce Campbell, Dove Media, 598 Westwood Dr, #201, Abilene TX 79603. 915-677-3900.

CART MACHINES

Want to Sell

Audiocord cart machines. I have about 3 dozen. They have been refurbished and am asking about $150, but will accept offers. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

COMPLETE FACILITIES

CONSOLES

Want to Sell

ATI Vanguard Series sound board, eight channels, $300 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Autogram 10-channel good working condition with telephone punch down blocks attached, $1500. Bruce Campbell, Dove Media, 598 Westwood Dr, #201, Abilene TX 79603. 915-677-3900.

BE 10S-150 console in excellent condition with many new spare pots, $1000. Herman Gibbs, WCWS, The College of Wooster, Box C-3177, Wooster OH 44691. 330-263-2212.

One five channel mono Cetec & five channel mono Sparta sound board. No power supply available, $40 each "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Radio Systems RS 12 channel audio board, $4200 new but will let go for $1900 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Six AudioArts R-60 borads. Three have eleven channels, three have ten channels. The eleven channels will be available at the end of October & the 10 channels available at the end of November. I can send pictures, $2200 for 10 channels & $2250 for eleven channels "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Two Wheatstone A500a 16 channel audio consoles. I can e-mail pictures. Cost over $19,000 new but will sell them for $9500 "as is" each +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

LIMITERS/ AUDIO PROCESSING

Want to Sell

CRL audio preparation processor and spectral energy processor, $1000. Ken Lane, KVKP, Box 1118, Naskell TX 79521. 740-864-8505.

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.

MICROPHONES

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.

MISCELLANEOUS

Want to Sell

Vintage Silver Face Urei LA-4 compressors. Stereo pair, serial number puts it in the early 70's, both work great, BO. Contact Jon 586-770-0404.

TFT EAS 940A FM receiver module, $150. Mike Schweitzer, KBJM, Box 540, 500 1st Ave E., Lemmon SD 57638. 605-374-5747.

Gentner Extended transceiver EFT 900, $200 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Inovonics Map II multiband processor, $750 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Navco System Controller (The Brain). I have a picture but will accept the best offer "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

QEI Model ARC – 27 automatic remote control, $295 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Three 25 HZ TP-XT Zercom dual tone detect & notch filter, $70 ea "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Want to Buy

TFT EAS 940A radio module. Mike Schweitzer, KBJM, Box 540, 500 1st Ave E., Lemmon SD 57638. 605-374-5747.

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.

RECORDERS

Want to Buy

ITC 750 capstan pinch rollers. Anyone know of a source or have some used one's for sale? Tony Wortmann, WJAG, 309 Braasch Ave, Norfolk NE 68701. 402-371-0780.

REMOTE & MICROWAVE

Want to Sell

Marti RPT2 & RPT-15, FQ1 450.500 & FQ2 455.500, BO. Ken Lane, KVKP, Box 1118, Naskell TX 79521. 740-864-8505.

Telos Zephyr Express with soft-side carrying case, excellent condition, $2600. Brad Hildebrand, KSLQ, 636-978-4200, spots@kslq.com.

SATELLITE EQUIPMENT

Want to Sell

Four Zephrus analog sat receivers, $175 each "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Harris 6550, card included, BO. Ken Lane, KVKP, Box 1118, Naskell TX 79521. 740-864-8505.

Scientific-Atlanta AD-7550, card included, BO. Ken Lane, KVKP, Box 1118, Naskell TX 79521. 740-864-8505.

Wegener DN 86 digital audio receiver 3944.1 MHZ, $500 "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

STATIONS

Want to Sell

SMALL AM RADIO STATION in the South. Can be moved to much larger market, $150K. Call 706-692-4100.

TRANSMITTERS

Want to Sell

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

Continental 814-R1 2.5 KW FM. Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

Harris-Gates FM-5G 5KW FM & **Harris-Gates BC-5-H** 5KW AM. Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

McMartin BF-5K, 5kW FM. Factory rebuilt in perfect, like new condition, includes new tubes, tested & tuned on your frequency. Guaranteed, fully adjustable from 0 to 5.5 kW. Goodrich Enterprises Inc, 402-493-1886.

RCA BTF-20-E1 20KW FM. Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

Bauer 707 AM transmitter. Tuned to 1080 KHz, excellent condition & spare tubes, $1800. Scott Bailey, WMRO, 701 N Blythe Ave, Gallatin TN 37066. 615-451-2131.

BE FX 30 exciter, $4850 new but asking $2950, "as is" +shpg & handling. Michael Raley, Bible Broadcasting Network, 704-523-5555 or Mraley@bbnradio.org.

Broadcast Electronics RE-30, 1984, mint 3 phase 30,000W FM, tuneable to your frequency, $20,000/BO. Todd Noordyk, Great Lakes Radio, 2025 US 41 W, Marquette MI 49855. 906-228-6800.

CCA 20KW, 1978 3 phase 20,000W FM, can be tuned to your frequency, has all manuals, $14,000/BO. Todd Noordyk, Great Lakes Radio, 2025 US 41W, Marquette MI 49855. 906-228-6800.

Harris MW-1A 1kW AM transmitter. Marked down to $3995/BO. Transmitter was working fine when station went dark. Call Will at 321-427-3512.

Harris TH-3 solid statesman FM exciter, $350. Bruce Campbell, Dove Media, 598 Westwood Dr, #201, Abilene TX 79603. 915-677-3900.

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10KW	AM	1982	Continental 316F
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Radio World's Broadcast Equipment Exchange provides a FREE listing service for radio stations *only*. All other end users will be charged. This FREE service does not apply to Employment Help Wanted ads or Stations For Sale ads. These are published on a paid basis only. Send your listings to us by filling out the form below. Please be aware that it takes one month for listings to appear The listings run for two consecutive issues and must be resubmitted in order to run again. Thank you.

Please print and include all information:

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*Closing for listings is every other Friday for the next month's issue. All listings are run for 2 issues unless pressed for space or otherwise notified by listee.

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17	Klotz Digital AG	www.klotzdigital.com
12	Logitek	www.logitekaudio.com
33	Lynx Studio Technology	www.lynxstudio.com/rw
23	MediaTouch	www.omt.net
19	Modulation Sciences	www.modsci.com
27	Moseley Associates	www.moseleysb.com
36	Nott Ltd.	www.nottltd.com
9	Omnia, a Telos Company	www.omniaaudio.com
20	Radio Computing Service (RCS)	www.rcsworks.com/howitworks
8	Radio Design Labs (RDL)	www.rdlnet.com
5	Radio Systems	www.radiosystems.com
11	Radio Systems	www.radiosystems.com
38	Raduga Automation	www.raduga.net
38	RAM Broadcast Systems, Inc.	www.ramsyscom.com
38	Ramsey Electronics, Inc.	www.highpowerfm.com
38	rfSoftware, Inc.	www.rfsoftware.com
3	S.C.M.S.	www.scmsinc.com
35	Sine Systems	www.sinesystems.com
38	Spacewise Broadcast Furniture	www.spacewise.com
13	Telos Systems	www.telos-systems.com
47	Wheatstone	www.wheatstone.com
48	Wheatstone	www.wheatstone.com

Radio World, November 6, 2002

GUEST COMMENTARY

Can IBOC/DAB Deliver?

by Jon McClintock

The author is the commercial director of Audio Processing Technology, based in Belfast, Northern Ireland.

When digital broadcasting was first mooted a decade ago, the benefits were clear to all. With its promise of improved audio quality, interference-free reception and additional ancillary services, including song and artist information, it was apparent that digital broadcasting could provide a substantial improvement on existing FM analog services.

Undoubtedly, technical developments for digital broadcast have addressed interference/fading issues and brought all the ancillary services we were promised, but what about improved audio quality? Has IBOC/DAB (or HD Radio) really delivered superior audio quality? And if it hasn't, then why not?

The greatest threats to audio quality in the broadcast chain are the number and type of data compression passes taking place prior to emission.

As audio quality is a relatively subjective issue and by no means a definite science (how many "Golden Ears" do we all know?), there is plenty of scope for manipulation. As an aside, this subjectivity has allowed for the introduction of a new adjective for audio description, "CD-like quality," a term that is quite openly used when describing IBOC.

Arguably the greatest threats to audio quality in the broadcast chain are the number and type of data compression passes taking place prior to emission. As the final emission is a psycho-acoustic based technique (Musicam Layer II for DAB and PAC for IBOC/HD Radio), it stands to reason that the type and number of compression passes prior to the final stage should be monitored carefully.

The fundamentals of psychoacoustic-based algorithms and their attempts to replicate the performance of the human ear have been well documented over the past 10 years. What is understood is that a signal of certain amplitude will mask a signal of lesser amplitude, which is in close proximity in the frequency axis. The second signal is deemed irrelevant, ignored and removed. (I'm sure many proponents of MPEG derivatives are going to shout "foul" over this simplified description.)

In theory, this is a reasonable technique, and in functionality and practice a good process on a single pass, possibly even two passes. But it is on the third pass, and after that, that the problems start to occur. These problems may result in artifacts leading to listener fatigue and ultimately the listener moving across the dial.

Although broadcasters have been aware of the problems associated with multiple psychoacoustic passes for a number of years, the reality only hit home when digital stations went live. In the U.K., a number of listeners complained of "muddy" or "tinny" sounding audio when commercial radio stations first went on-air with DAB. Other stations, namely within the GWR and Capital networks, were able to deliver content that could be described as CD-quality.

How did they achieve this? Firstly, by ensuring a reasonable data rate for emission. Secondly, and possibly more important, by using a relatively nondestructive compression algorithm, if and where compression was required.

In GWR's case, this was achieved by using apt-X for their distribution network. Other applications for a nondestructive algorithm are ISDN contribution links, automation, storage, studio networking and distribution networks. In general, the rules of thumb were:

- Try to avoid more than two passes of psychoacoustic (inclusive of emission)-based algorithms in a digital broadcast network.
- Where possible, use 256 kbps for ISDN contribution.
- If you have the data capacity, use 384 kbps (or linear where possible) for storage and networking.
- Definitely use at least 256 kbps for distribution networks.

The apt-X compression algorithm is a four-subband ADPCM technique using predictive analysis and backward adaption to provide a modest 4:1 ratio and can return audio content very close to the original, even (or especially) after several passes. A corollary to the compression technique is the remarkably low coding delay, or latency: a mathematical 1.9ms at 48 kHz Fs.

Broadcasters who understand and have addressed the long-term repercussions of multiple psychoacoustic passes will benefit greatly from IBOC/DAB. They know that muddy- or tinny-sounding program content will turn listeners off.

Unfortunately, for those broadcasters who refuse to address this situation, either by failing to acknowledge the problem or due to financial pressure (i.e. using 8:1 or higher compression ratios), there is only one possible outcome: a substandard IBOC (HD Radio)/DAB channel that will turn listeners off for good.

Radio World, November 6, 2002

GUEST COMMENTARY

Make IBOC 'Right' the First Time

by David Noble

The author is chairman of government affairs for the International Association of Audio Information Services.

For the past several months, we've been treated to regular updates on the status of the new digital broadcast system, IBOC, or in-band, on-channel. As the FCC and Congress discovered during the debate over low-power FM, including as many broadcast interests as possible is smart. Ibiquity, to its credit, has been feeding us information all along, and now that we have a ruling from the commission, it looks as if everyone is ready to leap into the digital stream.

Wide benefits

However, there is a whole lot of work still to be done on the new system. For AM, we don't know about night-time service, and on the issue of additional data channels, we have no test results on interference to the main carrier, subcarriers or even adjacent signals.

For commercial radio, this might mean the difference between a quick adoption of the new system and a DTV-like rollout, taking years to get off the ground. For reading services for the blind or visually impaired, the availability of additional data capacity at the time of implementation is essential.

Any system that goes into place now must provide for the needs of all Americans, and that means people with disabilities too.

With a change of this magnitude, the new system should do it "right" the first time. Any system that goes into place now must provide for the needs of all Americans, and that means people with disabilities too.

IAAIS, the International Association of Audio Information Services, a member-based association of reading services for blind and visually impaired persons worldwide, stated in its comments to the FCC that a system that includes the capacity for additional datastreams benefits everyone.

It's not just smart for the community and public radio operator, it's smart for commercial radio. If manufacturers and broadcasters all agree to utilize the capacity for additional programming feeds from day one, let's look at some of the benefits:

- Faster adoption of the new system by consumers who want to receive the additional program material, data service or auxiliary information.
- The cost to adopt IBOC drops sooner for broadcasters and consumers.
- Additional audio/data services on commercial radio begin generating income to offset the cost of adopting the digital system.
- Increased justification for Congress to fund public radio's digital conversion, because new services are being offered to a more diverse audience.

Of course, the first hurdle is exactly what so many of us said in comments to the commission. We need a clear standard. *The new transmission system and digital receivers must include the use of secondary audio programming at the time of implementation, not in some far-off future.*

For reading services on SCA, we proposed that the commission must require stations transmitting a reading service on its subcarrier to include the reading service when the transition to digital is implemented for the main channel.

The current FM IBOC does not offer subcarrier users such as radio reading services a good digital solution in its Hybrid Mode. At present, the only digital solutions available to us would involve a station devoting some of its bandwidth to auxiliary data use, using 80 kbps instead of the standard 96, for example. In a highly competitive market, this is unlikely.

The second possible solution is the use of "Extended Hybrid Mode," where a larger chunk of spectrum is devoted to the digital signal. The lack of a digital home for reading services is of concern because the hybrid phase could last for many years.

Ibiquity has not thoroughly tested this mode of operation and admits that some interference is likely to some analog radios. Further, both these approaches presuppose a disability friendly radio receiver exists that could decipher the additional data capacity.

No digital home?

Without a predefined standard, the solution for digital supplemental program carriage is unlikely at best. That would mean millions of Americans who are blind and disabled and who now rely on reading services on SCA must suffer additional interference to the already fragile signal until the hybrid mode is over and full digital broadcasting commences.

Not having a digital home for reading services increases the risk that advocacy groups in the disability community will mobilize and seek legislative redress to the issue.

Conversely, with more programming streams in the digital signal — public and commercial — it makes better sense to manufacture radios that are able to "hear" all the streams, giving incentive to even more consumers to purchase the new digital radios, including millions of Americans with disabilities.

This is a golden opportunity for the commission to make a "home" for the nation's reading services. Ever since the phase-lock-loop made the use of a subcarrier minimally viable for receiving audio, subcarrier space has been targeted for commercial use. Only radio reading services have "gone the distance" and made a broadcast service work on SCAs. No other group has used the subcarrier technology to serve the public interest for more than 30 years.

The new transmission system and digital receivers must include the use of secondary audio programming at the time of implementation, not in some far-off future.

Commercial ventures have come and gone, eventually giving up on the admittedly poor signals as not viable for commercial use. However, each time the forays into SCA space have damaged or eliminated services for people who are blind or visually impaired.

Imagine how dedicated the listeners of reading services must be to endure static and crosstalk, short receiver supply and, in some cases, regular outages. Reading services will be facing even greater pressure to clear out SCA spectrum space for commercial interests now that a digital datastream promises to make that space more robust and have higher fidelity.

Universal design

Reading services should not be pushed off the air in the new digital system, nor be the only analog service that sounds "worse" without a digital stream to compensate for the loss. The advancing technology should not close doors, effectively isolating people with disabilities by stealing their access to information.

For instance, the intent of 82-1 and similar rules protecting reading services which use subcarriers on public stations should be applied in the new digital system to ensure that such services are not swept away in a rush to increase revenue or recover digital conversion costs.

Finally, the consumer radios in a digital world must be manufactured under the principle of "Universal Design." IAAIS supports the idea of universal design, as do the American Council of the Blind, the American Foundation for the Blind, the National Federation of the Blind and other organizations that have been outspoken advocates for including the needs of people with disabilities in the design stages of a new consumer product.

IAAIS is pleased to have had its concerns receive the recognition of the commission, most notably in the joint statement issued by Commissioners Abernathy and Martin. We agree with their characterization of the new digital receiver as capable of interactive services.

Reading services could be the national showcase for accessible design and interactive digital radio products on the largest scale yet, if the FCC enforces Section 255 of the Telecommunications Act, which requires such products to be usable by people with visual or other disabilities. Making radios accessible *is* readily achievable. There are no digital radios for the average American home in mass production. The time for designing in talking displays, tactile markings and other time-tested accessibility features is now.

But back to the business issues. Requiring universally accessible design of digital radios eliminates the "chicken and egg" issue inherent to introducing the IBOC system, and promotes early public buy-in to the new technology. *All* consumers will have an incentive to buy new radios if there are digital streams available on the new radios that they never could hear before. There are millions of Americans who have disabilities. And, because universal design will speed the public's adoption of a new technology, broadcasters will enjoy a larger audience of "digital listeners" sooner.

IAAIS took a proactive approach to meet with the commission staff regarding IBOC, much as it did with low-power FM, because both issues could negatively impact the IAAIS member stations' ability to serve blind, legally blind, visually impaired and otherwise print-handicapped Americans. IBOC does not have to negatively impact reading services for the blind and visually impaired population, so let's take the time to figure out how to do this right.

In comments to the NRSC Report, IAAIS asked the commission to protect reading services on SCA. If the hybrid mode and extended hybrid mode tests show that it will be impossible for the commission to protect reading services in the transition to digital, then let them find for all reading services a place to exist where they can deliver access to news and information without having to buy expensive special receivers and where the services will be able to grow and serve the vast population of people who cannot read because of a disability.

Write to Us

RADIO WORLD READER'S FORUM

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◆ READER'S FORUM ◆

Change at WCBS

WCBS(FM) had a very special sound that I think was unique to oldies radio. Unlike other stations, CBS-FM was still playing tons of '50s and early '60s rock that you could only get away with in New York City, until their recent format modification dumped the doo-wop. As far as I know, they were still the highest-cuming oldies station in the USA.

I think many programmers make a fundamental error in assuming that you can treat an oldies format like a CHR or AC format, i.e. retire the older music and substitute newer music to keep a constant core 25-49 audience.

Oldies isn't AC or CHR. It is a formatic smorgasbord, with all sorts of music flavors that define the genre. Take away some of the core music, and it's no longer an oldies format. The same premise applies to classical and even classic rock.

If WCBS(FM) erases the brand and character of their station, I guarantee that another station will quickly snatch the '50s and '60s franchise, and hire most or all of the CBS(FM) jocks, to again fill a massive audience niche.

Paul Ward
President
Far West Communications Inc.
Los Angeles

Sept. 11 and EAS

I wanted to congratulate you for the Sept. 11, 2002, edition of Radio World. It was an outstanding job of bringing a very complex set of issues into how it related and relates to radio in general. I wrote a short article for RW last year on how we at Brighttower Broadcasting dealt with the tragedy.

However, a raspberry is also in order. On page 54, the editorial with a reference to EAS was, in my humble opinion, way off target.

Going to a twice-monthly RMT is not the answer. Doing something twice that nobody understood the first time is not only a waste of time; it is actually counterproductive. EAS has been an unmitigated failure from the get-go, at least in most areas of the country. It was a clear case of technology manufacturing dictating policy to the FCC. I still field a few calls from listeners of our stations who mistakenly think the EAS header was a CD player on steroids.

Where the editorial was on target — and I think most "modern" station owners/GMs/PDs will miss this — was that "a fundamental understanding of basic journalism should be part of any broadcaster's skill set."

The idiotic notion that "Oh, we're not a news station" is one reason (although certainly not the only one) why EAS encoders were not in meltdown soon after the planes hit Washington and New York City. (Whatever happened to "the public's interest, convenience and necessity?") Playing that one more Britney sound-alike song is no substitute for informing listeners, and, in some cases, possibly saving their lives.

Today in radio, and for that matter television as well, few, if any, of the talking heads we see and hear on the airwaves have even taken a class in journalism, let alone have a college degree in it. And as a result we do have the Howard Sterns to which you made reference. Maybe this is a giant step backwards, but I would love to see the FCC again require stations to show their "public interest" broadcasting as they did decades ago.

Instead of worrying about digital broadcasting in the 0.5-1.6 MHz range, where the only "demand" for this technology is from the manufacturers themselves, wouldn't it make a lot more sense to improve the message instead of the messenger?

As was quoted in one of the Star Trek motion pictures, "Just because we have the technology to do a certain thing, does not necessarily mean we *have* to do it."

Jerry Arnold
Director of Engineering
Brighttower Broadcasting
WMGI/WWSY(FM)
Terre Haute, Ind.

College radio streaming

Just wanted to give another sad report of a streaming dropout.

WEGL(FM) 91.1 at Auburn University has stopped streaming as well. We have been streaming since about '97, but have decided to pull the plug after reviewing the potential costs involved in continuing to stream.

WEGL is completely funded by the students of the university. Students pay $15 per semester dues, which are divided among nine student activity projects, of which WEGL is one. Besides our underwriting (which is virtually none) and these student funds, WEGL receives no state or federal money to operate. Our total budget for FY02 was $79,000 (this includes paying the secretary and faculty advisor).

I also wonder how artists are going to expect us to give them accurate counts of streams since '98. At no point did the university (which was running the streaming server), nor Nibblebox (who also hosted us at one point), keep detailed logs on listeners to our stream. Until we find out something different, our stream is going to stay silent (except for locally originated programming).

Thanks for the great work you do at Radio World. I learn something new each time I pick it up.

Joseph Brannan, CBNT
Program Director
WEGL Radio, Auburn University,
Auburn, Ala.

How Far Is Too Far?

When shock jocks cross the line, it is disingenuous for employers to wash their hands of them. Common sense and promotions insiders both suggest that owners know very well what their air talent is doing.

Shock jocks are expected to be outrageous. These people have turned off their "inner gatekeepers," the filters that tell them when they are approaching the danger zone. Often they surround themselves with sycophants who won't stop them even as they come precariously close to the edge.

One radio insider told us of his involvement with a jock who wanted to do an on-air promotion so stupid and dangerous that our source flat-out refused it. The talent went over our insider's head, but management backed our guy. While the decision caused considerable friction, the jock's job may have been saved in spite of himself. The station certainly was protected from a big problem.

The lesson: someone in management must have the authority to refuse bad ideas, and must exercise it.

Bubba "The Love Sponge" Clem was acquitted not long ago of animal cruelty after an animal was castrated and slaughtered on his show. He made the news; people tuned in. While Clear Channel, the owner, suspended Clem, it also mounted a costly defense to win his acquittal.

The infamous "Opie & Anthony" sex stunt this summer was part of a contest that had been run in years past. Infinity managers should have acted before any public outcry was necessary.

This fall, Sandusky Radio was embarrassed when jock Beau Duran called Darryl Kile's widow in her hotel room, told her she looked "hot" on TV and asked her if she had a date for the next game. Kile, a ballplayer for the St. Louis Cardinals, had died suddenly earlier in the season. The station apologized, but even in its apology it expressed amazement at the "media circus" that had resulted, as if management was simply shocked by all the hubbub. After thinking about it way too long, the group finally fired Duran.

Some managers may think that the attention drawn by these incidents is worth the cost. We think these stunts make all of us in radio look bad.

There is also a feeling in the industry that censure is not meted out equally. Howard Stern can get away with much more than other talent because he makes phenomenal amounts of money. Firing him for any reason probably would cost the company in revenue and stock price. Further, some shock jocks may see what Howard does but not realize the discipline he reportedly applies behind the scenes.

For years, stations have aired "What Would You Do for This Prize?" promotions, giving away concert tickets, $10,000 or a new car. These contests once drew people who would dress funny or jump into kiddie pools filled with chocolate syrup. Now we get people who climb a building with suction cups attached to the their feet, have sex in public places or jump off a bridge.

Radio managers don't have to encourage this stupid or dangerous behavior.

Don't hire jocks for their shock value, then act surprised when they deliver it. Further, protect your station and your talent from themselves. Station managers need to create guidelines for their employees that make clear what is and is not acceptable. These guidelines must be enforced; they should not be issued with a wink and a grin.

A broadcast licensee is responsible for the content of its programming. It cannot abdicate that responsibility simply by saying that its employees were doing their own thing. Your employees are in effect your agents; absent extraordinary circumstances, you as licensee will be held accountable for what a jock does or says on the air. Occasional slips of the tongue aside, management must know how its station is being promoted, particularly if those promotions and contests extend over days or weeks or years.

This is corporate responsibility. Talent alone should not be hung out to dry while owners feign ignorance, pay little or no penalties or merely hire the next personality until he or she also goes too far.

— RW

More Letters On Pages 44-45

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