

*****3-DIGIT 857
 S117298 D08 0508
 TOM MILLER
 ASST CHIEF ENGINEER
 KTZR
 2033 S AUGUSTA PL
 TUCSON AZ 85710 7905

558

A Spectrum Marker

Should 500 kc be honored as a 'Memorial Frequency'?

Page 54

'The Way Music Was Meant to Be'

WMKV in Cincinnati is hardly, well, 'retiring.'

Page 66



Radio World

\$2.50

The Newspaper for Radio Managers and Engineers

March 29, 2006

Dawson, Rackley Honored

Kilohertz Gurus Singled Out by NAB

by Randy J. Stine

It seems fitting that Ron Rackley and Ben Dawson both receive this year's NAB Engineering Achievement Award. The two veteran consulting engineers have partnered on many international broadcast projects throughout their careers and share an admiration for each other's work. Moreover, both love AM broadcast system design and optimization.

"Ron and Ben have worked passionately in their craft and are known throughout the broadcast industry as true experts in the field of broadcast antenna systems — especially directional AM systems," said John Marino, NAB vice president of science and technology.

The NAB will honor the two during the NAB2006 convention in Las Vegas. The Radio Engineering Award is given to industry leaders for significant contributions that have advanced broadcast engineering.

"Hundreds of broadcast engineers have learned how to troubleshoot and maintain their antenna systems as a result of NAB's directional AM seminars led by Ron and Ben. Their laid-back teaching style has been very well received over the years," Marino said.

A Clemson Tiger

Ironically, Rackley is a self-professed introvert uncomfortable speaking in front of crowds.

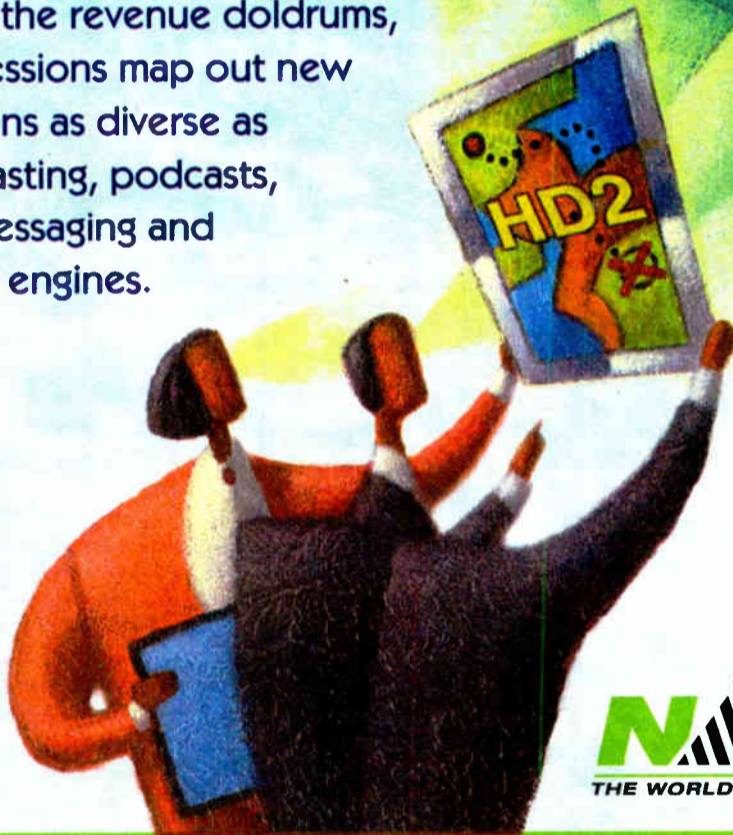
"However, I'll do it if I can help other engineers understand what AM is all about. Professionals are supposed to share information and to share knowledge," he said.

Rackley, 53, is partner in the engineering firm du Treil, Lundin & Rackley Inc.,

See ACHIEVEMENT, page 8

Radio Searches For Its Growth

Seeking to help owners break out of the revenue doldrums, NAB sessions map out new solutions as diverse as multicasting, podcasts, text messaging and search engines.



Show coverage starts on page 12.

NAB2006
THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW

Stand alone reliability or networked flexibility. Why should you have to choose?

With the Harris **PR&E RMXdigital™** console and **Vistamax™** networked audio management system you don't have to give up reliability to get the flexibility of networked audio, you can have **both!** Whether you have a large consolidation, or just want to update one studio, we've got you covered. Our unique distributed approach reduces wiring, installation time and expense. Harris' scalable digital audio solution can be tailored to fit the most demanding needs and strictest budget.

The touch and feel your talent loves with the adaptability every engineer needs all at a price the boss will like.

Call 800-622-0022 today and put the power of Harris to work for you.



HARRIS assuredcommunications™
Broadcast • Microwave • RF • Government Systems www.harris.com

imas Letters to the Editor
E-mail: radioworld@imaspub.com
Publishing Group

Behringer Faces \$1 Million Fine

by Leslie Stimson

WASHINGTON Using strong language about "egregious" misconduct, the FCC proposed a \$1 million fine for Behringer USA for allegedly marketing 50 models of unauthorized radio frequency devices — Class B digital audio music devices such as mixing consoles, dynamic processors and microphone preamps.

The company had 30 days to seek a cancellation or reduction in the fine and to explain what corrective measures it has taken. A Behringer USA spokesman declined comment.

The commission said it acted on a 2004 complaint that alleged Behringer

was marketing digital audio equipment that didn't have an FCC certification label that would certify the gear meets standards to control interference.

In 2004, Behringer told the FCC that in 2000, it began importing, marketing, distributing for sale and selling in the United States digital audio products, such as mixers, amplifiers and digital effects processors — a total of at least 66 models.

The company told the agency it had not verified compliance of the models prior to selling them. But Behringer stated that "a range" of its digital devices had been tested and indicated they had conformed with European safety requirements.

Behringer told the FCC that, after

receiving the bureau's first inquiry, it initiated measures to come into compliance, engaging a lab to test products and saying it would submit results to the commission.

The FCC said in its decision that Behringer had supplemented its response with copies of test reports demonstrating compliance of 14 of the devices with emission limits. However, the agency found that Behringer continued to market the remaining models in question.

Behringer stated that since 2004, it had imported about 93,600 units and sold approximately 100,000 units of digital devices that had not yet been tested for compliance with the FCC's rules.

The fine applies to 50 of the models;

16 were tested and verified more than a year before the date of the FCC action.

Specifically, the commission has proposed base forfeitures of \$7,000 for each of the 50 models of unauthorized digital devices it says Behringer marketed in the United States within the last year. It increased the fine "based on the egregious nature of Behringer's misconduct, its ability to pay a forfeiture and the substantial economic gain it derived from its continued marketing of unauthorized devices after the Enforcement Bureau began its investigation," the FCC stated.

The commission pointed out that the amount "substantially exceeds" proposed fines in similar equipment cases, noting it recently proposed a \$75,000 forfeiture against a manufacturer for advertising one model of an unauthorized device in various venues, and proposed a \$125,000 forfeiture against a retailer for selling several models of unauthorized devices on 13 occasions.

In 1999, Mackie Designs and Behringer settled a legal dispute in which Mackie had alleged infringement of its intellectual property rights, according to the Web site of Mackie's parent, Loud Technologies. The companies did not disclose terms of the resolution.

The FCC fine was not the only recent action in a case involving a manufacturer. The commission recently said it plans a \$25,000 fine against Ramsey Electronics for allegedly marketing two models of unauthorized FM broadcast transmitters and two models of unauthorized external RF power amplifiers.

THIS IS THE NEXT BIG THING:



WHEATNET™ — FUTURE PROOF!

WHEATNET LETS YOU ROUTE THOUSANDS of bi-directional signals at ONCE in just 60 microseconds—all secure, virus-proof and in just 2 rackspace! WHEATNET leaps way ahead of conventional stacked router or IP-based designs, interconnecting up to 48 studios (each with its own independent mix engines and I/O resources) using just one CAT-5 wire per studio, plus providing systemwide X-Y control from one central location. You can even meter and monitor (in stereo) any signal systemwide.

REDUNDANCY? We've got that covered too: just add a second WHEATNET and CAT-5 link from each studio and have an AUTOMATIC standby interconnect for the ENTIRE system!

WHEATSTONE has a proven track record for digital networking; benefit from our experience!



48 CAT-5 PORTS with 128 audio channels
(plus embedded control data) per port.
THAT'S 6144 TRAFFIC CHANNELS IN JUST
TWO RACK SPACES!



Wheatstone

GET THE POWER!

tel 252-638-7000 / sales@wheatstone.com

copyright © 2005 by Wheatstone Corporation

Index

NEWS

| | |
|--------------------------------------|----|
| Dawson, Rackley Honored | 1 |
| Behringer Faces \$1 Million Fine | 2 |
| BE Gets New Owner | 3 |
| Registration for PREC Closes April 7 | 3 |
| From the Editor | 4 |
| Digital News | 5 |
| HD-R News | 10 |

NAB2006 PREVIEW

| | |
|-------------------------------------|-------|
| Confidence on the Exhibit Floor | 12 |
| Vegas CEs Face Unique Critters | 16 |
| Weekend 'Summit' Looks Into the Pod | 18 |
| Show Highlights | 19 |
| Radio: On-Air, On-Site and Online | 20 |
| Take a Break and Head on Out | 24 |
| Conference Looks at FCC Agenda | 26 |
| NAB Radio Booth Listings | 28-44 |

FEATURES

| | |
|---|----|
| Workbench: The King of Shipboard Containers | 45 |
| Surround Compatibility Revisited | 47 |
| KGZO Suffers a Mighty Wind | 49 |
| What's in It for New Engineers? | 51 |
| A Spectrum Marker for 500 Kilocycles | 54 |
| Do You Need Bigger Conductors? | 56 |
| A View From the Back of the Room | 58 |
| The Demise of the First Phone | 60 |
| Who's Buying What | 62 |
| How DX Transmitters Began | 64 |
| Tichenors, Fries and Case Are 'Pioneers' | 65 |

GM JOURNAL

| | |
|--------------------------------------|----|
| The Way Music Was Meant to Be | 66 |
| Station Vehicles: Tips & Tricks | 68 |
| Deloitte: Tuning in to Radio 2.0 | 70 |
| How Vulnerable Are You? | 72 |
| What Is the Real Future of HD Radio? | 74 |
| Tips for Dealing With the Media | 75 |
| Minot: Davis 'Sets Record Straight' | 78 |

OPINION

| | |
|------------------------------------|-------|
| Reader's Forum | 84-86 |
| EAS: Bypassing Blame for Solutions | 85 |
| Growing the Radio Channel Family | 86 |

BE Gets New Owner

Broadcast Electronics Looks to Investment Firm Audax Group to Help It Grow After Sale

by Leslie Stimson

QUINCY, Ill. Broadcast Electronics has a new owner, one company executives believe will give the prominent equipment manufacturer deeper pockets from which to fund projects.

A Boston investment firm, Audax Group, acquired Thompson Street Capital Partners' interest in BE in late February in a deal Thompson valued at more than \$100 million.

BE President/CEO John Pedlow said the St.-Louis-based Thompson had been BE's majority shareholder for just over two years; now Audax assumes that role. BE is a wholly-owned subsidiary of BEI Holding Corp., now controlled by Audax.

The BE management team and other employees stay on, said Pedlow; he said Audax has confidence in the employees' ability to grow the business. He also said BE management would retain a minority stake in the company.

Audax manages more than \$2 billion in equity and mezzanine debt capital. Company Co-CEO Geoffrey Rehnert cited BE's "strong market position" and called it an attractive platform in broadcast radio equipment.

Principals declined to disclose revenue at BE or specify what Thompson had paid for BE two years ago. Thompson Managing Principal Peter Finley said sales at BE had doubled since coming under Thompson's wing and BE had "transitioned from a small company into a large,

fast-growing" one.

"We're confident that the company will continue to perform well but could not ignore the opportunity to sell the business and provide to our investors returns that are well in excess of targets for our industry," Finley said.

According to Thompson, it specializes in investing in private business with sales of \$20 million to \$150 million and profits of 10 to 30 percent.

Ownership by Thompson had been good for the company, Pedlow said, helping it to grow.

When Thompson acquired BE in 2004, it recognized HD Radio as a trend and helped reposition BE to take advantage of that, sources close to the deal said.

In 2004, when Hoak Capital Corp. of Dallas sold BE to Thompson, Pedlow told RW the Hoak/BE relationship was "terrific" but said Hoak was "very mature and nearing the end of their investment life, and there were some things we couldn't do."

Now, with the HD Radio rollout, the new deal speaks to investors about the value of the industry, BE believes.

Overseas HD-R

"They understand what's happening in our market and are very supportive of the direction we're taking," said Pedlow of Audax. "They will give us the resources to do whatever we want to do."

The purchase, he said, would allow BE to execute a broad plan that involves HD Radio, and especially continue its interna-

tional activities, pointing to HD Radio projects in Asia, the Middle East, Latin America and Europe.

BE makes HD Radio and other transmission products and a studio line that integrates on-air production and automation activities with over-the-Internet and HD Radio data delivery.

The move comes more than a year after BE's purchase of The Radio Experience, which allowed it to incorporate the software technology to transmit text data for analog RDS and digital HD Radio transmissions into its HD Radio and analog transmission hardware product lines.

The deal means BE has its fourth owner in 10 years.

Pedlow came to BE in 1999 from Alpha Technologies, which manufactures powering products for cable TV and telecommunications. He replaced Doug Davis, who was interim president after the departure of Jack Nevin. BEI Holding Corp's parent, Hoak Capital Corp., purchased BE in 1997 and then sold it to Thompson Street in 2004.

Pedlow remains BE's president and chief executive officer and the management structure stays in place. BE, which has about 150 employees, will remain


They understand what's happening in our market and are very supportive of the direction we're taking.

— BE President/CEO John Pedlow

Pedlow said recent growth in BE's product sales has been driven, in part, by HD Radio, and the ability to sell Radio Experience software that complemented its broadcast transmission hardware.

BE is still looking to grow through new product introductions and more add-on product acquisitions; the Audax deal will help that effort, executives said.

headquartered in Quincy, Ill., where the manufacturer has been for 26 of its 47 years.

Kirkland & Ellis LLP advised Audax Group. GE Antares Capital led a syndicate of banks providing senior debt financing. ABRY Mezzanine Partners led the mezzanine financing. Harris Williams & Co. advised the company. 

Registration for PREC Closes April 7

Registration closes on April 7 for the NPR Public Radio Engineering Conference. The conference will take place April 21-22 at the MGM Grand in Las Vegas and will include radio technology presentations on topics including HD Radio, ContentDepot and NPR Labs.



Bruce Theriault of Boulder Strategies (at podium) and Luis Guardia of CPB discuss public radio's PAD consortium at last year's 2005. An update on the project is planned this year.

On the first day, topics include initial results of NPR Labs' efforts to map IBOC coverage, as well as HD Radio receiver performance standards and marketing strategies. Potential technical enhancement to public warning systems and best practices to minimize losses from theft also will be discussed.

Saturday's sessions focus on ContentDepot, public radio's long-promised program delivery system. ContentDepot receivers and decoders are due to begin arriving at stations this month and dual operations of the new ContentDepot and the existing satellite distribution system are set to begin in May.

Recently completed station technical upgrades are also on Saturday's agenda. To sign up, go to www.nprlabs.com.

Mark Your Calendar!



SCMS Communications Conference Focusing on Digital Radio

Charlotte, NC

June 1, 2006 - all day

Attendance is FREE to all radio broadcasters!

Two educational tracks: Engineering & Management/PD

Exhibit area including: AEQ Broadcast • Audemat-Aztec • APT • BE • Davicom • Dielectric • Marantz • OMT • Orban • Radio Systems • Rane • TWR Lighting • Wheatstone • AND MORE!

Register/Get Exhibit Info
at SCMSinc.com
800-438-6040



Radio, Thinking in Pictures

You've heard talk from pundits (like me) who say that if managers want their radio businesses to prosper, they should think of themselves as content providers rather than broadcasters.

A company that walks the talk is Delmarva Broadcasting, owner of 11 Delaware and Maryland radio stations plus one Web-only outlet; its licenses include flagship WDEL(AM) in Wilmington. That's where I landed my first full-time job in radio; but I'm writing about the company today because it is exploring its own limits once again.

In the quarter century since I encountered Delmarva Broadcasting and probably longer, the company has innovated—in technology as well as programming, sales and localism strategies. It was an early adopter of touchscreen automation. It explored RDS-controlled billboards and AM stereo. It expanded its local news staff at a time when many AM outlets were doing the opposite. It computerized its newsroom early, built a successful in-house traffic service and has maintained a program of consistent, long-term capital plant improvement.

As I write, its engineers are setting up the company's first multicasting channel on WSTW(FM), which switched on HD Radio in December.

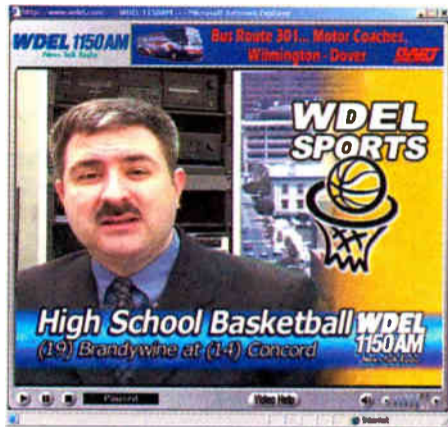
But even with that history, WDEL's newsroom staff must have raised their eyebrows when management recently handed them video cameras to replace their familiar portable audio recorders. I know I did when I read about it in an NAB convention preview story on page 20 of this issue.

Local

I spoke to Corporate Operations Manager Bob Mercer to learn about the company's newest product: WDEL Video News, an online newscast posted at 8 a.m. each day that is available as a series of separate video story clips.

"There is no real local TV news" in Delaware, Mercer said. Delaware has no VHF outlet and very little TV service of any kind. So WDEL decided to try to fill the gap.

The service is also something of a step back in time, because WDEL(TV) served the market until the late 1950s. "Now the Web opens that opportunity up again—to extend our antenna, if you will. It's the MBA 'economy of scale' kind of thing. We've extended our product from on-air news, to on-the-Web written, to on-the-



Chris Carl hosts WDEL Video News, posted weekdays at 8 a.m.

Web audio cuts, and now to video."

The project was the brainchild of Mercer and Delmarva President Pete Booker. "We've had this vision for going on five years," Mercer said. "This year WDEL and WSTW are celebrating 10 years on the Internet, so we were early adopters... We've seen potential for our product being extended, through the Web and the many other devices out there that are using network connections."

The daily video news roundup serves a savvy audience that is accustomed to watching news from big-market television stations out of nearby Philadelphia but hungers for more Delaware-specific content. The program is produced by the WDEL news department, using video collected in the field by radio news staffers in the course of their work. The station has six full-time news staff, and eight to 10 part-timers.

"Since WDEL was a local source of news for all these years, this was a logical extension," Mercer said. "We were able to come up with a scheme that lets our local reporters use a video camera to

record local events. The camera records digital audio as well."

Delmarva equipped the news staff with off-the-shelf, high-quality Canon consumer cameras, and purchased "prosumer" videocams, a chroma-key screen and a lighting rig in one of its production rooms. An employee with cable TV experience has the full-time job of editing and producing the newscast and running the cameras.

The field cameras capture sound for use in the WDEL radio newscasts; reporters can literally "keep the cap on," recording only audio if they want. "But we've taught them to do some very basic 'essence of the story' shots, B-roll stuff. It doesn't add a great deal of time (although some of them might argue with me about that) to the process of getting the local story," Mercer said.

Back in the newsroom, he figures, the video work adds 10 to 20 minutes to the time to edit an average story. "They come back with short clips. It's very easy to roll off, do quick edits and put a package together."

The packages are compiled into an early-morning newscast so that WDEL listeners can become WDEL viewers. Content is available in three Windows Media Player streams, with varying resolutions, plus an MPEG-4 version for viewing with Apple QuickTime or on a video iPod.

"Since we went up with MPEG-4, we saw an immediate jump in the viewing of the 'Video News,' just in the past three weeks," Mercer said. (You can watch the program at www.wdel.com.)

Pick and choose

The initial capital cost was about \$60,000. Additional expenses are bandwidth and salary for the production person. Delmarva's engineering staff was called on to run network cables for the video production package and computer, and to create customized mic cables for the camera rigs.

The video service was launched last summer and Mercer says it is growing, slowly.

From the Editor



Paul J. McLane

"People aren't calling up and saying, 'We love your video news.' We tell by measuring the number of visits." Because visitors can also view stories "à la carte," often a story will receive hundreds of views. The overall daily package has fewer viewers, but each month, he says, the number grows.

A locally produced video product, Mercer knows, isn't for every station.

"Frankly I'm not sure this is a model that would work in a major market, where you have a lot of TV stations," he said. But in a city like Wilmington, where the TV news competition is from outside the immediate area, or for stations in outlying areas, he feels video news can work.

If a radio station doesn't wish to produce a full newscast or can't afford it, it might try posting just individual video stories.

Delmarva is considering consulting, to explain for a fee how it brought these elements together without overwhelming a radio news department. The station managers will have their ears open for interest during the upcoming NAB convention.

"No other radio broadcasters I know of are doing this," Mercer said. The closest thing he's seen is video offered by a radio station that has a sister TV operation. "We've only seen one or two that even came close."

I wondered about the workflow implications and whether the staff resisted. "Some days the reporters get frustrated," Mercer said, and there was some initial resistance, mostly out of trepidation of

See VIDEO, page 6 ►

Your Best Move!

Make ERI part of your broadcast strategy.

HD Radio™ Solutions

HD Radio™ is trademark of iBiquity Digital Corporation.

Antennas



Broadcast Towers and Structural Products



Transmission Line



Visit Us in Booth N2406
at NAB 2006

ELECTRONICS RESEARCH, INC. **ERI**

Call Toll-free at 877-ERI-LINE • Visit Online at www.eriinc.com • Your Single Source for Broadcast Solutions™

DIGITAL NEWS

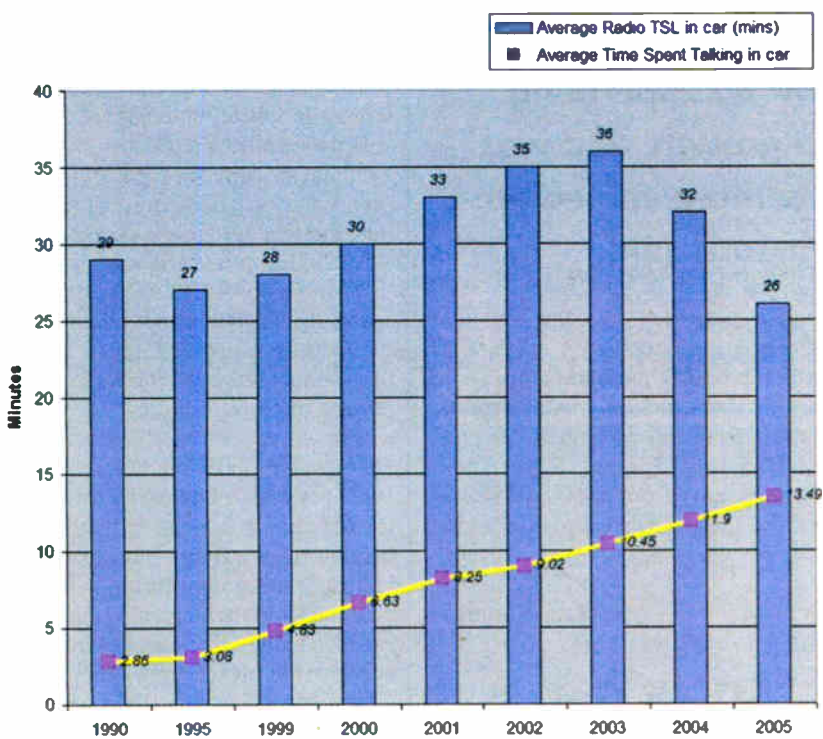
Cell Phone Use Cuts Radio Listening

GLENDALE, Calif. Cell phones siphon off a great deal of listening from terrestrial radio in the car, research suggests. That's on top of radio's losses in the vehicle to satellite radio, MP3 and iPod.

findings. That in turn translated to cumulative time spent talking in 2005 of almost 13.5 minutes per commute while true in-car radio listening in this group has fallen from 36 minutes in 2003 to 26 minutes in 2005, according to Bridge.

The Bridge study projects that in the United States, 66 percent of the population owns a cell phone. The U.S. population stands at 297 million, with 197 million cell phone users. Traditional radio's market penetration is at 93 percent or 276

Avg Time Spent In-Car



In-car time spent listening to radio increased between 1990 and 2003 but has trended down recently, says Bridge Ratings. True time spent listening to the radio (with no cell phone activity) has fallen while total time-spent-talking has increased to 13.5 minutes among those who use cell phones during their daily commute.

The statistics are important as cell phones in this country could someday rival the amount of car radios in use, according to Bridge Ratings, which completed a six-month analysis.

"The more time a commuter spends talking on their cell phone, the less time they are spending actually listening to the radio," said Bridge Ratings President Dave Van Dyke.

"We noted that a significant percentage of drivers either turned their radios down or off when engaged in a cell phone call. The implications are clear: the cell phone is vying for true time spent listening in car."

The news comes as satellite and HD Radio proponents seek ways to broadcast their content to cell phones, as in Sirius' recent deal with Sprint.

A wireless company commissioned the survey as part of a multi-year consumer study. Bridge interviewed 2,000 adult cell users about in-car behavior regarding cell talk time and radio listening. Actual TSL to radio was measured against time spent talking on cell phones.

Of the 209 million cell subscribers in the U.S., the study found that 56 percent use their phones in the car at least once a week, up from 40 percent in 2001.

While the average length of cell calls rose from 2.7 minutes in 2001 to just over 3 minutes in 2005, the length of in-car calls is, on average, 33 percent longer, Bridge found.

The amount of calls made from or to a cell phone in the car has increased from 2.1 calls per commute in 2001 to just over 3 calls in 2005, according to the

million Americans who listen to terrestrial radio at least once a week.

The markets measured were Los Angeles, San Francisco, Dallas, Burlington, Vt., Toronto, Philadelphia and St. Louis.

CBS vs. Stern & Sirius

NEW YORK First came the big departure, then the big lawsuit.

CBS Radio and Howard Stern are arguing over money. Sirius Satellite Radio, as Stern's new employer, is involved as well. Pundits debated whether the suit could harm Stern or raise his visibility.

CBS filed suit against Howard Stern and Sirius as well as Stern's company One Twelve Inc., his agent Don Buchwald and the agent's firm Don Buchwald & Associates Inc.

The 43-page complaint, filed in the Supreme Court of the State of New York, is for compensatory and punitive damages for multiple breaches of contract, fraud, unjust enrichment and misappropriation of CBS Radio's broadcast time, according to the broadcaster. CBS also seeks damages from Sirius, alleging unfair competition and interference with Stern's CBS contract.

Sirius said the lawsuit has no merit and it would "vigorously defend this action," according to a spokesman. "Nothing in the complaint would prevent Stern from fulfilling his obligations to

Sirius through December 2010," said Sirius, referring to the end date on the jock's 5-year contract.

Stern held a press conference before the suit became public; he said CBS had a "vendetta" against him and the company is "floundering," several newspapers reported.

The New York Post reported the lawsuit would seek \$500 million from Stern. The value was not stated in the CBS announcement.

Specifically, CBS Radio alleges that Stern "breached his written contract with CBS Radio over the last 22 months of the agreement, misappropriated millions of dollars' worth of CBS Radio airtime for his own financial benefit, and fraudulently concealed his interest in hundreds of millions of dollars of Sirius stock while promoting it on the air."

Sirius gave to Stern and his agent more than 34 million shares of Sirius stock, valued at approximately \$220 million, because Sirius exceeded by the end of 2005 certain subscriber targets that were set in the Sirius-Stern contract, as previously reported.

CBS said Stern's actions, for which he received expedited compensation, occurred when the shock jock was under exclusive contract with CBS Radio. In the complaint, the broadcaster said Stern wanted to receive that stock as soon as possible "while Sirius's stock was extremely valuable" or risk a drop in that stock value.

"By taking action on CBS Radio's airtime in 2004 and 2005, Stern assured himself of immediate access to \$200 million

in assets that could be readily converted to cash," CBS alleges in the complaint.

Further, by repeatedly promoting Sirius, Stern "misappropriated millions of dollars worth of CBS Radio airtime for his own financial benefit" and for the benefit of his agent and Sirius, CBS said.

XM Sees Black In Year-End Books

WASHINGTON XM Satellite Radio now believes it will achieve a positive cash flow break-even by the end of this year, predicting \$860 million in subscription revenue and 9 million customers.

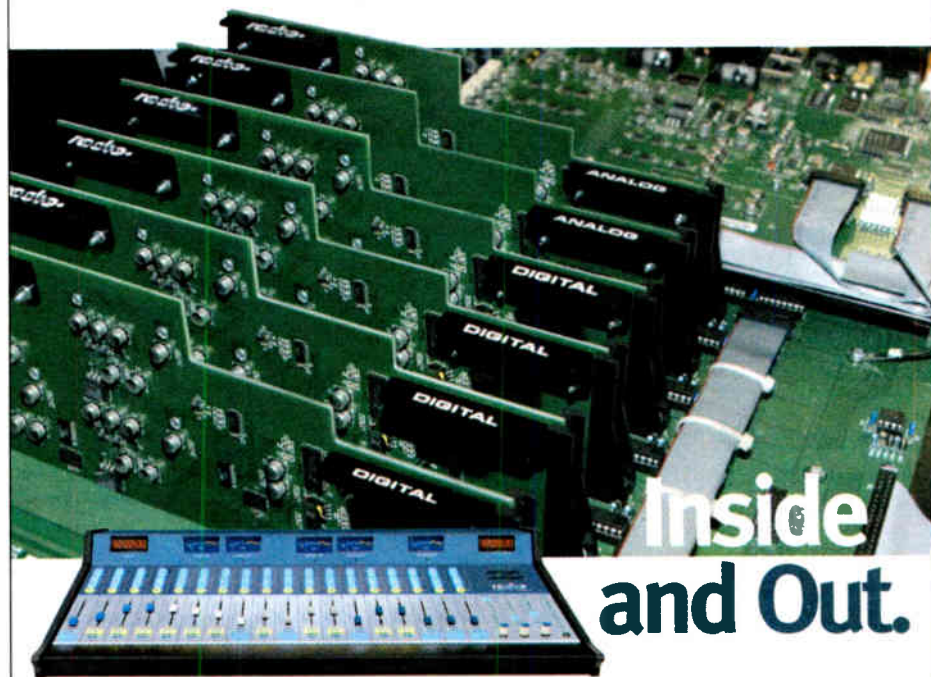
In 2002, RW reported then, XM predicted it would reach the break-even point by mid-2004.

In the short term, XM's losses grew in the fourth quarter, executives said, as marketing costs rose before the holiday season and OEM subscriptions dropped. Executives attributed that reduction to sharply rising post-Katrina gas prices, coupled with the simultaneous ending of several summer purchase incentives offered by General Motors for vehicles that contain XM radios.

XM executives said this was a temporary situation as GM plans to freshen its product line this year and offer new incentives to buyers. This, in turn, would boost XM's subscriptions and profits would rise enough this year to reach cash flow break-even by the end of the year.

XM's net loss for the fourth quarter See NEWS, page 6 ▶

Millenium Digital Consoles Beautiful..



inside and Out.

Radio Systems' Millenium Consoles go digital with a beautiful new look and an unbeaten complement of digital features including:

- Analog or digital inputs on every channel
- Sample rate conversion on every digital input
- Mic thru line level sensitivity on every analog input
- Simultaneous digital and analog outputs
- 10 fully programmable mix-minus outputs

Contact Radio Systems or your dealer today about the best looking and most functional low-priced digital console available.



Radio Systems, Inc.
601 Heron Drive, Logan Township, NJ 08085
phone: 856 467-8000 Fax: 856 467-3044 www.radiosystems.com

News

► Continued from page 5

was \$268.3 million; that compares to a net loss of \$188.2 million in Q4 of 2004. For the year 2005, XM's net loss was \$666.7 million, compared to a net loss of \$642.4 million in 2004.

The satcaster reported Q4 total revenue of \$177 million in 2005, an increase of 113 percent over the \$83.1 million reported a year earlier. XM's 2005 total revenue was \$558.3 million, an increase of 128 percent over the \$244.4 million total revenue recorded in 2004, it said.

The company cited subscriber growth and increases in average revenue per subscriber in connection with a price increase implemented in the second quarter for the gains.

In the fourth quarter, the cost of acquiring each subscriber was up to \$89 compared to \$64 in the same period last year. For all of 2005, that statistic was \$64, a slight increase from \$62 in 2004.

At the end of 2005, XM had 5.9 million subscribers.

Sirius: Us, Too

NEW YORK Sirius also expects to cash flow break-even by the end of this year.

In releasing its fourth quarter and year-end 2005 financial reports, Sirius President/CEO Mel Karmazin said the signing of Howard Stern helped boost the company bottom line. "Howard is going to add subscribers every single day."

The company will eventually stream Stern but only when it can accomplish that securely without fear of content piracy, Karmazin said.

Sirius reported a net loss of \$311.4 million for the fourth quarter, and a net loss of \$863 million for the full year. Full-year 2005 Sirius revenue grew to \$242.2 million, up 262 percent from \$66.9 million in 2004. Average monthly churn for the fourth quarter and full-year 2005 was 1.5 percent. Subscriber acquisition costs are dropping, the company says, to \$113 for the fourth quarter and \$139 for full-year 2005.

In the fourth quarter, Sirius added 900,645 net subscribers from its retail channel and 241,705 net subscribers from its automotive OEM channel, and ended the year 3.3 million subscribers.

Board Member Quits XM Over Spending

WASHINGTON Observers debated the significance of XM Satellite Radio losing a board member in February. Pierce Roberts resigned because of what he called a "significant chance of a crisis," writing in a letter to XM Board Chairman Gary Parsons.

Roberts was concerned 'XM was spending too heavily to achieve rapid growth' and was worried about the satcaster's 'more immediate positive cash flow,' Parsons said.

Parsons said there was a disagreement among Roberts, other board members and the company about the balance of growth vs. cash flow.

Roberts was concerned "XM was spending too heavily to achieve rapid growth" and was worried about the satcaster's "more immediate positive cash flow," Parsons said.

"Other board members differ," he said, supporting stronger programming, content and marketing efforts. "This is a balancing act for management and the board." The differing opinions, he said, are similar to what the company hears from investors at large.

XM understands it will see a positive cash flow "as soon as we pull back on the accelerator," but also believes that adding assets and value comes with every subscriber, if done on "economically rational" terms, he said.

In a statement accompanying a filing to the Securities and Exchange Commission, XM said: "The company and other directors concur in Mr. Roberts' assessment that lower programming and marketing expenditures, and a potentially lower growth rate, would likely result in earlier positive cash generation. The other directors, however, believe that the company's high growth rate, market leadership and large base of subscribers are strategically important assets to ensure the company's long-term value and can be sustained while also reaching positive operating

cash flow later this year.

"These differing views of strategic direction and balance between growth and profitability have been voiced openly for a number of years, but Roberts states that he can no longer be effective given ongoing disagreement with management and other board members."

Roberts was one of 11 board members and served on several XM board committees.

According to Roberts' bio on XM's Web site, he chairs the board of Telephia

Inc., which provides measurement data to mobile operators, device manufacturers, and content companies. He is also a principal at Mill Road Capital. Roberts was with Bear Stearns from 1993 to 1998 as head of the telecom investment banking group.

— Leslie Stimson

T-DMB Gets Parisian Test

PARIS France is evaluating the possibilities for mobile media services, including Digital Media Broadcasting, which builds upon Eureka-147 DAB technology with additional error correction. The first trial of terrestrial DMB service launched here in February.

Mobile telecom operator Bouygues Telecom teamed with network operator VDL, television broadcaster TF1 and handset manufacturer Samsung Electronics for the demonstration service. According to a Samsung press release, the results of the trial service, which involves select Bouygues customers, will be used to determine further service plans.

The four parties began planning for the DMB trial service in July 2005.

— T. Carter Ross

Video

► Continued from page 4

something unknown. That largely has passed, he said.

"For the most part there's a pride in their workmanship. You look at it and [realize] it's a complete professional package."

To me, a former radio news guy with a bit of TV news experience, the project is intriguing. I know this: If I were toting a camera in place of an audio recorder, it would change the way I did my job. A camera is a different beast than a microphone; the person on the other end of it will have a different response to it too.

I also can imagine issues from a management strategy standpoint. If your station requires that its radio newspeople become videographers, do you pay them as such? Do you spend money to train them in video skills? Are you willing to spend the big bucks that quality video production can cost? Might a station risk hurting its hard-earned brand image by putting out inferior video?

These questions are going to be answered by individual circumstances. But I commend Delmarva for the idea, for not simply lamenting that radio has become such a tough business but instead finding opportunities in new channels and then spending money to explore them. Oh — and of course, this is relatively inexpensive content that can attract new ad money; the service has two sponsors so far.

From Mercer's perspective, the video project is worthwhile. "Everything about it, I love. Sure, there's always learning curves and little bumps, production equipment failures, but we expected that. We worked our way through that kind of stuff."

For a station in a market with a similar set of circumstances, he said, video news can make sense as a natural extension of its product. "People," said radio veteran Bob Mercer, "tend to think in pictures." 📺

Write to RW

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

**Homeland
Security &
All-Hazard
Alert
Systems**



**Connect to
ANY DEVICE,
ANYWHERE**

- Smoke Detectors
- CellPhones
- Mobile Devices

real **FM** radio™

GLOBAL SECURITY SYSTEMS

Visit us at NAB booth NO. N2733 • 228.255.7220 • www.gssnet.us • info@gssnet.us



This Is How You Feel When You Can't Get ISDN.

ACCESS is what you do about it.

ACCESS uses BRIC technology to deliver wideband mono or stereo audio on a single POTS line or IP network including the public Internet. Use it on DSL, cable, WiFi, satellite, 3G cellular, or pretty much whatever you've got.

Read all about BRIC technology in the IP Audio Coding brochure. Want a copy? Contact us at **800-237-1776** or check our website at www.comrex.com/ip.



Your Pass to Amazing Audio From Anywhere

See Us at NAB Booth # N2722

Put Comrex On The Line.

Toll Free: 800-237-1776 • www.comrex.com • e-mail: info@comrex.com
19 Pine Road, Devens, MA 01434 USA • Tel: +1-978-784-1776 • Fax: +1-978-784-1717

World Radio History

COMREX

Achievement

► Continued from page 1

based in Sarasota, Fla. The Clemson University electrical engineering graduate is a former radio chief engineer and antenna designer for Kintronic Labs Inc. He co-founded the predecessor to his current firm, du Treil-Rackley Consulting Engineers, with Bob du Treil in 1983.

"I can't recall a time when I wasn't interested in radio," Rackley said, who grew up in Greenville, N.C., and worked as a duty operator for several local AM stations while still in high school. "I had plenty of time to read various engineering reports and study contour maps while on duty. Radio always seemed like magic to me. It seemed less like magic after I took mathematics in college."

Rackley said he found AM radio particularly fascinating, especially directional AM.

"I always had an interest in how it worked. I just thought it would be a good field to go into. I also realized with the development of computers that we would be able to limit the experimentation part of it," Rackley said.

Rackley first met Dawson while working for Kintronic Labs more than 30 years ago. Rackley built a phasor for a radio station that Dawson worked for.

"Ben is one of my closest friends and someone I trust implicitly. We have a



Ron Rackley

wonderful relationship," Rackley said.

The pair formed a partnership in 1987, the dTR/H&D Joint Venture, to pursue overseas high-power medium wave antenna system and allocation engineering projects for the U.S. government. Most projects are in excess of 50 kW, Rackley said.

"At the time the overseas work would have overtaxed any one of our firms, so we formed our partnership. We soon realized there was quite the demand for high-power AM stations from foreign broadcasters, too," Rackley said. "We are currently working on a project together in Sao Paulo, Brazil."

Rackley is familiar with the HD Radio

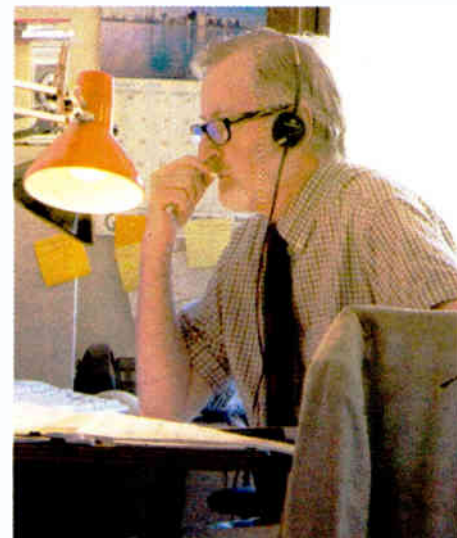
rollout in this country, having served as a consultant to USA Digital Radio during the early stages of IBOC testing in the United States. He has assisted numerous client stations through the evaluation process of converting their facilities to digital.

"AM broadcasters need to be concerned about the suitability of their technical facilities. They need to realize they may have performance in areas where they didn't before. The signal contour coverage areas will not be as large with digital AM.

"Adjacent channel noise could be an issue and coverage areas will generally be smaller," Rackley said.

Rackley isn't sure why the FCC hasn't yet authorized nighttime digital service on the AM band, although he expects it to happen sometime this year.

"Could be they are having second thoughts about the service at night, or maybe they have just been busy with other things," Rackley said. "If they don't authorize nighttime service, in



Dawson working at his drafting table, August 2005

band. There is inherent narrow-banding from the antenna pattern itself and the layout of the towers, along with other narrowband situations that result from the feed system design," Dawson said.

Hundreds of broadcast engineers have learned how to troubleshoot and maintain their antenna systems as a result of NAB's directional AM seminars led by Ron and Ben.

— John Marino, NAB

essence you have created just a daytime service."

Rackley, his wife Dorothy and their four children live in Bradenton, Fla.

Narrowband characteristics

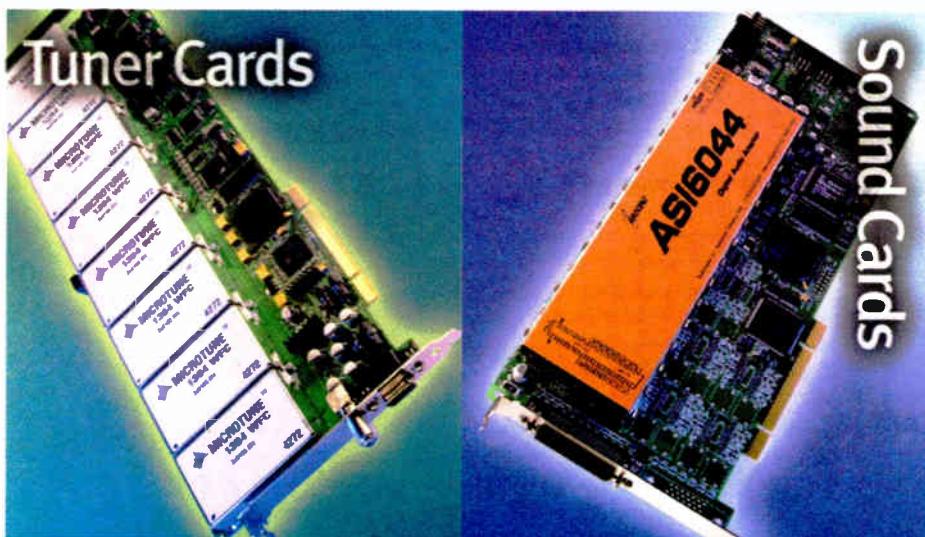
Meanwhile, Dawson, managing partner of Seattle-based Hatfield & Dawson Consulting Engineers, believes the majority of AM antenna systems probably will be able to produce acceptable IBOC performance, despite the narrowband characteristics of AM.

"HD Radio is an interesting dilemma for AM broadcasters because so many antenna systems are inherently narrow-

As for eventual nighttime authorization for AM digital broadcasts, Dawson said of potential interference concerns, "It's necessary to understand that from an administrative standpoint, frequency allocation matters are not fundamentally engineering problems, but rather political problems. The job of regulators is to balance interference concerns with providing adequate service to certain communities."

Dawson said AM broadcasters have faced many challenges throughout his 30 years as a consulting engineer, digital just the latest of them.

"I came in at a time just after the AM
See ACHIEVEMENT, page 10 ►



THE TECHNOLOGY YOU NEED TODAY. AND TOMORROW. AudioScience's expanding line of professional audio solutions gives broadcasters the tools they need to stay ahead. **Tuner Cards** to monitor and log content on 8 audio channels at once. **CobraNet Cards** and Interfaces to stream audio over Ethernet and route connections from your PC. **Soundcards** that are Built for Broadcast™ with innovations like MRX Multi-Rate Mixing and Soundguard transient voltage suppression. To get ahead, and stay ahead, choose AudioScience. Learn more by calling +1-302-324-5333 or visit www.audioscience.com.



Honor Roll

Past winners of the NAB Engineering Achievement Award. Beginning in 1991, radio and TV winners were named; radio winners are listed.

- | | | | |
|------|---------------------|------|-----------------------------------|
| 1959 | John T. Wilner | 1983 | Joseph Flaherty |
| 1960 | T.A.M. Craven | 1984 | Otis S. Freeman |
| 1961 | Raymond F. Guy | 1985 | Carl E. Smith |
| 1962 | Ralph N. Harmon | 1986 | Dr. George Brown |
| 1963 | Dr. George R. Town | 1987 | Renville H. McMann |
| 1964 | John H. DeWitt Jr | 1988 | Jules Cohen |
| 1965 | Edward W. Allen Jr. | 1989 | William Connolly |
| 1966 | Carl J. Meyers | 1990 | Hilmer Swanson |
| 1967 | Robert M. Morris | 1991 | George Marti |
| 1968 | Howard A. Chinn | 1992 | Edward Edison & Robert L. Hammett |
| 1969 | Jarrett L. Hathaway | 1993 | Robert M. Silliman |
| 1970 | Philip Whitney | 1994 | Charles T. Morgan |
| 1971 | Benjamin Wolfe | 1995 | Robert Orban |
| 1972 | John M. Sherman | 1996 | Ogden Prestholdt |
| 1973 | A. James Ebel. | 1997 | George Jacobs |
| 1974 | Joseph B. Epperson | 1998 | John Battison |
| 1975 | John D. Silva | 1999 | Geoffrey Mendenhall |
| 1976 | Dr. Frank G. Kear | 2000 | Michael Dorrough |
| 1977 | Daniel H. Smith | 2001 | Arno Meyer |
| 1978 | John A. Moseley | 2002 | Paul Schafer |
| 1979 | Robert W. Flanders | 2003 | John W. Reiser |
| 1980 | James D. Parker | 2004 | E. Glynn Walden |
| 1981 | Wallace E. Johnson | 2005 | Milford Smith |
| 1982 | Julius Barnathan | | |

Multicasting.

It's like trying to fit —
well, you know.



Management has decided to multicast. Which seems like a terrific idea — until you consider just how little bandwidth each channel will get. How will the sound of your station(s) survive these shrinking bitrates? Omnia can help.

New Omnia Multicast with SENSUS™ restores the fullness and depth that bit-reduction steals. Our DSP gurus teamed up with the codec experts at Telos (the folks who introduced broadcasters to MP3 and MPEG AAC). Together, they developed a unique suite of tools to pre-condition audio for HD Radio™ multicasting.



Omnia Multicast with SENSUS codec conditioning, Omnia Bass Management system and distributed look-ahead limiter significantly improves the sound of HD multicast and other bit-reduced streams.

SENSUS technology enhances punch, preserves presence, and reduces artifacts. Even heavily bit-reduced channels (like multicast) can be significantly improved by Omnia running SENSUS. And like all Omnia processors, Omnia Multicast delivers the smooth, clean, pure signature sound that grabs your listeners and holds them hour after hour. No wonder the top stations around the world choose Omnia over all other processor brands.

Multicast like you mean it... with Omnia Multicast.



OmniaAudio.com

DIGITAL NEWS

Lindahl Promoted To Cox Technical VP

ATLANTA Cox Radio has added new technologies to Gregg Lindahl's vice president title. He has been VP of Cox Radio Interactive since 2000.

Company President/CEO Bob Neil said Lindahl "has been a clearinghouse for many of the technologies — including many HD Radio opportunities — within Cox Radio for the past several years."

Lindahl said the Cox Radio Interactive team has done a good job building businesses around the company's brand distribution on the Internet and said the Cox

Radio platform was designed to extend to other distribution channels.

He joined Cox in 1986 as vice president and general manager of WSOC(AM-FM) in Charlotte, N.C.

HD-R Retail Training Site Opens

COLUMBIA, Md. Retailers can go to an online training site to learn how to sell HD Radio products.

The program developed with Creative Channel Services is called HD Radio University. It is free and requires a one-time registration, said Ibiqity Digital.

CCS said retailers such as Best Buy,

CompUSA, Micro Center, Staples, Circuit City use the online training.

HD-R Roundup

BEASLEY'S WXKB(FM) in Cape Coral, Fla., was the 700th digital station when it turned on the juice Jan. 26, according to Ibiqity. By early March, nearly 730 had converted. Broadcasters are converting stations at the rate of more than one per day, the company said.

BEASLEY threw the switch on digital radio at WRXK and WXKB in Ft. Myers, Fla. The two FM stations are on the air with HD Radio. The company planned to convert sister FMs WJPT and WJBX soon.

Achievement

► Continued from page 8

freeze was lifted and at a time when many broadcasters had been neglecting their facilities. I have always been interested in AM antenna performance and design and followed it very closely," Dawson said.

Dawson, 65, even taught himself calculus in high school to better understand antennas and can recall the first transmitter he fixed.

"When I was 15, I began working an air shift during the summers for a radio station in Salem, Ore., but when the transmitter broke — an old RCA 250L — I was the only one who could fix it. Then my parents moved to Portland, Ore., and I started work for KUIK(AM), which was half-owned by Harold Singleton, who was a consulting engineer. Once Harold realized I could fix things I became his gofer," Dawson said.

After stops as chief for several West Coast radio stations, Dawson formed Hatfield & Dawson in 1973 along with Jim Hatfield Jr., and Maury Hatfield. The practice today is diverse, Dawson said, ranging from about 50 percent broadcast-oriented work to mobile and government clients.

"This is the perfect job for me. It's one of the few jobs I know that allows a person to do serious intellectual work, work with your hands, write and solve complicated practical problems," Dawson said.

Adjacent channel noise could be an issue and coverage areas will generally be smaller, says Ron Rackley of HD Radio.

Consolidation within the broadcast industry has significantly impacted the role of consulting broadcast engineers, Dawson said.

"As a result of ownership consolidation, many groups now employ engineering departments more capable of doing highly technical projects. So I think more work is being done in-house. However, consolidation has resulted in broadcasters having the money to upgrade their AM facilities after years of neglect. That has resulted in more work for us."

Dawson said he is honored to receive NAB's top broadcast engineering award with Rackley. "We have had so much fun designing AM projects together and trading ideas for over 30 years. It's nice to be considered in the same stratosphere with someone so talented," he said.

Dawson lives with his wife, Mary Lou, in Seattle. The couple has four grown children.

Past winners of the NAB Engineering Achievement Award include Geoff Mendenhall of Harris Broadcast, Glynn Walden, formerly with Infinity and now CBS Radio and 2005 winner Milford Smith of Greater Media. 🌐

Sometimes, getting out the ladder is just too much work.

With the **Mosaic**, even a light bulb change is easy.

We designed the Mosaic to stand up to the rigors of radio life—whether it be an over-enthusiastic music jock, an emotional talk show operator, or simply a need to reach the ceiling.

Even more important is the Mosaic's performance. Behind the sturdy construction, the Mosaic gives you the operational capabilities you need. An advanced control surface for our Audio Engine Router, the Mosaic console gives you fast, flexible access to sources and provides key information at a glance.



Mosaic
Where art meets technology



Mosaic consoles are available in a wide range of sizes, and the modular construction lets you customize your installation for your operators' needs. Call today to see how the Mosaic can handle life at your facility!

Logitek Electronic Systems, Inc.

5622 Edgemoor • Houston, TX 77081 USA

713.664.4470

info@logitekaudio.com

1.800.231.5870

www.logitekaudio.com

© 2006 Logitek Electronic Systems, Inc.

Logitek
Console Router Systems



Remote Broadcasting over the Internet

Test Drive Audio over IP at NAB
NAB 2006
THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW
Booth: N3215
Las Vegas 2006



The remote from Mexico was a spectacular success, in no small part thanks to the flawless sound which the Tieline G3 provided over the public Internet

**-Mike Rabey Chief Engineer
Entercom Indianapolis**



Read the full story and get a **FREE** IP demo
www.tieline.com/ip

800-750-7950

Tieline 
www.tieline.com

NAB 2006

THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW



Confidence on the Exhibit Floor

HD Radio, Networked Audio, ContentDepot Are Among Hot Topics for Vendors at NAB

by Scott Fybush

Vendors who'll soon be setting up booths at the Las Vegas Convention Center say the halls of NAB2006 will be filled with buzzwords that would have been a mystery to convention attendees even a decade ago: "USB," "ContentDepot," "5.1 Surround" and so on.

At the center of the buzz is HD Radio. As recently as a year ago, the technology seemed for some major radio groups to be

a "what if" proposition. This year, with the help of the HD Alliance and the commitment of many groups to roll out and promote digital signals, it feels more substantial.

For instance, on the transmission side of the business, Continental Electronics' Dave Hultsman said at WQED(FM), Pittsburgh, the company recently installed its first D-816HD combined analog-HD Radio transmitter, a product introduced at last year's spring convention.

ERI President and CEO Tom Silliman said the HD-R conversion is one reason his company is getting to work on major FM master antenna replacement projects in San Antonio, Minneapolis/St. Paul and Orlando. "All of a sudden, the need to have HD is pushing people into replacing these antiquated systems," Silliman said.

It's another aspect of HD Radio — the multicast programming on FM — that has many vendors buzzing this year, though.

Choices

"At NAB, I would expect one of the big highlights would be HD Radio multicasting," Hultsman said, and other vendors interviewed by Radio World agree.

HD2 channels are on the minds of clients, according to Diana Stokey, manager of marketing for Prophet Systems. Broadcasters are opening their wallets, she believes, to add automation systems to run multicast channels, which have become a central marketing point for HD Radio.

"I think (HD2) opens up potential for more programming, and for bringing more choices to their audiences."

The prospect for further multicasting, especially among public broadcasters already experimenting with a *third* multicast stream on FM, has Neural Audio President Mark Seigle excited about this NAB. "There's an interesting content vacuum," he said.

As broadcasters work on filling that vacuum with new multicast programming, Seigle said stations that rushed to get HD Radio on the air are now looking at tweaking processing to get the most out

of the system's digital bitstream. In some cases, such as Neural's alliance with Continental, manufacturers are working across category lines to offer broadcasters turnkey HD-R solutions.

"At this NAB, the processing world is going to be important to all the manufacturers," Seigle said. "There's an importance to getting HD1 and HD2 channels sounding great."

Manageable

Some manufacturers are looking ahead to NAB2010 and beyond as they prepare for further expansions in multicasting, he said. "We've gotten some feedback that adding HD3 and HD4 channels is compelling, especially for the National Public Radio folks," he said.

See TRENDS, page 14 ►



James Banks, left, of Kintronic Labs listens to a question on the Kintronic ATU from John York of Public Broadcasting Atlanta on the floor last year.

NAB Show Preview

This Issue:

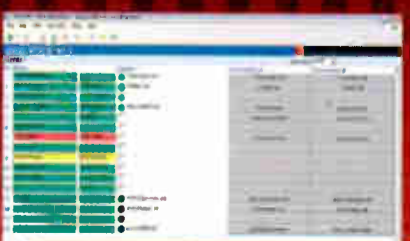
- Show Overview
- Exhibitor Listings
- Broadcast Management & Business
- Las Vegas Engineers
- Vegas Food Ideas

Next Issue:

Broadcast Engineering Conference Preview



ARC-16 Web Interface



GSC/VRC Web Interface

Take Control with the Power of IP

Version 2 now shipping!

- Adds web-based site management to the GSC3000, VRC2500 and ARC-16
- Email and SMS alarm notifications
- Connect with Lynx and AutoPilot® over TCP/IP

Find out more about the most versatile solution for IP-based broadcast facility control at www.burk.com/webinterface.

BURK
TECHNOLOGY

800-255-8090 (Main Office)
800-736-9165 (Radio Sales)
www.burk.com

Conserves AU.



HD Multicast, HD Surround, conventional stereo — Element handles them all. Upgrade your studios with confidence; you're ready for anything.



Technology can save you money.

Consider: computers, VoIP phone systems and bandwidth cost less and deliver more every year. Wouldn't it be great if broadcast gear did, too? Thanks to Axia, it can.

Axia saves you money by using open Ethernet technology to replace expensive proprietary mainframe routers. Not only is Ethernet less expensive, it's simpler and more reliable — perfect for critical 24/7 operations. The Axia IP-Audio solution eliminates sound cards, DAs, punch blocks and cumbersome cables, so it reduces installation and maintenance costs.

And now, Axia has a cool new modular control surface: Element. Scalable from four to forty faders, you can build the ideal surface for every studio. Element's abundant outputs and flexible architecture can be switched between stereo and surround mixing. Its info-rich user display, built-in router control, and integrated phone and codec support simplify the most complex shows. You'll never outgrow it.

Like all Axia products, Element does more and costs about half what others try to charge for their "Trust us, this is better than Ethernet, would we lie to you?" stuff.

Element. Worth its weight in... well, you know.



www.AxiaAudio.com

Trends

► Continued from page 12

"Processing companies need to think five years out," Seigle said. That includes the addition of surround sound to HD Radio, which Neural and other processing companies will again demonstrate at NAB 2006.

While NAB itself is an association of commercial broadcasters, public broadcasters shop at the convention too. Don Backus, vice president of sales and marketing for ENCO Systems, said that for pubcasters, this NAB is "the year of ContentDepot," the distribution system that's being rolled out by the Public Radio Satellite System to combine live program delivery with on-demand content trans-

mission to stations.

ENCO is providing automation systems to public broadcasters that were not equipped with any automation to handle ContentDepot feeds, which are now expected to go live this summer, as reported by Radio World.

"I think other new developments are mostly incremental, not revolutionary, as manufacturers tweak and adjust products to meet expressed client needs," Backus said.

For many vendors, that "tweaking" includes an emphasis on convergence. ENCO, for instance, intends to show its Streamline system, which links the ENCO DAD automation system with Wicks' Visual Traffic software and with Powergold music scheduling.

At Burk Technology, "The big challenge our customers face is how to

expand their broadcasting activities while keeping engineering infrastructure at a manageable level," said Nathan Burk. For many broadcasters, that's being accomplished by standardizing certain core equipment purchases across entire groups.

Networked audio

"What standardization means for the supplier is that versatility is more important than ever. The same piece of gear needs to work in a much wider range of applications," he said.

In many cases, all that gear is being connected through interfaces that are more familiar to computer professionals than to broadcast engineers.

"Users like the ease and reliability of USB interface, so it is likely to be a growing trend," said Hank Landsberg of Henry Engineering, which plans to roll

out several pieces of USB-equipped gear at the show.

On a larger scale, audio distribution over IP networks rapidly is replacing traditional wiring in studio plants, and that's keeping vendors of studio equipment busy. "There are still a large number of studio and automation related upgrades and building going on," Backus of ENCO said.

"What engineer doesn't welcome the chance to upgrade their plant and have it be corporate's idea?" asked Telos/Omnia/Axia spokesman Clark Novak.

"Along with RF upgrades, the purse strings are loosened a bit more to do complementary studio upgrades too," Novak said. "It should be a big year for refurb buildouts."

Overall, vendors sampled by Radio World said the industry seems confident going into NAB2006, with much of the uncertainty around HD Radio — and the fear of satellite radio dominance — giving way to more concrete planning for the future.

Show me a guy who refuses to give up his analog plant, and I'll show you the band-leader on the Titanic.

— Clark Novak,
Telos/Omnia/Axia

"All of these things combine to reassure broadcasters that the industry is healthy," Burk said. "We see evidence of this when buyers take advantage of a new HD transmitter project to also add to their transmitter remote control system or get their system talking over IP. There's an eagerness to move forward with plans, which is great to see."

Novak points to recent sales of broadcast suppliers — dMarc, RCS and Broadcast Electronics — as a sign that broadcasting is becoming more closely tied to the world of information technology.

"Anyone who's been paying attention knows that audio engineers have been de facto IT experts for about a decade now. With big players outside broadcast taking a pointed interest in the digital side of radio, computer-based applications, networks and solutions are going to become an even larger part of daily life in the tech shop. Show me a guy who refuses to give up his analog plant, and I'll show you the band-leader on the Titanic," he said.

While Novak believes there's still a note of caution about the economy — nobody's "gung-ho" just yet, he said — he calls himself "cautiously optimistic" about a strong show in Las Vegas.

For ERI, at least, there's a concrete sign of confidence heading into NAB this year: Silliman said the company's expanding its floor presence, going from a 30-by-30-foot booth to a 40-by-40 foot space.

"We look forward to a good show," he said.

Exhibitor listings, including new product previews, begin on page 28 of this issue. Also look for extensive product coverage in our post-convention issues.

Suppliers and attendees: What do you think is ahead for the industry? Tell our readers. Comment via e-mail to radioworld@imaspub.com.

Prophet Systems Your Technology Resource.



Hundreds of stations have chosen Prophet Systems for their HD-2 signal.

We are committed to constant research and innovation in all areas of audio and content management, to keep our customers updated on how technology can solve their problems today, and make their business better tomorrow. Deliver your content with ease, enjoy constant reliability, quick deployment and the lowest possible cost for the technology.

Prophet Systems has teamed with Continental Electronics pairing our automation line with transmitter systems to provide a complete package for FM and HD broadcasts. Our Importer enables advanced HD radio capabilities, like multicasting and datacasting and can work with any automation system.

You know radio is changing.

The question is what are you going to do about it?

Prophet Systems is leading you in the right direction.

HD Radio

Content Management

Music Scheduling

Podcasting

Newsroom Software

Streaming Software

Logging

WANcasting

The list goes on.....

Visit Prophet Systems at NAB Booth #N3522.

1-877-774-1010 ■ Sales@prophetsys.com ■ www.prophetsys.com



“Connect POTS to ISDN? You’ve got to be kidding!”



At Telos, we’re obsessed with quality audio. We were the first to marry DSP with broadcast phone hybrids to achieve clean, clear caller audio. We invented Zephyr, Earth’s most popular way to send CD-quality audio over ISDN. And now our DSP experts have built the **best-sounding POTS codec ever — Zephyr Xport.**

Instead of proprietary algorithms, we chose **MPEG-standard *aacPlus***[®], the same coding used by XM Satellite Radio, Digital Radio Mondiale, Minnesota Public Radio, Apple Computer and many others to deliver **superior audio at low bit rates.** (An optional ISDN interface lets Xport connect to Zephyr Xstream with Low-Delay MPEG AAC, or with nearly all third-party ISDN codecs using G.722.)

There’s no need for a studio-side POTS line. Your studio’s Zephyr Xstream receives Xport’s POTS calls via its existing ISDN line, **eliminating the cost of a second POTS codec** and delivering smooth, clear digital audio to your listeners.

And Xport makes **unexpected modem re-training extinct** thanks to custom DSP algorithms that extract stable performance from even marginal phone lines. Xport gives you **surprisingly clean 15 kHz remote audio at bit rates as low as 19 kbps.**

No wonder clients tell us Zephyr Xport is the world’s best-sounding POTS codec. But don’t take their word for it — hear it for yourself.

Zephyr Xport: It’s all about the audio.



Two-input mixer with sweetening by Omnia, switchable Phantom power, and send / receive headphone mix make life on the road easy.



Ethernet port isn’t just for remote control: feed PCM audio right into the codec from any Windows™ laptop. Great for newbies on the go.



Xport’s *aacPlus* and Low-Delay MPEG AAC deliver superb fidelity. G.722 coding enables connections with 3rd-party codecs, too.



Xport lets you easily send and receive audio using a cell phone headset jack. Gives a whole new meaning to the phrase “phoning it in.”

Telos
AUDIO | NETWORKS

telos-systems.com

Vegas CEs Face Unique Critters

Scorpions and Equipment Suppliers Are Part of Life for Sin City Engineers

by Sharon Rae Pettigrew

If stepping in deer doo at your remote transmitter site constitutes the greatest occupational hazard of your job, consider yourself lucky.

Tracy Teagarden was attacked by an irritated roadrunner.

Joe Sands was sauntering to the back of his pickup to collect tools when a Ringtail cat, the smallest member of the raccoon family, jumped from the bed.

Bill Croghan battles black widow spiders at his AM sites and has been bitten by a scorpion on the job.

These engineers all have one thing in common. Aside from having had bad luck with wild creatures, they are all radio employees in the desert southwest of Las Vegas.

"Desert survival techniques are a must — plenty of water, good shade, etc.," said Croghan, chief engineer of Lotus Broadcasting stations KOMP(FM), KXPT(FM), KENO(AM) and KBAD(AM). He also teaches desert survival with the local Civil Air Patrol, the civilian auxiliary of the United States Air Force, on the side.

"Our FMs are on Mt. Potosi, a four-hour round trip with the 4x4 if the road is good," said Croghan. "It'll take eight hours if I have to take the Snowcat in."

A Snowcat is an enclosed-cab, truck sized, vehicle with Caterpillar tracks designed to move on snow.



Chief Engineer Warren Brown stands in the Technical Operations Center of Nevada Public Radio.

Teagarden, chief engineer of CBS stations KLUC(FM), KMXB(FM), KKJJ(FM), KSFN(AM), KXNT(AM) and KXTE(FM), points to weather as his biggest challenge. KXNT(AM) and

KXTE(FM) are HD Radio stations, and KXTE is multicasting.

"Mt. Potosi at about 10,000 feet AMSL (above mean sea level) can get snow to the point of impassibility from October through April, and you can't

seem to carry along enough spare parts for a Snowcat," he said. "Wind, dust storms and flash floods from thunderstorms can all catch you off guard."

Joe Sands, president of Desert Sands Broadcasting Inc., a contract engineering firm with numerous clients in the market, said his biggest challenge is keeping transmitters cool in 117-degree temperatures.

"The biggest potential failure in transmitter sites is not the transmitter itself, but rather the air conditioning to keep the transmitter cool," he said.

The engineering community in Vegas considers itself tight-knit.

"We are all very close," said Sands.

"We are all competitors, but realize that anyone can have their signal disrupted and have to rely on others for help. We loan each other equipment as needed, help out during outages and keep an eye out for potential problems when visiting the various transmitter sites."

Warren Brown, director of engineering at Nevada Public Radio, which has six FMs in Nevada and Utah, also serves as a contract engineer for an additional half-dozen stations. He calls Vegas the best engineering community he's worked in.

"Engineers are friendly with one another and willing to help out whenever they can," said Brown, who's been in the market since 1990.

Sands agrees. "I consider the Las Vegas radio engineers the best, most cooperative and friendly group that I have ever had the privilege of working with," he said.

Willing to help'

Croghan said it's common for one engineer to save the others a trip to the mountaintop FM sites if possible.

Time constraints keep these engineers from talking to each other in person much of the time.

"We probably see each other 10 percent of the time in-person, the other 90 percent we connect via e-mail and telephone," said Croghan.

Brown cites the occasional lunch or bull session, while Teagarden said, "It's hard to go up Black Mountain and not run into a colleague."

The area's SBE chapter features sporadic activity, according to Sands. Croghan, who serves as the certification chair, said that the group rarely meets.

"A mail-in ballot was sent out some time back for the offices, and there was only one write-in vote for president, me," said Croghan, who turned down the job because of time constraints.

So what's it like having the NAB convention in their collective backyard every year?

"We frequently get to put the best new See VEGAS ENGINEERS, page 19 ▶

Beep Beep

"In 1996 I was relatively new to the desert southwest and not all that familiar with the local fauna. Early one morning, my four-tower AM directional refused to switch to day pattern, and as I was troubleshooting the RF relay in the ATU of one of the towers, I noticed an observer. Although this observer didn't much look as they have been portrayed in cartoons, I was pretty sure it was a roadrunner.

"As I continued work on the ATU, the roadrunner eventually made it to right beside me, looking into the ATU as if he were going to offer me some advice.

"Did I mention it was really early in the morning? Something made me think that a bird that dines on rattlesnakes and knows unequivocally he has no reason to fear a sleepy broadcast engineer would be a good thing to pick up for closer observation.

"In the next 500 milliseconds — roughly the time it took to realize I had made a very poor decision, and increase the proximity of myself and the roadrunner to a point he was comfortable with — I became afflicted with about two-dozen scratches, abrasions, miniature stab wounds and contusions."



— Tracy Teagarden



Tracy Teagarden remembers an encounter with a particularly unhappy roadrunner.

THE FUTURE FOR AM BROADCASTERS

TRANSRADIO DRM TECHNOLOGY

TRANSRADIO offers:

- complete DRM-Systems
- LW + MW-Transmitters up to 1,200 kW
- SW Transmitters
- VHF/FM Transmitters from 10 W to 30 kW
- Antenna-Systems
- Turn Key Projects

TRANSRADIO
SenderSysteme Berlin AG
Mertensstraße 63
13587 Berlin
Germany

phone: +49-30-3 39 78-0
fax: +49-30-3 39 78-599
internet: www.tsb-ag.com
e-mail: info@tsb-ag.com

“Some people don’t like change. Change doesn’t much care.”

“I guess being the very first station to use Ethernet for audio routing has made WEGL a little famous! Someone’s always on the phone:



‘Tell me about your Axia system. What’s the real story?’

“The real story is that two years ago, when our our old analog consoles began to fall apart, we put in an Axia IP-Audio network and SmartSurface. And I’ve never had a single reason to regret that decision.



“Sure, I was skeptical at first. But audio-over-Ethernet technology is compelling!

Other companies just use CAT-5 to carry audio using proprietary protocols. Axia uses standard Ethernet to build a true network with uncompressed digital streams



plus machine logic and program-associated data. No one else does that! I was a little concerned about dropouts and QoS

problems, so we went to the Axia factory and assembled a network ourselves. It was easy to do, and it just *worked*. We were sold.

“The jocks took to the new board like fish to water. Show Profiles are their favorite part, since they can all have custom board setups. Some like their headphone levels blasting, some don’t. Some like the mic on the left side, others on the right. I’ve got one guy who brings in his vinyl records every week for an oldies show; he’s the only one who uses the turntables but when he loads his profile, they’re ready to go.



“There were a few little bugs, but we had the very first surface! Axia support gave us new software right away and our problems were solved. Two years later, I’m more impressed than ever. I recommend Axia one-hundred percent.



“Since the first studio was installed, we’ve added a new production and interview studio, and we plan on building three more studios. It’ll be all Axia — all the way to the transmitter.”



— Marc Johnson, Chief Engineer, WEGL-FM
Auburn University, Auburn, Alabama



www.AxiaAudio.com

Weekend 'Summit' Looks Into the Pod

Podcasting, or 'On-Demand Broadcasting,' Gets Its Own Weekend of Sessions

by James Careless

Not long ago, few NAB delegates could have told you the meaning of the word "podcast." At NAB2006, the Web-based medium has a two-day weekend series of sessions devoted to it.

Branded as the NAB Podcasting Summit, the event on April 22-23 aims to give delegates a thorough overview of podcasting. The NAB is co-organizing the summit in partnership with Future Media Concepts of New York. This is not a radio-specific event; it is part of NAB's Post-Production World Conference. But it has clear radio implications.

The summit "will address the nuts-and-bolts topics of advanced podcasting production techniques, advanced encoding, repurposing broadcast material for podcasts and methods of delivering podcasts and making them searchable," said John G. Marino, NAB vice president of science and technology.

"The summit will also tackle business issues such as licensing and copyright, generating new revenue from podcasts, audience metrics and measurement methods, marketing podcasts and of course the future trends for podcast technology."

The theme is "Podcasting: Audio and Video for a New Audience."

New outlet

"Many broadcasters now understand that podcasting can benefit them by offering another outlet for radio programming and special events," Marino said. "Podcasting provides an opportunity to offer programming on demand. It gives radio broadcasters an opportunity to reach out to new tech devices such as iPods, and new audiences."

Art there pitfalls for broadcasters new to podcasting?

"For radio, there are none," said radio host and podcaster David Lawrence, who will be speaking during the sessions.

"If you're not a professional, you have no idea what kind of pressure you'll be under to continue to podcast if you become popular. But for pros, there's not a downside; not even incremental cost of delivery if you know how to set your feed up properly."

Saturday's sessions are oriented toward technical training; Sunday is for business pointers.

On April 22, the first session, at 9 a.m., will examine advanced podcasting production techniques, to help delegates learn effective and professional ways to prepare content. The session at 11:45 a.m. will tackle proper encoding of podcast files, for capturing and encoding content in optimal ways for MP3 players and iPods.

At 2 p.m., presenters explain how to convert broadcast content to podcasts. The fourth session of the day is at 3:30 p.m.; it will examine the many ways in which



broadcasters can distribute podcasts. The final session of Day One at 5 p.m. will march out experts to talk about podcasting tech and trends.

On the second day, the summit will begin by tackling legal and copyright laws for podcasting at 9 a.m. Broadcasters who want to stay on the RIAA's good side are likely to find this of interest. Next, at 11:45, the topic is "Podcast It! — New Revenues from Existing Content." Panelists will explain how a broadcaster's audio and video archives can be re-purposed to earn new money from podcasting.

"I plan on talking about how I take my content, the existing content I've already created, and how to make additional money from podcasting it," said Lawrence. "I'll show you how to do that easily, and to make incremental income from those newfound listeners. I hope to remove the mystery and the hype at the same time, and give nuts and bolts processes and standards so that attendees come back to their station as heroes; making more money for 'the man,' whoever that man may be."

Marino said, "It seems every day that broadcasters are discovering the benefits of offering their content via podcasting. While it's presently difficult for many to realize the revenue benefits of podcasting, I believe that over time broadcasters will provide unique content that may only be available via their podcasts, content that may be offered as fee-based services."

At 2 p.m., the summit will consider who is listening to podcasts, how to measure them and how to use this data to sell advertising. At 3:30, the experts will explain how to market podcasts.

"In order for broadcasters to relate to a new generation of listeners, they will need to put together a podcasting plan for their business," Marino said.

Finally, at 5 p.m. on April 23, the experts will congregate again to talk about podcast tech and trends.

Profiting

Organizers hope the event will inspire them to discover new techniques and ways to earn money from their craft.

"That's exactly what people will find out when they attend this session — all the little ways that we overlook potential because we are, and have been, married to the transmitter," Lawrence said. "New avenues present themselves all the time, and podcasting is just another to gather a fruitful and loyal audience, and that means

advertising dollars or subscription dollars."

Broadcasters, NAB's Marino said, are like most business owners and managers; they want to understand the benefits of any new technology before taking the plunge.

"If they see successful business models being deployed by their colleagues and competitors, they may have incentive to try them out at their facilities. It's all a matter of understanding that this new technology offers benefits and not just time-consuming staff effort."



What are the implications of podcasts like East Detroit Radio, 'an Internet radio-type show, where we play some indie music (with permission) and discuss the music and other things'?

Broadcasters who ignore podcasting in the hope that it will go away are only putting themselves at risk, he says. The proliferation of low-cost portable audio devices will drive podcasting by offering attractive opportunities for creative individuals and entrepreneurs.

"This, combined with the spreading landscape of broadband wireless and the ease of downloading podcasts, will probably make the technology commonplace within the next five years."

This is why "Simply ignoring a technology that is popular with listeners is foolish, especially if a new generation of consumers using new high-tech devices can enjoy a different way to sample a broadcaster's fare," Marino said.

Lawrence added, "There are aspects of podcasting, the cachet, the hipness factor that will fade over time; but again, podcasting has no less legs than broadcasting. There are those in the industry that are tolling the funeral bells for traditional broadcasting, and the naysayers will always have something to claim as dying. I don't see it; not with 60 million iPods and many more millions being sold every month."



AM Radio DA Phasing System: The Way It Ought To Be.

Built for the digital revolution for Radio Disney by
Kintronic Labs.

Nobody Does It Better!

WFDF Radio in Motown, USA
Eight Towers, 50KW, DA-2

423.878.3141 fax 423.878.4224 Email: ktl@kintronic.com www.kintronic.com



Kintronic Labs, Inc.

See us at NAB Booth # N3211

World Radio History

Vegas Engineers

► Continued from page 16
technology on the air ahead of the rest of the country because of the trade shows," said Teagarden. "It was the experience of a lifetime to be lighting up the first DAB stations in 1999."

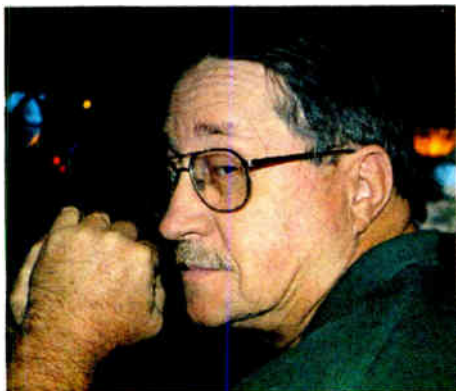
Croghan calls having the show in town a bonus as well.

"We are often asked to help as a source of demonstrating over-the-air, in-studio and remote gear."

Sands called the whole experience a mixed blessing.

"Many equipment manufacturers rely on the local engineers to host their demonstrations for show," he said. "What they don't understand is that we can't take them up and down the mountains three or four times for nothing. Many of us pay for our own gas and tires."

Sands said he only averages one to three hours of floor time per year at the NAB convention. "The rest of the time it's working on show demos or doing the day-to-day stuff that doesn't stop for NAB."



Bill Croghan is chief engineer for Lotus Broadcasting in Las Vegas.

Overall, radio engineering in Vegas is exciting, at least for Croghan.

Demos and other firsts

"We have more happening, more opportunity and more fun than anywhere," said the broadcast veteran who has spent the 27 of his 42 years in radio and TV as an engineer. "We are seriously competitive so I get the best of equipment. We've helped do broadcasts to Germany, Denmark, Italy, Canada and a few dozen states as well as originating many network programs from our studios."

"We've had most of the greats in sports broadcasting, talk show hosts and great bands broadcasting out of our place. You never know whom you'll bump into in the hall. I gave directions to the rest room to Rita Rudner this morning."

Asked for juicy market gossip or traditions, two of these gentlemen offered eerily similar stories regarding a pair of local nameless engineers with an interesting ritual when trekking to some of the more remote transmitter sites.

Apparently the practice involves stopping the vehicle to climb out and make explicit gestures at the rough, rocky road. On one occasion, the driver accidentally locked the doors of the truck (with the engine running) during the ritual road hollering. Fortunately, the vehicle's wing windows were cracked open and allowed for a small pine tree branch to be maneuvered in to unlock the doors. (They are, after all, engineers).

The ritual reportedly continues to this day.

Show Highlights

Stories in this issue preview the NAB Broadcast Management Conference; Podcasting Summit; and new products planned by radio exhibitors.

Here's a glance at other highlights of the convention:

Broadcast Engineering Conference

Keynote by Tomlinson Holman, professor of cinema-television and electrical engineering at the University of Southern California. Next issue, Radio World will explore the BEC in depth. Saturday–Thursday.

All-Industry Opening

David Rehr's coming-out party. The new head of NAB opens his first convention by honoring Tom Brokaw, Dan Rather and Peter Jennings with the NAB Distinguished Service Award. Monday, 9 a.m.

FCC Roundtable

Monday, 2:30 p.m.

FCC Breakfast

Tuesday, 7:30 a.m.

Radio Luncheon

Dick Purtan, host of Oldies 104.3 "Morning Show with Purtan's People" on WOMC Detroit, is inducted into the NAB Broadcasting Hall of Fame. Wall Street Journal tech columnist Walt Mossberg keynotes. Tuesday, 12:15 p.m.

Latin & Jazz Party

Sponsored by Orban. Tuesday, 6 p.m.

Career Fair

Wednesday, 10:30 a.m.–5 p.m.

Amateur Radio Reception

Sponsored by Heil Sound. Wednesday, 6–8 p.m.

RTNDA@NAB

Conference and expo for journalists, at the Las

Vegas Hilton. Includes super session about lessons of Katrina. Sunday–Wednesday

Beyond Broadcast

The convention also includes NAB Post-Production World, NAB Multimedia World and Technologies for Worship Conferences.



New NAB President/CEO David Rehr

Registration:

Rates vary; \$495 is base member price for the NAB Broadcast Conference package, which includes the Broadcast Engineering, Broadcast Management and Business Law and Regulation Conferences plus luncheon ticket. Other packages are available for students, exhibits-only and other conferences. Visit www.nabshow.com/registration/



Pipe. Lighter.

Introducing Big Pipe LT.

The single box solution, perfect for the rest of us.

Easier on the real estate and easier on the checkbook, Big Pipe LT is not just another studio-transmitter link. Big Pipe LT takes the proven performance of our now-industry-standard Big Pipe, and packs it in a single-rack space:

With bidirectional capabilities up to a whopping 45 Mb/s, you can interchange analog and digital audio, HD Radio data, Ethernet, and serial data via a wireless or wireline path.

Flexible and reliable, Big Pipe LT works just as well for studio facility interconnects as it does for any other media transport needs. And because it comes from BE, you know that Big Pipe is designed for the realities of radio, including tight budgets and rock solid performance. Contact BE for details.



Broadcast Electronics, Inc. • 4100 North 24th Street, Quincy, Illinois 62305-3606
Telephone: (217) 224-9600 • Fax: (217) 224-9607 • E-Mail: bdcast@bdcast.com

Broadcast Electronics and the BE logo are registered trademarks of Broadcast Electronics Inc.

Radio: On-Air, On-Site and Online

Management Conference Topics Range From Hypnosis to Podcasting and Text Messaging

by Ken R.

The NAB's Broadcast Management Conference, part of NAB2006, has in the past focused on topics such as the synergies of consolidation, the notion of superserving clients and a then-unfamiliar entity called The Internet.

This year the buzzword might be "engagement."

In "Hiring Smart: Finding and Securing the Best People," Sunday morning, Tim Daniel will explain why radio and TV are behind other industries in the art of developing new talent.

Daniel, director of Sausalito, Calif.-based Noll & Associates' Organization Performance Group, said that while there are many passionate people in the broadcast world, enthusiasm alone is not enough to make a good employee.

"We like to do a half-day of training a year for our people whether they need it or not," he said. "In manufacturing, a supervisory candidate is trained for a year before he or she is put into management. What we do is take our number one biller and promote him/her to sales manager. There's no predictive correlation between those skills."

Historically there was a large pool of people eager to join the broadcast indus-

try, but according to Daniel, that is no longer the case.

"Now we're competing for labor," he said. "Recent college grads are interested in being on-air stars, but no one wants to work in the guts of our stations. Our business is more standardized, more 'corporate' now and getting the next generation interested is very hard."

Daniel also suggested that radio management puts too much emphasis on the interview.

"Words don't predict behavior," he said. "Behavior predicts behavior. And a bad hire can cost a broadcaster 1.5 times that employee's annual compensation."

A Sunday session, "Hypnotic Advertising," will feature as sole presenter programming and advertising consultant Dan O'Day.

"I've spent my adult life immersed in two subjects: clinical hypnosis and advertising," he said. "Years ago I realized that the techniques of a good hypnoterapist have very strong, exciting parallels to the world of advertising."

O'Day said the biggest problem with most advertising is that copywriters try to sell with facts: "They should be selling by creating a strong association between the brand and the targeted consumer. The second most common mistake is creating

an association ... but the wrong one!"

He added the premise of a commercial should reflect the listener's own experience.

"Then you can lead the listener from that situation with which he identifies into making his wish come true," said O'Day.

Monday sessions

It will be a special occasion Monday morning when retiring RAB president Gary Fries says goodbye. In a session called, "State of Radio Sales," Fries, who headed the organization for 15 years, will

vice president of new technologies for Cox Radio and also vice president/general manager of Cox Radio Interactive. Joining the panel will be Bill Wheaton, vice president of media and entertainment sales for Akamai, a streaming provider.

"We're asking our experts to focus on how to leverage new technology to reach younger audiences," said session organizer Brian Parsons, Clear Channel's technology vice president. "You'll find that if you put a toe in the water, it won't be as cold as you think."

Parsons said there are now revenue models for the new media, although there are still roadblocks to be overcome.

"Getting into the mobile space is daunting because it involves a lot of play-



Sheila F. Kirby of Interep Innovations will talk about how radio competes in the modern media world.

reflect on what he has seen and where the industry is headed. But leadership is not the only change in the air.

"There has been a lot of smoke and speculation about satellite radio and a number of other competitors, but the truth is that radio reaches 94 percent of the American public each week," said

ers and the carriers insist on a huge cut for themselves," he said. "Streaming is challenging because of the rate structure but we'll present some good tips and show how this can be done profitably."

According to Parsons, the biggest misconceptions about podcasting, streaming and text messaging are that they are difficult to do and not worthwhile.

"The benefits include increased revenue and a way to turn younger audiences into P1 listeners," he said. "This session is all about not being old-fashioned radio anymore."

This session is all about not being old-fashioned radio anymore.

— Brian Parsons

Tuesday sessions

Tuesday morning in the "Podcasting for Profit" session, Holland Cooke will offer case histories and recent research on the viability and potential profitability of station Internet sites and podcasting.

Cooke, news/talk specialist for McVay Media, mentioned WDEL(AM) in Wilmington, Del., a market in the shadow of Philadelphia. With no local TV, the radio station filled the news gap by replacing the old audiocassette recorders assigned to their seven local reporters with digital videocams.

"Several thousand of our listeners who have opted into our e-mail blast news summaries can now see a fully produced video newscast that is sponsored with new advertising dollars," he said. "Station President Pete Booker told me that he views his operation not as a radio

George Hyde, executive vice president of training for RAB. "Since the dawn of satellite radio, terrestrial radio has added more weekly listeners than satellite has added subscribers."

Fries also will address the topic of audience measurement, noting that advertisers are demanding more accurate metrics.

In the futuristically titled "How 2 B C00L in the N3W T3CH Age" Monday afternoon, discussion topics will include podcasting, streaming and text messaging. Moderating will be Gregg Lindahl,

See MANAGEMENT, page 22


Shively Labs[®]

From Multistation to Multicasting
Quality signals require quality components.


FM Antennas and Components




Model 2600
Bandpass Filter




Model 6813
FM Antenna



Model 9413
Power Splitter




F-9C
Field Flange



18F-62
Adapter

Visit us at NAB
April 24 - 27, 2006
Booth N1517



www.shively.com

A Division of Howell Laboratories, Inc.
Bridgton, ME 04009 USA
(207) 647-3327 (888) SHIVELY
sales@shively.com
- An Employee-Owned Company -



Come see the latest in **Nautel FM HD Radio Equipment**

VISIT US AT NAB 2006 BOOTH N1302



Virtuoso V5

1.5 kW Digital, 4 kW Hybrid, 5.5 kW Analog Transmitter

More Versatility

- Digital adaptive pre-correction
- Integrated Engine
- Programmable pre-selections for frequency, power and audio source
- Frequency agile: N+1
- Better than 62% overall efficiency

More Robust

- Redundant ventilation fans
- Dual IPA power supply
- Dual low voltage power supply
- Dual IPA

More Service-Friendly

- Hot-pluggable RF modules
- Hot-pluggable PS modules
- Dual digital exciters
- Compact, light weight rack (32" W x 72.5" H x 35" D) is ideal for tight spaces



Phone: (207) 947.8200 | Fax: (207) 947.3693 | info@nautel.com | www.nautel.com

HD Radio is a trademark of iBiquity Digital Corp. All rights reserved.

Making Digital Radio Work.

World Radio History

Management

► Continued from page 20 station, but as a content factory.”

Cooke quoted WDEL General Sales Manager Chris Walus as saying, “Our on-air inventory is finite. Our online inventory is infinite.”

In this session Cooke will unveil the surprising results of a recent survey he conducted with 1,215 adult radio listeners. He asked them what non-music features they would want to download as podcasts. Cooke disclosed that the second most popular — cited by 78 percent of respondents — answer is “week-end fun-formation,” or as the survey referred to it, “things to do in your area this weekend.”

“Local programming and weekend automation have compromised radio in the post-consolidation era,” said Cooke. “The new media will suck in listeners that radio is short-changing. Stations that ‘mail it in’ on the weekends are just leaving money on the table.”

RAB’s Hyde envisions stations capturing the highlights of each broadcast day and offering these tidbits in downloadable bites. In fact he coined a term for this service: primecasting.

“And each primecast could have premium sponsorship opportunities, of course,” he said.

The annual “Small Market Roundtable” will also be held Tuesday morning.

“Part of our session will be an idea swap,” said Dean Sorenson, president,

Sorenson Broadcasting Company of Sioux Falls, S.D. “You bring in a few good ones and you take a few new ones with you.”

He said that one of the issues facing all small broadcasters is recruiting.

“That’s followed closely by training, motivating and retaining,” he said. “If we can do these things well and keep our turnover down, we’ll be spending more time calling on customers and solving their problems.”

Another challenge Sorenson sees is

keeping stations locally focused, an issue that is shared with bigger broadcasters as well.

“We have to keep our listeners tied in,” he said. “That will make us an important part of their lives.”

Co-facilitator of this session will be Paul Gardner, president of KELK(AM)/KLKO(FM), Elko, Nev., who sees the coming of HD Radio as an issue.

“Conversion is a challenge because there’s a lot to multicasting that we’ve never done before,” he said. “In small

can sell to their advertisers.”

Increasingly important is the third place the broadcaster meets its listener: online.

“Many stations have excellent Web sites now. We work with CBS Radio, and they out-stream every major news broadcast you can watch on television,” she said. “Now I can go to the Internet and hyperlink to a second platform. I may get involved with permission-based marketing. If a car dealer lets me design my own car, for example, that creates loyalty.”

In the afternoon session, “Change, Chaos and Opportunity: How to Make More Money with NTR,” Sylvia Allen, president of Allen Consulting in Holmdel, N.J., will be the sole presenter.

George Hyde, who helped organize the session through RAB, said radio should use its one-on-one relationship with the listener to get them to turn out for sponsored events.

“It’s about how we maximize dollars,” he said. “I’ve had more than one broad-



Radio becomes TV becomes Webcast: WDEL(AM) goes video.

The new media will suck in listeners that radio is short-changing.

— Holland Cooke

INTRODUCING The FIRST Analog & HD Digital FM Translators.



The TRX-HD Series
from



All of your listeners can now hear your analog and HD Radio® Programming!

Visit us at NAB 2006 Booth N 611
in the Radio Hall

HD Radio® is a registered trade mark of iBiquity Digital Corporation

markets, one person might serve as manager, sales manager and chief engineer, so we don’t have the luxury of larger broadcasters who can assign a specific task to a specialist on staff.

“Another challenge small broadcasters face is just meeting payroll,” he said.

In a Tuesday morning session, “Google Rules: GM Drools,” Sheila F. Kirby, president, strategic sales and development at Interep Innovations, will identify three fronts on which stations need to meet their listeners.

“The most obvious is on-air,” she said. “You rent space in consumers’ brains, even with a background music format. And we have more listeners than we think we do because our metrics are antiquated.”

The second front is on-site.

“Stations are localized in their approach. They can have bar nights or they can sponsor sporting events,” said Kirby. “The good stations haven’t abdicated that and localism is something they

caster tell me that if we don’t understand radio and its relationship with the Internet we will not be a major player with automotive clients.”

Allen said attendees at this session can expect to learn how buyers think and what they want.

“Media sales and non-traditional revenue sales are 180 degrees different,” she said. “Media sales can happen last-minute, but NTR must be more carefully planned because the advertiser has to consider the component pieces besides media. Buyers want to know how the proposal will fit into their overall goals.”

Allen also advised sales reps not to use the word “package” when seeking NTR.

“Each presentation has to be customized,” she said. “And I’ll show you how to sell ahead of the budget cycle, too.”

WE GIVE YOU PIZZI

Name: Skip Pizzi

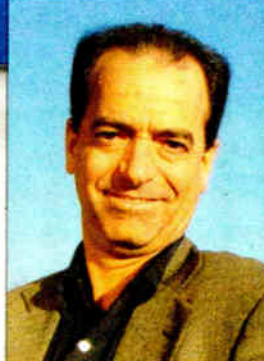
Column: The Big Picture

Experience: 31 years in broadcasting, audio, music, computer and publishing industries

Certifications and industry honors: Member SMPTE, SBE, AES; former chair of AES D.C. chapter; winner of AES Board of Governors Award; winner Public Radio Regional Organizations' PRRO Award

Mentors/heroes: Don Davis; Ed Greene; Neil Muncy; William Zinsser; Nick Negroponite; Bill Gates

Quote to live by: “Our generation will always speak digital with an accent.”



Radio World's pages are home to the finest writers and columnists in the industry. Like Skip Pizzi. Just one more reason we're the newspaper for radio managers and engineers.

Rugged Broadcast UHF with Automatic Frequency Setup

Shure SLX Series UHF Wireless

Shure's rugged SLX UHF wireless systems offer powerful yet affordable wireless that can be set up quickly and used confidently, with innovative features such as automatic frequency scan and setup, exceptional wireless clarity, and legendary Shure microphones.



TRANSMITTER FEATURES:

- Automatic Transmitter Setup and backlit LCD
- Frequency and power lockout, and 3-segment battery fuel gauge
- 2 AA batteries (included) provide 8 hours of use
- 518-782 MHz operating range

RECEIVER FEATURES:

- Automatic Frequency Selection
- 960 Selectable frequencies across 24 MHz
- XLR and 1/4" outputs
- Detachable 1/4-wave antennas
- RF presence LED and 5-segment audio meter
- Multi-function backlit LCD with battery indicator
- Frequency and power lockout
- 1/2 rack design with furnished rack hardware
- Non-slip bumpers for use out of rack

| | | |
|--------------|------------------------|---------------|
| SLX24-58 | Handheld w/SM58 | List \$850.00 |
| SLX24-BETA58 | Handheld w/Beta 58 | List \$902.32 |
| SLX14-85 | Bodypack w/cardiod lav | List \$931.44 |

NEW!! Helical Antenna



Unlike most other antennas, which are more sensitive to signals coming from the same direction, the HA8089 is circularly polarized, giving it greater sensitivity to omni-directional signals. Gain 14 dB; bandwidth: 550 MHz to >900 MHz; beamwidth: 50°; connector: right angle BNC.

| | | |
|----------|------------------------|---------------|
| SLX14-30 | Bodypack w/headset mic | List \$942.06 |
| SLX14-93 | Bodypack w/omni lav | List \$850.00 |
| HA8089 | Helical antenna option | List \$650.00 |

LowestPrice@bswusa.com
OR CALL: 1-800-426-8434

NEW RePop!! The Ultimate RE20 Pop Filter!!

RE20 Pop Filter

The BSW RePop is the ultimate pop filter—made specifically for the Electro-Voice RE20 microphone. The fine mesh metal screen diminishes undesirable P-Popping while keeping the integrity of the hi-end frequency response. The RePop clamps easily and securely to the microphone and will also work in conjunction with the EV 309 shockmount. Robust metal construction, and the color is matched to the microphone. The RePop is a BSW innovation! Get yours today for only \$39.95.



REPOP List \$59.95 **LowestPrice only \$39.95!**

Electro-Voice RE20

Do we really have to sell you on the RE20? A favorite of broadcasters and engineers worldwide, it's simply built to last forever. Its patented, Variable-D design reduces proximity effect to maintain uniform low frequency response at any distance (thereby eliminating bass-boosting when close miking) and its bass roll-off switch helps to shape low-end response. An internal element shockmount reduces vibration-induced noise.



RE20 List \$798.00 **LowestPrice only \$399!**

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

309A **LowestPrice only \$99!**

CD Players Don't Get Any More PRO Than This...

TASCAM



The Tascam CD-01U Pro is a professional slot-loading CD player designed to fit in 1RU, with balanced XLR analog, RCA analog and digital outputs. This compact professional model will save room in your broadcast equipment rack. Also available is an affordable unbalanced version – the CD-01U. Both players have an RS-232 control port available for programming with AMX and Crestron systems. They also feature MP3 playback, 20-second shock protection and pitch controls for flexible performance. Order today.

CD01UPRO w/XLR out List \$699.00

CD01U w/o XLR out List \$599.00

LowestPrice only \$599!

LowestPrice only \$499!



Orban Optimod 6200 Digital Audio Broadcasting Processor

The Optimod DAB 6200 is designed for digital audio broadcasting. A transparent limiter provides control of peaks for protection against digital clipping, while Optimod processing ensures source-to-source consistency. Includes presets for all formats/applications. It's compatible with Eureka 147 and IBOC DAB and Radio Mondial systems. It has 2-band dynamics control, 5-band processing with a flexible set of EQ controls, and control via modem. When you think Orban... think BSW!

6200 List \$6,250.00

LowestPrice@bswusa.com
OR CALL: 1-800-426-8434

orban

NEW!! Behringer XENYX Mixers

NEW!!

Small, affordable and very good!! Behringer's new 2-bus mixer series boasts the new XENYX Mic Preamp, which matches the sound quality, transparency, headroom and dynamic range of boutique-styled, standalone mic preamps. Featuring neo-classic "British" 2- or 3-band EQ, these mixers provide the warmth and musicality of those '60s and '70s mega-console desks in an ultra low-noise, high headroom design. Each mixer has assignable CD/tape inputs for routing flexibility, while the FX mixers incorporate a new studio-grade 24-bit FX processor, giving you 100 effect presets.



| | | | |
|--------------|---|---------------|---------------------------|
| XENYX-502 | 1 mic preamp, 2-band EQ, 5 inputs and main mix, stereo CD/tape, plus headphone output | List \$54.99 | \$44⁹⁹ |
| XENYX-802 | 2 mic preamps, 2-band EQ, 8 inputs, and an FX Send control for each channel | List \$79.99 | \$59⁹⁹ |
| XENYX-1002 | 2 mic preamps, 3-band EQ, 10 inputs, and an FX Send control for each channel | List \$89.99 | \$69⁹⁹ |
| XENYX-1002FX | 2 mic preamps, 3-band EQ, 24-bit FX processor, 10 inputs, and an FX Send control for each channel | List \$109.99 | \$89⁹⁹ |
| XENYX-1202 | 4 mic preamps, 3-band EQ, 12 inputs and an FX Send control for each channel | List \$109.99 | \$89⁹⁹ |
| XENYX-1202FX | 4 mic preamps, 3-band EQ, 24-bit FX processor, 12 inputs and an FX Send control for each channel | List \$139.99 | \$109⁹⁹ |

LowestPrice from \$44⁹⁹!

Henry Engineering AES/EBU 2x8 DA

Do you need to send digital audio signals to multiple destinations? The new Digital D.A. 2X8 is just what you need. It's a dual-mode distribution system for AES/EBU digital audio signals. It produces outputs that are exact copies of the input signal(s). There are no changes to any data or timing, and no jitter, delay, or latency is added. It provides up to 8 outputs from a single digital source. Single (1X8) or Dual (2X4) modes: Its 8 outputs can also be split into two groups, providing 4 outputs each from a pair of digital sources. Sample rate up to 96 kHz. Steel enclosure to protect it from the daily wear and tear. Low price at BSW.



DIGITALDA2X8 List \$395.00 **LowestPrice only \$339!**



2006 Source Book

BSW's 2006 192-page catalog is now available for FREE! Real paper means true portability, perfect for reading in a secluded place, with just the hum of an exhaust fan. Call or go to our website and request your free copy today.

BSW



Broadcast Product #15:

Add a LOUD, audible alarm to your wireless transmitter to indicate when battery life is getting low. The Battery Banshee™ lets you choose Siren, Whistle, Foghorn or Bugle. \$89

Lowest Prices on everything at: www.bswusa.com



1-800-426-8434

World Radio History

Same Day Shipping

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

Free Shipping on Most Web orders over \$189

Most web orders over \$189 ship FREE ground service delivery to the contiguous 48 states. Excludes heavy or oversized items.

Knowledgeable Staff

Our staff has professional broadcast and studio experience to help you with your equipment purchase. PW_032706

LowestPrice@bswusa.com

Find the best prices on all of your gear with us on the web at www.bswusa.com. We'll beat any other price you find on the web. LowestPrice@bswusa.com

Take a Break and Head on Out

Clear Your Head From the Convention Fog

By Walking or Cabbing to Lunch or Dinner Nearby

by Jackie Broo

The Las Vegas Convention Center, all 3.2 million square feet of it, is an amazing display space. But as any NAB attendee will tell you, covering that space can be a challenging endurance contest.

Exhibitors arrive at the convention center early and don't leave until evening. Radio and television executives and engineers cram conferences, meetings and the exhibit floor in a rush to see everything in a short time span. By the second day, you might feel that you are getting in touch with your caveman roots as you enter this huge fluorescent "cave" with few windows and little contact with the outside world. The bright desert sun blinds us when we finally emerge.



The nearby Marriott Renaissance Las Vegas Hotel includes the ENZY Steakhouse.

There is life outside of the LVCC; and there is food. So shake those caveman blues by planning a lunch break, a late afternoon snack or a dinner meeting nearby.

Sports junkies

A number of eating establishments are a short walk or drive away.

Vegas partying landmark The Beach is across the street. Location is a big plus, once you get past the fact that its décor shows a lot more wear and tear in the light of day and there is a definite lingering odor of a keg party from the night before. The Beach serves adequate American, Mexican and Italian food, i.e. sandwiches (3/4 lb. hamburger, pizza and salads). A section of the bar has a sports theme with 80 video displays for sports junkies who need a quick fix.

Right next door to the Beach on Convention Center Drive is Piero's Trattoria. It isn't open for lunch but it's a

great place to end the day with a quick drink and appetizer or a fabulous dinner. It opens at 5:30 p.m. A Zagat Award winner, Piero's features Italian cuisine with steaks, pastas, lobster, stone crabs (in season) and veal. Reservations are recommended. Piero's has handy paid parking during the day for convention attendees.

The Las Vegas Hilton Hotel is situated right next to the LVCC. The Hilton is a five-minute walk from the center and has a number of restaurants where a weary convention-goer can get a quick bite to eat. They include The Buffet at the Hilton, with the likes of pizza, carved roast beef and Caesar salad; the Margarita Grille, specializing

A number of eating establishments are a short walk or drive away.

in spinach enchiladas, spicy burritos, chimichangas, tostadas, tacos and fajitas; Paradise Café for burgers, omelets, club sandwiches and salads for breakfast, lunch and dinner; and Quark's Bar and Restaurant in Star Trek: The Experience. It features American fare with hamburgers and pasta.

Exhibition kitchen

For really quick dining the Hilton has a food court with familiar names in fast food such as Pizza Hut and TCBY, along with Las Vegas Subs and Fortuna Coffee and Wine Experience.

For dinner, the Hilton showcases four fine dining restaurants: Andiamo, Benihana, Hilton Steakhouse, Garden of the Dragon and Teru Sushi.

Andiamo presents the dishes of Italy and the Mediterranean prepared in an exhibition kitchen. Benihana features "guys with swift knives" at hibachi tables. The chefs put on an exhibition as they prepare the Japanese cuisine.

What's Las Vegas without a steakhouse? The Hilton's version presents steaks, veal chops and more. The Garden of the Dragon Restaurant prepares Szechwan, Peking style, Northern Mongolian and Cantonese cuisine in an intimate setting. Teru Sushi features some 40 types of fresh sushi shipped in daily and prepared by a licensed Japanese sushi chef. Reservations are suggested for all the restaurants.

A short walk from the LVCC South Hall is the Marriott Renaissance Las Vegas Hotel. It has two lunch possibilities, the Aroma Coffee Show and the ENZY Lounge.

Chef Richard Chamberlain's ENZY Steakhouse fea-

Nearby Food

More about the restaurants/hotels mentioned in the accompanying article. All phone numbers use the 702 area code.

The Beach, 365 Convention Dr., 731-1925

Piero's Trattoria, 355 Convention Center Dr., 369-2305

Las Vegas Hilton Hotel, 3000 Paradise Rd., 732-5111

Marriott Renaissance Las Vegas Hotel, 3400 Paradise Rd., 733-6533

Del Frisco's Steak Restaurant, 3925 Paradise Rd., 796-0063

Shalimar Indian Restaurant, 3900 Paradise Rd., Citibank Plaza, 796-0302

Gordon-Biersch Brewery Company, 3987 Paradise, 312-5247

Bahama Breeze, 375 Hughes Center Dr., 731-3252

FedExKinkos and Starbucks, 395 Hughes Center Dr., 951-2400

tures "traditional steakhouse cuisine with a twist" along with Kobe filet, prime rib roast, Black Angus filet and prime bone-in rib eye. A walk-in wine cellar features 1,500 bottles of wine.



Quark's Bar and Restaurant is part of the Star Trek attraction at the Hilton, but you can enter without going through the ride.

Five minutes away by cab are a number of good restaurants including Del Frisco's Steak Restaurant; Shalimar Indian Restaurant; Gordon-Biersch Brewery, featuring micro brewed beers, great sandwiches and salads; and Bahama Breeze, for Caribbean-influenced food and drinks. If you have some emergency printing to do, a 24-hour Kinko's with WiFi service — and an attached Starbucks, also open around the clock — is nearby.

Not enough choices? The Strip is a few long desert blocks away from the LVCC. Take a walk, clear your head and you'll be hungry when you get there. 🍷

ALTRONIC RESEARCH INC.
Performance By Design



OUTDOOR DUMMY LOADS
6600 Series

Convection-Cooled Resistor Loads
Designed for Outdoor Applications

Available in 6kW, 12kW & 20kW Power Ratings
Ideal for HD Applications
No AC Power Required



ALTRONIC RESEARCH INC.

P.O. Box 249 Yellville, Arkansas 72687 870-449-4093 Fax: 870-449-6000

E-mail: altronic@mtnhome.com Web Site: <http://www.altronic.com>

See us at NAB Booth # N911
World Radio History



WorldNet Oslo is the perfect solution for 5.1 contribution and distribution applications, transporting high quality content over an E1, T1 or IP link.

MAKE YOUR STRONGEST LINK

Introducing WorldNet Oslo from APT. Now you can have up to eight full bandwidth audio channels with low delay, cascade-resilient, Enhanced apt-X™ coding on a single T1 line.

Each WorldNet Oslo gives you a choice of Encoder, Decoder and Duplex Audio Modules, AC and DC redundant power supplies, a flexible auxiliary data system and automatic backup. WorldNet Oslo supports 16, 20 or 24-bit Enhanced apt-X™ audio, delivering lossless audio quality with under 2ms delay.

WorldNet Oslo comes complete with an easy to use IP-based Management System so you can set up, configure and monitor your installation across town or across the globe. To see just how useful this user interface can be, download a demonstration version from www.aptx.com.

Contact us to find out what WorldNet Oslo can do for your air chain or request a demo.



Highly intuitive user-friendly interface with level meters and programmable fault monitoring, all via IP

Features & Benefits

- Multiple Channel Audio Codec
- Designed for your STL and Studio-to-Studio Links
- Redundant Power Supplies
- Modular Architecture
- Audio over E1, T1 or Ethernet
- Up to 4 audio channels per audio card
- Up to 6 audio cards per chassis
- Analog and AES/EBU audio interfaces
- Enhanced apt-X™ coding

APT
AUDIO PROCESSING
TECHNOLOGY

See Us at NAB Booth # N1217

Audio Processing Technology Ltd
Tel: +44 28 9037 1110
Fax: +44 28 9037 1137

Audio Processing Technology North America
Toll-free: 800-955-APTX
Fax: 732-796-0304

Audio Processing Technology Japan
Tel: +81 (0) 3 5771 1191
Fax: +81 (0) 3 5771 1192

Email: info@aptx.com
Web: www.aptx.com

World Radio History

Conference Looks at FCC Agenda

Sessions Let Attendees Meet With Regulators to Discuss Compliance, Enforcement, Consequences

by Lauren Rooney

FCC regulations, especially those governing indecency. New rules about political ads. What ASCAP and BMI fees will mean to HD Radio.

These are some of the issues facing station managers. Organizers of the Business, Law and Regulation Conference at NAB2006 say they are bringing together federal regulators and private attorneys to educate station owners and managers on many of the changes they face.

"Enforcement is a big issue, complying with FCC regulations is high on the list of things radio broadcasters have to deal with," said Joan Dollarhite, NAB Legal Department director of operations and planner of the Business, Law and Regulation track sessions.

Regulation 'grab bag'

Dollarhite said the most important session for radio owners and managers is the "FCC Round Table" Monday afternoon. The Round Table is an informal setting where broadcasters can meet in small groups with FCC regulators and legal experts.

"The broadcaster will be able to identify issues important to him and ask specific questions about that rather than relying on the NAB to identify what their hot topic is," said Dollarhite.

The FCC Breakfast, Tuesday morning at 7:30, is another session Dollarhite said station managers and owners should heed. There, a high-level official from the FCC will talk about the agenda the FCC has and what regulatory actions are coming. Commission chairmen or commissioners have taken part in the event in the past.

Another session to help station man-

agers meet requirements is "FCC Compliance and Enforcement," Monday morning, with moderator Jerianne Timmerman, senior vice president and



Jerianne Timmerman

deputy counsel of NAB. This session will cover regulations such as tower safety, public file rules, license renewal process, the Broadcaster Self-Inspection Program and indecency.

"Enforcement," she said, "is always a grab bag with a variety of areas where licensees can run afoul of commission rules. Indecency remains a very hot issue both at the FCC and in Congress. There is stricter enforcement but no better definition of indecency."

According to the FCC Web site, the commission received 1.4 million complaints of indecency in 2004, but less than 190,000 in the first nine months of 2005. The trends in complaint statistics are watched closely by both regulators

and industry critics. Timmerman noted that comments regarded as indecent today might have been just borderline a few years ago. And modern conveniences like the Internet and e-mail have made it easier for listeners to contact the FCC.

"Anyone who wants to send a complaint to the FCC can do so with little effort so the FCC gets more complaints about indecency because it's so easy to send them," said Timmerman. "You also have organized groups who work to generate complaints, particularly in the indecency area."

'Tricky' rules

Listeners seem to have a better understanding of what a station must do maintain its license. Public files need to be in order, and new regulations concerning political ads need to be followed as we enter into a congressional election year.

"Advertising and Controversial Content in a Political Year," Tuesday afternoon, will discuss such changes. Moderator Ann Bobeck, associate general counsel for NAB, said when station managers see political copy, they'll have to be sure the content is correct, the sponsorship is correct and, depending on the flavor of the ad, will have to include certain information in their political file.

"If, for example, I am 'Citizens For a Better America' and I'm going to run an issue ad telling listeners to call their Washington congressman and talk about Medicare, the stations will have to disclose the rates in their political file. But if I'm talking about calling your state congressman about your state Medicaid, I don't have to disclose those rates," Bobeck said.

The changes stem from McCain-Feingold legislation that was put into place to improve tracking of hard and soft money in political advertising. The rules that resulted are tricky.

"They require broadcasters to be very well versed in very complex regulations. These are tough rules and even under the best intentions broadcasters can slip up. Our job is to make the rules as clear as possible," said Bobeck.

Consequences, she said, can be significant, including FCC forfeitures and having to explain before the Federal Elections Commission as to why you improperly ran an ad. That can be expensive even just in terms of attorney time.

Political advertising will be one of the topics discussed in the session. It also will cover promotions in children's programming, advertising of Internet gambling and weight loss and prescription drugs. Bobeck said regulations regarding drug advertising are in a state of flux.

"There are new guidelines the FDA has been trying to push through, and we'll talk about where those guidelines are going," said Bobeck.

Flat fee

While advertising is the moneymaker for radio stations, music is what brings in the listeners. Issues related to music licensing will be discussed in the session, "ASCAP & BMI Terrestrial, Internet and Digital Radio Performance Licenses," Wednesday morning.

Panelists are Jonathan Weiss of law firm Weil Gotshal and Manges and Keith Meehan, executive director of the Radio Music License Committee.

"Our session will discuss the status of the ASCAP and BMI licenses including the structure, duration and fees payable under each of the allocation methodology employed to distribute the industry-wide flat dollar figures to individual stations," said Meehan.

The radio industry is off of the revenue base for calculating royalty fees payable to the performing rights licensing organizations, or PROs. Meehan said the main issue now is arriving at a rea-



Ann Bobeck

sonable flat fee for the industry.

"The radio industry believes that a flat dollar figure is far more appropriate than a percentage of revenue, because while music may be an important programming ingredient for many stations, it does not drive revenue," Meehan said, adding that factors such as air talent, branding, contests and sales go into making stations successful.

"Stations do not pay for any other product or service on a percentage of revenue basis."

The ASCAP agreement runs through the end of 2009, but the BMI agreement expires at the end of this year. There has yet to be any agreement on a dollar figure. The jury also is out on a fee structure for HD.

"As we have only had preliminary discussions with BMI, it would be inappropriate to offer more detail as to specifics of those discussions," said Weiss. "Similarly, our discussions with the PROs and our own internal thinking with regard to how to price digital multicasts, or HD, are still in their infancy."

However, any HD license agreement is expected to be "experimental" at the start.

Digital is a topic that will have its own session in the business track called "HD Radio: If You Built It, They Will Come," on Monday afternoon. The session will include Ibiqity updates, discussions on revenue generation, programming possibilities and pitfalls and marketing.

The full list of sessions designed to help radio station owners and managers better understand new regulations and learn about new technology can be found at www.nabshow.com.

"The goal is to help owners and managers run their stations more smoothly," said Dollarhite.

A Rectifier To Fit Your Transmitter

No matter what transmitter you own, we can provide quality rectifiers from stock. We have a reliable, cost-effective solution to meet the requirements of most AM and FM transmitters built since the 1950s at prices better than the manufacturers'.

We Have CCA Rectifiers

Rectifier Upgrades Available
Same Day Shipments

www.rectifiers.com
800-649-6370

Your Best Move!

Make ERI part of your Broadcast Strategy.

- Antennas
- Filters and Combining Systems
- Transmission Line and RF Components
- Broadcast Towers and Structural Products

Visit Us in Booth N2406 at NAB 2006



ELECTRONICS RESEARCH, INC. **ERI**

Your Single Source for Broadcast Solutions™ • Call 877 ERI-LINE • Visit www.eriinc.com

World Radio History

Radio Booth Listings

NAB 2006

THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW

**25-Seven Systems****N2513**

Intro: Audio Time Manager, version 1.30 Software upgrade adds new "Cue" mode, expanding the unit's storage capacity.

Also: Audio Time Manager is a time-compression processor that lets broadcasters create up to 12 minutes an hour of "extra time." Stations can use ATM to extend local breaks in network shows with no loss of content, prevent unplanned interruptions from generating make-goods and smooth joins to random-starting events like press conferences.

360 Systems**SU2993**

On Display: Instant Replay, DigiCart Audio Server, Short/cut Editor

615 Music**C1959, R436**

Intro: Promo Accelerator consists of music themes written for TV/radio promos.

Also: "Gold and Platinum" series, King size, AMP, Music Shop, Music Gallery, Promo Accelerator, Sound Burners FX and ZEN libraries.

A.N.T. Antenna Nord telecomunicazioni C139

Intro: ANT130 Protocol converter for remote control/telemetry unit. Connected to the RDF (radio data front end) becomes an interface to virtually any manufacturer of equipment with a known protocol. ANT128 DVB-T quality control card. Same as the analog card, monitors all main parameters of a DVB-T channel like MER, C/N, PER, BER, RF level.

AccuWeather**C4314****Acoustic Systems****N1614****Acoustical Solutions Inc.****C4817**

Intro: Studio In A Box, four studio packages including RPG Acoustical Foam, Diffusers and Corner BASS Traps and the Alpha WOODiffuser is 2'x 2'x 2" thick.

Also: AlphaSorb and SoundSuede Fabric Wall Panels, SONEX and RPG Acoustical Foams, AudioSeal Sound Barrier

ADAM Audio USA**N4506****Adobe Systems****SL3732****AEQ SA****N3518**

Intro: Phoenix codec is an audio platform for future communications requirements. It has two communication interfaces slots that accommodate modules configured as primary and back-up. The modules are for PTSN (worldwide compatibility) and GSM (Dual to Quad Band); further modules are ISDN (incl. AAC), V35, G3, IP and Bluetooth/WiFi. The power supply allows hot-swapping between internal Li-Ion battery and built-in battery pack. Also new, Arena digital mixing console provides configurable inputs and outputs, both analog and digital and two kinds of control surfaces. It includes fader start, monitor muting, control room and studio signaling, intercom, cough muting, remote control of hybrid and codec, etc. Unlimited number of N-1 circuits can be created. Features are physical input and output routing, selection on each fader and the capacity to assign/ monitor any signal to each fader.

Also: AM03 Self-Amplifier Monitor, BC2000 Digital Router, CADDY AD&DA Converter, CourseMulticodec, Eagle Codec, Impact Router, MPAC02 Portable codec, Syste16000 Multiplex and talk show system, Swing Portable codec, TL02 Portable Codec, TH02 Telephone Hybrid

AEV S.P.A.**N1533****Agiosat Global Communications****C6547**

Intro: Agiosat 3G is a satellite-based IP centric mobile system designed to provide global connectivity for voice, data and video.

Allied Tower Co.**N2132****Altronic Research Inc.****N911**

On Display: Model 6612 Coaxial Load Resistor, Model 6606 Convection Resistor Load, Model 77100 Coaxial Load Resistor

American Radio Relay League**Lobby****American Tower Corp.****N3637**

Intro: ATC Expanded Site Portfolio of more than 20,000 U.S. towers is home to broadcast installations ranging from full-power TV and radio RF plants to ENG, traffic cameras and Doppler radar installations. From mountaintop sites out West to 2,000' structures in the nation's heartland and along the Eastern seaboard, some of the most advanced and technologically superior facilities on the air.

Anchor Audio**N1322****Anixer****C1957**

On Display: Audio cable, connectors, patch bays, racks and accessories

Aphex Systems**N2906**

New: Model 240 Dual Logic Gated Compressor features two linkable independent channels of two patented signal processors, the Easyrider compressor and the Logic Assisted Gate. The Easyrider controls average levels without pumping, breathing or dulling at the same time

NAB2006**Exhibit Hours**

| | |
|-----------------|---------------|
| Mon. April 24 | 9 a.m.-6 p.m. |
| Tues. April 25 | 9 a.m.-6 p.m. |
| Wed. April 26 | 9 a.m.-6 p.m. |
| Thurs. April 27 | 9 a.m.-4 p.m. |

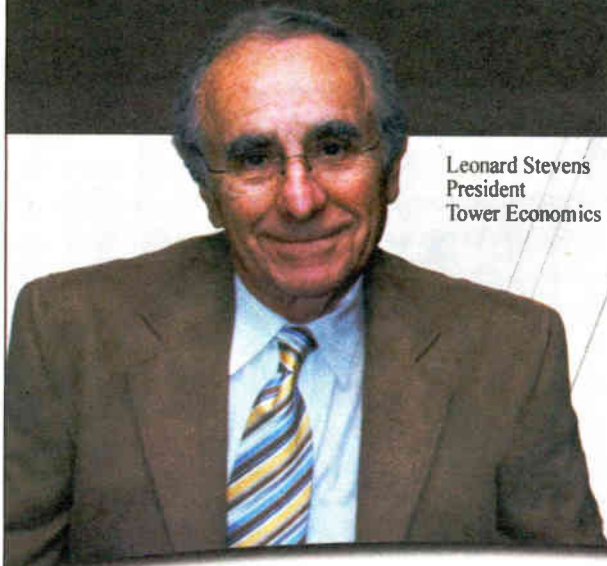
RTNDA exhibit hours at the Hilton are Mon.-Wed. and vary. See NAB Web site.

This section contains a selection of exhibitors of interest to radio attendees at NAB2006. Highlights are paid for by exhibitors, information is from the companies. Check the on-site program for changes, late-registering suppliers and the full list of convention booths.

Booths preceded by the letter N are in the North Hall of the Las Vegas Convention Center. C indicates Central Hall, SL is South Lower Hall, SU is South Upper Hall, OE is Outdoor Equipment & Technologies, MR is Meeting Room. Booths preceded by R are RTNDA booths at the Las Vegas Hilton.

"Accountability is indispensable to us

when putting up a new tower. That's why we deal exclusively with Sabre for our broadcast towers. Their people have been in the industry for years, and have a broad-based knowledge on all types of towers. Their construction department handles turnkey projects with ease, eliminating the need to hire subcontractors and worry about who is taking responsibility. We choose Sabre because we like the people, the product and the pricing."



Leonard Stevens
President
Tower Economics



800-369-6690 • www.sabrecom.com
e-mail: broadcast@sabrecom.com

2101 Murray Street • PO Box 658 • Sioux City, IA 51102

See us at NAB Booth # N2831

it controls peaks. The Logic Assisted Gate effectively and positively reduces noise without the pops, clicks or chattering associated with conventional gates. Additionally the compressor release is frozen when the gate is closed.

APT**N1217**

Intro: WorldNet Oslo is a codec for multi-channel audio applications, transporting content over E1, T1 or IP. Featuring enhanced apt-X coding, the unit delivers real-time, near-lossless quality on up to 24 channels. New is the option to transport audio over IP in addition to E1/T1 links for STL/TSL and studio-to-studio networking applications, opening wider bandwidth for transport of broadcast audio with greater control and monitoring. Also, WorldNet Chicago II offers digital audio over IP for bidirectional stereo transport featuring enhanced apt-X to provide low delay, AM, FM, DAB and HD Radio audio quality while ensuring costs of an audio network remain competitive through use of an IP transport network. Scalable in bandwidth, the Chicago II is also an appropriate solution for low-cost engineering communications channels. The WorldNet Rio audio codec is now available with an optional E1/T1 interface. The unit is a full-duplex, multi-channel, multi-algorithm audio codec using standard and enhanced apt-X. WorldNet Rio delivers high-quality audio for inter-studio networking, remote/outside broadcasts and STL applications. Also presenting the Enhanced apt-X algorithm in multiple formats: Motorola DSP, TI, ADI, Verilog and ARM7. Enhanced apt-X licensing options will be available to third-party manufacturers.

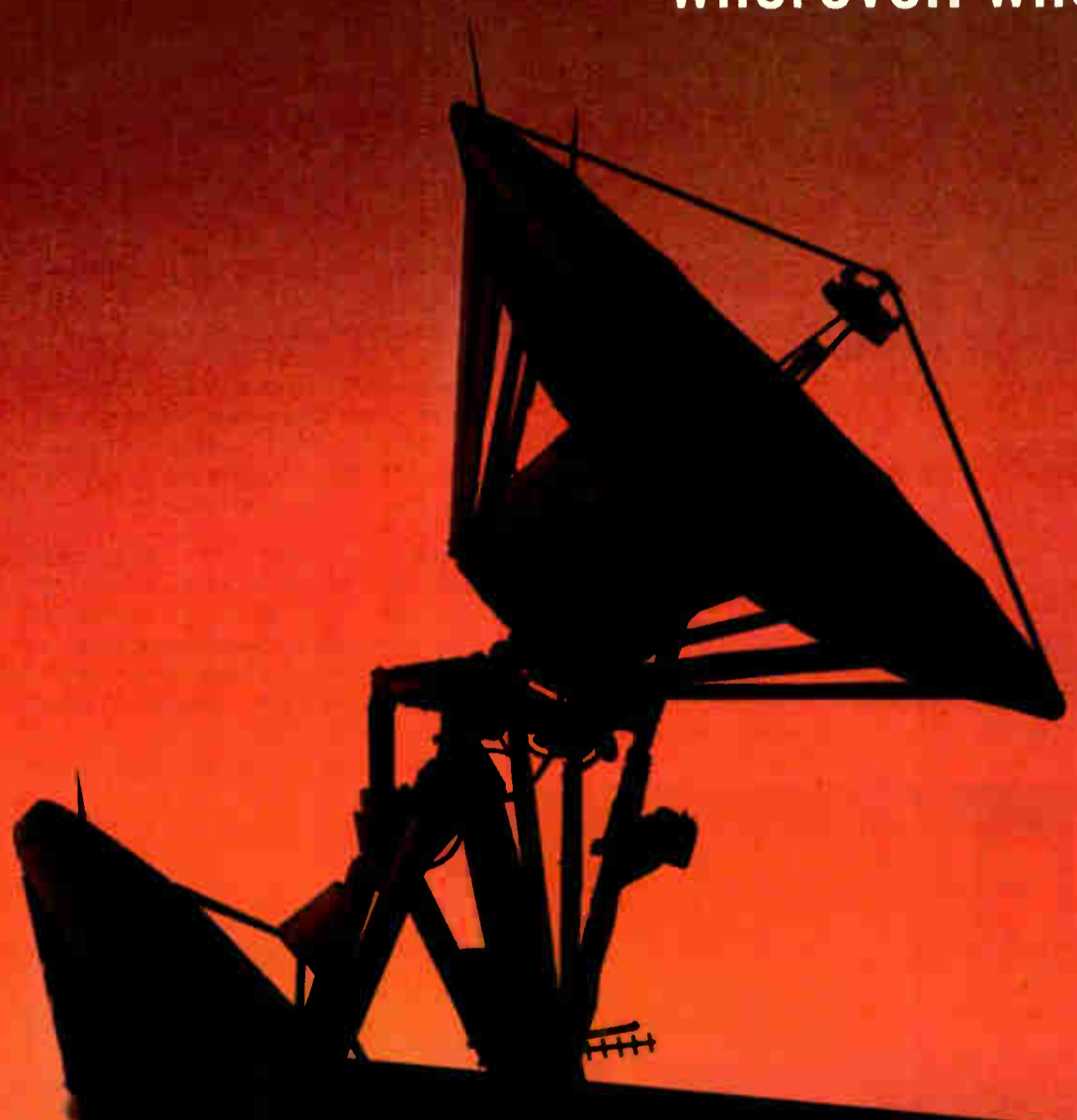
Also: The WorldNet series of audio codecs enable transport of low-delay, AM, FM, DAB and HD Radio quality audio over a variety of telecom links such as IP, ISDN, X.21 and E1/T1.

APW Enclosure Products**SL2132**

Intro: The Stantron Broadcast Rack reflects

Visit us at NAB 2006
Booth #C6841

wherever. whenever.



Prime C-band satellite capacity, digital system design, and expert field engineers to assist you. To cover the U.S., Mexico, and the Caribbean. Faraway affiliates, distant stations, hard-to-reach areas are all within easy reach. With reliable, low-cost solutions, maximum flexibility, and engineering support 24/7. Wherever you want us, whenever you need us. Call NPR Satellite Services at 202.513.2626, or visit www.nprss.org/rworld.



space segment | equipment | uplink services | system design | engineering support | 24x7 customer service

system integration trends related to broadcasters' requirements for rack space efficiency. The Stantron Broadcast Rack is low profile at 22 inches.

Also: Audio-video rack, Pioneer Enclosure Cabinet, Frontier Series of sloped consoles

Armstrong Transmitter N611

Intro: XLator is an analog and HD FM translator, designed as a replacement for existing analog-only translators. The XLator picks up the HD Radio signal and a station's analog signal and retransmits them at the assigned translator frequency. Since the unit does not bring the received signal to baseband, no additional liability licensing fees apply.

Also: AM and FM transmitters, the "E Pack," STL systems, antennas and passive RF products.

Arrakis Systems N2026

Ascent Media Group SU2947

Intro: Engineering, systems integration, consulting and technology support for broadcast, cable, entertainment, satellite, telecommunications, production/post-production and corporate video industries.

Associated Press R212

Intro: AP Online Video Network is an ad-supported news video service that draws on the newsgathering resources of the Associated Press to provide video summaries of breaking news stories for Web sites.

Associated Production Music C1551

Intro: MyAPM, a music search and download system, is an online portal offers customized project management. Use the search system to access collection, audition tracks and manage projects online. Create customized folders containing notes, music tracks and other information and share them online or via e-mail.

ATA Audio Inc. N4519

Intro: Prononet-IP is a codec over IP with ISDN as a backup. Uncompressed bidirectional audio over IP. LAN Interface 10/100 Base-T Ethernet for control and audio transmission. Dolby E transmission over IP by using AES/EBU I/O in transparent mode. Algorithms include MPEG 2/4 AAC LC and AAC LD. The Scoop E-Z over Inmarsat delivers audio using the new BGAN

Inmarsat terminal. Can be used over ISDN or IP. Coding algorithms of G.722 and MPEG. Low-delay 7kHz also available in IP.

Also: Scoop E-Z

ATCI/Antenna Technology C4746

ATI/Day Sequerra N1800

Intro: The M2.0 HD Radio Modulation Monitor provides synthesized, pushbutton tuning for AM and FM bands including multicast channels. It features balanced audio outputs at +4dBV on 3.5 mm Eurostyle (Phoenix) modular connectors, transformer-isolated 110 ohm S/PDIF digital audio output that is 5.1 surround-capable, a multi-function vacuum fluorescent display, 10 preset stations each for AM and FM bands, Left and Right Audio "signal present" indicators, demodulated audio peak level indicator, HD audio locked and delay bit front-panel indicators, headphone output with screwdriver gain control on front panel and HD Radio digital to analog program time-alignment monitor

Also: M4.0 HD Radio Tuner

ATS Communications C8115

Intro: Rock n Roller Multicart, an equipment moving and support vehicle for location production, moves up to 500 pounds of equipment cases, sets up with up to three shelves for on-location support; All-Terrain R12 has four pneumatic or no-flat wheels.

Audemat-Aztec Inc. N2532

Intro: Goldeneagle HD AM, FM, AM/FM with spectrum analyzer continuously monitors multiple AM and FM analog and HD signals with a single unit. Web accessible, streaming audio, time/level alignment measurements, optional spectrum analyzer, multicast, PAD and RDS data monitoring. Scan a market with a click, automatically configure stations to monitor. Send alarms via e-mail, text, voice message, SNMP. Also: Navigator HD-FM is a compact, affordable product for field surveys and on-site/studio monitoring of your FM and HD signal. Frequency agile. It combines an FM monitor (RF, modulation, audio, Pilot, RDS) and HD monitor (QI, C/N, DA, DAAI, SIS ID). Also: Transmitter Remote Control IP2 Choice V2, in a 19" rack form, is a modular system for remote management and monitoring. Connect to all equipment at

a remote site thanks to three serial ports, 128 digital inputs, 40 analog inputs or 64 relay outputs. Peripherals accessible with one telecom line (Ethernet, PSTN coming soon). Thanks to its routing functions configurable with associated ScriptEasy software, the IP2choice automatically sets up the suitable TCP/IP link to connect peripheral with a remote server or provide it with Internet access. Also: Remote Control Silver remote control system for permanent monitoring of devices on the transmitter site. It monitors in 16 digital inputs, 8 analog inputs, 8 relay outputs and one RS-232 (call for other configurations). Configure using ScriptEasy software. Compatible with Goldeneagles, the Remote Control Silver can also be managed by the Broadcast Manager. Also: Silver FM Monitoring remote control system for permanent off-air monitoring of stations. Using one FM receiver, the system monitors automatically in real time the quality/continuity of eight FM programs and notifies relevant person of problems by sending an alarm. Functions include audio streaming, scanning, measurement consultation.

Also: FM_MC4 Mobile FM, Navigator FM mobile FM, World-Class RDS encoder FMB80, RDS Silver, FMB10 RDS encoder, FMX480 sound processor, digital stereo generator, RDS encoder, DARC encoder and digital composite clipper, Broadcast Manager: user-friendly Web server system that can manage alarms, measurements and data from any Goldeneagle (HD, AM, FM, TV).

Christophe Poulain, Executive Vice President
1021 Ives Dairy Rd Suite 216

Miami, FL 33179

(305) 249-3110

Fax: (305) 249-3113

E-mail: poulain@audemat-aztec.com

Web Site: www.audemat-aztec.com

Audio Precision N1317

AudioScience N1514

Intro: ASI6600 series sound cards feature a PCI Express interface and include eight stereo out, four stereo in, analog and AES/EBU I/O, multi-channel record, playback and mixing features.

Also: ASI5000 and ASI6000 series sound cards, ASI2416 modular Cobranet interface, ASI8700 series tuner cards

Audio-Technica U.S. Inc. N3218

Intro: Now available in cocoa, the MicroSet Omnidirectional Condenser Headworn Microphone, model AT892c-CO, has a capsule diameter of 2.5 mm. It is a micro miniature headworn mic with contoured loop hooks behind either ear for a secure, comfortable fit with or without glasses. Offered in black, beige and cocoa, with terminations for Audio-Technica and other wireless systems.

Also: AT3060 phantom-powered tube microphone, AT822 and AT825 stereo microphones, AT849 stereo boundary microphone, AT804 omnidirectional dynamic field microphone, 40 Series studio production microphones, 30 Series studio production microphones, 20 Series studio production microphones, ATH-M40 Precision Studiophones, ES991, ES993, ES995 dual-element microphones

Australian Monitor N1822

AV Internacional S.L. N4231

Avid Technology Inc. SL701

Avlex Corp. N1324

Intro: Mipro MA-909 Wireless Mixer is a UHF true-diversity 16 frequency agile wireless mixer that combines up to two wireless microphones, a CD player, mic and line inputs into a rack-mountable 2 RU control mixer with wireless transmitter; Superlux Pink Stick is an audio test signal generator that operates on phantom power and requires no batteries; Superlux 4U2SET, a handheld two-channel multi-function real-time analyzer, includes a RT60 decay time meter, THD+N meter and a room equalization calculator.

Also: Avlex, Superlux and Mipro microphones, wireless systems and electronics

Axel Technology SRL N2433, C111

Intro: Falcon 50 FM/TV versions of a dual LCD display with digital six-band processor for FM, DAB and TV audio broadcasting. New version has two large displays for control and monitoring over operating parameters from the front panel; also Oxygen 3 MKII on-air mixing console; Soundtrack is radio automation software for stations, networks and public address. Reliable, cost-effective. Includes professional and Soundblaster-compatible audio cards, automatic and manual operation with live-assist and advertising planning.

Axia, a Telos Company N2714B, N2515

Intro: Network-based professional audio products for broadcast, production, sound-reinforcement and commercial audio applications. Products include digital audio routers, DSP mixers and processors and software for configuring, managing and interfacing networked audio systems.

Also: Axia iPlay, Pathfinder, Axia AES or Analog Nodes, Axia Microphone Node, Axia Router Selector, Axia Engine, Axia GPIO Node, Element: modular control surface, Smart-surface: control surface

Azden Corp. N4218

Intro: FMX-32 field mixer, the low-noise three-channel FMX-32 designed for the professional videographer. MSRP of \$450.

Also: Wireless microphone systems

Belar Electronics Lab Inc. N2418

Belden CDT Electronics Division C1655

Intro: Audio/video cables that meet shipboard standards including the American Bureau of Shipping, IEEE 45 and IEC 60092-376 for low smoke and zero halogen. Low Cap OFHC

Time to Celebrate

See us at NAB
Booth # C1639

35 Years of Precision Timing

Broadcasters have counted on ESE precision master clocks and timing-related products for over 35 years. ESE products accurately synchronize broadcast operations using a choice of GPS, WWV, Modem, Crystal or line frequency for affordable, reliable, perfect time.

Spend a few seconds on www.es-web.com to discover a brilliant display of timing systems that are designed for easy installation, set-up and operation.

142 Sierra Street
El Segundo, CA 90245 USA
Tel: (310) 322-2136
Fax: (310) 322-8127
www.es-web.com

MASTER CONTROL TM

CONTROL

The On-Air Digital Studio

The best
use the
best. TM

"For the re-launch of Capital Radio, our programming team chose RCS Master Control TM for its user interface, the flexibility of the Living Log [®] feature and integration with Selector [®], while RCS UK accomplished installation and staff training within a tight deadline. We are delighted with the ongoing technical support from the RCS team."

John Sullivan
Head of London Technology
GCap Media plc.


Sound Software [®]
www.rcsuk.com

See Us at NAB Booth # N602

World Radio History

© Copyright 2004, RCS, Inc. All Rights Reserved.
RCS, RCS Sound Software, Selector and Living Log are registered trademarks of RCS, Inc.

Speaker Cables are designed for low capacitance and utilize OFHC conductors in 10, 12, 14, or 16 AWG sizes. CatSnake Tactical Heavy Duty Cat 5e Cables are for use in rugged indoor/outdoor environments and feature our bonded pair technology to increase signal integrity. Stranded conductors and special Matte jackets make them flexible.

Also: Mic cables, single-pair line-level and digital audio cables, analog and digital multi pair snake cables, speaker cables.

Bext Inc. N3508
On Display: LEX Series, FX Series, FR Series, STLs, broadband FM antennas

Beyerdynamic Inc. N2412
Intro: The MCE 86 II, a condenser shotgun microphone featuring phantom or battery power including suspension mount that is lightweight and quiet. The MCE 86 IICAM condenser shotgun microphone includes a camera mount kit with cable and windscreen.
Also: Audio recording, ENG, interview and broadcast remote

BGS N2711
Intro: Tower Switch is a box located at the tower site that will give tower specific information and emergency contact info to crews working on the tower; Radio Systems Digital Consoles; AudioScience Cards; Axia Console and Routing, move audio around your facility on Cat-5 or -6 without clashes or dropouts using off-the-shelf Ethernet switches and Axia nodes.

Bid4Spots.com N1326

Bird Electronic Corp. N2911

Bittree Inc. C3547
On Display: Audio, video, data patchbays and patchcords

Bomar Interconnect Products Inc. SL4156
Intro: RBC Series 75-ohm coaxial RCA plug, a precision audio/video true 75 ohm. Fits most standard coaxial video cables.

Broadcast Electronics N1808
Intro: The Big Pipe LT, a high-bandwidth STL link boasts AES/Analog/HD Radio/Ethernet/RS-232 inputs/outputs. It delivers up to 45 Mbps of reliable, bidirectional transport over radio links or Ethernet landlines. The Dashboard for IDI 20 HD Radio Data Importer interface helps the importer provision and encode the HD Radio bitstream for HD2 multicasting. It features intuitive menuing and control/status interface with other components in the HD Radio equipment chain. Also: 4MX 25 AM Transmitter, the second release in our 4MX transmitter series, provides 25 kW in a compact chassis. And The Radio Experience Now Playing Station Manager, software for data management of all program channels for all stations in a cluster. AVLogger captures and archives audio.

Broadcast Microwave Services C2326
Intro: The Digital Media Transport Package allows Internet Protocol Datagrams to be routed. It includes simultaneous file and video transmission, simple interface to laptop or NLE systems and integrates with Studio LAN/servers

Broadcast Software International Inc. N3515
Intro: Simian 1.7 features full automation or live assist, triple-overlap segues, automatic weather and time announcements, voice-track editor built in, background recording, supports GPI/O devices, dynamic HTML Web page, exports track data for RBDS/RDS/DAB, touch-screen capable and multiple HotKey sets.
Also: Simian 1.7, SkimmerPlus, WaveCart, Speedy, Stinger

Broadcast Store C1239

Broadcast Tools Inc. N1400
Intro: The ADMS44.22 provides analog and AES digital mixing and switching while the WVRC-8 features dial-up voice remote control and Internet capabilities

Burk Technology N3802
Intro: New products and updates for Burk's line of broadcast facility control systems. Burk is expanding its platforms to meet new needs. Watch live demos of the latest developments in transmitter remote control systems and facility management software.

Also: GSC3000, ARC-16 and VRC2500 broadcast facility control systems with central management software and monitoring accessories

Burle Industries Inc. C2016
On Display: FM power grid tubes, cavities

Burli Software Inc. N800
Intro: The News Podcast Engine computer newsroom system introduces a podcasting feature. A single click by journalists uploads any news audio as a fully formed podcast. News staff no longer deal with titles, headers, audio formats, XML or complicated uploads. System administrators have full control over format, episode and upload options.
Also: Burli Radio Newsroom System

Calrec Audio Ltd. N917
On Display: Alpha System Plus, Sigma System Plus, Zeta System Plus, Hydra Networking

Canare SU4164
On Display: Cables, Connectors, Bulkheads

Captain Digital.Com N414
Intro: Radio Traffic.Com: New traffic and billing software with avails, order entry and management approvals via Internet. Consolidated reports and dashboards. Handles 99,999 users and 9,999 stations. Captain Digital.Com: Sixteen digital audio systems for the price of one, including on-air studio system with phone recorder/editor, production recorder/editor, voice tracker, CD ripper, remote capability, automated weather, etc. Unattended Weather.Com: Current, accurate audio weather for unattended stations using satellite or voice-tracked formats. Several national announcers to choose from, or use your own. Pays for itself with sale of naming rights and weather conditions at area sponsors. Uncompressed Music.Com: 60,000 premium quality songs delivered on hard drive in the format of YOUR digital audio system. Your choice: Uncompressed, MPEG-II or MP3. Affordable.

Doug Raines, Regional Manager
307 Brown Street
Waxahachie, Texas 75165
1-888-888-0777 ext.
1-866-Dave-Scott
Fax: 702-975-8787
E-mail: info@captaindigital.com
Web Site: www.captaindigital.com

CDR Software C-7114
Intro: wxView gives viewers free radar and weather forecasting tools on their PC. It runs in user's tool tray showing your station logo.

Chorus Call Inc. N3137

Clark Wire & Cable C6330

Coaxial Dynamics N1319
Intro: LCD Display Wattmeter Model 81030. Located in Middleburg Hts., Ohio, we have been a leading manufacturer of precision equipment for the measurement and termination of RF power for over 30 years.

Coffey Sound N4526

Comet North America N2511

Comrex Corp. N2722
Intro: Access IP Codec: Broadcast-quality, real-time audio over the public Internet! Access delivers mono or stereo over DSL, cable, Wi-Fi, 3G cellular, satellite. Given the challenges of the public Internet, it's no small boast to say that Access will perform in real time over virtually any available IP connection. Contact Comrex to get a free booklet that explains Access BRIC technology and how it differs from traditional IP codecs.
Also: STAC Studio Telephone Access Center easily manage talk shows, call ins and phoners; Digital Hybrids to send and receive audio from a connected telephone line; POTS, ISDN, GSM codecs: Matrix, Bluebox, Vector, Nexus, Envoy for high-quality remote audio.

Kris Bobo, VP Development
19 Pine Road
Devens, MA 01434
(978) 784-1776
(800) 237-1776
Fax: (978) 784-1717
E-mail: kris@comrex.com
Web Site: www.comrex.com

Com-Tech Srl RF Filters N1131

Continental Electronics N1702
Intro: HD Radio Exporter/Signal Generator: The first of a series of Continental HD Exciter products, the CEC Exporter/Signal Generator is a full-featured package for FM HD Radio. The Exporter/Signal Generator includes audio and data inputs, GPS receiver and HD Signal output as well as a 1/4 VGA screen, keyboard and touchpad. HD Radio Importer: The CEC Importer offers all the features needed to generate Supplemental Audio Service audio and program-associated-data for input to the multiplexed HD Radio transmission. 811/812 HD Radio FM Transmitters: Solid-state HD transmitters are optimized for use in high-level combined and space-combined FM applications requiring 250 or 500 watts of reliable linear power. The 250-watt RF module contains the RF amplifiers, metering, control, power supply and internal cooling. The transmitter is in a 19-inch rack with output filter and cabinet cooling and for the 500-watt transmitter it includes system combining, metering and control.

Also: 816HD FM transmitter offering the highest-power HD FM transmitter available.

Michael Troje, Sales Manager
4212 S. Buckner Blvd
Dallas, Texas 75227
(214) 381-7161 ext. 2319
(800) 733-5011
Fax: (214) 381-3250
E-mail: mtroje@contelec.com
Web Site: www.contelec.com

Control Concepts Corp. C113

Countryman Associates. N3202

CP/Eimac Division C1526, N1611
On Display: 4CX20,000E, 3CX1500D7

Crown Broadcast 3912
Intro: The FM10K solid-state transmitter will output up to 11,000 watts power, with no tuning needed across the FM band, with a three-year warranty and a small footprint. Also: Crown's IBOC translator offers an "Offset Design" receiver and linear amplifier in separate and combined applications to allow analog and digital signals to pass through the system without demodulation, requiring no additional licensing from Ibiqity for transmission. Also: The plug and play satellite remote control for Crown Broadcast translators and transmitters that allows for command and control via the Internet

is called Airsis TM2000. No phone lines or cumbersome dish. Crown will launch FM-A Amplifiers, a derivative of its FM100-, 250- and 500-watt transmitter/exciter. These units will allow those who have low-power exciter the ability to upgrade to Crown quality without discontinuing using their current exciter.
Also: FM Series transmitters and translators, Omnia DP-3 internal audio processor for Crown products

CRT Custom Products Inc. N624
Intro: Media Packaging product packaging, replication, fulfillment and mailing service
Also: Printing, packaging, replication, binders, slipcases, fulfillment, mailing service

Cte International srl N1525
Intro: Automatic Change-Over Unit. The ACU 1+1 model is a universal automatic, change-over unit capable of controlling radio FM and television transmitters and repeaters. ACU 1+1 features a baseband and RF internal switch and can control an external high-power coaxial relay. In case of a breakdown of the primary signal, it operates the subsequent switch-over to the auxiliary source, thus ensuring continuity of service. The internal coaxial relay allows switch-over of RF signals of up to 350 W average power up to 1 GHz and 150W up to 3 GHz. By means of the dedicated DB25 connector located on the back of the unit, it can interface with any type of external coaxial relay to control any high-power installation. The unit, which is microprocessor-controlled, allows the software-operated configuration of operating parameters, such as low power threshold, wait and switching time.

Also: Transmitters, receivers, amplifiers, links, antennas and accessories.

D&C Electronics N2432

D&R Electronica Weesp B.V. N1433

D.A.V.I.D. Systems Inc. N3034
Intro: D.A.V.I.D. Systems simplifies the integration of Internet and other 21st century technologies with radio's broadcast traditions. RDS/RBDS text messages and PAD images are automatically sent from the software's enormous stores of metadata fields, giving priority to Amber Alerts, EAS messages and manually inserted promotion content such contest information or the sponsors of remote broadcasts. The chore of turning finished programs and productions into podcasts is likewise processed automatically in the background. D.A.V.I.D. Systems feeds content directly to station Websites, placing pictures, text and audio files in the appropriate locations. If desired, content in the database can be searched by listeners through the Web site including archived material. Customized portals can be created to give advertisers and/or station personnel working outside the network the user-rights to access the database, allowing them to browse content, audition files, download tracks in portions or their entirety in any format, edit a production remotely and upload new content, all from any laptop or PC with a connection to the Internet; also, D.A.V.I.D. is first to implement the newly standardized RF-64 surround sound format. In cooperation with broadcasters, the IRT and EBU staff D.A.V.I.D. engineers developed this new specification. It is available as an upgrade to all customers. The file format is designed to meet the requirements for multichannel sound in broadcasting and audio archiving. It is based on the Microsoft RIFF/WAVE format and Wave Format Extensible for multichannel parameters. Additions are made to the basic specification to allow for more than 4 Gbyte file sizes when needed. The format is transparent to the BWF and all its chunks.

Also: DigaSystem, Latitude Edition, Database Manager, MTE, Remote Reporter, EAS Alerter, DigaROC, DigAirange
Doug Bertelmann, Sales Manager
 1655 N. Fort Myer Drive, Suite 700
 Arlington, VA 22209
 (888) 374-3040 ext. 85
 Fax: (888) 620-3267
 E-mail: doug.bertelmann@davidssystem.com
 Web Site: www.davidssystem.com

Dalet Digital Media Systems SL1132
Intro: New to the DaletPlus Radio Suite is the P3000 player and recorder. It interfaces with Harris HAS and Encoda automation systems with a separate interface for both the player and recorder. The primary use is for automating large-scale operations. This application provides up to 16 simultaneous stereo output channels from a single server. Highlights include play and record control by HAS and Encoda automation. The product also supports a new Dalet feature called "Containers," automation that can call a single event that has multiple titles. The latest release of DaletPlus Radio Suite offers an enhanced DaletPlus Audio Engine. The new engine allows mixing of audio sample rates as well as multiple-perceptual audio encodings. The enhanced DaletPlus Audio Engine supports Digigram boards and other industry-standard audio devices with WAVE (MME) drivers.

Dan Dugan Sound Design N2431

Davicom, a division of Comlab N1000
Intro: Next-generation MAC remote monitoring and control system using secure, 128-bit encrypted IP communications (LAN, WAN, Internet), can accommodate two modems (one as a primary link using landline and a backup using GSM, for example). New units are bilingual (one ASCII and one Unicode character set) and allow each user to select the language of choice for MacComm displays and the vocal interface. Units have 128 timers, allowing users to program AM day/night pattern changes, to set multiple alarm-call rosters for vacations, normal-duty, special-occasions, etc. More virtual logic gates (128) allows users to program more conditional actions and complex logic functions and now 128 configurable virtual relays allow users to set up additional relay command actions without using actual physical relays. Physical and virtual relays are individually software-configurable for latch, follow and variable-length pulse modes, to better match equipment control requirements. Also 16 alarm lists for conditional alarms, two event logs including a user-defined log to focus in on desired information, new hardware board with faster processor, more RAM memory, integrated IP, more configurable system status and log transfer functions. Also introduced: MacComm version 5 communications software.
Also: Davicom MAC units, Scientel Broadcast Interfaces

DAWNco C7141
Intro: Satellite Feed Switcher, Super High Stability LNBS, Starlook Satellite Identifier, Satellite Fiberlink, Outdoor rated, Off-Air 8VSB Digital Channel Demodulator
Also: Data Fiberlinks, AV Fiberlinks, Broadband Fiberlinks, Satellite fiberlinks, Fiber Optic Cable

DB Elettronica Telecomunicazioni SpA N3505
Intro: KF 5.0C is a 5.0 kW FM solid-state amplifier/transmitter. New coupling architecture helps realize a dramatic reduction of dimensions to produce the smallest solid-state 5.0 kW FM transmitter in the industry. This involves great simplification in maintenance, facility of transport and installation and a dramatic reduction of floor space. With weight

and cooling reduced, transport, installation and maintenance operation are simplified. Also new, PFS 30000/LD 30 kW solid-state liquid- or air-cooled FM transmitter uses the latest industrial Mos-Fet technology to render a high-power solid-state transmitter at a price similar to those of tube transmitters. Three 12 kW amplifiers are combined through a high redundant coupling device which allows you to keep the system on air even during maintenance to some of its components. The high efficiency of RF amplifiers (Cold-Fet) and the use of PFC filters in the switching power supplies allow reduced AC power consumption with benefit to cooling and management plant costs.

Delta Meccanica Srl N2834
Intro: FM receiver band-pass filter to manage low-power applications at an affordable price.

Denon & Marantz Professional N600
Intro: PMD671 High-Resolution Compact Flash Recorder, 24-bit, 96 kHz PCM capable for unrivaled fidelity, "Virtual Third Head" for confidence monitoring (Read After Write), Time-Shift Playback capability for random access playback while recording, no moving parts-no maintenance, USB 2.0 port for easy file transfer to PC, records uncompressed 16 and 24 bit PCM .wav files at 8, 11.025, 12,16, 22.05, 24, 32, 44.1, 48, 82 or 96 kHz, records .mp2 mono (32-192 kbps), records .mp2 stereo (64-384 kbps), records mono .mp3 files (16-160 kbps), records stereo .mp3 files (32-320 kbps). A 1 GB CF card can hold almost 30 minutes of uncompressed stereo (24 bit, 96 kHz) PCM audio, just over 90 minutes of uncompressed, stereo (16 bit, 44.1kHz) PCM audio, over 35 hours (stereo) or 70 hours(mono) .mp3 audio. 4 to 6 hour audio life with standard AA alkaline batteries, optional rechargeable NiCd or NiMH batteries, condenser mic, two XLR mic connections with +48v phantom power, dramatically upgraded microphone preamps, RCA line I/O, built-in monitor speaker, optional RC600 wired remote control with peak indicator. Also new: PMD560 - Installation Solid-State Recorder.
Also: PMD660, PMD670, CDR420, PMD570

Dielectric Communications C2020, N412
Intro: MobileMedia antennas and filters for the 1.67 GHz spectrum including panel and traveling wave antennas. Various pattern options. Unique approach of the traveling wave design allows for a broad choice of beam tilt and gain without increasing the above-the-horizon radiation. The mask filter with less than .3% bandwidth has excellent performance in a compact design. The filter uses a pseudo-elliptic design with high Q dielectric resonators. This design is excellent for low-cost, high-power applications. Also new: DFM Series Manifold Combiner is a low-cost multi-station combiner solution that allows similar performance to a traditional multi-station combiner at a significantly reduced cost. Similar in appearance to a traditional branch-style combiner although electrical performance is far superior. The output manifold comprises a single coaxial line, has a separate tee junction for each input frequency and a short circuit stub on the end farthest from the output. As with all combiners, each input to the manifold combiner requires a band-pass filter tuned for the input frequency. This filter in turn rejects all other frequencies in the manifold; also see booth listing for Flash Technology.
Also: 7C 7P and 7S Series 700 MHz Antennas, HD Plus Antenna, HDR Dibrad Combiner

DiGico N4527
Digidia N3334
Digigram Inc. N1222
Intro: UAX220 Audio Mouse edition USB

Audio interface for broadcast and other demanding pro audio applications, now with enhanced ergonomics, better audio quality and optional mic preamp (UAX220-Mic); PCX924HR/VX222HR succeeds the PCX924v2 and VX222v2 and benefit from the characteristics of new HR (High resolution) series of sound cards: 2/2 balanced analog and digital AES/EBU I/Os, comprehensive set of drivers (driver for the Digigram SDK, as well as low-latency WDM DirectSound, ASIO and Wave drivers), 32-bit/66 MHz PCI Master mode (PCI and PCI-X compatible interface), 24-bit/96 kHz converters, LTC input and inter-board Sync., PCX924HR-Mic and VX222HR-Mic: built-in phantom-powered mic preamp, AES42 compatible, parametric 3-band EQ & Maximizer. Also new: LX6464ES PCI network sound card with DirectSound, Wave and ASIO drivers. It can transmit and receive 64 EtherSound channels, thus connecting computer-based audio applications to the EtherSound network. In broadcast, ES881/ES1241/ES16161 and LX6464ES form a compelling solution for multichannel audio delivery and distribution via standard Ethernet. EtherSound is the elegant, simple and open standard for networking digital audio using off-the-shelf Ethernet components; also, eXaudi XIP882 is the first product to embody eXaudi technology, an IP audio streaming, processing and routing system. It combines in one device the functions of four traditional product categories: IP streaming client/servers, audio processors, routers and codecs. eXaudi enables integration of radio automation applications and audio transport over IP networks within a scalable, manageable and integrated system, which makes the broadcast chain easier to manage and reduces engineering

and operating costs.
Also: PCX882HR, PCX1221HR, LCM420, PCXpocket 240, VXpocket 440.

Digital Rapids Corp. SL616
Intro: Copper, for wirespeed, secure delivery of media over the Internet with tunable rate control and bandwidth scheduling which provides control over network utilization.

dMarc/Scott Studios/Maestro N3511

Dolby Laboratories SU2923
Intro: Dolby Media Producer is a suite of content creation tools for DVD and high-definition media. The suite includes the Dolby Media Encoder, Dolby Media Decoder and Dolby Media Tools.

Dorrugh Electronics C1233

DPA Microphones Inc. N608
Intro: 4090 and 4091 microphones have an omnidirectional condenser capsule in a lightweight aluminum housing with a 3-pin XLR connector. They have a 19mm barrel housing in anodized black aluminum, sleekly tapered down to the 5.4 mm capsule, accepted as one of the best sounding capsules available. The total length of the mics is 12 cm fitting neatly into the mic clip included. Designed for use with 48V phantom powered systems, these mics will operate with voltages down to a minimum of 5V. The 4090 has a noise floor of 23 dB(A), sensitivity of 20 mV/Pa and can handle 134dB SPL. The 4091 is acoustically identical with the 4090, but has sensitivity of 6mV/Pa, a noise floor of 26 dB(A) and it can handle 144 dB SPL.
Also: Microphones, Windpacs, accessories



June 1, 2, & 3 '06
Miami

Join LABS 2006 and become part of the show that will bring together the best radio stations, technology vendors and exhibitors of the broadcasting industry of Latin America and the world.

The first Show for Latinamerican and US Hispanic radio stations.

Register now at www.labs06.com

DRM Networks N1226

Intro: MediaGate online billing e-commerce system for digital management; Content Management Service offers streaming, hosting, transcoding, digital rights management and work flow management; Device Management Utility manages content on portable devices. *Also:* Online employment services for rich media content

Dymo Corp. N2133**Efron Computerized Studios N408****Electronics Research Inc. N2406**

On Display: SHPX Rototiller Antenna, LPX Rototiller Antenna, LYNX Antenna, 1180 Series Master Antenna

Electrosys Srl C311

Intro: DAB L-Band HPA module, air-cooled solid-state amplifier: max. 280W output power in DAB modulation, provided with internal power supply and control system; also FM products line including solid-state products up to 40 kW output power, based on air-cooled amplifier modules with 2.5 kW output power and provided with own power supply and control system. The transmitter is modular with max of five amplifiers for each rack. Optional remote control system.

Elenos N1826**Elettronika Srl N2436****ELTI N3631****EMR Corp. N1300****ENCO Systems N617**

Intro: StreamLine is an all-inclusive station automation, traffic management and music scheduling system. StreamLine tightly integrates all functions in a single turnkey system solution. StreamLine includes DAD's powerful automation features with traffic management capabilities from Wicks Visual Traffic and music scheduling from Powergold; also new, DAD's Content Adaptive Processing, CAP, option, enables instant changes to Omnia audio processing settings based on currently playing content. The opti-

mum audio processor setting for voice, genre, recording, age or other variation is set automatically, providing unique sound quality without compromise; PADapult allows real-time manual sending of data to HD Radio, RDS, Web sites and more (up to six locations) directly from your control room while also integrating data output from your automation system or satellite provider. PADapult operates with DAD or as a stand-alone application with any automation system.

Also: DAD

Don Backus, Vice President
29444 Northwestern Hwy
Southfield, MI 48034
(248) 827-4440 ext. 130
(800) ENCOSYS
Fax: (248) 827-4441
E-mail: sales@enco.com
Web Site: www.enco.com

Energy-Onix N3335

Intro: DRE: Expands FM station capability of transmitting two additional digital mono programs. No change required in existing transmitter. Documentor/Audio Logger: 365-day audio logger permits station to select previous programs by minute, hour, day and month. Can drive 10 terminals simultaneously via LAN or Internet connections. Roadcaster: RPU, VHF and UHF remote pick-up, 40-watt transmitter and frequency agile receiver. Contains 16 frequencies selectable by front-panel switch. Tele-Link #2: Linux-based hardware and software that permits broadcast-quality STL over a reliable Internet or LAN connection. ECO-15 and Legend 1500C: These additional transmitters add capability to the Energy-Onix FM transmitter line. Thus, broadcasters can purchase a one-tube transmitter with 15 kW output and solid state with 1500-watt output. This is in addition to the one-tube 4 to 30 kW transmitters and 1 kW to 10 kW solid-state transmitters.

Also: Documentor, SST-30FS exciter, SSA-500 and 1000C broadband amplifiers

ESE C1639

Intro: ES-102U is a GPS Master Clock/Time Code Generator. It receives accurate time and date information from GPS satellites and supplies this data to the user in the form of four

types of time code/ Two one-pulse-per-second outputs and a GPS "Lock" output are available. The supplied software allows the user to change settings of the ES-102U via a serial port or USB interface; also new, ES-185U/NTP offers a Network Time Protocol output that allows for network time synchronization, this model is an enhancement to our popular ES-185U and includes NTP output, IRIG AM or TTL time code, SMPTE time code selection (Drop frame, NDF, EBU and Real Time) through supplied software and USB connection for configuring set up features. On-board 12-channel GPS receiver; 700 Series is a family of programmable event controllers that provide a number of contact closure outputs at predetermined times. These controllers allow the user to automate a multitude of events with simple programming. Various models are available from time-code readers (ESE, SMPTE/EBU, IRIG) to stand-alone clocks and elapsed timers with thumbwheel, keypad or PC interface programmability; also, ESE's line of enhanced NTP Time Servers provide a simple method of putting accurate time information onto a network; ES-110 generates a stable source of 10 MHz and 1 PPS using GPS satellites as a reference.

Also: Master clock systems, audio & video distribution amplifiers, SMPTE/EBU Time Code products, audio level indicators & interfaces

Euphonix N1002

Intro: System 5-MC Integrated DAW Controller for audio post recording, editing and mixing, can control multiple DAWs including Nunedo, Pyramix, Pro Tools, Logic Pro and Digital Performer. The MC Media Application Controller forms a central editorial section with up to 48 channel strips each with moving fader, eight knobs and TFT screen. MC Media Application Controller is designed to speed and enhance control of professional applications on Mac or PC, the MC is suitable for editorial work in film, audio post or video. The MC can switch between controlling multiple workstations including Final Cut Pro and Avid Media Composer.

Also: System 5-B/BP and Max Air Digital Audio Mixing Systems

Eurotel N4222**Eutelsat C4541**

Intro: Hot Bird satellite broadcast neighborhood.

EV Microphones N1214**Eventide Inc. N2416**

Intro: VR615B Broadcast Logging Recorder features Linux for reliability and networkability and offers an optional TFT display for front-panel control, dual 250 GB drives and comes in eight channels of mono (four channels of stereo) or 16 channels of mono (eight channels of stereo). Capable of storing 323 channel/days at 44.1 kHz sample rate, plus DVD-RAM for archiving; also new, BD600 Extended Remote option for automated broadcast chains. Sixteen bipolar opto-isolated inputs may be configured to drive BD600 functions and general-purpose delay inputs. Sixteen open-collector outputs may be configured to output BD600 status indicators or to pass through delayed versions of the inputs. An RS-232 output provides a delayed version of the input, useful for driving a time display or for delaying an Internet feed; H7600 Ultra-Harmonizer effects processor delivers a 174-second sampler and features powerful preset sorting capability. The H7600 features the stereo algorithms from the flagship H8000FW, 1,000 in all, including our collection of stereo post-production effects plus dozens of new environments; Anthology II plug-in bundle for Pro Tools TDM includes all nine plug-ins from

Anthology plus EQ65 Filter Set, EQ45 Parametric Equalizer, E-Channel configurable channel strip, Ultra-Channel Deluxe Channel Strip, Precision Time Align positive or negative time alignment for tracks, Quadravox four-voice pitch shifter.

Also: BD600, BD960, DSP4000B+, Eclipse, Reverb 2016, H7600, Anthology II

E-Z UP International, Inc. N3031**Fairlight SL2923**

Intro: The multi-configurable Constellation-Anthem digital audio console unites recording, mixing and editing functions into one powerful console. The configurations meticulously resemble traditional split recording consoles, classic in-line mixing consoles and the most advanced audio post-production consoles.

Also: Constellation-XT

Federal Communications Commission N3526**FiberPlex Inc. N2031**

Intro: LightViper VIS-1832 is a 32x8 fiber optic transport system; LightViper VIS-4832 is a 32x8 fiber optic transport system; LightViper 1808/0808 is an 8x8 fiber optic transport system; LightViper Shadow is a self contained 64x32 fiber optic transport system.

FileWave USA Inc. C9649

Intro: FileWave automated cross-platform solution to mass install, configure and manage new software and patches; also Asset Trustee, an automated cross-platform solution to collect and report installed software, hardware and system information.

FirstCom Music Inc. C1535

Intro: MusiQuick Local for ease of hard-drive delivery. Users can have access to our 15 catalogs at full-resolution AIF files on a networkable hard-drive. The drives are customized with as few as 100 CDs or as many and 1,900, pre-loaded with MusiQuick Local, the company's signature search and audition program. (Mac and PC compatible) The search interface allows users to search music by any combination of key words, moods, tempos, styles and CD categories.

Fischer Connectors SU5193

Intro: SS/ SSC Series: shortened connector for demanding environments. Manufacturer of circular, precision electronic connectors with a fail-safe keying system, Fischer offers a shortened version of its standard push-pull locking plug. The shortened body connectors are suited for military, medical, broadcast, instrumentation and other applications that require unparalleled reliability; also, WSO Series: right-angle plugs to replace the obsolete WS and WSE Series.

Flash Technology N412

Intro: M2M condition monitoring solutions are designed to save time and money by allowing users to remotely access, monitor and manage equipment from anywhere. Monitor and manage non-IT based assets such as HVAC units, back-up generators, security access instruments, street lamps and cooling towers. Solutions can help with predictive maintenance which can streamline operations and reduce unnecessary operating expenses. Simple enough to monitor lights at a cell tower or complex enough to manage and control a cooling tower at a large power plant.

Fraunhofer IIS C2507M

Intro: 5.1 Surround Sound for FM HD Radio. Telos, Omnia, Axia, Broadcast Electronics and Fraunhofer IIS participate in live demonstration of non-matrix 5.1 Surround Sound for FM HD Radio. The underlying Fraunhofer IIS surround encoder/decoder system employs technology

Announcer's Consoles for Live Events

Whether used in radio, television, production, or stadium announce applications, the

Model 200-series of announcer's consoles provide uniformly excellent performance.

With five models to choose from, everything on your "wish list" can easily be handled. And while each unit provides a unique mix of features, all share a common core: great audio quality, a simple user interface, and reliable operation.

To see which Model 200-series product is right for your application, please visit our website.



Model 212
Digital Announcer's Console
Now Available

**STUDIO
TECHNOLOGIES
INC.**

Skokie, IL USA | Ph 847-676-9177 | www.studio-tech.com

defined in the forthcoming ISO/MPEG Surround specification. MPEG Surround is a generic surround extension, which can be associated with any perceptual audio codec while remaining backward-compatible to stereo or even mono. The achieved audio quality is very close to a fully discrete surround system despite the fact that the surround image is represented by a very low additional bit rate down to 3 kbps. Also: At AVC Alliance booth, Fraunhofer demonstrates protected video and audio streaming over IP, applying the most efficient audio and video codecs available. Also: Tower lighting and monitoring

Genelec SL4791

Global Security Systems LLC N2733
Intro: GSSNET All-Hazard Digital Alert System uses the nationwide FM broadcast infrastructure to provide target area coverage messaging coverage and a proprietary messaging system that allows secured and encrypted data with layered and targeted messaging to "need to know" personnel.

GMPCS Personal Communications Inc. C4846
Intro: Inmarsat BGAN Terminal, based on IP technology, delivers data rates of up to half a megabit via a small, lightweight satellite terminal (about the size of a notebook PC). The terminal is easy to carry, quick to set up and simple to use. Also: Satellite communications equipment and services

Harris Corp. C807
Intro: Flexstar Family of HD Radio Solutions. The Flexstar HDX-FM exciter will have its NAB debut, offering advanced, real-time adaptive correction technology. It can be seen with the Flexstar HDI-100 importer, HDE-100 exporter and Z-Series FM transmitter as part of an HD Radio Engine multicasting demonstration. The company will introduce Flexstar BoostPro, which allows stations to operate multiple transmitters from a single HDX-FM exciter. Also new, ZX low-power FM transmitter based on Harris' Z-Series of transmitters, it is available in 500-, 1000- and 2000-watt power levels for analog broadcasting. Upgrades to HD Radio are achieved when driven by the Flexstar HDX-FM exciter as a hybrid analog/digital system or in digital-only mode; also, Intraplex NetXpress transport solution is a managed networking platform that can send multiple services, including audio, data and PBX phone communications, over a single IP connection. New features such as echo cancellation, PBX phone system links, T1/E1 circuit emulation and forward error correction for stations considering a transition to IP-based STL connectivity; also, Harris PR&E VistaMax Envoy offers simpler VistaMax-like networking solutions suitable for smaller-market stations and larger markets with less complex frame requirements for newsroom or similar applications; Harris PR&E NetWave on-air console is available as a standalone console or with VistaMax connectivity and offers affordable, reliable, high-quality digital radio for smaller on-air studios.

Also: VistaMax audio networking, 3DX transmitter line, DAB transmitter range, DRM transmitter range, Harris NeuStar family of 5.1 and pre-codec conditioning products.

Hardata S.A. N3138

Harrison N1522

Heil Sound N407
Intro: Heritage Pro. Vintage design and high-performance, large-diaphragm dynamic element make this mic the best of both worlds. PR Series large-diaphragm dynamic microphones
Also: PR20, PR30, PR40

Henry Engineering N1200
Intro: USB Matchbox is a USB-to-XLR audio codec for broadcast and professional audio applications. Bi-directional, stereo, Burr-Brown 8X oversampled A-to-D and D-to-A. This USB-powered unit solves all the problems caused by PC-sound cards. Has balanced XLR I/O, true professional levels with lots of headroom, plus monitor output with remote mute. Superb audio performance in a self-contained unit that can be rack mounted. Also available: USB Match Plus: adds peak LED metering and headphone amp; also new, USB Match Plus, Same as USB Matchbox, but with addition of accurate LED peak metering that read levels referenced to digital FS. Also includes reference-quality headphone amplifier for critical aural monitoring of input or output audio. USB powered; Digital D.A. 2X8 is a compact distribution sys-

tem for AES/EBU digital audio signals. Two inputs, eight outputs, dual-mode system can operate as either a 1-in, 8-out DA, or as a pair of 1-in, 4-out DAs. Inputs, outputs are individually transformer isolated. Units do not add any delay, latency or jitter. Built-in compensation for low input levels and high-frequency rolloff caused by long cable runs; also, USB Mic Match is similar to USB Match Plus, but with an additional XLR input for a mic. Makes an ideal mic-to-laptop interface for desktop or field use. Mic on/off control included, with tally output, monitor with muting. Also stereo line inputs, XLR line outputs. USB powered.
Also: Matchbox HD, Superrelay, Multiphones, Powerclamp, Studiodrive With USB, Twinmatch, Digistor-MP, Stereomixer, Autoswitch, Stereoswitch, Logiconverter, USDA 2x4, Digimatch 2x6

Hank Landsberg, CEO
503 Key Vista Dr
Sierra Madre, CA 91024
(626) 355-3656 ext.
Fax: (626) 355-0077
E-mail: info@henryeng.com
Web Site: www.henryeng.com

HHB N1822
Intro: FlashMic DRM85 Digital Recording Microphone professional digital recording microphone combines a high-quality, Sennheiser omni-directional condenser capsule with an in-built, broadcast-quality Flash recorder; also, CDP-88 Professional Compact Disc, a 1U rack-mounting CD player packed with an array of professional features and a complement of analog and digital connectivity.
Also: Portadrive PDR2000 Location Sound Recorder, CDR830 BurnIT Compact Disc

NEW! USB Digital Audio Solutions...

USB-to-XLR interfaces eliminate soundcard problems!

The **USB Matchbox** gives you audiophile performance without the noise, hum, and interface headaches of consumer soundcards.

USB Match Plus adds accurate peak-reading level meters and a reference-quality headphone monitor amp.

Both versions feature easy USB interface to any PC or laptop. Balanced analog inputs and outputs at professional levels are on XLR connectors. The Speaker output can be used for monitoring, with muting via any GPI closure.

Computer audio just got easier!

- 48K, 44.1K, 32K sample rates
- Burr-Brown 8X ADC and DAC
- Speaker output with Muting
- Superb analog filter design
- XLR connectivity
- USB powered

Now in stock at all Henry Engineering dealers. Complete info at www.henryeng.com.
626.355.3656

We Build Solutions

Recorder, CDR830Plus BurnIT Plus Compact Disc Recorder, Portadrive MDP500 Portable MiniDisc Recorder, Professional Recording Media for all major formats

Hollywood Edge C1744

Intro: The High Impact Series is a five-disc collection of 2,200 action sounds for production, recorded at various locations including the Kresge mansion, horror, science fiction, fire and explosions, impacts, crashes; Premiere Edition Vol. 6 is the sixth installment of the Premiere Edition Library, contains two bonus DVDs in .WAV format; Soundelux Music Library offers record-label-quality production; Sonic Energy Production Elements is a five-disc set that contains 1,000 effects and various stingers, rumbles and booms, includes one bonus DVD in .WAV format.

Also: Edge Edition, Sound Designer Tool Kit, Animation Collection, Sonic Energy Production

Elements, Premier Editions

Holophone N3931

Intro: Holophone H2-PRO Rev. 2, a 7.1 channel discrete surround microphone for high-end audio recording/TV broadcasting. This version includes an enhanced low-frequency channel.

Honeywell Obstruction Lighting N2922

IllbruckInc./Sonex N1700

IMAS Publishing U.S. N3500

See Radio World listing.

IMAS Publishing China C5107C

Intro: Broadcast & Production China covers technology trends and product application in content production, management and delivery with international perspective drawn from IMAS Publishing USA, 22000+ copies; InfoAV China

targets the pro AV market in China, offers coverage of industry trends and practical application information on presentation, conferencing, C&C and other AV installations, readers include system integrators and end users in business, education, government and large business venues.

IMT RF Products N2830

Independent Audio Inc./CEDAR Audio USA N4508

Intro: CEDAR Tools Retouch in sound processing technology allows you to define the temporal and spectral content of the sound you want to remove. This makes it possible to identify noises as varied as coughs, squeaky chairs, page turns, the creak of a piano pedal and car horns. Unwanted sounds are replaced with audio that matches the surrounding signal. Retouch is available for Pro

Tools|HD & LE v6.9 onwards, operating at high sample rates and offering 64-bit internal resolution. Also new; CEDAR Auto Dehiss embodies a more advanced algorithm than previous dehissers; CEDAR Declip algorithm allows you to identify and remove most instances of clipping in a single real-time pass; CEDAR Cambridge 2.6 offers advances in the user-interface, additional features in the File Processing system, significant upgrade to the tracking accuracy of the Debuzz algorithm, plus two new modules: Vintage Decrackle and the DC Filter; also Phoenix Audio Nicerizer 16 to take the output out of the digital realm and to add the Class A characteristics and feel before the final recording. *Also:* Audio Developments Location Mixers, CEDAR Audio Restoration Products, Coles Noise Canceling Commentator's Microphone, DACS Mic Pres and Headphone Amps, EAR Tube Processors, MicMate Hot Shoe Receiver Mount, OKM In-Ear Microphones, Pearl Microphones, Phoenix Audio UK Mic Pres and DIs, Signex Patchbays, TL Audio Valve Consoles and Processors

Industrial Acoustics Co. N2132

Industry Advanced Technologies Inc. C6637

Intro: Firefly Illuminated Cable Protectors are high-visibility illuminated cable protectors (crossovers) designed to reduce accidents by warning pedestrians of the tripping hazard.

Innes Corp. N2523

Intro: Flashlog 5 digital logger provides recording of weeks or months of audio program, using high-capacity hard disks. Windows Media 9 audio compression is used to provide near-CD quality recording. A playback mode having mono program on one channel and date and time announcements on the other can be selected. Includes Flashback 5, which can access the logger over a network connection. A graphical waveform display makes audio selection easy. Log extracts can be copied to the Windows clipboard or saved as WAV or WMA files. Date and time calls can also be included in the extracted audio; also, Delay Master 5 is a time-zone-correction audio delay built on a Windows XP Professional platform that offers two stereo channels with independent delay settings in half-hour steps from zero to 24 hours; also, Radcap FM is a radio capture card designed for simultaneous recording of 24 stereo FM stations. The frequency of each may be set in software and its audio appears as a Windows audio input device. The card incorporates 24 stereo tuners whose frequencies can be independently set under software control; Radcap AM is a radio capture card designed for recording of up to 20 radio stations; Auricon 2.2 is a professional-quality audio I/O card supplied with DSP software and a Windows WDM driver to provide sound card functionality under Windows 98, Windows ME, Windows 2000, Windows XP and Windows Server 2003. A driver providing basic wave functionality under Windows NT version 4 is provided. *Also:* Auricon 1.1, Auricon 4.1, Digitorc M

Innovative Office Products Inc. N4017

Inovonics Inc. N3206

Intro: 532 FM/HD Modulation Monitor shows simultaneous transmission parameters for analog FM and for HD digital carriers, built-in spectrum analyzer for occupied bandwidth; also new; 261 Digital Utility Processor is an all-digital "utility" audio processor with AGC, compression, limiting; 264 Quad Leveler with four independent channels or 2X stereo, maintains program average/peak ratios for consistent perceived loudness and system protection. *Also:* Omega digital split-airchain processing



aeon
breaking down barriers

DIGITAL RADIO ON-AIR CONSOLE

- Full Audio Networking
- Any signal anywhere
- Complete format store, name and recall system
- Dynamic control matrix
- Dynamics and EQ control
- Powerful Mix-Minus capabilities

aeon

- +Level meters for all busses and selected inputs
- +Talkback
- +Macro programming
- +Voice processing presets
- +16-character channel name displays
- +Ultra slim low profile design - only 1" thick!
- +Table-top mounting, no furniture cutouts required
- +Split or straight console options
- +GUI based Autoconfig Setup Tool

★ **Starting at \$10K!**
Including surface, audio engine and audio platform.

AEON - the latest innovation from the market leader

actual height
mm inch
25 1
20
15 1/2
10
5
0 0

See us at NAB Booth # N826

For more information
visit www.klotzdigital.com or call 678-966-9900

KLOTZ
DIGITAL

for FM and IBOC; DAVID-III FM airchain processor; AM and FM mod-monitors; off-air translator receiver; RDS/RBDS encoders and decoders for scrolling text displays.

IRTE SpA C10131
Intro: Digital microwave links. From 2x2 Mbps up to 2x155 Mbps, ANSI and ETSI frequency bands, PDH and SDH, mono and bidirectional, indoor + outdoor or full indoor with power amplifier.

Italiana Ponti Radio N4211

Jampro Antennas/RF Systems Inc. C1517
Intro: The JMPC-HD antenna is the medium-power version of Jampro's FM Penetrator antenna, available with and without deicers or radomes, for use as a separate or interleaved antenna for HD Radio broadcast, rated at 10 kW maximum input, each bay consists of a Penetrator-style radiating element with a 1-5/8-inch shunt feed line, factory-tuned to any frequency in the FM Band II (87.5 -108 MHz) range on a tower structure that best simulates the customer's actual tower, multiple frequency design also is available, true circular polarization of the JMPC antenna offers excellent performance for HD Radio, stereo and SCA operation, typical VSWR is 1.1:1 ± 200 kHz, a higher-power rated JHPC-HD also is available; the dual input, sidemount JSHD HD FM antenna system for full-service stations provides linearity and power-handling capability, features broadband characteristics, provides isolated and separate inputs for both analog and digital transmitters, allows the digital transmitter to operate at its target power with no power lost in a reject load and no power reduction caused by "lossy" digital injectors; the Optimizer JBCP-H-HD FM side mount antenna is for digital HD broadcast applications that require separate or interleaved bays that are relatively insensitive to icing conditions as well as high power handling, each element is fabricated with thick wall brass and copper with a 3-1/8-inch outside diameter, capable of handling 40 kW, on a single frequency VSWR is 1.1:1 +/- 200 kHz or better, radomes not normally needed, factory VSWR tuned and optional field tuning may not be needed; RCHA-323-10HD Digital FM Radio combiner provides isolation and properly sized inputs for analog and digital FM transmitters, created according to HD Radio standards, self-cooling techniques provide safe combining without the need for cooling fans, for use with station provided coax and reject load or as a system with these components included for quick installation, lower-power rated RCHA-222-10HD also is available.

Also: Antenna systems for all broadcast applications.

Sonia Del Castillo, Sales and Marketing Administrator
6340 Sky Creek Drive
Sacramento, Calif. 95828
(916) 383-1177; FAX: 916-383-1182
E-mail: sonia@jampro.com
Web Site: www.jampro.com

Jennings Technology N411
On Display: Vacuum capacitors and vacuum switches.

JK Audio Inc. N4215
Intro: RIU-IP is a remote interface to the JK Audio Innkeeper 2 and Innkeeper 4 multiline digital hybrids. The Innkeeper 2 and 4 come standard with a screw terminal block for contact closure; and RS-232 for more advanced control. RIU-IP provides an IP interface for full, remote operation.
Also: QuickTap, CellTap, Voice Path, THAT-1,

THAT-2, Daptor One, Daptor Two, AutoHybrid, Inline Patch, ComPack, RemoteMix C+, RemoteMix Sport, Broadcast Host, Innkeeper PBX, Innkeeper 1, Innkeeper 1rx, Guest Module, PBXport, Innkeeper 2, Innkeeper 4

JLCooper Electronics SU5158

Junger Audio N3200
Intro: Level Magic Surround relies on an adaptive level control algorithm that adjusts the right audio level from any source at any time, Automated Gain Control + Transient Processing + Peak Limiting for unattended control of program material, supporting surround sound schemes for TV broadcasting; HD/SD SDI-interface C8403 dual mode (HD and SD) audio de-embedder and embedder card for the C8000 system; and SD SDI-interface C8402 SDI audio de-embedder and embedder card for the C8000, both

simultaneously de-embedding and embedding 16 channels of audio, a 16x16 switching matrix for reassignment the audio signals is included.

Also: Level Magic automated audio level control, MIX4 digital desktop mixer, dynamic range processors, FM audio processors

Kathrein-Werke KG C3907A
Intro: FM, TV, DTV, HDTV, DAB & MMDS broadcast antenna systems
Also: FM radio broadcast antenna systems

Kay Industries Inc. N1600

KD Kanopy N4516
Intro: Rolling Banner, a two-sided presentation that rolls from bottom to top in a circular motion, scrolling action of the fabric gets your message across, twice the banner in half the space, packs up quickly and is suitable for marketing and pro-

motional needs, available in widths of 2 feet, 3 feet and 4 feet and heights of 24 inches (x2) to 96 inches (x2), hanging version can be made to any length, graphic panels are interchangeable, allowing multiple panels for the one stand and message to be changed, one-year warranty on materials and workmanship.

Also: Pop-up canopies, tensioned tents, large format graphics, banners and signage

Killer Tracks C1255

Kintla Corp. N2732

Kintronic Labs Inc. N3211
Intro: A line of RF switches ranging in current rating from 150-200 Amps and in voltage rating from 30-100 kV, utilizing a new linear drive mechanism that is free of shock and vibration, has switch time of one second, offers low mean time between failure and is simple to maintain



The Word is Out - iMediaTouch is the fastest growing Radio Automation System...



...wondering why?

With three new installations a week, iMediaTouch keeps beating out the competition. Why are we so hot?

- » HD-2 Multicasting & PAD Data
- » Instant website integration
- » Non-Stop Broadcasting
- » Group Wide-Area solutions
- » New On-Air Interface and more!

"We looked at many different systems and kept getting drawn back to OMT's iMediaTouch! I spoke with programmers and engineers that use iMediaTouch and those that use other systems...NO iMediaTouch user could come up with a system downfall. That's a powerful statement!"

Chris Maestle - Director of Programming
Verstandig Broadcasting

Call our Toll Free Sales Desk Today 888-665-0501

Download a Free Demo Version
@ www.imediatouch.com

omt technologies **Inventing Radio Trends**

NAB2006

» See us at NAB2006 in the Radio Hall Booth #N2908

and service. Also, the KinStar antenna will be highlighted due to the pre-approval by the FCC for full-time non-directional operation in the U.S. market.

Klein + Hummel N1822

Klotz Digital Audio Systems Inc. N826

Intro: Octo-Bus Studio Network, a digital audio network that carries audio in real-time, control data and power over CAT-5 cables, synchronous bus protocol allows transmission of up to eight simultaneous channels of bidirectional digital audio including control data and system monitoring without audible latency, can be configured as a star or daisy-chained audio network without routers or hubs, using Octo-Bus the VADIS platform can be expanded by a range of products that ease studio installation; DiAN Routing Control Panels control the VADIS router, control VADIS without a PC, RCPs suit any type of router application, configuration software for the configuration of an audio router with associated RCPs; also, AEON Audio Networking Console, a cost-effective mixing solution combined with an integrated router, based on Klotz ultraslim console modules, allows flexibility in console layouts and studio setup, available with 8-, 12-, 16- and 20-fader control surfaces, AEON Setup Tool software is included; Workflow Implementation, as broadcaster operation has been limited by the technology installed in their facility, Klotz engineers use a combination of VADIS consoles, audio and control network infrastructure and customized software to implement a workflow solution to match each broadcaster's specific requirements.

Also: VADIS audio media platform; VADIS D.C.II

KLZ Innovations LTD N2036

Kramer Electronics SL549

Larcen USA C4119

Intro: Broadcast solutions from "start to success," experience analog to digital technology at its best, our solutions are customer-driven and customized; Eclipse Series; 8VSB REGEN Transcoder; Magnum Series; original in state-of-the-art M Series; MX and MXD Series of low-power transmitters/translators

Also: FM Series translators/transmitters

Lawo AG N3808

Lawson SU1647

Intro: Professional design services, architecture and MEP engineering, 20 years experience designing for the broadcast industry, including renovation of existing facilities to site acquisition, design and construction of new facilities,

licensed architect in 50 states, specialized design firm with track record of design and construction, from newsrooms to transmitters.

LBA Technology Inc. N4512

Intro: AM Directional Phasor Systems offer precise coverage patterns requiring minimum adjustment and yielding maximum stability. Directional antenna systems are computer-designed, circuitry features jack and plug test points, toroidal meters and phase samplers are standard, antenna systems constructed with concern to avoid arcing and overheating, connecting tubing of generous diameter is employed with corona rings and ball gaps where needed for electrical gradient relief and component protection, attention is given to internal and external grounding and personnel protection; also, TGR-50 Transportable Antenna System provides a deployable medium-wave broadcast antenna for use in emergencies or when maintenance is required for the station's main antenna. Available for purchase or as a leased unit, 50-foot antenna mast assembly, antenna tuning unit and ground radials (set of 60 at 50 feet each) are shipped in three containers; also, Tunipole series of folded unipole antenna system kits for AM broadcast use, advantages in efficiency, lightning protection, bandwidth and FM feedline isolation, supplied with components for installation on towers between 12- and 36-inch face size, depending upon makeup of existing antenna tuning unit additional electronic parts are needed to complete installation at most broadcast stations, the UP-310 series are used in most low-power installations, for stations utilizing powers of 10 kW or higher, or with bandwidth problems, the UP-600 series is recommended, permission should be obtained from the FCC prior to utilization of these systems; also, Tomco Impedance Analyzer; ERM Series provides first responders with critical communications, for public and industrial emergency, communications, accepts a variety, of HF, VHF and UHF antennas, features a 8 x 10 foot communications, shelter, a tilt-to-vertical, crank-up 45, foot tower, outriggers and topside metal storage, cabinets.

Also: AM DA systems, ATU, folded Unipole antenna, TOMCO test equipment

LEA International C1642

On Display: DS30 surge protector, DS21S surge protector

Lectrosonics Inc. N3225

Intro: UCR401, a battery- or DC-powered receiver with Digital Hybrid Wireless technology for compandor-free audio, compatibility with analog transmitters, 2xAA operation extends battery life over previous products,

RF spectrum analyzer eases frequency choice among 256 channels within each block; SMD, a miniature transmitter using Digital Hybrid Wireless technology, can be remote-controlled using RM unit, 256 frequencies available per block; SMQ, a high-powered miniature transmitter using Digital Hybrid Wireless technology, 2xAA battery powering for long operational time with 250 mW RF power; RM remote control for SM, SMD and SMQ transmitters using proprietary audio signal, transmitters can be programmed for audio level, frequency, sleep mode for battery conservation, mode changes and other features, RM signal activates the transmitter through the transmitter's own microphone.

Linear srl N402

Location Sound Corp. N3926

Logitek Electronic Systems Inc. N2802

Intro: To be announced at show

Also: Mosaic digital control surface, Audio Engine digital audio router, Remora digital control surface, router control panels and software, vMix virtual console, vScreen customizable user interface, audio VU meters, surround meters

Mackay Communications Inc. C5543

Intro: Demonstrations of Inmarsat's BGAN service will be provided to show broadcasters how remote broadcast costs can be reduced. Mackay provides voice and data products for remote broadcast and emergency applications from Inmarsat, Iridium, Globalstar and MSV.

Mackie SL561

Magnum Towers Inc N3918

Manhattan Production Music C1955

Intro: All Media Music, a library from producers of BRG; Music Library Delivery via iPod & iTunes lets users see our library in one iPod and iTunes, exportable to be used in multiple edit bays.

Also: Apple Trax, MPM, Live Trax and Audiophile Sound Effects Series

Mayah Communications SL1206

Media Monitors N627

Intro: Local cable and broadcast TV monitoring, see and hear commercials that aired on local cable TV systems and local TV stations in selected markets on the same screen as spot info from local radio stations; Newspaper monitoring, see print ads from local newspapers in selected markets on the same screen as local radio spots.

Megatrax Production Music C1259, N1500

On Display: Libraries, jingles and radio programming

MGE UPS C7837

Micro Communications Inc. C307, N418

Intro: FM transmitting antennas for horizontal, vertical and circular polarizations, elements for both triangular and square tower structures, standard and custom patterns available; FM channel combiners for low-, medium- and high-power applications, multiple channels in one transmission system; coaxial components for RF system installations including coaxial transmission line, filters, elbows, switches, patch panels.

Also: FM switches, filters, antennas

Micronwireless N4531

Microwave Advances C122

Intro: MicroSynth, a handheld, battery-operated frequency generator, provides a tuneable synthesized RF signal source for commercial bands, units cover either a 500 MHz or a 1 GHz range in microwave bands between 2 GHz and 23 GHz; MWA-23SM Phase-Lock Loop circuit, increases frequency stability of .001 percent for a microwave link transmitter in the 23 GHz frequency band to meet new FCC frequency specifications, used with new or existing transmitters operating in the 21.2-23.6 GHz frequency band, optional receiver phase-lock loop is available.

Middle Atlantic Products SL1181

Modular Components National N1532

Modulation Sciences Inc. C118

On Display: Composite Clipper, STLs, distribution amplifiers, FM modulation monitors, SCA generators

Moseley Associates Inc. N2402

On Display: SL9003Q, SL9003T1, Lanlink, PCL6000

MSoft Inc. C 1242

Intro: MusicCue V. 4.0, an asset management system for a production facility to replace the hundreds or thousands of CDs they need to search music from on a daily basis, for production music and popular music, lets users search across libraries and cross reference to other music, reads an EDL file to automatically create a music cue sheet accurate to the tenth of a second of what was used in a production.

Also: mSoftPlayer

Multidyne Video & Fiber Optic Systems SU1729




Pristine Systems
www.pristinesys.com
www.summittraffic.com
1-800-795-7234

BLACKBOX
Audio Logger

- Record up to 16 Channels
- Off Air & Dead Air Alerts
- Compliance & Verification
- Web Browser Access
- Talent & Market Monitor
- PodCast Recorder
- Available in Spanish
- Extended Support for AM/FM/TV Tuner Boards
- Mic & Time Skimming

CDS³²
Radio Automation

- Music on Hard Drive
- Satellite Operations
- AutoPromo Builder
- "Wet" Voice-Tracking
- WEB/RDS Radio Text
- HD Radio Ready
- CobraNet & LiveWire
- LAN/WAN Operations
- Content Depot Ready
- Easy to Use!



SUMMIT TRAFFIC

- Optimized Scheduling
- Real Time Avails (\$\$\$)
- User Defined Reports & Logs
- Multi-User/Multi-Station
- Open Item A/R
- Fast & Accurate Billings
- 20 Years: Radio, TV & Cable
- Windows, Linux & Novell
- Compatible With all Major Automation Systems

Musicam USA N914
On Display: NetStar, RoadStar, Prima Series, TEAM, SuperLink, RoadRunner

Myat Inc. C817
Intro: Myat's 3-1/8-inch Coaxial Switch offers advanced drive mechanism that allows the unit to trip interlocks before actuating, switch quickly and then lock securely in the switched position, manual bypass, available with a rackmount local/remote switch controller; FM/VHF Switchless Combiner, a modular drive system that allows the combiner to quickly move between positions, dual guide rails and independent switch mounting.
Mr. Dennis Heymans, Sales
 P.O. Box 425
 380 Chestnut Street
 Norwood, NJ 07648
 (201) 767-5380, ext. 220
 FAX: (201) 767-4147
 E-mail: sales@myat.com
 Web Site: www.myat.com

Nagra N3100

NATEXPO C10212
Intro: Established by the National Association of TV and Radio Broadcasters with participation of major Russian companies involved in TV and radio, in support of the Federal Agency of Press and Mass communications and the Federal Agency for Culture and Cinematography, in partnership with the NAB.

National Weather Service N4018

Nautel N1302
Intro: V5 HD Radio FM Transmitter features Digital Adaptive Pre-Correction technology for HD Radio transmission, for complete compliance with the IBOC Spectrum Mask under changing environmental conditions, switchable between FM, FM+HD or HD only modes to provide an analog backup to your HD system; V10 HD Radio transmitter; XR50 50,000 Watt AM Digital Transmitter, a compact footprint 50,000 Watt AM transmitter designed for HD Radio and DRM operation; XR25 25,000 Watt AM Digital Transmitter; XR12 12,000 Watt AM Digital Transmitter 12,000 Watt AM transmitter for HD Radio and DRM operation, features dual DDS exciters with automatic switchover for analog exciter backup to HD Radio digital systems.
Also: FM transmitters: FM1, FM2, Q20, Q40; AM transmitters: J1000, ND5, NA100, NA200, NA300

ND SatCom C6544
Intro: Smart Uplink, compact uplink systems with embedded components, easy integration, quick delivery, configurable

Netia N3208
Intro: SMS (Short Message Service) module for Radio-Assist 7.5 range of digital audio software programs enables stations to increase revenue by using mobile phone platforms as a way to communicate interactively, allowing on-air talent to play interactive SMS and voting games with listeners; AIR-DDO playout module, spread over two monitor screens, the GUI displays four broadcast channels and offers access to help and preparation tools, including a cuer, on-air monitoring, playlist modification, recording and production, DJ functions; Statistics module for Radio-Assist 7.5 allows users to measure and monitor the effectiveness of elements of daily broadcasts including the number of times an audio clip has been played, the broadcast rate and the total number of times an advertisement has been broadcast; Multitrack XT for Radio-Assist 7.5 editing tool for multitrack digital audio recording and editing, suited for audio editing and production work, mixes linear and compressed data on a single track, features include time stretching, pitch shifting, noise reduction,

unlimited undo/redo; copy-paste, insert, drag-and-drop; simultaneous recording and playback, noise gating, support for CD audio engraving programs and import/export MP3 files.
Also: Radio-Assist 7.5 range of digital audio software programs

Neumann N1822

Neutrik USA C6033
Intro: EMC-XLR cable connector consists of three-pole male/female XLR cable connectors with integrated LC-filters, which avoid the RD interference and LF noise, 360-degree shield contact on the female connector that ensures shielding and chassis contact, suitable for solving ground loops, RF interference and Pin 1 problems, OpticalCon system based on a standard optical LC-Duplex connection; Sealed Ethercon Assembly Kit, an assembly kit for D-Series EtherCon connectors to achieve a water-

proof IP54 connection, users can replace the frontplate and push lever with the kit components to achieve an IP54 protection.

Nicom USA Inc. N3435

Novella SatComs Ltd. C7845
On Display: Frequency converters, tracking receivers, uplink power controllers and redundancy systems

NPR Satellite Services C6841
On Display: Space segment, equipment, uplink services, system design, engineering support.

Nucomm Inc. C320

OMB N1812
On Display: Transmitters, STL, mixer, audio processor, antennas

Omnia, A Telos Company N2714, N2515
On Display: Omnia audio processing for radio, Omnia mastering processor, Omnia A/X processing software

Omnirax N2424
On Display: Innova Broadcast Furniture combines modular components with custom-tailored shapes to fit requirements of on-air, production and imaging studios. Conventional case-work cabinetry can be provided so that the entire facility has a unified look and feel. Each project builds on our expanding repertoire and parts library. CAD/CAM design and manufacturing ensure repeatability and accuracy. Pre-production renderings allow everyone involved to see how finished studios will look. Innova is shipped with pre-assembled and flat-packed components along with detailed instructions for ease of assembly by facilities personnel, integrators or Omnirax-trained pro-

AUDIO OVER IP

Applications

- STL links over IP networks
- Distribution of live or shared programming
- Multicasting
- Remote broadcasting over IP networks
- Automatic fallback to ISDN

Communication Interface

- 10/100 Base-T interface
- ISDN U or S/T
- X21

Coding algorithms

- Standard and Enhanced apt-X™, G711, G722
- MPEG1/2 LAYER II, MPEG1/2 LAYER III
- MPEG 2/4 AAC LC, MPEG4 AAC LD (Low Delay)
- PCM Linear Uncompressed Audio Over IP

www.ataaudio.com
 973-659-0555
info@ataaudio.com
 Visit us at NAB
 Booth # N4519

professionals. Tools specific to the installation are included.

OMT Technologies N2908

Intro: iMediaTouch 2.6 hosts new features and additions; iMediaDatacast 2.0 an HD PAD optional module for iMediaTouch Automation Software, features Inovonics support and enhanced features; iMediaTouch compatibility with Axia over IP consoles.

Also: iMediaTouch - Broadcast Automation Software, iMediaLogger, iMediaAdCast, iMediaPIX - Live Assist Module, iMediaImport - Auto Import Module, iMediaMultiStream - Multi-Channel Live Stream Encoder, iMediaAccess - Wide Area Content Management

Opticomm SU4183

Optimal Solutions Inc. C7107

Intro: Business Intelligence provides a Data Warehouse "Cube" for easy access and manipulation of data from the OSi-Traffic database. This provides users with key spot level information that can be used to customize any type of database query from the OSi-Traffic system. Allows user to drag and drop, filter, group and aggregate attributes on the fly to create endless reporting views, provides a module based on Microsoft Sharepoint technology that provides customizable views in any combination of centralized sales and billing data from the OSi-Traffic system.

Orban/CRL N1136

Intro: Orban Optimod-AM 9400, all-in-one processing for analog AM and digital radio channels. Until now, if you wanted an AM audio processor that provided no-compromise, independent, multiband processing for analog AM and digital radio (like iBiquity's HD-AM, system), you had to buy two boxes. Orban's Optimod-AM 9400 changes that by offering two independently adjustable processing chains: one for the analog channel and one for the digital channel. The only processing common to the two channels is the AGC and stereo enhancer. Beyond this front-end processing, you get two of everything: equalizer, five-band compressor/limiter and peak limiter, each optimized for its intended transmission channel; also, Orban Opticodec-PC 1010, the first MPEG-4 AAC/aacPlus encoding software for high-quality streaming audio. Opticodec-PC offers the most important feature that the basic netcaster is looking for in an encoding product: entertainment-quality sound at economical bit-rates. AAC/aacPlus is changing the way streaming audio and netcasting are perceived. For a given bitrate, it sonically outperforms any other codec.

Also: Orban Optimod-FM 8500, Optimod-FM 8300, Optimod-FM 5300, Optimod-FM 2300, Optimod-PC 1100, CRL Amigo Series

Overly Door Company N4511

Paradise Datacom LLC C7541

Intro: Evolution high-speed modem (IF or L-Band) continuously variable data rate from 4.8 kbps to 52 Mbps, second-gen turbo operates up to 52 Mbps with 16QAM, internal Web-server based monitor and control, built-in diagnostics; also, compact outdoor SSPA with fiber optic interface-C, Ku, X & S frequencies, power levels from 10W to 250W, L-Band input option, wireless Bluetooth M&C.

Patriot Antenna Systems OE107

Pelican Products Inc. SL1847

PESA/Fortel DTV SU1370

Intro: The2048x2048 Audio Router in 36 RU, also, Cheetah audio router, a base unit of 64x64 in 1 RU or 128x128 in 2 RU and expandable to 2048x2048 in 36 RU, the Cheetah audio router has a small form factor and a distributed

architecture that is compatible with Dolby-E, while supporting synchronous and asynchronous signals and sample rates up to 96 kHz.

Peterson Systems International N4522

Phasetek Inc. N706

On Display: Custom AM broadcast equipment.

Philips Content Identification SL1840

On Display: Audio watermarking: Compotrack, Cinfence (digital cinema)

Phillips Semiconductors N218

Phonak Communications AG N1736

Intro: Invisity, RF in-ear receiver, earpiece, IFB, discreet, invisible, programmable; also, Invisity TX, a 9.5" studio transmitter, narrowband, VHF 150-220MHz, RF; also, Invisity Wireless Remote Control, discreet, real-time control, channel, scan, sync, re-programmable

Pineapple Technology Inc. N422

Popwire AB SL1047

Potomac Instruments Inc. N2422

Intro: PI-4100 medium wave field strength meter, is a portable self-calibrating metering device, SBAS augmented GPS positioning, E-Data friendly transport software, BW Shape Factor (-6 to -75 dB): 2:1, harmonics measured to 5.2 MHz *Also:* 1900 Series Directional Array Monitor, PI-4100 MW Field Strength Meter, AA-51A Audio Analyzer, AG-51 Audio Generator, SD-31 Synthesizer/Detector

Prime Image Inc. C5136

Intro: Time Tailor Audio, time management for audio content owners, through an undetectable process utilizing proprietary algorithms time-reduces audio programming in real-time, on air and without compromising program integrity, variable selection adds from .01-milliseconds to 4-minutes within 10-minutes to 2 hours, for stereo or mono broadcasts.

PrimeLED Inc. N606

Primera Technology SL1233

Intro: TuffCoat with AquaGuard is a water-resistant and smear-resistant inkjet-printable CD-R and DVD-R.

Prism Media Products N1327

Pristine Systems Inc. N614

On Display: Digital automation for music-on-hard-drive and satellite operations, Auto Promo, voice tracking, LiveWire, CobraNet, website content, music scheduling and much more. Also BlackBox digital audio logger; and Summit Traffic & Billing software is the best alternative for your traffic needs, any size operation.

Production Intercom Inc. N405

Intro: DMH948 Broadcaster's Headset, an all-in-one headset, with four interchangeable condenser microphone capsules from omni to hypercardioid; also, the AS100 Broadcast Announcer Station, allows broadcasting and communicating with one headset. Powered by and compatible with popular intercom systems; also, AS200 Broadcast Announcer Station, includes features of AS100, but with two channels; the FR4000 Half-Duplex Wireless System. Combined with our HD-903, an lcom repeater with transceivers acts as a wireless system, range is 2-5 miles depending on antenna and power settings. *Also:* DMH948, AS100, AS 200, FR4000

Professional Label Inc. C10844

Intro: CD DVD Custom Printed Sleeve Kits include one label sheet for every two sleeves, as there are two labels per sheet. Sleeves

available for use with these are white paper with flap, white Tyvek with flap and white paper-board with no flap.

Also: DVD CD packaging, Labels, cases, sleeves, mailers

Professional Sound Corp. N4022

Intro: DV ProMix 6 portable audio offers six inputs each equipped with quiet pre-amplifiers, switchable low-cut filters, pre-fade listen switches and dedicated line outputs; also, Elite Series Carbon Fiber boom poles has super high modulus carbon fiber tubes, aircraft aluminum fixed threaded mounts and locking collars; DV SGM1 Shot Gun Microphone, a compact, lightweight package offers a flat, smooth frequency response and a low self-noise artifact; also, the Miranda Audio Mixer for field production has options that include 12 inputs, eight main output busses and two auxiliary output busses. Inputs and outputs are individually metered.

Professional Sound Services C7730

Intro: Lectrosonic Wireless UCR/401/SM portable digital wireless receiver with small miniature transmitter.

Also: Wireless, Mics, Boom poles, Digital Recorders

Promedia SL1224

Intro: CD/DVD Wallets/Storage Cases; CD/DVD Replication/Duplication, Silkscreening.

Also: 16 DVD-R, Overwrapping Machine, Aluminum CD/DVD Storage Case

Propagation Systems Inc. (PSI) C330

On Display: FM broadcast antennas, combiners, filters and transmission lines. Various configurations including panels, Slant-V and Power-Tiller in directional and non-directional designs in standard and IBOC broadcasting modes. Ask about pattern optimization, customizing, multiple station antennas and turnkey installations.

Prophet Systems N3522, C4431

Intro: XLR8R has the ability to create and post Podcasts. The NexGen podcast module is integrated easily into the workflow at a radio station; also, the Prophet Importer which enables advanced HD Radio capabilities like multicasting and datacasting. The stand-alone module can work with any automation system. *Also:* NexGen Digital, MusicGen Pro, NewsGen

Radio Advertising Bureau Lobby

Radio Frequency Systems C1217

On Display: RF System Digital Monitor, Heliflex range of air dielectric feeders and accessories, CPF2500 family of antennas.

Radio Music License Committee N3924

Radio Systems N1211

Intro: Studiohub+ Matchjack Amplifiers. Extended application A/D and D/A converters and analog and digital distribution amplifiers.

Also: Digital consoles, StudioHub+ wiring system, DAs, clocks, phone interfaces

Radiofusion.com S.A.C. N1513

Radio World/IMAS Publishing N3500

On Display: Radio World, the newspaper for radio managers and engineers, now celebrating our 30th year. Featuring industry experts, leading columnists and journalists like Paul McLane, John Bisset, Skip Pizzi, Guy Wire, Scott Fybush, Buc Fitch, Leslie Stimson, Tom McGinley, Mark Lapidus and Ken R. *Also:* Radio World Engineering Extra, edited by Michael LeClair, six issues a year dedicated to "deep tech" coverage of the radio broadcast industry. We are now also preparing the 2007 Radio World Industry Source Book & Directory.

Claudia Van Veen, Sales

P.O. Box 1214

Falls Church, VA 22041

(703) 998-7600

E-mail: cvanveen@imaspub.com

Web: www.imaspub.com

RCS N602

On Display: Selector music scheduling, Linker promo scheduling, Master Control studio automation.

RDL Radio Design Labs N3331

Intro: RU-ADL2 studio-quality audio delay with a low-noise DSP, separate time delays for two audio outputs and adjustable delay from 0 to 135 ms; AV-HK1 "Hum Killer" audio isolation module for isolation in an unbalanced line, ground-loop elimination, unbalanced stereo galvanic isolation or isolation in rugged field case; AV-DC4 line-level audio divider/combiner combines audio signals to a single output, combines stereo line-level signals, feeds a mono signal to stereo inputs or combines multiple lines to a single input; AF-SH1 panel-mounted and RU-SH1 Rack-Up Series rack-mounted stereo headphone amplifiers with integrated VCA stereo level control, balanced or unbalanced inputs and switch-selectable input sensitivity.

Remote Audio N4514

Intro: HN-7506 high noise environment headset monitor provides extreme isolation from outside noise and uses Sony MDR-7506 drivers with special baffling.

Richardson Electronics C526

On Display: FM pallets, power grid tubes and amplifiers

Richland Towers C746

Ricsonix/Grace Distribution N4024

Riedel Communications US C8507

Intro: Connect IP provides intelligent intercom interfacing to IP-based networks, allowing for matrix-to-matrix connections, from matrix to control panel(s) and distribution of audio over IP, converting one AES3 stream configured to individual bandwidth needs.

RIZ-Transmitters Co. N625

Intro: DRM MDI Modulator produces DRM signal from max four stereo audio sources, produces DRM signal from DRM/DI stream and RIZ Content Server which generates MDI stream.

Rohde & Schwarz Inc C830

Intro: UP300/350, a professional analog audio analyzer for production, laboratory and service, high signal quality, high-end measurement characteristics, extensive measurement functions, dual-channel signal generation and measurement, R&S UP 300 for analog interfaces, R&S UP 350 for analog and digital interfaces, remote control via USB interface. *Also:* UPV

Roland Systems Group SL3781

On Display: S-4000, AR-3000

Rosendahl Studioteknik N1822

On Display: bonsaiDRIVE miniature hard disc recorder, nanoclocks digital audio clock server, nanosyncs direct digital audio clock and video sync generator, MIF3 MIDI time code interface, WIF2 Word clock interface, BIF Bi-phase interface

RTI-Research Technology International C2851

Intro: RTI professional tape erasers, a range of tape degaussers in sizes and capacities for professional audio, data and video tape recycling requirements; also, Optical Disc Restoring Machines remove deep scratches, clean and



simply put: the lowest price ever for A-T vintage tube sound

A-T tube technology for just \$399
estimated street price

AT3060
phantom-powered tube microphone

audio-technica.
always listening.

Booth N3218



rubicon™ **NEW for NAB 2006**

Rubicon™ family of Digital Control Surfaces, the favorite of hundreds of major and medium market radio station programmers.

Rubicon-SL
A "Junior" Rubicon for less demanding studio applications.

Rubi-T Mini Console
6" high mixer for news, edit, voice tracking, and lots more.

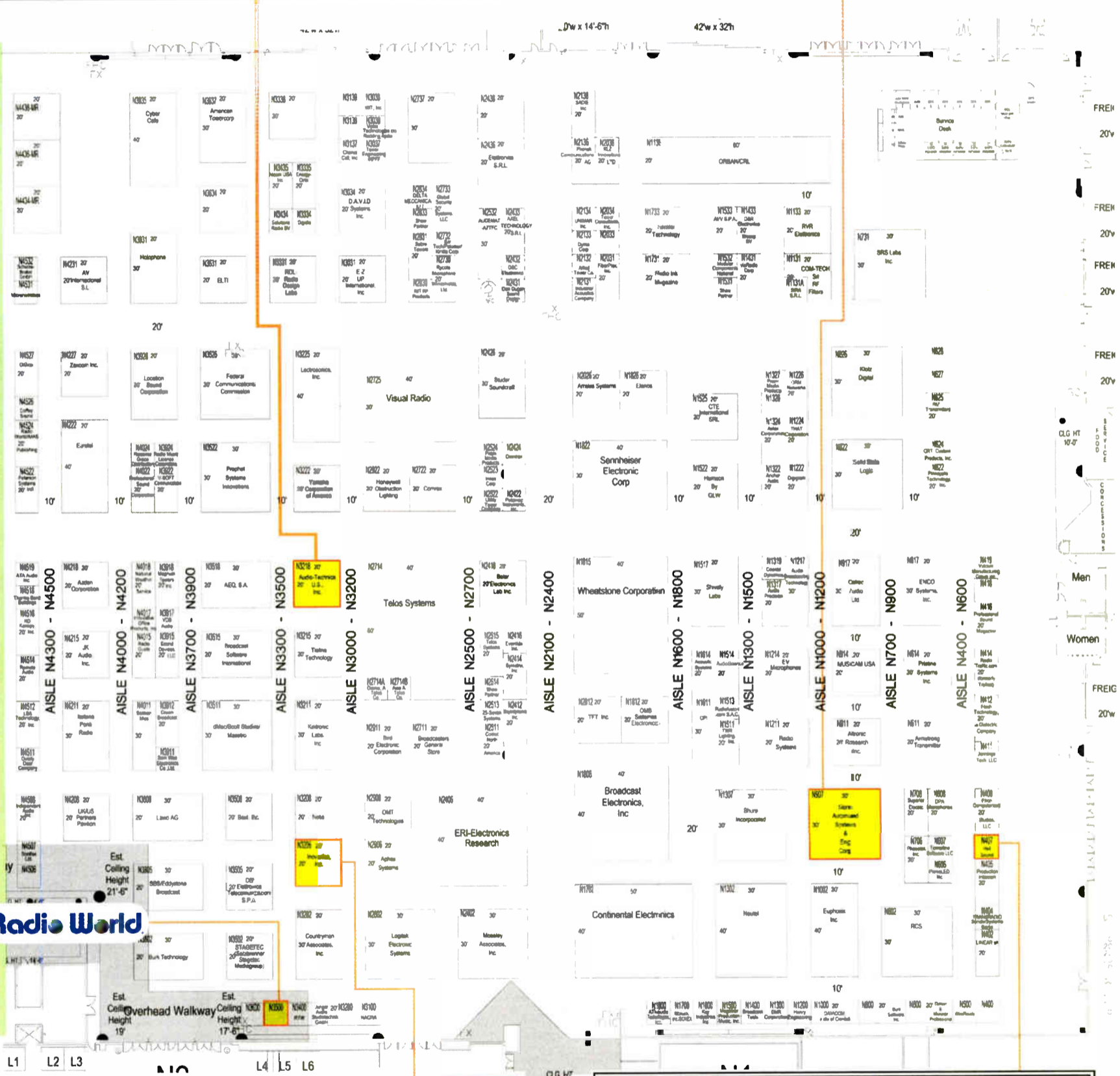
RIOGrande
Stand-alone mixer/router for smaller applications.

Radio/Audio North Hall
Booth N907

SAS

NAB 2006
THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW

North Hall Exhibits



Visit Inovonics - Booth N3206

NEW! Model 532
FM/HD Mod-Monitor

- Supports Multicasting
- RF and FM-baseband spectrum displays
- Serial/USB/Network data interface
- Serendipitous alarm tallies

HD Radio
LICENSED PARTNER

Inovonics **Also see our full range of RDS/RBDS solutions**
Look for the GIANT RADIO!

Legendary sound man Bob Heil showcases large diaphragm dynamic microphones

TransAudio Group
1-702-365-5155
presents

HEIL SOUND Booth N407
www.heilsound.com



return discs to like-new condition.

Also: TapeChek Pro Line Tape Recycling and Rejuvenation Systems

RTW Radio-Technische Werkstätten N3400

RVR Elettronica N1133

Rycote Microphone Windshields N2731

Sabre Towers N2831
On Display: Towers and tower components

SADIE Inc. N2138

Sam Woo Electronics Co., Ltd N3911

Sanken Microphones/Plus24 N4011

Intro: DCD-8 Word Clock Distributor, a word clock distributor/generator; also, Sanken C0-100k Studio Condenser Microphone, a 100 kHz mic for professional recording, not just measurement purposes; the Sanken CS-1 Short Shotgun employs the same technology as previous Sanken mics in a smaller, ultra-compact housing.

SBS/Eddystone N3805

Schulze-Brakel GmbH N4532

SDS C9119

Intro: SDS\Broadcast, Microsoft Windows-based integrated broadcast software for television, networks and radio stations, it incorporates sales, traffic, programming, operations and billing into a single solution
Also: SDS\Traffic, SDS\Proposal, SDS\VAR

Sencore Inc. SU3009, C3810

On Display: Digital audio analyzers.

Sennheiser N1822

Intro: SK 5212 is extremely frequency agile. It features a 36 MHz tuning window in which you can access up to 7,200 frequencies in 5 kHz steps, across the UHF spectrum (450-960 MHz); also, the NET1 Network System acts as a hub for up to 10 Sennheiser wireless systems. It coordinates and automatically configures frequencies for connected components and portable units through wireless sync on the front panel. NET1 can operate as a standalone device or connect via Ethernet to a PC for control of frequency coordination and parameters vital to the operation of multi-channel RF systems; also, the 3250 series of wireless monitors for demanding stage applications.

Seratel Technology N1733

Shively Labs N1517

Intro: 2914 low-power bandpass filter, compact bandpass filters for FM stations under 1000 watts; also, the 2912 low-power notch filter, notch filters for FM stations under 1000 watts; the 2930 Low-Power Branched Combiner, a branched combiner for combining two or three FM stations under 1000 watts into the same antenna; also, the 2940 low-power balanced combiner, a branched combiner for combining

two or more FM stations under 1000 watts into the same antenna.

Also: FM broadcast antennas, FM combiners, coaxial transmission line components.

Shure Inc. N1307

Sierra Automated Systems N907

Intro: Rubi-T Mini Console, Mini Rubicon broadcast console, 6" high, any number of input modules, monitor modules, talkback modules. Ideal for news booths, edit booths, voice booths, voice tracking, mini secondary effects mixer in on-air studios and lots more. Features full-length 100 mm P&G fader, On/Off, four programmable source select or bus assignment buttons; also, turnkey project management, design, fabrication and installation, radio broadcast studio design, furniture, pre-wiring and on-site installation. SAS' studio design team brings a combined 50 years of experience in major market projects. We manage the project from design to completion, teaming with a select group of top-notch custom broadcast furniture makers and field wiring crews.

Also: Rubicon Broadcast Consoles, 32KD Digital Routing Switcher

Howard Mullinack, Director,

Strategic Planning

2625 North San Fernando Boulevard

Burbank, CA 91504-3220

(818) 840-6749

(818) 840-6751

E-mail: radio@sasaudio.com

Web Site: www.sasaudio.com

SIRA S.R.L. N1131A

Society of Broadcast Engineers Lobby

Solid State Logic N822

Intro: C Series Digital Consoles, the C100, a broadcast console with an "all-in-one" rack design, scalable control surface, TFT channel metering displays and 5.1 surround capabilities. The C200 is based on the MTP control surface and provides dedicated one knob per function control surface. It is suitable for creative mixing applications, such as music or entertainment, where hands-on access to a large number of controls is essential. The C300 is a compact, assignable console for sweetening and mix creation; also, the AWS 900 analog workstation system combines processing and digital; also, rack-mounting outboard signal processing units

Solutions Radio BV N3434

New: Stand-alone Webradio (WMA and MP3) for easy listening to the Internet without the use of a PC/computer. A standard telephone line or DSL connection suffices.

Songs To Your Eyes Ltd. C2163

Intro: Metal Rock Riffs & Heavy Beats Vol.3. Our latest CD release featuring live metal rock bands playing afro instrumentals for production companies dealing with Xtreme sports, action, reality shows etc; also, Lounge/Groove/Elec-

tronic Vol.3 is a collection of trip hop grooves; Hip Hop Instrumentals Vol.4, the work of platinum recording artist Spike Rebel from Chicago; Trailer Music Vol.2, Composer Chris Farrell has scored over 20 feature films. This CD showcased his work with live orchestras. Vocal Cocktail Vol.2, our latest vocal compilation features the work of numerous talent in the genres of Hip Hop, Rock, '80s, Pop and Dance Music.
Also: Production music library, music consultation, clearance.

Sonic Solutions SL3750

Sonifex Ltd N4507

Intro: DHY-03 offers digital telephone performance over a standard analog phone line without compression, universal line compatibility, input and output gain adjustment, typically 75 dB rejection, input and output metering, conferencing, RS-232 serial control, local/remote line hold switching, integrated auto-answer, a balanced mic/line input and balanced line output; also, RB-ADDA2 combined A/D & D/A converter, 24 bit 192 kHz, a 1U rack-mount which produces an AES/EBU, S/PDIF or Toslink optical level digital audio output from a balanced XLR or unbalanced phono stereo audio input and vice versa. It supports high sample frequency rates up to and including 176.4 and 192 kHz, has additional independent AES/EBU and Word Clock synchronizing inputs so that the A/D and D/A sections can operate independently, has front-panel push-button switches for main settings and a serial RS-232 port so that the RB-ADDA2 settings can be controlled remotely.
Also: Net-Log 4 channel network audio logger. S2 analog/digital radio broadcast mixer. Redbox range of DACs, word-clock, audio & headphone DAs, microphone & matching amplifiers, mixers, source selectors, silence detectors, limiters, a power controller and stereo to mono converters.

Also: Net-Log 4 channel network audio logger. S2 analog/digital radio broadcast mixer. Redbox range of DACs, word-clock, audio & headphone DAs, microphone & matching amplifiers, mixers, source selectors, silence detectors, limiters, a power controller and stereo to mono converters.

Sound broadcast service Ltd. N3805

Sound Devices LLC N3915

On Display: MixPre, 302 and 442 Field Mixers, 7-Series Audio Recorders
Mr. Jon Tatoes, Managing Director
300 Wengel Drive
Reedsburg, WI 53959
(608) 524-0625
(800) 505-0625
Fax: 608-524-0655
E-mail: jon_tatoes@sounddevices.com
Web Site: www.sounddevices.com

Sound Ideas C2151

Intro: Series 6000 Extension VI, collection of general sound effects on 10 CDs and one DVD ROM; Headline News Music, 81 tracks of royalty-free production music tailored for newscasts; Club Elements, 420 musical elements with a "club feel" on two CDs; Podcasting Production Toolkit, 128 kbps MP3 sound effects and music on one CD-ROM for podcast productions; and Twisted Tiger Music II, 100 royalty-free music tracks.

Also: Mix Music, Twisted Tiger Music, Mix Signature Music.

Soundcraft N2426

Intro: BB100, small-format analog audio console in four chassis sizes with up to eight subgroups, four internal mix-minus feeds and eight aux busses; MH2, medium-format dual-purpose live sound reinforcement console in four frame sizes with four stereo channels, four-band sweepable EQ and 10 aux channels; Live 8, full-featured front-of-house desk in four frame sizes with two stereo channels, eight group busses and UltraMic+ preamps; EPM compact multiformat audio mixer in three frame sizes with two stereo channels, two configurable aux busses, three-band EQ and transparent GB30 preamps.

Also: RM1ds and RM1d digital on-air audio consoles and B800 and B400 analog broadcast audio consoles.

Soundfield Ltd. N1326

Intro: ST350, portable surround microphone system with the ability to feed B format and stereo signals simultaneously.

Soundminer Inc. C2063

Intro: Soundminer XP, a Windows XP version of the Macintosh OS Soundminer asset-management system.
Also: Soundminer asset-management system.

SRS Labs Inc. N731

Staco Energy Products C107

Stagetec/Salzbrenner Stagetec Mediagroup N3502

Stainless LLC C2447

On Display: Towers and tower modifications; analysis and engineering studies; installation and maintenance services.

Statmon Technologies Corp. C8511

Intro: Axess v. 6.1, the latest version of the Axess remote control and facility management product suite uses Internet protocol to provide multisite, multiuser facility control and management, including EAS remote operation, alarm management and notification and data logging; EIF-32+, Web-enabled facility management and remote control solution with 10/100baseTX network connectivity and support for up to 192 channels of telemetry, status, control, external serial device connection and on board temperature, voltage and humidity sensors.

Stratacache SU231

On Display: OmniCast, data distribution software that consumes minimal network bandwidth and server resources when sending digital content.

Stratos C9843

Intro: BGAN, Broadband Global Area Network mobile satellite service providing simultaneous high-speed data up to 492 kbps and voice connectivity from almost anywhere from a lightweight satellite terminal.
Also: Inmarsat, Iridium, Globalstar and VSAT solutions.

Studer N2426

Intro: The OnAir 3000Net option migrates OnAir 3000 desks from a standalone operation to an open, networked environment that taps connected Studer SCore units for control and access to all interconnected audio sources; also, the Call Management System (CMS) uses VoIP technology to replace the physical telephone hybrids and codecs with integration to most PBX systems with VoIP interfaces, as well as POTS lines, ISDN lines or the Internet.

Also: Vista 8 digital live production mixer; OnAir 3000 and 500 Modulo on-air audio consoles.

Superior Broadcast Products C131

On Display: FM solid-state transmitters, FM broadband antennas, coax and transmission line and connectors.

Superior Electric N708

On Display: Stabiline power quality products, including automatic voltage regulators, uninterruptible power supplies, transient voltage surge suppressors and power conditioners.

Switchcraft Inc. C9316

Intro: Studiopatch Series audio patchbay with support for the EZ Norm concept and geared

Product Showcase



Model DAI-2 Dialup Audio Interface

- perform unattended remote broadcasts
- DTMF operated controller with relay outputs
- fully programmable output on any key press
- momentary and/or maintained relay outputs
- four logic inputs with programmable output
- balanced audio input and output with ALC

Sine Systems inc.

615.228.3500

more information: www.sinesystems.com

toward use with digital audio workstations; EH Series connectors mounted in XLR panel housing, including BNC, RCA, USB, FireWire, DB-9, DB-15 and other styles.

Also: Audio connectors, patchbays/patchcords, adapters, jacks/plugs

Symetrix Inc. N2414

Intro: GENx192 low-jitter studio master clock with eight Word, four AES-11 and two S/PDIF clock outputs, as well as AES-3/11 and Word clock input; 88192 eight-channel A/D/D/A converter; Orion 8088 DSP with eight analog line-level inputs, +4 dBu / -10 dBV software selectable and eight analog line-level outputs, +4 dBu, as well as two 66 MHz Sharc floating point processors and RS-232, RS-485 and Ethernet control ports; 6200 digital voice processor with dual mono or stereo operation mic preamps, filters, de-essers, EQs, compressors/limiters/AGCs and symmetry, stores up to 256 voice profiles with recall by remote or time-of-day schedule.

Also: 6100 broadcast audio profanity delay, 581E audio distribution amplifier, 304 headphone amplifier and 422 stereo AGC-leveler.

Systems Wireless C5119E

Tascam SL2913

Intro: HD-P2 high-definition portable stereo recorder supports up to 192 kHz/24-bit recording with two built-in XLR mic-level inputs with phantom power and storage to CompactFlash with time-code input.

Techni-Lux Inc. C9641

Intro: Gaffstage Tape, cloth tape with a non-residue adhesive designed to not leave a gooey mess on cables upon removal.

TecNec Distributing C5541

Intro: JackReel-3 high-capacity steel-frame cable reel with a cushion-grip carry handle; JackReel-CVR3 connector plate mounts on a JackReel-3 center hub for punching and loading a variety of connectors on the reel; DelvCam DELV-LCD1 combo stand for an LCD monitor; and VESA LCD mounting bracket for field and studio monitoring.

Telecast Fiber Systems Inc. SU4717

Telestream Inc. SL2781

Intro: Flip4Mac WMV Components extend QuickTime-based applications so that Mac users can play, import and export Windows Media video and audio files on Mac OS X.

Telos Systems N2714, N2515

On Display: POTS/PSTN and ISDN codecs, ISDN hybrids, interface products for talkshows, teleconferencing, audio production, remote broadcasts and intercom applications.

TextCaster C10247

Intro: TextCaster, permission-based text messaging system for delivering information to listeners via SMS text messages; iBAS Internet Broadcast Alert System, software application gives law enforcement personnel the ability to feed public safety information, such as AMBER Alerts, into a station's Emergency Alert System, Web site, text messaging service, etc.

TFT Inc. N2012

Intro: 5200 Series STL transmitter and receiver with front-panel frequency agility for analog composite or monaural STL or backup applications.

Also: STLs, RPU's, modulation monitors and Emergency Alert Systems.

THAT Corp. N1224

Thermo Bond Buildings N4518

Tieline Technology N3215

Intro: i-Mix G3 mixer-codec and Commander G3 field and studio codecs adds wireless broadcasting over the Internet capabilities via a broadband cellular network to its PSTN/POTS, ISDN, GSM wireless and wired Internet transmission capabilities.

Also: Commander G3 field and studio codecs; i-Mix G3 codec with built-in mixer; and ProSolutions audio/video products.

Torpey Time SU946

Intro: Model CLK-29 compact clock display able to display time information from Leitch, ESE, SMPTE, EBU, DQS, IRIG-B, NPR or NMEA-183 time code.

Tower Consultants Inc. N2034

Tower Elevator Systems Inc. 2116

Intro: Smart Reel Control System, direct wired

control with a dial tone capable intercom communications system for tower elevators; Trac-Cab gear-driven elevator for towers.

Tower Engineering/KPFF N3037

On Display: Tower analysis, inspection, design, retrofit and upgrade services.

Towerline Software LLC N607

Transaudio Group N407, N1326

Transradio SenderSysteme Berlin AG N404

(formerly Telefunken SenderSysteme Berlin AG)

Intro: The DRM DMOD2 Digital Radio Mondiale exciter for the 9 kHz to 27 MHz frequency range includes a passive reserve, RF backchannel, single- (SCS) and multi-channel simulcast (MCS) functions, audio

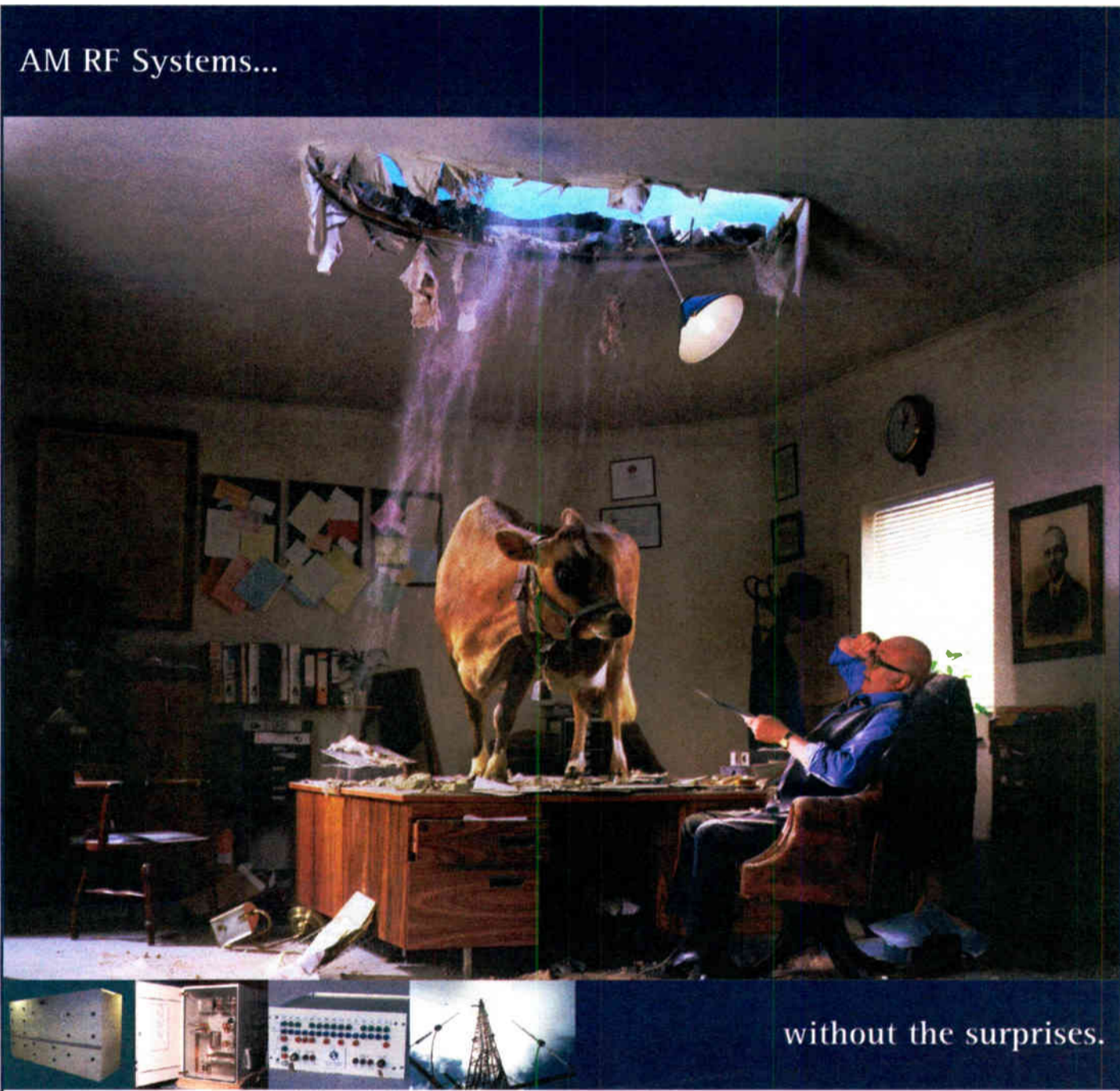
encoder and GPS receiver.

Also: MF transmitters, VHF/FM exciters, DRM exciter and DRM receivers

Jochen Huber, CEO
Mertensstraße 63
DE-13587 Berlin
GERMANY
011-49-30-33978-0, ext. 501
011-49-30-33978-500
FAX: +49-30-33978-599
E-mail: j.huber@tsb-ag.com
Web Site: www.tsb-ag.com

Triangle Software LLC C9313

Intro: Online Mapping, zoomable maps showing traffic flow and up-to-the-minute traffic incidents with interactive mouseovers provides real-time traffic speed and incident data; BeatTheTraffic technology allows users to personalize information for their own travel routes.



AM RF Systems...

without the surprises.



LBA Technology, Inc.

Expert AM RF systems for the experts.

LBA Technology is a proven supplier of innovative, digital ready AM antenna systems. With an array of products, we continue to emerge as an industry powerhouse with products including; antenna tuning units, HD radio, directional antenna systems, multiplexers, folded unipoles and components for every power level.

With over 40 years of worldwide radio experience, we offer unequalled depth and breadth of products to ensure you're working as smoothly as possible. Go to www.LBAgroup.com and take a look at why hundreds of broadcasters look to us to help them... every day.

TSL SU1433

TWR Lighting Inc. N1511

Tyloon Inc. SU853

Intro: Online yellow pages and local search engine for searching in English, Spanish, Chinese or a mixture of languages through a database of 15 million U.S., Chinese and Canadian businesses. Japanese, German and French support to be added.

UK/US Partners Pavilion N4208

Unimar Inc. N2134

On Display: Obstruction lighting products for towers and hazardous areas; strobes, incandescent, LED, dual lighting and custom-design solutions

Unlimi-Tech Software SL5407

Intro: FileCatalyst, file acceleration software for sending large digital files over slow or congested networks; Files2U, Web-based file sharing solution.

Utility Tower Co. N2522

On Display: Broadcast towers.

Valcom Limited N419

VCom Inc. SU547

Intro: VistaMax wireless broadband products based on the WiMax standard, including coverage options suitable for densely populated urban environments.

VDB Audio N3917

viaRadio Corp. N1431

Intro: VA20, rackmounted DSP-based RDS decoder with screen and jogwheel can monitor up to eight stations with different alarms for each, including signal measurements such as low modulation and RF and reporting of alarms via e-mail or SNMP, an on-board MP3 engine can skim and record audio to compare sound, spots, etc; VC02, DSP-based RDS/RBDS encoder with screen and jogwheel to support all RDS/RBDS features, including scrolling text, can also act as a backup remote control with 11 relays and inputs and reporting of alarms via e-mail and SNMP; Emergency

Warning Radio System, branded dual-tuner clock radios with large text display that respond to RDS weather, emergency and community-service messages.

Also: RD10, RDS receiver in serial and USB versions for data applications such as road signs and billboards.

*Bill Marriott, President
760 North Drive Suite B
Melbourne, FL 32934
(321) 242-0001, ext. 111
E-mail: info@viaradio.com
Web Site: www.viaradio.com*

Videoquip Research Ltd. C6736

Intro: AVD-2, video and audio silence detection with a 2-x-1 video and stereo audio switching network for main and standby video and stereo audio signals, switching decisions based on a variety of signal-loss conditions; AVU-8H, high-resolution meter for digital AES/EBU audio signals with four digital inputs and an optional ADAT connection and eight 52-segment multi-color displays with scales superimposed within the display.

Also: Phase 3.

Vinpower Digital Inc. SL4585

Intro: Titan Pro, large-capacity robotic CD/DVD autoloader duplicator can duplicate up to 1,000 CDs or DVDs overnight; Titan lite, 100-disc-capacity robotic CD/DVD autoloader duplicator; and SharkCopier, standalone DVD/CD duplicator.

Visual Radio N2725

Voice Technologies c/o Redding Audio N3038

V-Soft Communications N3922

Intro: Probe 3, mapping and signal propagation prediction program for the 20 MHz to 20 GHz frequency range with polygon mapping graphics and precise coordinate information and map projections; FMCommander, FM allocations program for standard minimum separations studies and contour-to-contour frequency searches with a new antenna pattern editor; AM-Pro, AM standard band broadcast coverage and allocation study program plots both ground- and sky-wave signal contours as well as performs RSS studies with an interactive pattern editor for constructing and editing directional antenna sys-

tems; Terrain-3D, uses OpenGL graphics technology to model RF signals from 20 MHz to 20 GHz over a 3-D terrain graphic.

Ward-Beck Systems Ltd. C326

Intro: AMS8 Series multichannel audio monitors with Dolby E/AC-3 decoding available as well as analog audio and discrete AES/EBU digital audio outputs and HD/SD disembedder to extract Dolby or discrete AES from an HD/SD video signal; SLM-8E stereo loudness meter with four discrete AES/EBU inputs or Dolby E/AC-3 input when Dolby decoder is installed with VU/PPM bar-graph LED meters.

Also: PODS, SLM Series stereo loudness meters, Serialboxx and 8200 Series distribution amplifiers and converters, IMP Series AES/EBU baluns, AMS4 audio monitors, XTM4 extended range test meter, Audio Bit Buddy and Audio Bit Spitter.

Weather Bug/AWS Technologies N105

Wegener Communications SU1376

Intro: Audio iPump 6420 media server, designed for regionalizing affiliate radio broadcasts with file-based program distribution mixing seamlessly with live programming, incorporates an integrated digital satellite receiver, IP router and multimedia server with digital and analog audio output, as well as streaming functionality, handles customized playlists, network control commands and audio programs transmitted over satellite to targeted iPump Media Servers for storage or output for live broadcast, onboard AM/FM tuners digitize the bookkeeping of advertisement plays.

Also: Satellite IRDs and COMPEL network control.

*Raj Babbar, VP of Worldwide Sales
11350 Technology Circle
Duluth, GA 30097
(770) 814-4000
E-mail: r.babbar@wegener.com
Web Site: www.wegener.com*

Wheatstone Corp. N1815

Intro: Audio over IP automation interface, single-wire direct connection between a Bridge networked audio system and the station automation system, eliminating the need for soundcards; 5200 D utility news mixer with analog or digital program master output and assignable mix-minus bus output; D-7 and D-12 TV consoles for on air and production; Audioarts Engineering AE-Net 8 audio networking system with eight network ports for audio I/O or console interface; Vorsis AP1000, multiband, dual-path FM-plus-HD processor; Vorsis HD P-3, HD Radio multiband processor; and Vorsis M-1 digital microphone processor.

Also: Generation Series control surfaces; SR-9 surround sound control surface; Wheatstone Bridge and Wheatnet 4864 central switch networked audio products; Audioarts R-55 e, D-75 and A-line studio furniture; and Vorsis AP3 digital signal processor.

Whirlwind C6541

WhisperRoom Inc. SL4387

On Display: Sound Isolation Enclosures

White Sands Engineering C739

On Display: Mini RG-59 one-piece connectors, BNC, F, RCA and specialty crimp and compression, Mini RG-59 23 AWG coax cable, one-piece RG-59 and RG-6 connectors.

Will-Burt Co.The C7543

On Display: Telescoping pneumatic and manual vehicle masts and accessories

Winsted Corp. SU741

Intro: Talon free-standing console with multiple talons for supporting large and small flat-

screen displays; EnCompass II workstation for desktop LCDs or CRTs with full wire and cable management; Slim-line console with Corian worksurface and modular tube monitor wall with open or closed architecture and wire raceway management, adjustable worksurface, multiple chase widths and TruForm decorative side panels.

WireCAD C9310

Intro: WireCAD v. 4 creates .DWG compatible drawings and specialized reports, such as cable labels, run-sheets, bill of materials, without any need for the user to have drafting skills, new functions include AutoRack and AutoScheme layout and drawing tools, WireCAD also maintains conductor level data, creating both pin-out lists and conductor detail drawings.

*Lisa Holbrook, Sales
1300 S. Secretariat Way
Nampa, ID 83686
(661) 253-4370
FAX: (661) 310-9251
E-mail: sales@wirecad.com
Web Site: www.wirecad.com*

WireReady NSI N500

Intro: RDSReady expands data delivery on FM, HD Radio and Internet streams beyond automation system capabilities by generating RS-232 based "now playing" data, multiplexing additional time-based announcements, integrating wire-service headlines or EAS alerts, school closings, traffic or weather and other promotions; AlertReady, automatic alert notification and archiving system for EAS Receivers and AMBER Alerts; MpegReady, automatically converts MPEG and WAV files whenever an MPEG or WAV file is saved to a particular folder or location on a LAN; PodcastReady, automatically records, converts, compresses and pastes together playlists of standard WAV or MP3 files and then publishes the podcasts along with RSS feeds to one or more Web sites.

Also: ControlReady automation for satellite news/talk and music on HD, NewsReady electronic newsroom, WebReady web content delivery system and SalesReady broadcast telesales and AE contact management software

*David Gerstmann, President
56 Hudson St.
Northborough, MA 01532
(508) 393-0200
(800) 833-4459
FAX: (508) 393-0255
E-mail: sales@wireready.com
Web Site: www.wireready.com*

Wireworks Corp. C3043

WIT Inc. N3039

Xytech Systems Corp. C860, C11610-MR

Intro: Shift Scheduling; Article Management; and Quality Control.

Also: Enterprise v. 8.5.

Yamaha Corp. of America N3222

Z Technology C2039

On Display: R-507 programmable field-strength meter for AM and FM measurements.

Zaxcom N4227

Intro: TRX900 and TRX990 for boom applications, digital wireless microphone transceivers with built-in IFB receiver, RF remote control and up to six hours of internal recording with time code synchronization; RX4900, combines four stereo receivers in 1 RU of space; Deva Mix-12, mixing surface for Deva IV and Deva V hard disk audio recorders.

Also: Deva IV and Deva V hard disk audio recorders; stereo ENG digital wireless systems.

Easy Ordering in Nanoseconds



With the ONLY 1,700+ page catalog of the NEWEST information 4 times a year, and daily updates to over half a million products on-line, you can depend on Mouser for easy ordering in nanoseconds!

mouser.com (800) 346-6873

MOUSER
ELECTRONICS

a tti company

NEW Products
NEW Technologies
NEW Suppliers



Radio World, March 29, 2006

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

The King of Shipboard Containers

by John Bisset

Grady Moates of Loud and Clean Consulting in Boston has a contract client who is king of the shipboard storage containers. I'd heard of using these steel containers for transmitter buildings, but never seen the idea implemented in such a grand way.

Langer Broadcasting Group President Alex Langer has chosen 8x20- and 8x40-foot buildings for about

Fig. 3 shows panel-mounted coupling components bolted to the steel wall. Partly visible at the right rear of the picture, electrical boxes and conduit are mounted to a wooden board, also bolted to the wall.

White-painted walls and corner-mounted florescent fixtures keep the building bright, helpful for maintenance and troubleshooting. The doors are double-latched, with a rubber gasket, so the inside is clean and dry.

Reach Grady Moates at grady@loudandclean.com.

tripping at the proper current. Ask any electrician and they will tell you circuit breakers can fail. John was tempted to install a similar design to reset a plate breaker on a CCA transmitter. It too had the annoying habit of tripping in the middle of the night, about once every two weeks. John, also, had assumed the breaker was doing its job, but found he was wrong.

He tested the 175A, three-phase breaker and discovered the middle section would only hold 115A for about 30 seconds. The normal input current for the plate transformer was 112A per phase in the daytime. No more calls after they replaced the breaker.

In case readers are wondering how they tested a 175-



Fig. 1: A nice clean interior for a transmitter shack.



Fig. 2: Conduit is used to link storage containers.



Fig. 3: Securing copper ground strap

\$3,000 new. Compare that to a concrete building running \$25,000 or more.

Used containers may be less expensive, Alex says, but you never know what you're going to get. The extra money for a "new" container is well spent, according to Alex. The new containers are painted inside, as seen in Fig. 1, and the steel shielding is an added benefit, according to Grady.

At one site, three storage containers hold the main transmitter, the phasor, the auxiliary transmitter and the tower coupling network. Inter-container cabling is handled through conduits linking the buildings, seen in Fig. 2.

★ ★ ★

John Stortz is engineering manager for the Moody Broadcasting Group in Central Florida. He writes that he was disturbed to read about the "remote relay reset assembly" in our Feb. 1 column. No wonder the inventor wanted to be anonymous, he said.

John's hope was that this was only installed as a temporary solution. Unfortunately, "temporary" can become "permanent" easily, especially at stations where the owner/manager counts every penny.

He suspects this engineer assumed the breaker was

amp breaker, John and his staff used 175 amps, of course. They built an adjustable high-current power supply from the "Junque Box," which cost almost nothing.

The first item is a good chunk of iron for a transformer. They had an old plate transformer sitting around from an HT-20 transmitter with one shorted secondary. It was too heavy to move, so John had been cutting the copper off, before attempting to tear apart the iron, to reduce the weight to manageable pieces for disposal.

John's assistant, Don Jeerings, pressed him to save the iron, with the primaries intact. This became the start for

See NUBS, page 46 ▶

The Last Word in RDS/RBDS

A complete range of RadioData products to meet every need!

Model 702

"Mini Encoder"

Our low-cost "Mini Encoder" supports simultaneous Scrolling-PS and RadioText messages for station IDs, promos and advertising, plus all the housekeeping IDs and flags. Quickly installed and easily programmed with Windows® / USB interface.



\$420

See us at NAB Booth # N3206

Model 712

Dynamic Encoder

The RS-232 serial port ties directly to station automation to scroll song artist/title info and promos or advertising. The PS and RadioText fields are simultaneously available for greatest messaging capability. Static house-



keeping data is easily programmed with the supplied Windows® software.

\$1250

Model 713

TCP/IP Dynamic Encoder

All the messaging functionality of the Model 712, but with direct LAN/Internet connectivity. 3-way addressability: TCP/IP network, serial RS-232, USB. Supplied with Windows®



software for network setup and static register programming.

\$1690

Model 510

Decoder/Reader

Monitor, decode and log all the RDS data groups. Read the data from the front panel or use the supplied Windows® software for further analysis and logging.



\$1700

Visit www.inovon.com for full technical details.

Inovonics
1305 Fair Ave. • Santa Cruz, CA 95060
TEL: (831) 458-0552 • FAX: (831) 458-0554
www.inovon.com • e-mail: info@inovon.com

See us at NAB Booth # N3206



Fig. 4: Slip a plastic nub over that long bolt to save yourself a headache.

Nubs

► Continued from page 45
 their high-current breaker tester. Now the transformer needed a low-voltage/high-current secondary. Don had about 25 feet of heavy welding cable that had fallen off some contractor's truck, which he found laying on a highway. It became the three-to five-turn secondary, with enough extra cable to conveniently reach to the breaker.

One more item was needed, which was contributed from another engineer's Junque collection — a 50A variable autotransformer, sometimes known by the brand names Variac or Powerstat. Although the autotransformer was oversized, the price was right. Probably a 10-amp autotransformer would have

done just as well.

The autotransformer allowed the engineers to dial up any voltage between zero and about 130V, which was applied across the 240V primary of the old plate transformer. The secondary, connected to the breaker only, would produce any current from zero to over 300 amps, depending on the autotransformer setting. A clamp-on ammeter that they owned would read a maximum of 300A.

Dealing with 300 amps sounds dangerous, but it's not. At the setting for 300A, the open circuit secondary voltage was about one volt, as John recalls.

After replacing the breaker, no more dropouts. Since this test, John and Don have installed casters to the old transformer to make it easier to move around.

John Stortz is at ka4flx@aol.com.

Don't whack your head on all-thread or bolts supporting cable trays or RF line inside your transmitter plant.

Flexible plastic nubs can be found at any electric supply company. Slip them over the dangerously sharp edges. The plastic protectors also keep threads clean, so if you ever need to remove or readjust the bolt, you won't experience the frustration of knurled threads.

RSI, which offers RF safety training and compliance, is coming to Chicago in April, and other locations are scheduled.

RF safety is serious business; compliance to regulations is not optional. The costs of compliance are affordable to any licensee, employer or property owner. Regulations are straightforward and so are the solutions to becoming compliant.

RSI's RF Site Safety Awareness seminar helps attendees understand FCC and OSHA policies and informs participants of radiofrequency and general safety issues. Its class is intended for people responsible for or working in RF environments.

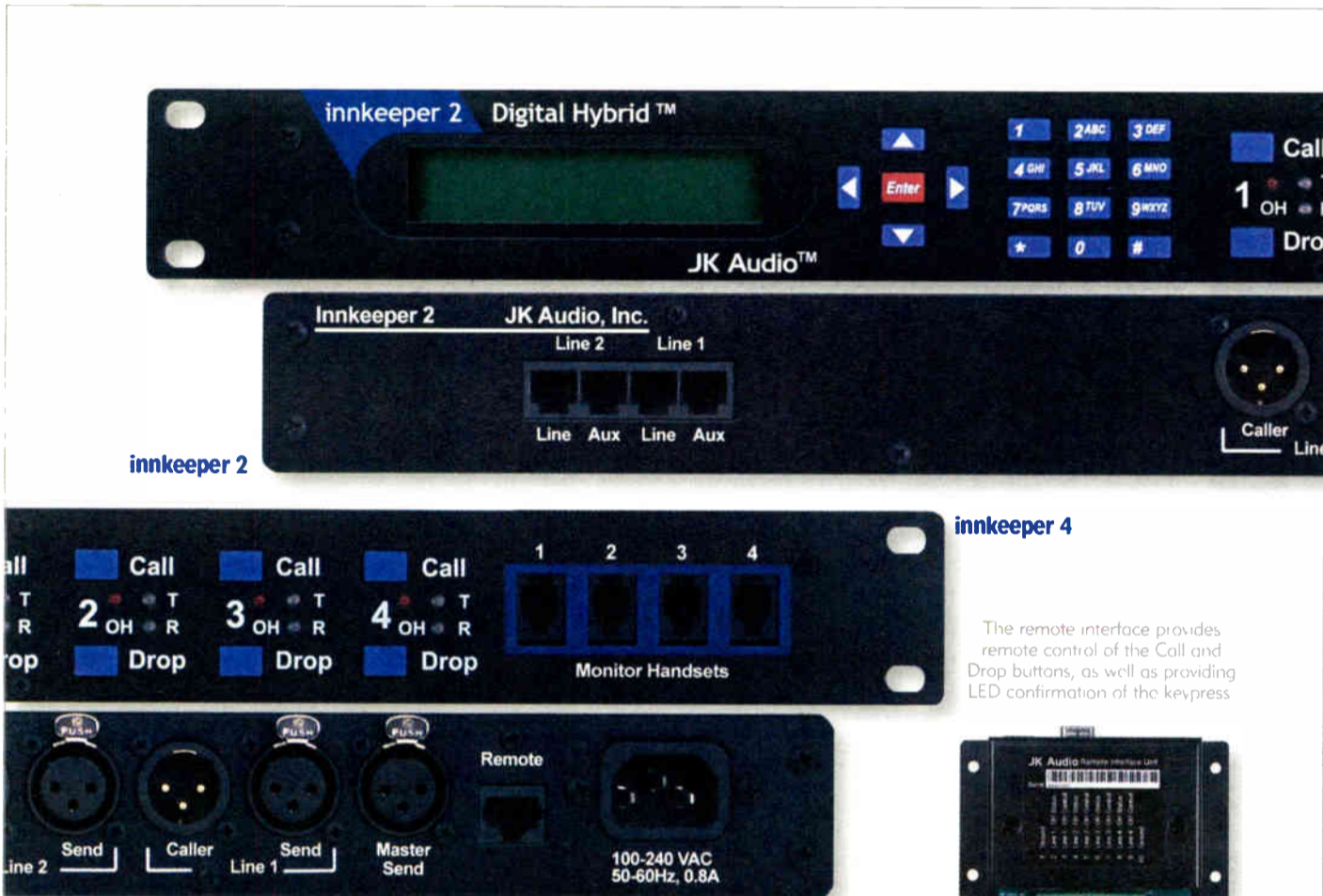


Fig. 5: RSI has a number of RF safety seminars on the schedule.

For larger companies, the company also offers an RF "Train the Trainer" seminar, a three-day class that teaches you how to train your own employees. Participants also receive a 10-hour OSHA card.

Reserve a seat by calling RSI at (888) 830-5648 or register online at www.rsi-corp.com.

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is the northeast regional sales manager for Broadcast Electronics. Reach him at (571) 217-9386, or jbisset@bdcast.com. Faxed submissions can be sent to (603) 472-4944. Submissions for this column are encouraged, and qualify for SBE recertification credit.



REMOTE CONTROL. PHONE BOOK. FLASH MEMORY. AUTO-ANSWER.

innkeeper 2 & 4 multiple digital hybrids kinda redefine the entire concept of "work.."

There are times when a single digital hybrid just isn't enough, but rack space is at a premium. No sweat. Innkeeper 2 and innkeeper 4 squeeze two or four independent digital hybrids (respectively) into a 1U rack space.

The front panel keypad, display, and handset jacks provide easy speed dialing and call setup. Digital hybrids allow you to send signals into the phone line while maintaining excellent separation between your voice and the caller. The balanced XLR output jacks contain only the caller's voice. The Digital Signal Processor (DSP) continuously monitors both the phone line and audio signals to deliver excellent separation. This

proprietary, dual-convergence echo canceller algorithm can achieve excellent separation without any setup and without sending a noise burst down the line.

Innkeeper 2 and 4 feature Auto-Answer/Auto Disconnect for use in on-air applications such as telephone interviews and talk shows as well as behind the scenes applications like intercom, monitoring and conference room full duplex applications.

When your application calls for multiple digital hybrids that are smart enough to know how to handle the workload, innkeeper 2 or innkeeper 4 are your best choice - by a long shot.

JK Audio

TOOLS FOR SUCCESSFUL RADIO

JK Audio, Inc. Sandwich, IL 60548 USA • Toll Free: 800-552-8346 • Tel: 815-786-2929 • Fax: 815-786-8502 • www.jkaudio.com • info@jkaudio.com

See us at NAB Booth # N4215

Surround Compatibility Revisited

A Face-Off With Frank Over MPEG Surround and Treatment of Surround Broadcasting Compatibility

The Feb. 1 issue of Radio World included an opinion piece on the editorial page titled "Compatibility Begins at Home." It described the dilemma faced by broadcasters as they move toward backward-compatible surround sound broadcasting, but find that much of the 5.1-channel music content available today is produced in a form that may not be compatible to stereo or mono listening.

The column posed the central question of how FM stereo would have fared if much of the stereo music content of the day had not summed well to mono.

Point

To restate the premise of the opinion piece, this problem stems from practices the music industry has followed since the introduction of DVD-A and SACD release formats for surround content. Unlike the old quad days, or the tradition of the TV and cinematic industries — where an audio encoding system allows a producer to create a single sound mix to

I mostly agree with 'Compatibility Begins at Home,' but it leaves the impression that all surround systems are affected by the downmix problem.

— Frank Foti

address all listening arrangements — the large storage capacity of these new formats allows the inclusion of separate stereo and surround versions of a release's content.

This allows surround music mixes to be optimized for surround listening only, without regard for how they might sound when "downmixed" to stereo or mono. While this approach provides content creators with considerable creative freedom, it does not mesh well with the spectral efficiency requirements of broadcasting, which call for a singular, compatible solution.

Given this context, the RW opinion concluded that all the effort underway to develop a compatible mono/stereo/surround broadcasting system for HD Radio might be in vain if there was not a large and reliable source of content that could take advantage of it. If surround audio is produced in a non-compatible manner to begin with, no transmission system, however ingenious its design, can make the content compatible downstream.

Therefore the opinion called for the broadcast and music industries to come to a mutually beneficial compromise, allowing radio stations to broadcast a single music mix that was compatible to all known listening formats.

Counterpoint

A well-known industry veteran took some issue with the opinion, however.

Frank Foti of Omnia/Telos fame — and a host of earlier, high-profile station chief-engineering credits — has been among those broadcast audio professionals actively involved with development of workable surround broadcasting for digital radio. Frank sent RW the following comment, from which I excerpt:

"I mostly agree with 'Compatibility

Begins at Home,' but it leaves the impression that all surround systems are affected by the downmix problem.

"Downmix is only a problem for the matrix schemes. The MPEG Surround technology can transmit the 'artistic' stereo mix as the producer intended it. Listeners receive exactly the familiar stereo/mono version with no modification of any kind. Fidelity might be a bit better, though, since both SACD and DVD-Audio disks have better resolution than 16-bit CDs.

"In some cases," Foti wrote, "the SACD or DVD-A stereo version might be re-mixed from the multi-track master to improve quality and motivate purchase

The Big Picture



Photo: Garry Hayes, BBC

by Skip Pizzi

of new disks. This happened in the transition from vinyl to CDs as well, and was seen as a benefit rather than a problem.

See SURROUND, page 48 ▶



HD RADIO™? I'M GOING WITH MOSELEY.

My challenge is to make the right STL choice for today, as well as for tomorrow.

With Moseley, it's no problem.

Check out their **Starlink SL9003Q-2SLAN**, the first STL to provide AES digital audio and Ethernet data over the traditional 950 MHz band.

Or add a bi-directional Ethernet LAN extension and serial data link to a new or existing STL with the license-free 900 MHz **Lanlink 900D**.

For T1 lines or license-free 5.8 GHz links, the **Starlink SL9003T1** STL/TSL transports bi-directional AES digital audio, Ethernet LAN extension, remote control, and telephones.

Your best connection to the future is a smart STL choice today. Take it from me, Moseley will insure that your station is ready for HD Radio™ and the new digital services of tomorrow.

Give the digital STL experts at Moseley a call for more details.



Dave Chancey 805 968 9621
Bill Gould 978 373 6303
www.moseleysb.com

Surround

► Continued from page 47

"Occasionally, the stereo version is completely different from the surround. For example, on the 'Tommy' SACD there are a couple of songs where the 5.1 versions are longer than the stereo versions. Pete Townshend used a different take for the 5.1. In cases like this, where the stereo mix is not useful, the simple ITU-775, 5.1-to-2.0 downmix method usually results in an acceptable compromise that is stereo/mono compatible and pleasing to listen to, though it may differ from the familiar stereo original.

"Matrix systems force stereo/mono listeners to a downmix because there is no way to transmit the original stereo ver-

sion. But then the matrix systems go on to phase-shift the channels as well — an even bigger problem. Even if music producers were able to somehow constrain their surround mixes for better down-mixed stereo/mono compatibility, you'd have the phase-shifting to contend with.

"I say, let producers mix as they wish. Let them go creatively wild to make the most impressive aural experience they can. Then let's broadcast that faithfully to wow our listeners," Foti concluded.

Rebuttal

I also agree with Frank on much of his rebuttal, but have to take issue with a few points. (I know he won't mind if in the interest of full disclosure we also mention that his company has historical business alignments with Fraunhofer IIS, one of the developers of the MPEG

Surround format.)

Yes, MPEG Surround attempts an elegant solution, and addresses some of the difficulties inherent to "matrix" (or what I prefer to call "composite") surround systems — i.e., those that encode surround information directly into the stereo audio mix, rather than extracting the steering data and transmitting it as a separate signal, as the "component" approach used by the MPEG Surround format does.

But it is not a panacea, nor does it provide its solution without some additional cost over composite systems.

First, if the MPEG Surround system is used in the way Frank suggests, such that the "artistic stereo" audio is broadcast along with steering data gleaned from the same song's surround mix, the stereo may come through as intended, but now

the surround reproduction may be compromised. Let's call this process *substitution*. It simply shifts the problem from the stereo to the surround listener, and although this may lessen the impact since that latter audience is smaller for now (and may always be), it's only a displacement of the issue, not a true solution.

Further, while this substitution approach is indeed unique to MPEG Surround today, it only works when the song's stereo and surround mixes are released in synchronized forms — which, as Frank mentions, is not always the case.

The MPEG Surround developers refer to these conditions (where the two mixes are actually different songs) as "pathological cases." I imagine some musicians would resemble that remark <rimshot>, but it doesn't allow MPEG Surround to work its substitution trick, and such cases may be on the increase.

So when the two mixes *aren't* synchronous, an incompatible surround mix will suffer from the same problem in MPEG Surround as it does with composite systems, since all the formats then rely on a downmix for the stereo audio. (And Frank's reference to such downmixing by an official ITU recommendation's algorithm may look impressive, but it doesn't make an incompatible surround mix sound any better.)

By the way, the music industry isn't fond of either the downmix or the substitution approach, since in each case they

Although MPEG Surround offers some unique help, it also presents some unique costs.

feel the broadcast may be violating the intent of the artist — either for the stereo or the surround output, respectively. The industry hasn't waded into the fray yet officially, but they have made informal public comment that they don't want radio messing with either mix. (One could counter that radio has always taken some liberties in this respect, given its tradition of audio processing, but that's another argument.)

Cost concerns

The substitution approach also would require the maintenance of a double music inventory by broadcasters.

This is not as big a technical problem as it sounds, since it's fairly easy to store all eight channels (5.1+2 = 8) together in a single audio file, for which there are already standard uncompressed audio file formats proposed. The ingest process might be a bit trickier and slightly more problematic here is audio routing, especially since not *all* content would be stored this way, and the main channel's digital and analog services would require separate feeds. Audio storage capacity also would be affected (such uncompressed surround + stereo files are 4x bigger than stereo-only equivalents).

I know Frank's colleagues at Axia have a good answer for this in moving to

See SURROUND, page 49 ►

WBS

POD SERIES
Smart Low Cost Solutions
To Every Day Problems

POD1
Balanced/Unbalanced Bidirectional Converter

POD2
6 x 1 Stereo Analog Switcher

POD4
Dual Mic Preamp

POD5
Dual Headset Amplifier with Talkback

POD8
1 x 6 Stereo Audio Distribution Amplifier

POD10
6 x 1 Digital Audio Switcher

POD12
Reclocking Digital Distribution Amplifier

POD13
Dual Digital to Analog Converter

POD14
Dual Analog to Digital Converter

POD18
Quad Balanced/Unbalanced Converter

POD26
6 x 6 Audio Level Amplifier

POD22 (Shown)
Stereo Loudness Meter

41 Segment Simultaneous VU and Peak Bar Graph Display
7 Segment Phase Correlation Meter
Stereo Analog and AES Inputs, A to D and D to A Converters Are Included

See us at NAB 2006, both C326

ward-beck systems

455 Milner Ave., Unit 10
Toronto, ON, Canada
M1B 2K4

416.335.5999
800.771.2556
ward-beck.com

POD-22 LOUDNESS METER

See us at NAB Booth # C326

NEWS WATCH

KGZO Suffers A Mighty Wind

One radio station and 15 various paging and communications companies with facilities on McKittrick Summit found themselves without power — or much in the way of buildings — after a powerful storm blew through the transmitting site just west of Bakersfield, Calif., in January, a story originally reported by the CGC Communicator newsletter.

Chris Compton, director of engineering at Radio Nuevavida told Radio World that forecasters had predicted

fairly strong winds as part of a typical Pacific winter storm. His local affiliate, KGZO(FM), then was knocked off the air. When the generator didn't power it back up, he went to investigate; what followed was a white-knuckled ride in his Jeep Cherokee up McKittrick in the dark.

When he arrived at the site he couldn't manage at first to get out of his vehicle due to the force of the winds. When he could finally investigate, "I had all I could do to stay upright." He said he could see cattle rolling down the side of the hill. Fearing for his safety, he returned down the summit, breaking a drive shaft on his Jeep. With the help of a farmer, he managed to get it off the mountain.

When he returned the next day he saw what he had driven through. "Power poles were on the ground like Pick-Up-Stix," he said. Dawn at the summit revealed devastated buildings,



KGZO's Transmitter Building

10-ton HVAC units hurled 20 feet from their moorings and broken drive shafts on Compton's Jeep.

However, KGZO's Ku dish remained, and when the generator was started, the station came on the air. The Crown transmitter, Shively antenna and satellite dish all survived.

The next off-air emergency seemed minor in comparison; another strong wind a week later blew a piece of debris into the dish, knocking out the LNB. That situation was rectified quickly, and KGZO continued broadcasting from the facility, thanks to a quick rebuild and restoration of power in difficult conditions.

— by Timothy Kimble

Surround

Continued from page 48

an IP-routed system, but some broadcasters may find this a bigger adjustment than they are willing to make just to add surround sound. Ultimately, that kind of system could be a wise choice when a facility move or rebuild is involved, but it's likely that more justification than surround conversion alone will be required for such a shift.

Finally, for its optimal operation the MPEG Surround system also levies an opportunity cost to the broadcaster by requiring the full-time dedication of ~5 kbps of a station's IBOC payload bandwidth to deliver the "steering data" component. While this may seem negligible today, it may not be considered so if a robust IBOC datacasting business evolves in the future.

Note also that neither the original opinion nor my response here takes any position on the relative aural fidelity or imaging quality of the various surround systems proposed for IBOC use. While those attributes should certainly figure into the holistic assessment that broadcasters undertake when considering any surround solution, the sole issue under discussion here is the compatibility question.

So although the MPEG Surround system offers some unique help on the compatibility problem, it also presents some unique costs to broadcasters in doing so. It also doesn't truly solve the problem. The sole, complete solution to this issue — as presented in the RW opinion column — remains downmix-compatibility in the original content. Let's hope the music and broadcast industries can work together and successfully resolve this matter in the near future, as they have done many times in the past.

Skip Pizzi is contributing editor of Radio World. RW welcomes other points of view; e-mail radioworld@imaspub.com.

Coming Up in RWEE

The April 5 RW Engineering Extra features:

- Engineering consultant Roy Stype
- Buc Fitch delves into HVAC systems
- Valentino Trainotti on the CFA
- Stephen Poole on computer network security
- Plus the latest from Guy Wire

Not getting RWEE? Subscribe at www.rwonline.com/subscribe/rwee

AirTools BROADCAST SOLUTIONS

See us at NAB Booth # N2414

ONE VOICE PROCESSOR FOR MANY FACES... 256 TO BE EXACT.



AirTools 6200 Digital Voice Processor

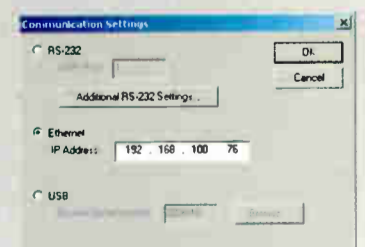
How do you get consistently great sound out of one microphone used by many different voices during the course of a day? Customized processing for each voice. The 6200 offers complete, real-time digital processing for microphones from a Windows PC or from the front panel. This allows each voice to have a completely unique sound which can be saved as one of 256 programs then recalled from the front panel, the RC-1 desktop remote, over a LAN, or automatically using the unit's on-board event manager.



The 6200 represents economy and efficiency, neatly packaging two digital voice processors into a single sculpted aluminum rack space — yes, one rack space for your host and co-host or guest. Connect its two fully assignable AES outputs straight into your digital console, set up your programs, then relax.



Drag 'n drop modules in 6200 Designer (included) to reorder your voice processing signal chain.



Administer or tweak voice profiles from your desk with 6200 Designer's IP control.

Engineered by Symetrix

www.airtoolsaudio.com

+1 (425) 778-7728

Products & Services SHOWCASE

Buy simplicity,
reliability and service

EAS

Price \$1750.00

Equipment is in stock for
immediate delivery!

GORMAN-REDLICH MFG. CO.
257 W. Union St. Athens, Ohio 45701

Phone 740-593-3150
FAX 740-592-3898

Now available
with optional DTMF
control via a phone line.



- 5 two-way RS-232 inputs/outputs for computer, remote signboard & character generator
- 6 audio inputs on standard models. All audio inputs & outputs are transformer isolated from encoder-decoder board
- Automatic interruption of program audio for unattended operation
- 4 line 40 character LCD display with LED backlighting
- 20 key keypad to program unit, set modulation level, set input levels
- Will handshake with automation equipment jimg@gorman-redlich.com Web Site: www.gorman-redlich.com
- 2 year warranty
- 2 minutes of digital audio storage
- 25 pin parallel printer port for external printer
- 52 terminals on the rear to interface with other equipment by removable plugs
- BNC fitting with 600ohm balanced audio out for second transmitter

◆ Also available: weather radios, antennas for weather radios, crystal controlled synthesized FM digitally tuned radios, remote signboards, cables for interconnection, character generators

LCD DISPLAY R.F. WATTMETER

Model 81095



**Coaxial
Dynamics**

See us at NAB Booth # N1319

1-800-262-9425 • www.coaxial.com

OPTILATOR™

T1-OPELATOR NOW AVAILABLE!



Fiber Optic Modem Protection

Lightning Protection that keeps on working!

Fiber optic protection impervious to lightning.

It is now a recognized name brand in the RF Industry.

For more technical information call toll free 888-471-1038,
Ph: 727-823-6100, Fax: 727-823-6044. For pricing and sales call:
Harris, Broadcast General Store, Broadcastworks, Broadcast
Richardson, RF Specialists, Crouse-Kimzey, EuroExchange
Brokers Inc., S.C.M.S., or your local distributor.

See our web page: www.opticsield.com It is for real!

The Ultimate Lightning Protection!

Talking, Dial-Up Remote Control



Introducing the First Totally New Talking Remote Control Design in Over a Decade!!

- Voice recordable technology
- Internet capable
- 8 channels metering, status, & control
- Expandable up to 16 channels
- 2 heavy-duty SPDT relays per channel
- Self-calibrating, auto-ranging meters
- Up to 5 alarms per channel
- Cell-phone interface
- Audio pass-through
- Free GUI software to monitor your site & program the Sicon-8
- X-10 capability for additional control

Learn how the Sicon-8 can help you
take control at www.circuitwerkes.com



CircuitWerkes, Inc. - 2805 NW 6th Street, Gainesville, Florida 32609, USA 352-335-6555

BEXT

FM & TV
Transmitters
Solid State or Tube
Antennas & Combiners

20 Years of Service
Asistencia en Español
24 Hour Support
2 Years Warranty

www.bext.com

Tel 619 239 8462

Fax 619 239 8474

bext@bext.com



FROM THE TALL
TO THE SMALL



NEW
EXCITERS/TRANSMITTERS
w/stereo generator & audio limiter,
field programmable FSK ID keyer, all built-in!

LM-2 Audio Level Matching Systems

Phase 3

The ideal interface between balanced XLR and unbalanced RCA audio signals. Exceptional headroom, wide-range level controls, low noise, and a flat response to 30 kHz.

The LM-2 series of audio level converters maintain the signal integrity demanded by industry professionals. Power supplies are internal. Quality is throughout.

- LM-2 (shown) 2 channels balanced XLR to unbalanced RCA and 2 channels unbalanced RCA to balanced XLR
- LM-2B: 4 channels unbalanced RCA to balanced XLR
- LM-2U: 4 channels balanced XLR to unbalanced RCA

VIDEOQUIP
RESEARCH LIMITED
www.videoquip.com

Phone: 416-293-1042
Fax: 416-297-4757
Toronto, Canada
TOLL FREE 1-888-293-1071

See us at NAB 2006, Central Hall, Booth #C6736

NEWS ANALYSIS

What's in It for New Engineers?

Tech Managers Comment on Why They Continue To Find a Crazy Business So Rewarding

by Allen J. Singer

Radio engineering has come a long way in a decade.

In years past, engineers were the fix-it guys, the equipment installers, the light-bulb changers. They could be station heroes or just the grumpy guys in the back room. They made the mast in the van go up and down, could turn off the transmitter with a single phone call and installed computers.

Ah, computers. No more mainframes, no more reel-to-reel machines, no more IVRs, and inevitably, fewer jocks.

Without question, computers have changed the direction of broadcast engineering. Anecdotal evidence suggests

didn't push this button.") They have to stay up to date on trends. They often are given projects by managers who may not have the station's — or engineer's — best interests in mind.

It takes a certain kind of person to want to do all this as a career.

Max Turner, regional engineering manager for Susquehanna, loves his job. To be a good broadcast engineer, he feels, "you must have a passion for the business." And many engineers do.

"We're like Disney Imagineers," says Turner. "In radio, an engineer does magic on a daily basis."

Engineers enjoy the satisfaction of solving unique and important problems. Without the expertise of the engineer, a station may go off the air and stay off for days at a time. No station can afford that.

Education is important, though a degree in electronics is not necessarily required. Like many other engineers, Surgeon fixed studio equipment during a shift in his first on-air gig. Seeing his work, the station owner urged him to attend a two-year trade school.

After contract engineering for a couple of years, Surgeon became a chief in Missouri, then Columbus, Ohio, before moving on to Cincinnati.

Field know-how

Turner attended Memphis State and Arkansas State universities and holds a degree in electronics. He says students should learn basic electronics, from any kind of institution. And because computers are "such an integral part of what we do," he recommends building those skills — especially because networks continue to expand, often farther than might have been imagined just a few years ago.

"Today our WANs extend to the transmitter site," he said.

Fundamental courses in IT are impor- See ENGINEERING, page 52 ▶

See us at NAB Booth # N2906

Looking to touch your listeners?



APHEX MODEL 230 MASTER VOICE CHANNEL

Introducing the Aphex Model 230 Master Voice Channel, the most powerful processor ever designed specifically for voice. Voices will be bigger, more present, more intimate, more intelligible and more consistent. Its comprehensive complement of exclusive proprietary features brings these benefits to any voice - from a thundering bombast to a whispering wail - without changing its essential quality.

We're like Disney Imagineers. In radio, an engineer does magic on a daily basis.

— Max Turner

that, due to the IT revolution, consolidation, the job market and modern technology overall, radio slowly is running out of young engineers willing to take on lower-paying, 24-hour-a-day jobs, favoring fields with less stress and better pay.

Many seasoned engineers are retiring or dying off. Others have burnt out and left radio for jobs in IT or other fields. But others linger, content in what they do.

Incentive

Are there incentives for a young college graduate to work in radio? I talked to a few colleagues to find out their thoughts.

Kevin Surgeon, chief engineer of FM stations WRRM, WMOJ and WYGY in Cincinnati, thinks so. The stations are owned by Susquehanna, soon to be part of Cumulus.

Though most everything is computerized anymore, a station "will always need someone to keep the plant running," Surgeon believes. And technology keeps advancing. "With HD Radio in its infancy, new engineers are getting in on the ground floor."

For a young person interested in electronics and technology, radio might be a good choice, he said. However, the budding engineer must take bad with the good.

An engineer in radio is paid less than in many other technology-based industries. They work long hours. They answer cell phone calls in the middle of the night. They must make emergency runs across town to transmitter sites during nasty thunderstorms.

They work around high-voltage equipment. They answer dumb questions. ("Why isn't this working?" "Because you

Every element of the Model 230 is superior to any other voice processor's similar function...

- The RPA™ tube preamplifier provides warmth, image and detail.
- The Easyrider® Compressor controls output levels without pumping or breathing.
- The Logic-Assisted™ Gate won't false trigger or cut off words.
- The Split Band De-esser effectively cuts sibilance without dulling.
- The Big Bottom® and Aural Exciter® add resonance, depth, presence and clarity.
- The parametric EQ takes care of any frequency anomalies with surgical precision.
- Post-processing insert point, -10dBV and +4dBu analog outputs, 24/96 digital outputs on AES3, S/PDIF and Optical, word clock I/O, and a cough switch with soft mute allow the Model 230 to be easily interfaced into any system.

So if you are looking to touch your listeners, you should be looking at the Aphex Model 230.

www.aphex.com
© 2005 Aphex Systems. All Rights Reserved. Designed and manufactured in the USA.

Genuine APHEX

DRM85

FlashMic

DIGITAL RECORDING MICROPHONE

You've got to admit that this is an idea whose time is long overdue – an extraordinarily high quality mic with a built-in broadcast quality digital recorder. With the FlashMic you literally grab and go. It just doesn't get any simpler. And, because it's HHB, it doesn't get any better.

- World's first digital recording microphone
- 1GB flash memory records over 18 hours of audio
- High quality Sennheiser omni-directional condenser microphone capsule
- Straightforward, intuitive operation with easy USB transfer of data to PC/Mac for editing
- High-quality linear or MPEG 2 recording (128–384 kbps)
- Greater than 6 hours battery life from 2 x AA cells
- LCD display for time, level and status information
- 0 - 10 seconds adjustable pre-record buffer
- Switchable high pass filter
- Record time remaining indicator with low time warning
- Rugged construction quality



FlashMic shown actual size



FIRST WE LISTEN

Distributed in the USA and Latin America by:
Sennheiser Electronic Corp.,
1 Enterprise Drive, Old Lyme, CT 06371 USA • Tel: 860-434-9190 • Fax: 860-434-1759 • www.hbbusa.com
Latin America: Telephone: 52-55-5639-0956 • Fax: 52-55-5639-9482
Distributed in Canada by HHB Canada: Tel: 416-867-9000 Fax: 416-867-1080

Engineering

► Continued from page 51

tant for the aspiring engineer. On-the-job training, though, is more than helpful; it's required.

"Young people aren't given RF theory in school," says Turner. A student can learn basic electronics and computers in school, yet there's only one way to learn how to fix and maintain a temperamental radio transmitter. Internships and co-op programs allow the student to get his hands dirty and learn about RF by working in the middle of it.

A transmitter manual or book about RF theory can touch the surface. A dead CSI or old Rust probably could be rejuvenated with a RadioShack transformer and a pair of clip leads. Not so with today's transmitters. Manufacturers offer training classes for today's high-tech digital transmitters.

Beyond classes, though, most engineers are happy to teach transmitter maintenance skills to a green assistant who might be able to help make the job easier.

Technical managers look for a good work ethic and the willingness to take on new challenges when they hire job candidates. Aside from equipment expertise, upcoming engineers must learn to be "people-friendly" and interface with other members of the staff, responding to their problems and needs quickly.

Broadcast engineering can be rewarding personally. But if a college graduate seeks a financially lucrative technology career, he or she might be persuaded to look somewhere else. Depending on the market, the company and a station's size, an entry-level engineering position might start in the upper \$20,000 range to the low \$30,000s.

Certainly chiefs can do better. In 2003, an NAB survey found the average compensation nationally for radio station chief engineers was \$71,000, with a high of \$141,000 and a low of \$27,000 among respondents.

But by comparison, a technical or IT position in another field can start in the \$30s or \$40s, offer a great deal of salary

upside and involve no weed-whacking at RF sites or evening/weekend labor at movie premieres and car dealerships.

In the blood

A college graduate with a computer degree interested in radio might be more inclined to join the ranks of full-time IT people who maintain the station's computer networks. In the 1980s and early '90s, chief engineers juggled their technical duties with network maintenance. Now that computers run the show, it often makes more sense for a broadcaster to hire full-time IT people and leave engineering to the engineer.

While other industries might pay better for such specialized talent, radio does offer its own particular benefits to IT people, who might relish a chance to work in entertainment and interact with a variety of personalities including air talent.

Jason Powell, IT manager for the Cincinnati cluster where Surgeon is chief, enjoys the autonomy and laid-back atmosphere of radio compared to that of companies like Procter & Gamble and Microsoft.

"Most of the pluses for me don't have anything to do in particular with IT," says Powell, "but rather that I work in radio." He also gets the opportunity to work with cutting-edge equipment and software.

Radio engineering offers a unique atmosphere: high-powered broadcasting equipment, computer networks, radio towers, remote vans and an environment filled with people with high-powered egos. There's a lot to the job and it's not for everybody. However, those who work in it often love it.

Turner describes the job as mental cocaine: "Once you've had it, it's in your blood." Engineering is also all about change. "A good engineer needs to embrace change," he says, "and things change in radio constantly. Our current hot list item is HD2; and who knows what's next?"

Why are you still in radio engineering? Or why not? Write to radioworld@imaspub.com.

Allen J. Singer is a freelance writer and a former engineer for Susquehanna Radio.

MARKET PLACE

V-Soft Training Set For Vegas

V-Soft Communications will hold its annual engineering training seminar on the weekend of April 22–23 at the Circus Circus Hotel in Las Vegas. The event is timed to coincide with the arrival of attendees for the NAB.

"The seminar will focus on specific broadcast engineering projects such as station upgrading, translators, single frequency networks and boosters, interference analysis and move-ins," the software company stated.

"The seminar will spotlight numerous features in the Probe 3 propagation prediction program, FM Commander frequency search software, AM-Pro AM allocation program and many others."

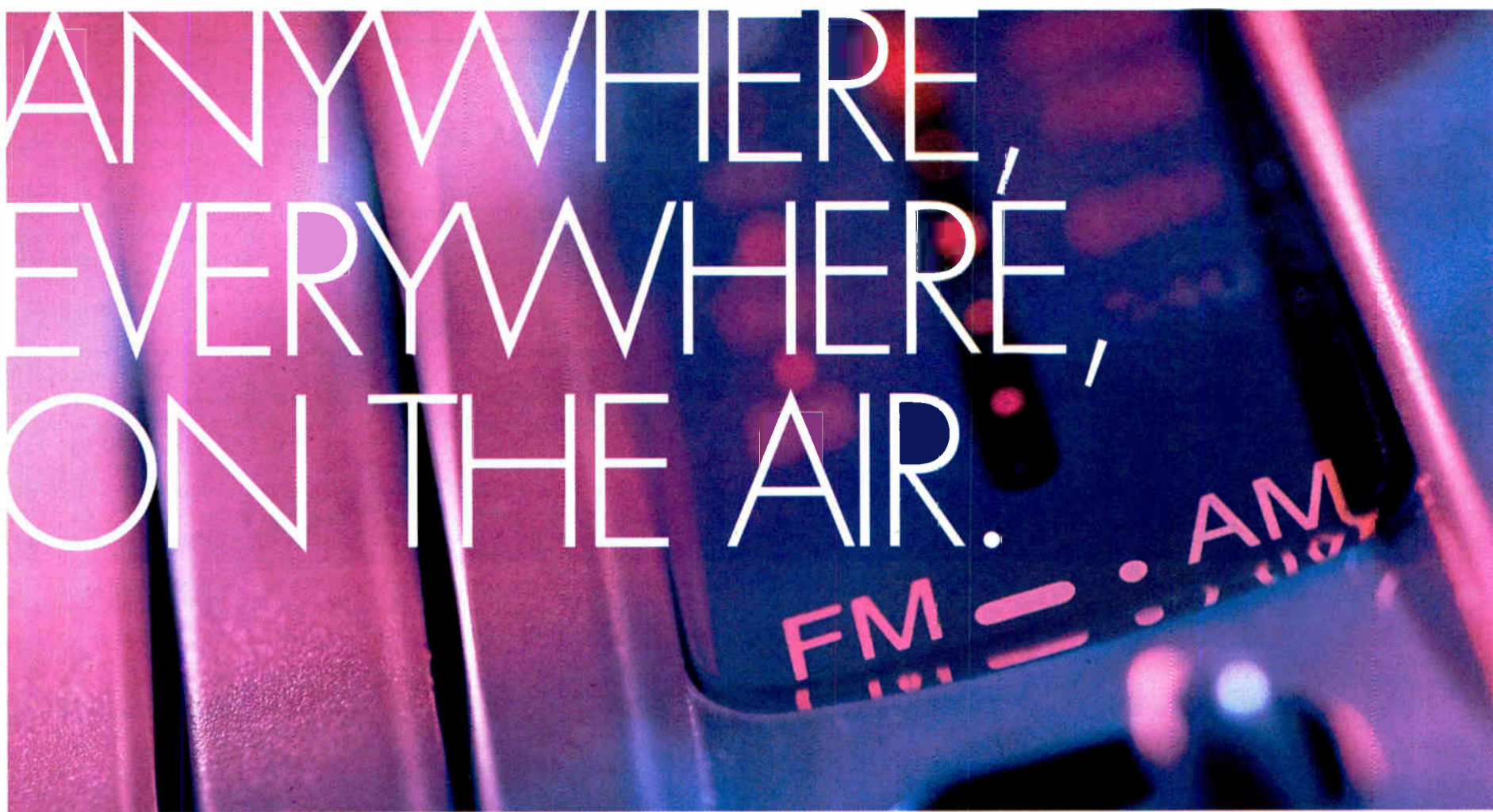
Breakfast and lunch are provided both days.

For information, contact the company via e-mail to kmichler@v-soft.com or call (800) 743-3684.



FM Allocation Map

ANYWHERE, EVERYWHERE, ON THE AIR.

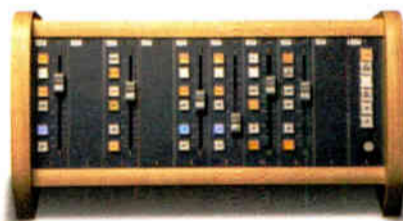


**New
Rubicon-SL
Console Control
Surface** — A "junior"

Rubicon™ for less demanding studio applications. Offering full router source select, four mix buses, an unlimited number of mix-minus, mode, pan/balance, talkback, and more, SL is an ideal replacement for a dated analog console. Rubicon-SL fully integrates into an SAS 32KD Mixer/Router System.

**INTRODUCING THE EXPANDING FAMILY OF
THE SAS CONNECTED DIGITAL NETWORK™**

New Rubi-T Mini Console Control Surface — Ideal for voice tracking rooms, news booths, edit booths, announce booths, effects mixing, and more. Just 6" high, Rubi-T's input module features a full-length 100mm P&G fader, channel ON/OFF, and four programmable source select or bus assignment buttons. Input, monitor, talkback, meter, remote control, and other modules are easily configured.



New RIOGrande Stand-Alone Mixer/Router — RIOLink, the SAS Remote I/O chassis for the 32KD, has grown into a full-featured stand-alone mixer/router, a junior version of the 32KD. Use it with Rubicons, SLs, Rubi-Ts, or simply as a powerful 32x32 analog and digital router. Connect two RIOGrandes with CAT5 or fiber for a great 64x64 mixer/router system.

With Rubicon, Rubicon-SL, Rubi-T, 32KD, and RIOGrande, the SAS Connected Digital Network has evolved to meet a wide range of budgets and requirements. In fact, it is now the "go-to" solution for hundreds of stations across the country moving into router-based networked control systems—providing the industry's most versatile and flexible user-friendly consoles, powerful routing of thousands of channels, integrated IFB/talkback/intercom, serial/ GPI/IP control, and so much more.

Whether you're building a Top-10 multi-station facility or a simple single air studio, SAS has the perfect system for any market, any where.

For more information, call 1.818.840.6749, or email radio@sasaudio.com.

Visit us at NAB
Radio/Audio
North Hall
Booth N907



**SIERRA
AUTOMATED
SYSTEMS**

www.sasaudio.com

ROOTS OF RADIO

A Spectrum Marker for 500 Kilocycles

Radio Enthusiasts Lobby to Make Historic 500 kHz an 'International Memorial Frequency'

by James Careless

For almost a century, 500 kHz was a lifeline for ships worldwide. Better known as 500 kilocycles, it was the spectrum reserved for ships and the shore stations that communicated with them in Morse Code (sometimes referred to as CW, for continuous wave).

If you're a real radio old-timer, you might refer to the frequency as 600 meters.

"To ensure that SOS calls were always heard, all ship and shore stations were required to monitor 500 kHz at all times," said Richard Dillman, secretary and chief CW operator of the Maritime Radio

said. As well, "Recently coast station KLB in Seattle restored operation on 500 kc."

Amateur radio operators are interested in the spectrum. But given the frequency's august history, Dillman, Horsfall and other society members are lobbying to have 500 kHz designated as a "memorial frequency." This, they say, would prevent the spectrum being reallocated by the International Telecommunication Union and keep 500 kHz open for future Morse events such the Night of Nights, which attract listeners around the world.

Dillman is not aware of any similar designation. "The concept of an

Gads! This is gross!"

(Made aware of this comment, Dillman replied, "Of course the fact that old-timers are old has nothing to do with our proposal.")

Another ham wrote, "I think they should just reallocate 500 kHz for amateur use and then these historical coastal stations can share it as secondary users under that same proposal. I do not agree that 500 kHz should be specifically allocated for historical station use only."

Other hams defend the society's idea. Wrote one ham, "These folks and their organizations are part of commercial maritime radio. They use 5-20 kW transmitters. None of their frequency allocations are in the Amateur Radio Service. In fact, in their proposal for the International Memorial Frequency they

state: 'It is important to note that this proposal is not intended to establish a new frequency in the amateur radio service. In fact the aim is quite the opposite.'"

"We don't want anything to change," Horsfall emphasized to Radio World. "We would like all authorizations to stay the same, with the addition that each ITU signatory country could license legitimate historic marine radio projects to use 500 kc."

A decision whether to "memorialize" 500 kc would be made by the ITU. To this end, the MRHS is lobbying contacts within the international body, hoping that they will help turn the MRHS' dream into reality. Dillman said the concept of an International Memorial Frequency has been presented informally to the ITU by a supporter of the idea who attends its meetings.

"At the moment the ITU has not expressed an opinion on the concept," he said. 🌐



Photos courtesy Richard Dillman/Maritime Radio Historical Society

The KPH receive site on the Pt. Reyes peninsula north of San Francisco was built in 1929 for reception of RCA's point-to-point service. The KPH marine service moved in to share the building after World War II. The primary KPH medium frequency position is shown; it also operates on HF. The clock above the door is marked with silent periods at 15 and 45 minutes.



This Chelsea eight-day spring-wound clock is a recent replacement of the original. Note markings for the silent period, and the four-second bands around the periphery. These guided the radio officer at sea in sending four-second dashes that triggered auto alarm receivers monitoring 500 kc when the radio officer was off-duty. If triggered, the alarm rang bells and lit lights in the radio room, on the bridge and in the radio officer's quarters.

Historical Society. "At 15 and 45 minutes past the hour, all users were required to go silent, so that any weak SOS calls could make it through."

Over the years, countless distress calls were transmitted and heard on 500 kHz, including those from the Titanic. In fact, it was Titanic's loss that inspired the 500 kHz monitoring rules.

But even in recent times, 500 kHz has been a lifesaver. For instance, when the Holland America passenger ship Prinsendam caught fire and sank in the Gulf of Alaska on Oct. 4, 1980, it was Morse via 500 kHz that brought help. As for the Prinsendam's high-tech satellite radio system? It failed. Without Morse and 500 kHz, help would have arrived too late.

With the demise of commercial Morse traffic, 500 kHz — "we still call it 500 kc," said society President Tom Horsfall — has fallen mostly silent around the world. Exceptions are events such as the annual MHRHS' "Night of Nights" Morse broadcasts from restored RCA shore station KPH near San Francisco, which is maintained by society volunteers and the National Parks Service.

"At least two — and soon three — historic ships that have valid ship station licenses use 500 kc to communicate with each other and KPH and KSM," he

International Memorial Frequency ... originated with the MRHS," he said. "While we can't speak for the ITU, I think we can say without fear of contradiction that no other frequency has been so designated."

'Sacrilege'

At first, the notion of preserving a piece of radio spectrum as a historic "site" might seem strange. After all, spectrum is not tangible, like a building or artifact, so how can one "preserve" it?

Dillman and Horsfall become passionate about the topic. Arguing that the actual amount of bandwidth removed from use would be "a tiny slice," they say reallocating 500 kHz to other uses would be "sacrilege."

"We've spoken to ship and shore radio operators around the world, and they generally agree that 500 kc is 'hallowed ground,'" said Dillman. "That's why they are hoping that the ITU will agree to setting 500 kc aside as a memorial frequency."

Some ham radio operators seem none too keen about setting 500 kHz off-limits. "This is going too far!" wrote one ham at www.eham.net. "History is important, granted, but the fact that many very talented old-timers are growing older and older does not justify turning the radio waves into a memorial.

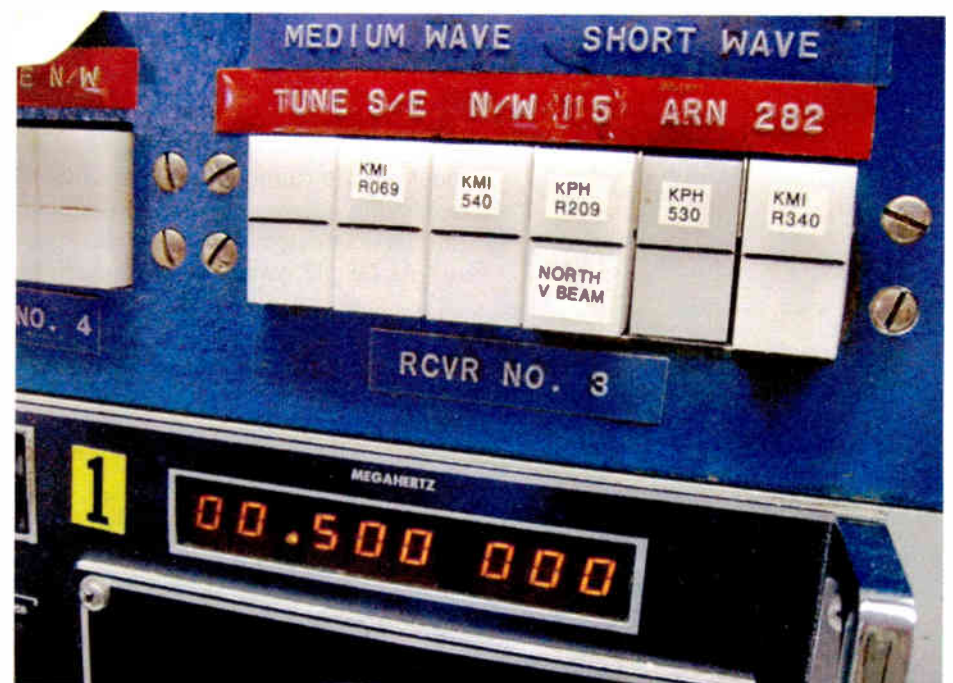


Photo shows an antenna selector switch for Receiver 3 at Position 1. Receiver 1 below is a Watkins-Johnson tuned to 500 kc.



PODCAST YOUR NEWS. EASILY.

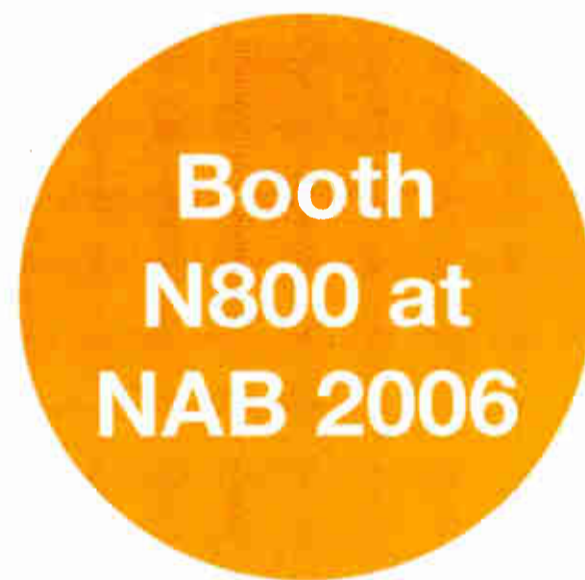
With Burli's newsroom system your staff can podcast audio from their desktops with a mouse click. Interviews, reports, hourly newscasts—with a single command Burli formats and uploads virtually any audio as one or more complete podcasts, including XML data and ID3 headers.

And with advanced features such as automatic podcasting, episode control, and image management, Burli is the only podcast tool you need to push your news programming to MP3 players and computers worldwide.

BURLI. COMPLETE NEWS PRODUCTION FOR RADIO. NOW WITH PODCASTING.

TO FIND OUT HOW BURLI CAN WORK FOR YOU...

www.burli.com | info@burli.com | 604.684.3140



WIRED FOR SOUND

Do You Need Bigger Conductors?

by Steve Lampen

If you've recently walked into a hi-fi store —

Oh, I'm sorry, they're not hi-fi stores anymore. They're "Home Theater Specialists" or "Entertainment Centers." Anyway, if you've spent more than five minutes in one, you probably had an argument about speaker cable.

Their philosophy is, "If you paid \$50,000 for your 5.1 surround and plasma, how dare you run everything in cable that costs less than \$10 a foot?"

Now I realize we broadcasters are a practical lot. If 18/2 zip cord works fine

on your air monitors, why would you need anything else? The difference between you and the average consumer is, of course, that you actually know something.

You know that the resistance on 18/2 is very low, especially for a 10-foot piece. And if you wanted to go farther, or carry higher power, you might go to 14/2 or even 10/2.

Be aware that there is only one 10/2 that actually carries a UL approval, and it says "audio only" on the cable so you don't "accidentally" use it for power cable or lighting cable.

I believe that moving your speaker a

half-inch, or hanging a rug on a wall, will have a more dramatic effect on the reproduced audio than all the speaker cable ever made put together. So why even consider bigger conductors?

Options

Well, there is this effect called slew rate. It's the ability of your power amp to follow high-frequency waveforms accurately and to drive the speaker cones in a similar fashion. The slew rate is determined by dividing the load on the amp by the actual output impedance of the power amp.

Most modern amplifiers have an output impedance of only a tiny fraction of

an ohm, sometimes hundredths of an ohm. Compared to the speaker, that could be a ratio of 100 or even 1000. The load on the output of the amp is the sum of the speaker impedance and the *resistance of the wire* that is attached. The smaller the wire, or longer the run, the higher the resistance.

The impedance of a speaker, as you might know, isn't 4 ohms or 8 ohms but a varying value over frequency. In fact, it can be a real problem if a speaker drops to a very low impedance, like below 1 ohm at a specific frequency, because the current from the amplifier will peak with that small load. It's not at all uncommon that certain amp-speaker combinations blow output fuses or activate output protection circuits when a certain musical frequency is played. The problem is the speaker, not the amp.

OMNIRAX

BROADCAST FURNITURE

NAB 2006
Las Vegas, NV
Booth #N2424

Omnirax from Design to Production

- At Omnirax we work together with you from initial design concept all the way through finished product, ensuring that your furniture will provide you with years of satisfied use.
- Our strength is forging partnership relations where we can use our expertise to turn your ideas into reality. We are able to work to your exacting specifications or provide comprehensive design services that remove the guesswork from your investment.
- Our CAD/CAM process ensures precision fit and finish, repeatability, and ease of modification. All of our designs are rendered in the computer prior to manufacturing. We are able to make alterations and adjust to your equipment, guaranteeing you not only get what you want, but exactly what you need.
- We are small enough to give every job the personal touch, large enough to outfit a complete facility.
- The measure of our success is the achievement of a synthesis of form, function and ergonomic comfort.

Some of our many customers since NAB 2005:

KFIR, FM (CBS / Infinity) San Francisco, CA
Westwood One New York, NY
KZYR Avon, CO
Z99 / Rooster 101 Cayman Islands
KKIQ Pleasanton, CA WGLY Essex, VT
KSKA Anchorage, AK KNBA Anchorage, AK
WZBA Baltimore, MD KYSL Frisco, CO
WRBZ / WDNC Raleigh, NC
KNEW (Clear Channel) San Francisco, CA
Metro Networks Jacksonville, FL
Univision Radio Houston, TX
KPAM Portland, OR (in process)
KCWU Ellensburg, WA (upcoming)

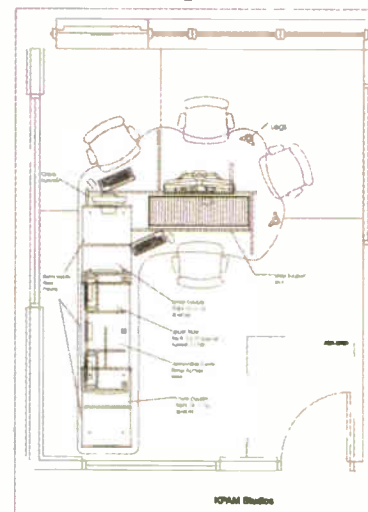
"I'm blown away" - Dave Williams, Director of Engineering, Clear Channel San Francisco

"High quality, heavy duty furniture. Great workmanship and finish. Most importantly, it was packaged so well that we had no shipping damage. Design services were excellent. We got an effective, attractive, user friendly design."

- Jon Banks, Jon Banks LLC, Technical Consultant to Krystal 93 Radio, KYSL, Frisco, CO

P. O. Box 1792 Sausalito, CA 94966
800.332.3393 415.332.3392 FAX 415.332.2607
www.omnirax.com info@omnirax.com

CAD drawing



CAD rendering



| Wire Gage | |
|--------------------------|--------|
| AWG Ohms Per Foot (68°F) | |
| 18 | .00692 |
| 16 | .00435 |
| 14 | .00273 |
| 12 | .00171 |
| 10 | .00108 |

In that instance, some 16/2 might actually save you, because the added resistance of the cable keeps you above that speaker impedance dip. Remember, the load on the amp is the speaker plus the resistance of the cable. If that resistance is a significant percentage of the load, it means that the speaker will not respond to the fastest waveforms very well.

One solution can be to move the amp close to the speaker. This was the original basis for amplified speakers. If you put the power amp in the speaker, then speaker cable is a non-issue. You just have to get line-level audio (and AC power) to the speaker, which are both easy to do. And line-level audio cable is a heck of a lot cheaper than 10 AWG speaker cable.

The other alternative is bigger wire. Shown here is a table of wire gage sizes and their resistance per foot. If you're calculating the added load on an amp, remember that you have two wires' worth of resistance at the given length, sometimes called the "loop resistance."

Sure, if you can find it

If you deal with high-power amps, that's another story altogether. There are now 5 kW, even 10 kW power amps.

This brings up an interesting question. Unless these are wired up to 480V three-phase, I must assume they run in 120V single-phase, with a 20-amp breaker like everything else. And 120x20=2400VA. So how do you get 5,000 or 10,000? Surely this is not RMS watts, more like peak power.

Some of these amps suggest 8 AWG or 6 AWG cable, when going longer distances. That stuff is hard to find. (Check the "lighting cable" or "industrial cable" section of the catalog.) These super-power amps also have an interesting sticker on the back that says "Class 1 Wiring Shall Be Used" or words to that effect. Do you know what that means? I wonder if that rock band roadie does either.

What it means simply is that the speaker outputs of these amps can now kill you. So they need the same kind of wiring for your AC power.

Ask any manufacturer of speaker

See WIRED, page 62 ►

Broadcast Software International

888 BSI-USA1 (888-274-8721) info@bsiusa.com

Professional Audio Skimming & Logging Software

SKIMMERPLUS

SkimmerPlus is a highly versatile tool for audio skimming and / or long-form audio logging of multiple audio sources.

Features Include:

- Remote Management
- Built-in email connectivity
- Support for various audio CODECS
- Assignable permissions for different users
- Record programs in segments for delayed broadcasts
- Simultaneously record compressed & uncompressed files
- Capable of recording multiple sources with a single Audio Science soundcard

**Starting at
\$399**



AUDIOSCIENCE

- ASI audio cards seamlessly integrate with SkimmerPlus
- Many of the cards have on-board MP2 and MP3 playback, in addition to supporting various audio file types through software CODECS
- Digital or analog audio, even on the same card
- Pass through and record capabilities

Thousands of users have discovered how easy and versatile BSI software is.

Test and try before you buy!

Broadcast Software International

503 E. 11th Avenue, Eugene, Oregon 97401

www.bsiusa.com 888-BSI-USA1 (888-274-8721) info@bsiusa.com

Para el español, llamada Felipe Chavez, Distribuidor de los E.E.U.U.

(916) 368-6300 fchavez@ommedianet.com

See Us at NAB Booth # N3515



FIRST PERSON

A View From the Back of the Room

Breaking Events Turned a Staid Tech Gig Into a Hurried, Nationally Covered Event

by Gary Palamara

It was a cold February morning in 1986. I arrived at the small corporate TV studio in New Brunswick, N.J., for what was to be an easy day of work. The weather and the latest happenings constituted most of our chatter as the crew unpacked our equipment and began to set up for a small videotaping later that morning.

Although everything at this point was relaxed and calm, we all felt there was something strange going on. You couldn't quite put a finger on it. Then somebody noticed that it was a little quieter than normal around the building.

Just before 10 a.m., things began to change.

At first, word filtered down that our videotaping might be a delayed. Several minutes later, the company told us that the job was cancelled; but for some reason they didn't want us to leave. Something was definitely going on, but we had no way of knowing what it might be.

Around 11 a.m. the guy who ran the studio came in. You could tell by his face something was wrong. He came over to me.

"How soon can you set up a press conference in the auditorium?" he asked.

"Well, when do you need it?"

"They wanted to do it at noon, but I got

that I had a pile of cases sitting on the floor, everything had yet to be connected and checked out and minutes were passing by too quickly.

Soon the room was full of people. Besides the electronic press, photographers and print reporters took almost every available seat. Everyone was jockeying for positions and staking out their turf around the room.

Once the equipment was up and running, I told everyone who had already plugged into the press muls to test and then re-test the audio feeds. All was ready to go, with about 20 minutes to spare.

But as I viewed the room from behind my audio board, reporters and news crews were still coming in the door. One by one, they'd plug into my equipment and I would test their feed to make sure everything was clean. I left the podium mics open so the crews would always have a live signal coming from the hall.

At first, I thought that I would probably have to give out about 25 audio feeds to the press. By the time the conference actually started, closer to 50 electronic media had plugged into my equipment. In truth, some of those last connections had to be improvised, once the press mult box was completely full.

soning, another death. It recalled the events of four years earlier when six people in the Chicago area had died. Back then, cyanide-filled capsules of Tylenol had been found on grocery store shelves.

Johnson & Johnson Calls Tylenol Case Isolated Incident

By MICHAEL WALDHOLZ
Staff Reporter of THE WALL STREET JOURNAL

NEW BRUNSWICK, N.J.—Johnson & Johnson, moving quickly to protect its prized product, Tylenol, said that it was convinced the recent poisoning death involving the painkiller was an isolated incident and that it will keep the product on the market.

At the same time, a local official in Westchester County, N.Y., where the death occurred, said it was being investigated as a murder, according to a wire service report.

At a news conference at company headquarters here, James E. Burke, chairman, said, "It is our collective opinion, ourselves, the FBI, the FDA and the local New York police, that this is a local event."

Mute Public Alarm

Mr. Burke's statements were an apparent effort to swiftly mute public alarm about Tylenol. Although he conceded he had no evidence absolutely confirming the cyanide poisoning was an isolated incident, information about the bottle involved

its small corporate TV studio into a damage control center. The company bought satellite time and fed edited clips of the press conference over and over again to the nation, and the world.

Less than a week after the initial event, a second press conference announced the total recall of all Tylenol products nationwide. Then, several weeks later, the com-

makes that assumption a strong likelihood.

The bottle, he said, was part of a batch of 200,000 packages shipped to retailers last August, 95% of which have been already sold to consumers. Johnson & Johnson believes other people would have reported problems months ago if the batch had been tainted either at the manufacturing plant or at distribution sites. Moreover, cyanide would have destroyed the gelatin capsules within 10 days of being placed inside of them.

Mr. Burke said that while he was concerned about loss of Tylenol business, he said, "Our primary concern is for the public," which relies on the product for health reasons.

Chicago Deaths 3 Years Ago

Mr. Burke's statements come one day after it was reported that Diane Elsroth, a Peekskill, N.Y., woman, died after apparently ingesting an Extra-Strength Tylenol capsule laced with cyanide. Her death follows by over three years the deaths in the Chicago area of seven people who took Tylenol capsules that were contaminated with the same poison.

At a news conference, Andrew P. O'Rourke, Westchester, N.Y., county executive, said Ms. Elsroth was given two Extra-Strength Tylenol capsules Friday evening by her boyfriend in his home. Mr. O'Rourke said the boyfriend, who was identified by United Press International as Michael Notarnicola, "opened the brand

Wall Street Journal coverage of the story.

The press conference finally began, about 45 minutes late. Right before it started, you could feel the tension rising in the room.

them to push it back to 2 p.m."

"It'll be close, but I can do that ... how big a conference is this going to be?"

"Big."

Here comes the zoo

There was no point in asking the topic, because it didn't matter anyway.

The actual structure of a press conference is about the same whether it's for the president of the United States or your average rap artist. Besides, I didn't have time to think about that. What I needed was more audio gear, and I needed it right away.

I called the shop and dictated a complete list of equipment that I needed and asked them to bring it to my location, ASAP. I stayed on site and helped prepare the auditorium as best as I could.

An hour or so later, when my equipment arrived, several news trucks were already set up on the front lawn of the building; more were arriving by the minute. Back in the auditorium, a couple of technicians had already staked out their camera positions near the back of the room. One guy asked me, "Where can we plug in the audio?" It was still about an hour and a half before the conference was to start, but he seemed annoyed when I told him I hadn't yet set up my gear.

Right from the start, this event seemed to have all the ear markings of becoming a media zoo. By the time I began to lay out the equipment, it was almost 12:45. I still didn't know or care about the purpose of the press conference. All I knew was

At the mic

The press conference finally began, about 45 minutes late. Right before it started, you could feel the tension rising in the room. The reporters were tired of waiting around, they all had questions, they wanted answers and they had deadlines to meet. Antsy reporters with time on their hands make for a volatile situation. You could tell there was blood in the water and the sharks were beginning to circle.

Jim Burke entered the room unannounced, and for the first time the reporters quieted down. Burke was corporate head of the Johnson & Johnson Company, parent company of McNeil Pharmaceuticals. He walked down the side aisle, opposite from where I had my audio setup, then on to the stage and approached the microphone. My microphone.

This is the moment when the audio engineer in charge wonders, "Did I set up everything correctly? Are all the levels right ... is it all going to work?" The last thing you want to have happen is for the press conference to start and have someone say, "My audio is distorted, 'I'm not getting a feed'" or "We're not hearing you in the back of the room!"

As Burke neared the stage, I remember thinking that I still didn't know what he was going to say. All morning things were happening too quickly and I didn't have time to ask.

When he reached the podium, Burke took a moment to collect his thoughts, looked up and began to speak.

There had been another Tylenol poi-

That appeared to be the case again.

Burke went on to say that McNeil was suspending all sales of the over-the-counter medication and the FBI and police officials in New York State were looking into the crime. He ended his prepared remarks and opened the floor for questions.

Snap

Suddenly there was a loud roar from every corner of the room. Like a coiled spring that had snapped, the reporters shouted their questions, with the loudest, most persistent ones getting to go first. The microphones that I had set up around the room so that reporters could "politely" ask their questions were ignored. It was a media free-for-all, and the loudest won.

After about 45 minutes, the formal press conference ended and the reporters descended on Burke as he tried to make his way out of the room by the same side aisle from which he had entered. From what I could hear, most of the in-person questioning was similar to the questions asked during the conference.

Even before the event ended, some reporters began doing stand-ups again from the back of the room. Those stand-up reports and other live feeds continued through the afternoon and long into the evening. J&J left the facility open and invited the press to stay as long as they needed.

The Tylenol crisis was the lead story for news broadcasts across the country and perhaps around the world. I could hear my audio echoing from the news crew monitor feeds around the room.

With everything that was going on, rather than tear down the audio setup, J&J asked me to leave the gear in place and ready to go at a moment's notice. Long into the night, Johnson & Johnson turned

pany re-introduced the Tylenol brand with new tamper-resistant packaging. Naturally it called a third press conference to get the word out.

Although several people were arrested and later convicted of trying to cash in on the mass hysteria that surrounded the Tylenol crisis, 20 years after the event, no one had been charged with the any of the murders. To this day, speculation abounds as to the actual motive for the crime.

Now few people pause to think about tamper-proof packaging, but it was the Tylenol murders and several copycat crimes in the early 1980s that forced manufacturers to adopt these measures.

In the years that followed the '86 case, the managing of information by Johnson & Johnson during the Tylenol murders would be touted as a nearly perfect example of how to handle a crisis situation with integrity and corporate responsibility. Even now, the Tylenol case is used as the gold standard by which other corporations are measured.

But as with most major news stories, few people give a thought to the many technicians who work behind the scenes and who make media events like that happen.

In the 20 years and several thousand press conferences that have followed the Tylenol crisis, I've come to learn a few things about engineering a successful media event. Be prepared for the unexpected and have backups for all system critical components. In the end, no matter what happens, everything has to work. When it does, everyone wins.

From 1968-'72, the author worked with the Armed Forces Radio & Television Service while serving with the United States Air Force. He is a freelance broadcast engineer and owner of Morningstar Sound. E-mail him at www.garypalamara.com.

OPTIMOD

FM

Consistent Quality Consistent Sound

NEW! 8500-FM for analog FM broadcasters

This cost-effective version of the award-winning Optimod 8500-FM / HD gives you everything but digital radio processing, which you can add at any time to **upgrade the unit to full 8500-FM / HD functionality**. The 8500-FM offers double the sample rate and double the processing power of any previous Optimod, making it the most advanced Optimod-FM ever.



The 2300, 5300 and 8300 V2 offer progressively higher performance as you move up the line to the 8500-FM.

They're all loaded with features and innovative technology. Most importantly, they all deliver that inimitable Optimod sound. Regardless of your processing budget, there's an Optimod-FM that's perfect for your station.

Worldwide sales, Luis Endara |Phone| +1 305 383-1200 |E-mail| lendara@orban.com

European sales, Peter Lee |Phone| +31 299 40 25 77 |E-mail| plee@orban.com

North American sales, Steve Gordon |Phone| +1 805 497-4685 |E-mail| sgordon@orban.com

See Us at NAB Booth # N1136

World Radio History

www.orban.com



MILE STONES

The Demise of the First Phone

by Charles S. Fitch

Have you noticed a trend in how qualification problems are addressed inside the Beltway over the last 50 years or so? In Washington, it seems, when enough people can't reach the qualification bar, they just lower the bar. Do away with the problem by the stroke of a pen; eliminate the requirement.

Ohhhh, if only we were so all-powerful! We would do away with taxes, reruns on TV and marriage (I must be crazy), among other things.

In our industry, the notable instance of this phenomenon was the disappearance of the Radio Telephone Operator License First Class, the possession of which was a long-standing requirement if you hoped to find meaningful and gainful employment in radio engineering.

Let's be clear. The FCC only licenses operators; it never licensed engineers engaged in intrastate commerce, professional or stationary. The commission never intended that one would have to operate high-pressure boilers or a power plant or design the foundations under your towers. Licensing of professional and stationary engineers is a power held only by the states.

Boilers aside, that still leaves us ordinary mortals who build and maintain broadcast systems in a profession of profound scope and need. Every station has

a lot of meaningful technical matters at hand, routine and otherwise.

Push to talk

The FCC licensing structure through the early 1960s was simple. In general terms, if you wanted to speak on a two-way radio, you needed a Radio Telephone Third Class Operator Permit. A classic example was the police radio dispatcher. He could push a transmit button on his big base station. Because he

theoretically was supervising the system, his unlicensed police officers in their patrol cars could push the buttons on their mobile mics and speak back.

The holder of a "Third" couldn't service or install any transmitter equipment. If you wanted to service and install communications-level transmitters or certain safety devices, you had to hold at least a Radio Telephone Operator License Second Class. One had to pass the Third exam before you could attempt the Second.

Broadcast was considered the highest level of importance (oh, how the mighty have fallen) and the most complex; you needed a First to operate and maintain broadcast transmitters. Again, you had to have passed the Third and Second exams to attempt the First.

Prior to 1963, all broadcast stations were to be maintained and operated only by First holders.

From 1963 through 1973, as a sop to owners, FM and 10 kW or less non-directional AM stations were allowed to be operated by a First, a Second or the holder of a hybrid sort of license, a broadcast-endorsed Third.

Prior to 1963, all broadcast stations were to be maintained and operated only by First holders.

With that in hand, you could turn the transmitter on and off, take and sign the operating log and adjust power to stay within limits, but you could not maintain the transmitter with a Third.

After 1973, all classes of broadcast stations were allowed to be operated by an "Endorsed Third."

In the 1980s, the commission sailed through a sea change of regulation. A basic premise was that the holder of the station license ultimately was responsible for the proper operation of the station.

On Jan. 5, 1979, the FCC eliminated the Third requirement, as well as the license grade, and allowed holders of

Restricted Radiotelephone Permits (just fill out a form and mail it in) to operate broadcast transmitters of nearly all classes and powers.

This requirement ultimately was dropped; now no operating license at all is needed for local or remote controlled stations. Responsibility for proper operation at this time falls completely to the station owner.

Equity trap

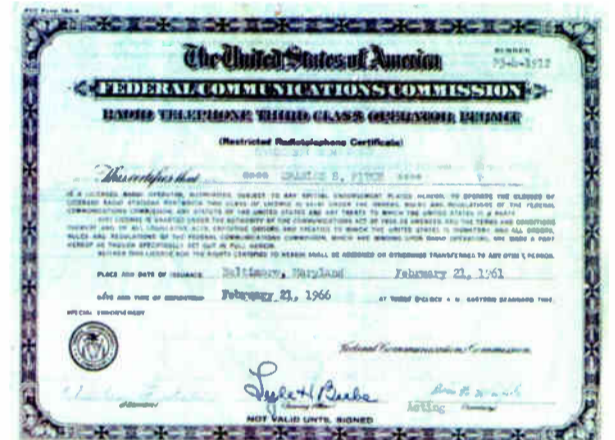
In my rear-view mirror, I think the major reason the "First" disappeared was a basic flaw: The test process used a set question base that could be co-opted. This left industry with an exam that could be passed by memorization, detracting from the value of the license as a proof that a person knew something about what they were doing.

In other professions, comparable licensing also is done through exams with a set syllabus of concepts addressed; however, the tests do not ask the same questions each time. This "equity" trap — dumbing up the exam — is a flaw that the SBE certification process, the industry's own replacement for the First's proof of knowledge, has so far been able to avoid, in my estimation.

All numbered classes of radiotelephone licenses were eliminated on Aug.



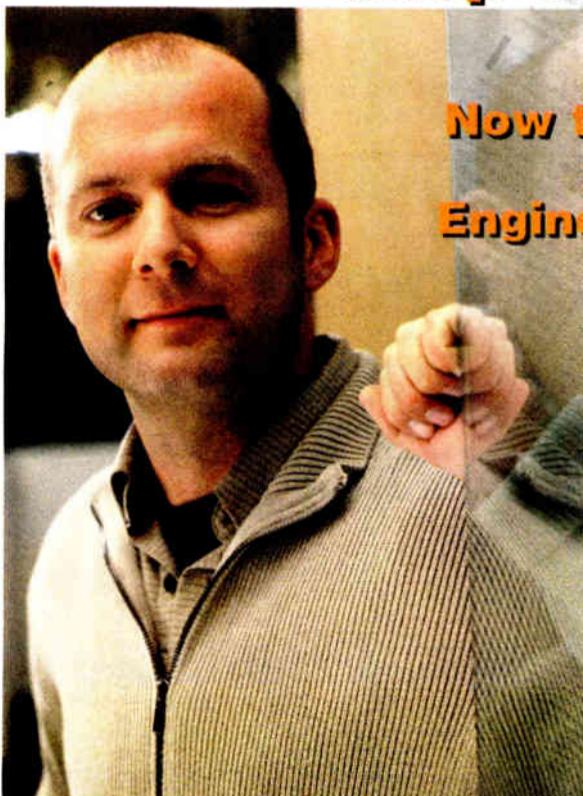
Radio Telephone Operator License First Class



Radio Telephone Third Class Operator Permit.

Today's top engineers need a reliable source of deep tech info.

BOC



**Now they have it.
Radio World
Engineering Extra**

Published six times a year, this "deep tech" version of Radio World is pure technology, with articles written by engineers for engineers—edited by an engineer active in the industry. White papers, in-depth engineering session coverage, technical op-ed and analysis articles—if it's important to radio engineers, you'll find it in Radio World Engineering Extra.

**Sign up now for your FREE subscription at:
<http://www.rwonline.com/eng-extra>**

Even if you are a Radio World subscriber, you must sign up to receive RW-EE.



You'll find
our prices
reasonable,
our reasoning
priceless.

Keeping track of all the satellite and fiber optic communications products out there is a full time job.

That's why so many people come to **DAWN**CO. They count on us for everything from satellite antennas, receivers, LNBS, and position controllers to fiber optic broadband links, satellite links and data links.

We offer the broadcast TV, cable TV, radio and educational fields high quality equipment at down-to-earth prices.

But more than equipment, we offer expertise. We can examine your situation and your budget, and recommend exactly what you need. You save both time and money by making the best possible buying decision.

Call a **DAWN**CO expert with your questions by simply dialing **800.866.6969**. Use the same number for our free catalog, or find it all on the web at www.DAWNCO.com.



DAWNCO

Reasonable prices, priceless reasoning.

DAWNCO formerly known as Dawn Satellite.



Who's Buying What information is provided by suppliers and users. E-mail to radioworld@imaspub.com.

Broadcast Electronics said NPR affiliate Temple University Public Radio added more stations to its list of HD Radio conversions. The classical and jazz broadcaster received funding from the Corporation for Public Broadcasting, ultimately to convert its six full-powered stations to HD Radio.

The flagship is WRTI(FM). Tobias

Poole is operating director for the broadcaster; Jeff DePolo is director of engineering. ...

Logitek announced the sale of a large console router system to Salem Communications in Honolulu. A system including 11 Audio Engines, 10 Remora consoles, vMix and various router controllers will be installed.

Separately, Logitek made sales of console router systems to Niagara Independent Media (WHLA in Buffalo, N.Y.), which purchased two Remora consoles; WUTC in Chattanooga, Tenn., a Mosaic console; and WJIS, Sarasota, Fla., a Remora. ...

Omnia said WSM(AM), home of "The Grand Ole Opry," tried and kept an Omnia-5EX HD+AM audio processor. Watt Hairston is chief engineer. Separately, Omnia said Clear Channel

station WTEM(AM) in Washington is using the Omnia-5EX+AM. The senior engineer of new technology there is Shaun Sandoval. Omnia said the station did a shootout of four models from three manufacturers before making the choice. ...

Wegener Corp. reported a \$3.6 million job order from the BBC, which specified an iPump System Solution for its international radio distribution network. "The system will allow the BBC to distribute audio to over 900 partners globally through advanced digital file store-forward technology, as well as traditional linear broadcasting," Wegener stated.

Nigel Fry is head of transmission and distribution for the BBC World Service. The supplier said its approach offers bandwidth efficiencies and low latency of DVB transmissions, while supporting



Tobias Poole prepares to install HD Radio at Temple.

delivery of audio over IP for applications such as IBOC and DRM. ...

FM Cumulus properties in Toledo WRWK and WTWR converted to HD Radio using the Harris Flexstar transmission system. According to Gary Kline, Cumulus vice president of engineering, the company is converting all seven of its FMs in the market. ...

APT said the link-up between Sirius Satellite Radio and the BBC's music channel Radio 1 was made possible by audio codecs it supplied. The Enhanced apt-X algorithm was used as the coding method for the transfer of audio between London and New York. WorldNet Ohio codecs provided an X.21/V.35 link operating at 256 kbps, enabling a stereo feed and mono back-up over ISDN. Jake Glanz is Sirius director of broadcast maintenance. ...

Metro Radio Group of Nova Scotia, Canada purchased additional Wheatstone G-5 12 fader control surfaces and upgraded to a Wheatstone networked audio system. The system consists of two Generation 5 control surfaces and a Bridge Digital Audio Network. The station purchased its first G-5 in early 2005. There are five stations housed in the facility, which is outfitted with four production studios, five main control rooms, two newsroom studios and two voice-tracking booths. ●

IMMEDIATE INSPIRATION IMMEDIATE INNOVATION IMMEDIATE EDUCATION IMMEDIATE

ALL INDUSTRY ALL ACCESS
All NAB2006 registrants get access to the All-Industry Opening!

BROADCAST CONFERENCE PACKAGE

OPPORTUNITY X 3

The NAB Broadcast Conference Package program focuses on bringing today's savvy television and radio broadcasters up to speed on all the latest information they need to improve their bottom line. Expert-led sessions cover the industry's most pressing issues in station management, policy and regulation, and sales & operations.

The NAB Broadcast Conference Package includes all three conferences for one low price:

• NAB Broadcast Engineering Conference • NAB Broadcast Management Conference • NAB Business, Law and Regulation Conference

For more information visit www.nabshow.com/conferences. Register Today!

ALL-INDUSTRY OPENING

Monday, April 24 • 9:00 AM

Sponsored by **accenture**

High performance. Delivered.

State of the Industry Opening Address



David Rehr
President and CEO
NAB

Distinguished Service Award Recipients



Tom Brokaw
Former NBC
Nightly News
Anchor and
Managing Editor



Peter Jennings
The late ABC
World News Tonight
Anchor and
Senior Editor



Dan Rather
Former CBS
Evening News
Anchor and
Managing Editor

A Conference Program of

NAB2006
THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW

CONFERENCES: APRIL 22-27
EXHIBITS: APRIL 24-27
LAS VEGAS CONVENTION CENTER
LAS VEGAS, NEVADA USA

WWW.NABSHOW.COM

Wired

► Continued from page 56

cable (especially in the "Entertainment Center") if they have Class 1 speaker cable. Huh? No, of course, they don't. And if you find yourself in this predicament, you will probably end up with someone who makes industrial cable, for wiring up factories. Tray Cable, a specific kind of factory power cable, is all Class 1. And you'd better get an electrician who does power wiring to do the speaker runs as well.

Hey, I can't wait to see a 10,000-watt, 70-volt transformer. I'm sure that's \$1.59.

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

got gear?
cables & connectors
racks
tools
problem solvers
test gear
& much more

www.systemsstore.com

Remote Control for Broadcasters

INTERFACING:

- Connectable virtually to any kind equipment.
- Parallel I/O's with optically isolated inputs.
- Serial connection thru RS485 using ANT's protocol converter.
- Wide range of probes: AC/DC detection, RF pickups, signal analyzers, silence detectors, etc.
- Can read ANALOG or contact information as well as 32bit floating point numbers and text.
- Real time alarm signaling on any data type.

HARDWARE FEATURES

- Modular construction can start from 16in/8out to over 700 I/O,s per box.
- NEW!** Backup power supply.
- NEW!** Optional CPU redundancy.
- Up to 1024 units per server.
- Built for challenging RF environments.



INTERNET

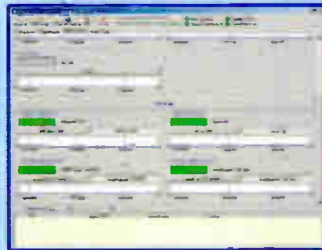
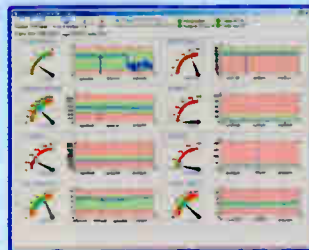
TCP/IP

GSM

UHF/VHF

SATELLITE

PSTN/ISDN



CONTROL ROOM SOFTWARE

- Client server multi - user environment.
- Server accessible via internet or LAN
- All information, including SNMP, converted to a simple map based interface
- Easy setup of all parameters using graphical tools
- User definable screens with an easy to use editor.
- E-mail and SMS alarm forwarding
- Voice call alarm signalling (available April 2006)
- ...and much more....

**Come visit us
at
NAB 2006**



A.N.T. srl
Via Giroli 76

25085 Gavardo (BS) Italy
tel +39 0461 551599 • fax +39 0365 371960
info@antgroup.it • www.antgroup.it

GUEST COMMENTARY

How DX Transmitters Began

Evolution of Digital Medium-Wave and Long-Wave Transmitter Product Line at Harris Broadcast

by T.E. Yingst

It was my pleasure to be involved when a major solid-state program started at a high-technology company and as it became a major factor in the worldwide marketplace in just a few years. I'd like to share that story.

The history — which is posted in full online — demonstrates that a good idea can prevail, but that it must be coupled with knowledge of the market and the

technical background to bring the idea to fruition. It also must be adapted to the available marketplace, in this case a global one.

Growing share

The new product was the Harris line of DX Radio Transmitters. Here's a brief overview, seen through my personal involvement. Readers who are interested in the details of this product history can find it posted at www.rwonline.com.

As an engineer since 1950 and later as a manager of high-tech electronics companies, I've spent my working lifetime in high-power radio frequency systems.

We developed the team to execute the program and develop the medium-wave (MW) and long-wave (LW) marketplace, moving Harris Broadcast to become a major factor in the market, growing from a 10 percent market share to approximately 35 percent.

The project got moving in 1988 after a noncompetitive low-power start in 1987. The basic concept was developed by Hilmer Swanson, a senior engineer at Harris Broadcast; and a 10 kilowatt model was

demonstrated at the NAB show in 1987.

I recognized the following year that Swanson's concepts could be cost-reduced while holding the design integrity and that we could move it from 10 kW to very high power of 100 kW, to beyond 500 kW and finally 2000 kW. We saw that about 80 percent of the installed power was at levels above 50 kW and that the key players at the time had capabilities up to megawatts, using primarily vacuum tubes in the final stages and series solid-state modulators.

We also noted that many countries had very high-power transmitters, in addition to 10–50 kW units, to communicate with their populations; and many units were above 1000 kW.

Aiming to be dominant at high power (above 50 kW) and become a major factor in the international market for MW and LW, we developed concepts to move the DX solid-state concept to 100 kW, then 200 kW, then on to 500/600 kW and finally to 2000 kW, knowing also that this

I recognized the following year that Swanson's concepts could be cost-reduced while holding the design integrity. We were able to move it, ultimately, up to 2000 kW.

would lead the way for the 10 to 50 kW market globally and help serve the U.S. market, which has a maximum power rating of 50 kW.


Thus we had the background to introduce a superior product at competitive prices. My paper discusses how a dynamic team was developed to execute the project.

SS

One major success was to overcome skeptics within Harris and other suppliers and users as we gradually replaced older vacuum tubes transmitters with a superior solid-state unit and move the market for all suppliers to be essentially 100 percent solid-state by 1995. Other designs existed prior to DX but were limited in production to about 50 kW at the time.

Most of the story takes place in 1988–1996. I worked well into retirement to help to continue the success of the DX program; and I feel that the paper demonstrates how a company can move from being a minor contributor to becoming a major factor in the worldwide market with a good idea, proper execution and dedicated and knowledgeable people within the framework of the supporting company.

The amount of installed LW and MW power from 1988 to 2004 exceeded 200 megawatts. The Harris DX enjoys market share of approximately 35 percent including tube and solid-state types, and approximately 50 percent of the solid-state portion alone. The division between low power and high power (above 50 kW) is about 40 percent and 60 percent respectively at present.

The author's paper is posted online at www.rwonline.com. RW welcomes other points of view. 



See the latest 5.1 products and technologies on display



ENCO



LINEAR ACOUSTIC

Surround Sound Solved

Fraunhofer

Institut Integrierte Schaltungen

Minnetonka
AUDIO SOFTWARE, INC.

t.c. electronic

Produced by NAB and the following publications:

TV TECHNOLOGY
PRO AUDIO REVIEW

AUDIO MEDIA

Radio World

NAB 2006
THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW

CONFERENCES: APRIL 22 - 27 • EXHIBITS: APRIL 24-27
LAS VEGAS CONVENTION CENTER
LAS VEGAS, NEVADA, USA
WWW.NABSHOW.COM

Tichenors, Fries and Case Are 'Pioneers'

The Broadcasters' Foundation named its recipients of the Broadcast Pioneer Awards, to be presented during the NAB convention. Honorees whose careers are in radio are shown. Also honored were John Conomikes, Hearst Corp. director and former president and CEO of Hearst Argyle Television, and K. James Yager, president/CEO of Barrington Broadcasting and former joint board chair of NAB.

Dwight Case

Case began his career in 1948 doing "Midnight Dance" remotes in Stockton, Calif., for KJOY(AM). He worked at KFIV Modesto as a board op, copywriter and DJ, then took up sales and marketing. He became GM of KRAK, Sacramento, and later KOBV San Francisco.



Dwight Case

"His first group management position began with Gordon Broadcasting, where he oversaw five markets from a base of operations at KSDO, San Diego," the foundation said. Case then ran the Richard H. Ullman syndication and jingle firm, then returned to management at KROY Sacramento. In the 1970s he became president of RKO Radio, with 13 major-market stations and a rep company; it built three new news networks, including the first to use satellites as the distribution platform.

He co-founded Transtar the Radio Network and was publisher of Radio&Records. He launched the first all-Asian station, KAZN, in Los Angeles, followed by Spanish stations in Fresno, Sacramento and Bakersfield. In the 1990s he was part of senior management at Western International Media.

Case is CEO of Team Asia, a management consulting company active in ethnic media in Los Angeles.

Gary Fries

Fries is departing president/CEO of the Radio Advertising Bureau, a position he took in 1991. Membership under his tenure has doubled to more than 6,000 stations and 1,000 associate, network, representative firm and international organizations.



Gary Fries

"He has raised the profile of radio within the advertising and buying communities; introduced or advanced numerous training, NTR and certification programs; and established the RAB as a full-service resource center for member stations, agencies, advertisers, the press and financial institutions," the foundation stated.

Fries held positions as president of Unistar Radio Networks and Transtar Radio Networks; president and COO of Sunbelt Communications' Radio Division; and vice president at ITC Communications and Multimedia Broadcasting Inc. He began his career in Lincoln, Neb., where he was a part-time salesperson at Stuart Broadcasting's KFOR while in college. His first management job was at KRGI, Grand Island, Neb.

The Tichenor Family

The foundation honored their "work, determination and a vision of the future" over three generations.

McHenry Tichenor, from Morganfield, Ky.,

went to work after the first World War as a newspaper salesman and became national sales manager. In 1932, he moved to the Rio Grande Valley in Texas. He purchased and sold a newspaper; in 1949, he put KGBS(AM), later KGBT, on the air in Harlingen, Texas.

"In 1952, McHenry took a huge risk and switched to a half-English, half-Spanish format," the foundation stated. It was the beginning of a media empire.

Son Mac served in the Navy during the Korean conflict and earned a law degree. He moved to Harlingen, beginning a career in retail sales. "In 1962, Mac convinced his father that all-Spanish was the way to go/ A series of media purchases in both English and Spanish radio led to the formation of Tichenor Media System." Mac became president in 1962.



Clockwise from left front: David, Warren, Mac Jr. Bill, Jean and Mac Sr. Founder McHenry Tichenor is in the middle in this 1988 photo.

Mac married Carolyn White, and they had four children; he remarried after her death and had another son. "All of Mac's children were raised in the business," the foundation stated.

In 1982, eldest son Mac Jr. became president of TMS, and they created a strategy to own stations in the top 10 Hispanic markets; Warren became vice president of TMS in 1986 and served as GM for several stations; Jean started a business in health care; Bill worked in national sales and headed a division of Katz, and worked at one of the TMS stations. David attends Regis University in Denver.

In 1997, TMS merged its 17 stations in a \$900 million deal with Heftel Broadcasting to become the nation's largest Hispanic radio group. Mac Jr. remained chairman and president/CEO of the public company, later named Hispanic Broadcasting Corp. In 2002, HBC merged with Univision Communications in a deal worth \$3.1 billion.

THE AEQ WORLD

This year AEQ has even more to offer!

SWING
ISDN Codec

PHOENIX
POTS & GSM Codec

EAGLE
ISDN Codec

COURSE Multicoder
Improved with telephone hybrid and IP cards!

ARENA
Digital Console

SYSTEM 6000
Multiplexing System

BC 2000 D
Digital Audio Router

Improved!

BC 2500
Analog Console

New!

PAW 120
Digital Handheld Recorder

Communications and remote broadcasting

- Stationary and portable audio codecs and multicoders for X21, V35, ISDN, GSM, POTS and IP
- Digital hybrids for single or dual lines

Software

- Advanced multiconferencing system
- Real time control for routers

Audio Routing, monitoring etc.

- Cost-effective analog and digital consoles for a single or multi-studio environment
- Digital handheld solid-state recorder
- Audio switching routers

COME AND SEE US AT
NAB 2006, April 24-27,
Las Vegas, Booth N3518

Phone: 866 817 9745 (US only) (954) 581 7999 Fax: (954) 581 7733 e-Mail: sales@aeqbroadcast.com

www.aeqbroadcast.com

See us at NAB Booth # N3518

'The Way Music Was Meant to Be'

Ohio Retirement-Home Radio Station Plays Big-Band Hits and Then Some

by James Careless

The format of Cincinnati's WMKV (FM), understandably, is grounded in big-band hits. The station, after all, believes itself to be the first educational public radio station licensed to a retirement home.

However, there's more to the Maple Knoll Village on-campus station than mere nostalgia. Whether on-air or online at wmkvfm.org, WMKV aims to be a genuine voice for a demographic "whose

average age is around 75," said Alan Bayowski, the station's general manager.

WMKV — a Class A station licensed to Reading, Ohio, and operating at 89.3 MHz — as well as Maple Knoll Village are operated by Lifesphere, an Ohio non-profit seniors support group, the roots of which go back more than 150 years.

What's on

The Society for the Relief of Aged Indigent Women, Lifesphere's predecessor, was founded in 1848 by Lydia

Beecher, stepmother of Harriet Beecher Stowe, who wrote the influential anti-slavery novel "Uncle Tom's Cabin."

The station was established in 1995 to serve as "a friend and companion for seniors in the community," Bayowski said.

"This means much more than just playing music dating back to the 1920s,

teers; many of whom have broadcasting experience," he said. WMKV is home to a number of veterans such as Bill Nimmo, who worked with Johnny Carson on the TV game show "Who Do You Trust?" and longtime WLW(AM)/WLWT(TV) weatherman Bill Myers.

Collectively, WMKV's staff and volunteers produce shows such as "Song Shop With Annie Wagner" (big band and Great American Songbook music), "America's First On-the-Air Support



GM Alan Bayowski, left, on the air with volunteers Annie Wagner and her husband/engineer 'Wags' Wagner.



WMKV has put together a 12,000-song music library from more than 100,000 donated records.

although we do have an extensive 12,000-song music library that includes 450 songs by Glenn Miller and 300 by Frank Sinatra. We're there for our listeners covering topics ranging from family caregiving to senior computer use and grandparenting issues. We also encourage interaction from our listeners, who we hear from by mail, phone and now e-mail."

With a \$300,000 annual budget drawn from listener pledges and corporate grants, WMKV is run by a handful of professionals such as Bayowski.

"We are aided by about 125 volun-

Group for Caregivers" and "A Bit of a Twist From the Mist of History." Music is WMKV's mainstay, with the station sponsoring a 15-piece WMKV Big Band that plays three dances a month.

"About of half of the band's musicians are retired professionals, while the rest are amateurs who love to play," said Bayowski.

Who's listening

According to Bayowski, about 30,000 people tune into WMKV over the air in

See WMKV, page 71 ▶

Ever wish you could just move the post?



Visit us at NAB 2006
Booth N2513

Program logs can't map out the surprises in your broadcast day. But serving your listeners means getting severe weather bulletins, Amber alerts, and other breaking events on the air immediately.

Audio Time Manager lets you insert important, unplanned content into a network show and still have it end on time. No more make-goods. No more returning "already in progress." No loss of content. No listener whiplash!

If you can press two buttons, you can make extra time when you need it. With audio quality so transparent it will amaze you.

Move the post instead of crashing into it. Contact us and take Audio Time Manager for a test drive.



ON THE AIR

SANITIZED FOR YOUR PROTECTION

SOME WORDS SHOULD BE OBSCENE AND NOT HEARD



Eventide Broadcast Delays are designed to keep profanity off your air, and angry listeners, embarrassed advertisers, and the FCC off your back. We invented the obscenity delay and have a solution for stations large and small that provides up to 80 seconds of the highest quality revenue and license-protecting delay.

Our new HD compatible BD600, 24-bit delay, comes standard with AES/EBU, and provides up to 80 seconds of memory — twice as much as other delays. There are fully adjustable Delay and Dump functions, and a Sneeze function which “excites” audio entering the delay, allowing the host to sneeze, cough, or make a short comment without being heard on air.

The BD600 offers two different methods of delay buildup and

reduction: Eventide’s catch-up and catch-down system, and an exclusive fast-entry-and-exit feature which allows starting a broadcast with the delay already built up to a safe amount and ending it with a rapid reduction of delay.

For HD, the BD600 offers MicroPrecision Delay™ mode which allows up to 10 seconds of delay to be adjusted in real time in 100 nanosecond increments. This is useful for synchronizing analog and digital signals while on-air, without audible artifacts, to maintain a seamless user experience.

Whatever your size, whatever your format, you can’t expect to protect the integrity of your air and the foundation of your business without an Eventide Broadcast Delay in your rack.

Eventide®

HD COMPATIBLE

One Alsan Way, Little Ferry, NJ 07643 tel.201.641.1200 www.eventide.com
Eventide is a registered trademark and MicroPrecision Delay is a trademark of Eventide Inc. ©2005 Eventide Inc.

World Radio History

Station Vehicles: Tips & Tricks

by Paul Kaminski

This article is meant to share observations I've made producing more than 625 episodes of the program "Radio-Road-Test." It raises questions and ideas that managers as well as engineers (to whom vehicle duty is assigned, more often than not) should ask about vehicles and their care and feeding.

One might expect that stations with certain formats would have certain kinds of vehicles. There's truth to that.

An oldies station might wish to project one image — perhaps with a PT Cruiser or classic older car — while a smooth jazz station or public radio station might say something different — perhaps with a Lexus or Subaru? You'd more likely find an H2 Hummer in the parking lot of a rocker or sports station. The "Music of Your Life" station might have a Buick LeSabre in its garage, and while an all-news outlet might go with utility vehicles like the Dodge Durango or Nissan Pathfinder, or even big sedans like the Ford Crown Vic.

In an ideal world, anyway, that's what happens. But we live in the real world, and your vehicle may or may not be "right" for the job. And the factors that go into making a good "fit" go beyond station formatics.

When negotiating a trade, lease or purchase, define the vehicle's intended use. Will this car, van or truck be used primarily for the engineer's transmitter visits in hip-deep snow? The general manager's ride taking important clients to lunch? A traffic reporter's heavy, twice-daily commutes? The promotions department remote appearances? A combination of all of these?

How will the vehicle be marked? Choices range from detailed graphic vehicle wraps to classic custom car hand painting, decals or a simple magnetic sign.

Decals need not go on the body. On a van, for instance, you might consider decals on side windows. In situations where formats are in a lot of flux, it'll be easier to scrape letters off glass rather than the painted body of the vehicle.

One thing station vehicles should *not* be marked with is grime. Keep the dirt off.

How big will your vehicle be? If it has a combined gross weight of 26,000



It's hard to miss the station branding on this vehicle of Greater Media's WBNF(FM) in Philadelphia.

pounds or more, operators must, by federal law, hold commercial drivers licenses and be subject to "hours of service" rules and other regulations. The Department of Transportation Web site has answers about hours of service, gross weight threshold and related questions about commercial vehicles. Visit www.fmcsa.dot.gov.

Driver ed

Who will drive this station vehicle?

If you are responsible for operation and management of vehicles, you should — in consultation with your risk manager or insurance agent — check the driving records of any drivers and check to see if those drivers do in fact have valid licenses for the class/classes of vehicle your station owns or controls.

If the operators have good records, ask your insurer about discounts. In some states, including New York, some points against the driving record can be erased by taking the National Safety Council's Defensive Driver Course. The course also can earn the driver a discount on personal insurance.

If a driver's record is not so good — multiple and serious violations within a short time, for example — you need to know that and consider the implications of granting access to vehicles. The time to prevent a person with a suspended license from driving your station vehicle is before it happens.

One piece of advice to anyone who drives a station vehicle that bears a logo: Drive as though you are being followed by a state trooper. If you cut people off, tailgate or drive well over the speed limit, you could in fact get you a face-to-face meeting with "Smokey Bear" — they still call 'em Smokey on the CB — but there's another reason to be extra cautious: Bad driving can hurt the station's image. You need every one of your listeners. Why make them mad in traffic?

Where the vehicle will be driven matters. If your intended use includes lots of in-town, stop-and-go traffic, consider hybrid electric and gas vehicles. Honda and Toyota/Lexus are the biggest players in this market, with Ford and GM offering hybrid versions of certain models. Your real-world mileage won't likely match EPA economy numbers, but you can save on fuel.

In a recent test of the Toyota Highlander all-wheel-drive hybrid, I averaged 26.4 miles per gallon on the highway with the V-6, and went from 0 to 60 in 8.5 seconds. With a full-size Chevy Silverado Hybrid V8 pickup, I averaged 17.6 mpg around town and went from 0-60 in 9.2 seconds.

Hybrids generate their own electricity to charge on-board batteries, which then drive a set or sets of wheels. The more time you spend on battery power, the better your miles per gallon will be.

In the Trunk

Equipment every station vehicle should carry:

- Jumper cables or a 12V power source for jumpstarting the vehicle
- Flashlight with alkaline batteries and a spare pack of batteries
- Flares
- External cell phone antenna and power adapter (the range of an external antenna can bring help sooner in some circumstances, and if you have to do an ad hoc broadcast over cell phone, the antenna will help to reduce dropped calls)
- First-aid kit
- Blanket for cold-weather protection
- Properly inflated spare tire
- Jack, wrenches and pair of work gloves to change that tire
- Windshield wiper fluid, oil and other extras that might run out at the wrong time

You probably have other suggestions, including ones particular to your station or environment.

If you do a lot of country and highway driving, add a couple of energy bars and a couple bottles of water to the list.

Carry detailed maps of the area in the vehicle. If the station has printed promotional information or sales one-sheets, add some of those in a 9-by-12 envelope. One never knows where your next listener or advertiser will appear.

Be prepared to wait for a hybrid, though. The manufacturers and dealers report waiting lists for the most popular models.

Some vehicles advertised as all-wheel-drive might not be appropriate for off-road excursions like those necessary to measure directional AM antenna performance, for example. Ground clearance is the key here; traditional "sport utes" have higher ground clearance than crossover models, those using a car platform rather than a truck platform to build on, like the Ford Escape, Chevy Uplander, Toyota Highlander, etc.

Gas-smart

Thrift and radio broadcasting are mutually inclusive terms. How can you save money on fuel?

See VEHICLES, page 76 ▶

Do you know what your competition is doing? MEDIA Access Pro™ can tell you!

A comprehensive resource for media intelligence—markets, ownership, revenues, and coverage.

MEDIA Access Pro™ Version 4.2 Available March 2006!

ALL NEW!

HD and multicasting data, expanded CP information, more comprehensive maps, the addition of low power FM stations and more!

Contact us today for a demonstration
800.331.5086, email: info@bia.com

BIA Financial
fn network

Media Intelligence and Investment Resources

www.bia.com

PLUG & PLAY TRANSMITTER BUILDINGS

Attention
Hurricane
Damaged
Facilities

- **Solid Reinforced Concrete Shelters**
- **Certified For Extreme Weather – Up To Category 4 Hurricane**
- **Completely Built Out And Tested With Equipment To Facility Specification And Site Requirements**

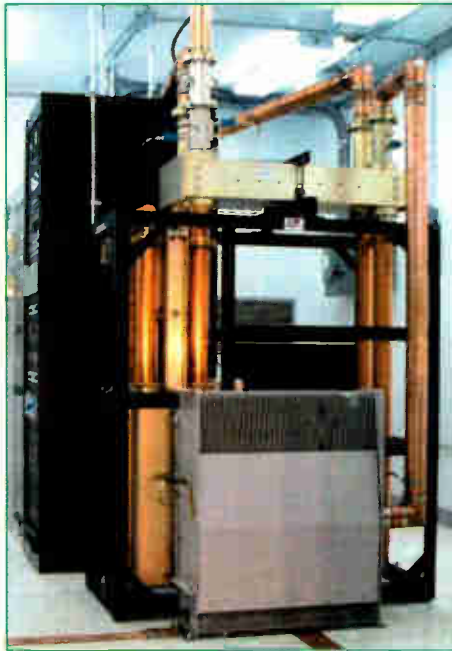


TYPICALLY PROVIDES CONSIDERABLE COST SAVINGS VERSUS SITE BUILD

Performing a transmitter facility site build can be an exercise in frustration, particularly if it's not something that the engineer in charge does on a frequent basis or the task is one of many that need to be accomplished in a very short time frame.

Balsys has developed an efficient alternative. **Plug & Play Transmitter Buildings**. Solid reinforced concrete shelters, each designed for the specific project with all required penetrations for transmission line, telco, electrical, GPS, etc. Each including complete electrical, HVAC, and insulation. Certified to meet your local building codes, with all equipment installed, wired, tested into a high power dummy load, & fully documented, ready to be delivered to the site as a final product. Local installation requires only pad or piers, electrical service, STL, antenna, & telco for completion.

Simply Put: Drop It In - Hook Up The Externals - Flip The Switch - You're Done!



All Equipment Is Located For Maximum Accessibility - Bolted To The Floor – Grounded - Wired
High Power Tested At Balsys Prior To Shipment

Lengths to 38' - Modular For Non-Transportable Widths

A Convenient Workbench Area Is Provided With Document Storage Rack - Telephone & Optelator Installed
Complete Documentation Is Provided

Balsys Is A Certified HD Radio (IBOC) Integrator

Would You Like To Receive A Quotation? We need to know the equipment to be installed (including manufacturer & model numbers), orientation of doors, electrical, telco, and transmission lines - and city, county, and state of final installation. Drawings will be supplied for your approval prior to quotation.

BALSYS
TECHNOLOGY GROUP, INC.

www.balsys.com

Balsys Technology Group, Inc.

930 Carter Road #228 – 234

Winter Garden, FL 34787

Te! 407-656-3719 • Fax: 407-656-5474

sales@balsys.com

Call 407-468-5932 to meet us at NAB

World Radio History

Deloitte: Tuning In to Radio 2.0

How are financial observers seeing the outlook for radio?

Here's the view of one. The following is an excerpt from "TMT Trends: Predictions 2006," Deloitte Touche Tohmatsu's look at trends in technology, media and telecommunications.

"The business model for radio will likely be on the cusp of significant change in 2006. Historically radio has been funded by advertising, and to a lesser extent, public subsidy. Although this funding will continue, radio stations will likely start to generate an increasingly diverse mix of revenue streams, satisfying an increasingly varied and geographically dispersed demand for radio content (see figure).

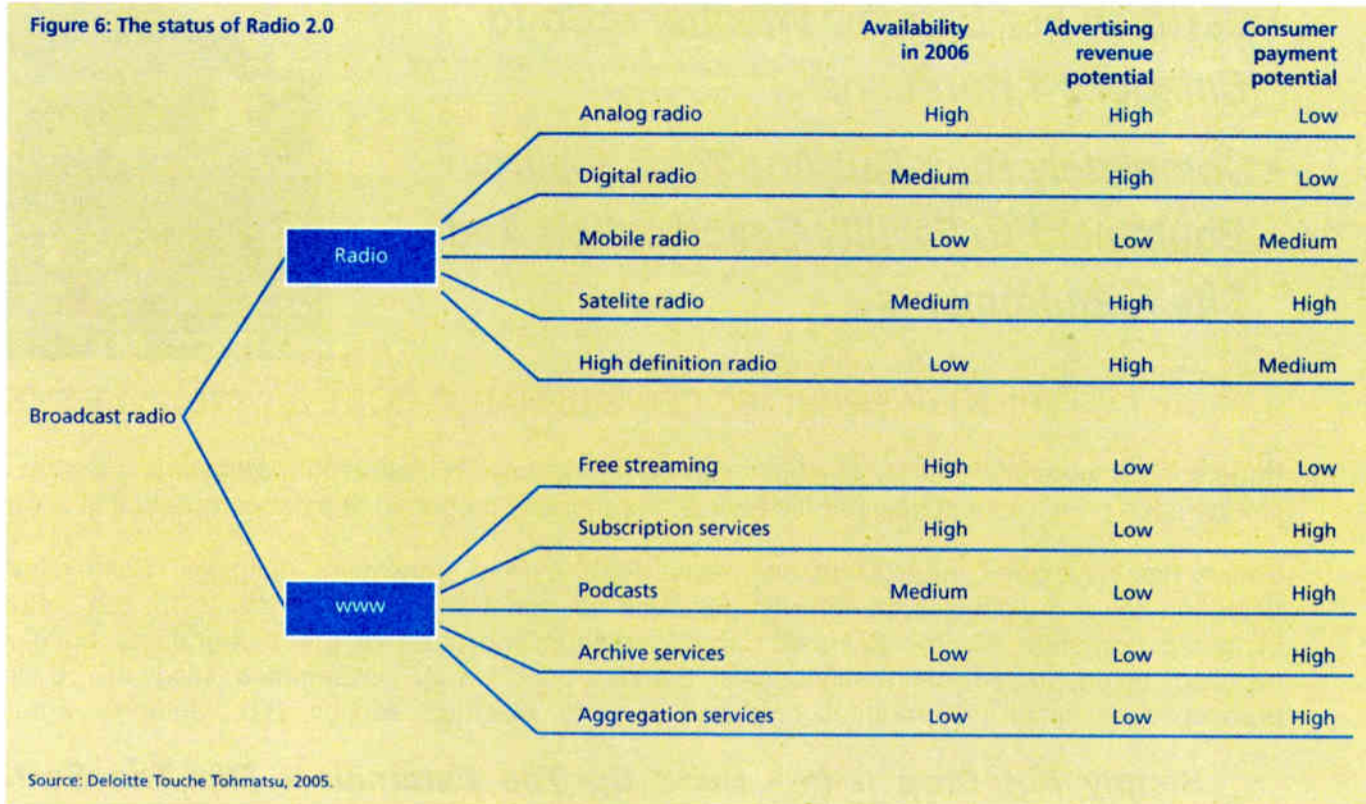
"Radio listeners — who may soon be referred to as customers — will likely enjoy increasing control over: what they listen to, when they listen to it (live broadcast or time-shifted playback), and on what device. They may also get to choose the amount of advertising they are exposed to and there should be increasing opportunities to purchase content.

"This suggests that radio stations should enjoy a growing range of opportunities to charge for content and advertis-

ing. Customers who miss a broadcast can buy a replay; classic archive broadcasts can be sold as downloads; the best con-

tent could be reserved for subscribers only; high-definition audio could garner a premium.

global audience. As foreign listeners will often be accessing via the Internet, far more accurate audience tracking than is undertaken of conventional radio listeners is possible, implying better service for advertisers. Furthermore there is scope for delivering localized, and even



STATION/STUDIO SERVICES

AOFBE

Two advertising salespeople are rated equal in talent, drive, opportunity, and resourcefulness. But give one of them some GBS Sales Boosters to sell to his clients and AOFBE, he'll outsell, outperform and outbill the other one, every time. He knows that our exclusive :30- and :60-second featurettes are a snap to sell - and that they attract and hold listeners' attention, thus providing an effective showcase for their sponsors' commercials. Which is why GBS Sales Boosters mean *Money in the Bank* to stations that use them. For free demos and more information, visit GraceBroadcast.com today. (Know what AOFBE stands for? Email your answer to rod@gracebroadcast.com. Free prize to the first 5 correct respondents.)



GRACE BROADCAST SALES
Sound Ideas for Building Business™

Questions? Call us toll-free (888) 472-2388.
www.gracebroadcast.com

The Ultimate NTR Machine!

Generate Non-Traditional Revenue for your station with a telephone time & temperature system

- C Easy Installation
- C Affordable Lease — No costly equipment to buy
- C Daily Remote Support

www.timeandtemp.net RTI Inc. 800.860.5701 Demo Line 919.362.1117

ATTENTION PROVIDERS!

Promote your services to **Radio World's** readers. Reach Radio Station owners/managers and engineers with your message.

For information on affordable advertising call **Claudia** at 1-703-998-7600, ext. 154.

WISHFUL THINKING

WON'T INCREASE YOUR BILLING....
...but market-exclusive GBS SALES BOOSTERS WILL!

FRESHEN YOUR SOUND. FATTEN YOUR PAYCHECK.
FREE SAMPLES AT GRACEBROADCAST.COM
or call toll-free 1-888-472-2388
FREE DEMOS/INFO at gracebroadcast.com

"Furthermore the growing digitization of radio archives could be opened up and licensed to content aggregators. Listeners accessing broadcasts via Internet Protocol (IP) networks can be monitored more accurately than those listening via traditional radios, enabling new approaches to charging for advertising. As new forms of consuming radio emerge, traditional radio will likely remain a genuinely mass medium — with an installed base of 1.8 billion radio sets

customized, advertising.

- The digitization of the radio archive. Particularly where content is proprietary (such as drama, comedy, news and sports) radio stations now have significant opportunities to repackage and resell content commissioned over the last few decades. Digitization also enables revenue generating replay services for listeners who missed the original broadcasts.

- The emergence of subscription radio on a global scale. The radio sector should

'Making radio functionally more complex serves no one. Radio 2.0 must be as intuitive and easy to consume — if not more so — than the current version.'

worldwide. Regular AM/FM radio will continue to attract a healthy share of global advertising spending.

Bottom line


"The days of radio as a single, broadcast product are coming to an end," Deloitte continued in its report.

"Through offering consumers a widening scope of ways in which to consume radio content, the radio industry has the potential to boost its revenues significantly. Preparation will be key: what is happening is far more than just an explosion of distribution options.

"Rather, the business model for radio is being rewritten. The implications of Radio 2.0 that require consideration include:

- The globalization of local radio. Radio stations should no longer regard their broadcasts as regional or national: every radio station can now appeal to a

learn from the experience of television, which in some key markets evolved from advertising-dominated to subscription-dominated in just a few decades.

- Delivering choice, not complexity, to customers. Digital radio platforms offer enormous technical flexibility, from time shifting to digital recording. These features, along with electronic programming guides, reminders, recommendations and other conveniences, should be used to ensure that the next generation radio experience is noticeably better than its predecessor. At the same time, however, simplicity must be central to all players' strategies. Radio is a very simple, easy-to-use medium, and consumers have had many decades of experience with AM/FM radio sets. Making radio functionally more complex serves no one. Radio 2.0 must be as intuitive and easy to consume — if not more so — than the current version." 

WMKV

► Continued from page 66 Cincinnati. "About 60,000 listen into our streaming audio online, based on the number of hits we get each month," he said. "They come from all over: the U.S., Canada, Japan, England, Russia, Germany and even Vietnam."

Although WMKV's target demographic is definitely 65 and up, the station does have listeners from all age groups.

For instance, 16-year-old Peyton McCormick, Miss Ohio Teen USA 2006, recently e-mailed to say, "I absolutely love listening to WMKV!" Hearing the station asking for support, she offered to help fundraise.

Meanwhile, 21-year-old Michael Collins e-mailed that "I absolutely love your station," while 28-year-old Dan Bowman wrote to tell the station to "keep

playing that great music and blessing so many of us throughout the country (and the world)."

And 45-year-old U.S. Coast Guard officer Jim Seeman — who listens when he

does when he's in town is to tune in. He enjoys the selection of big-band music, as well as the "excellent DJs who explain the song as well as the history of the singer."

Seeman likes to hear recordings of old-

ing — makes you feel as if you are at home in a comfortable chair with a great friend who knows lots of music and is sharing that with you," he wrote.

As an educational broadcaster, WMKV doesn't sell commercials. However, Bayowski bristles at the idea that the audience he serves has little to offer advertisers and is not worth being served by commercial broadcasters.

"So many advertisers are working with the stereotype that seniors are complacent, that they don't get around and that they don't spend any money," he said.

"In fact, many of them are in very good physical condition, maintain two cars and keep working, and like to spend money on their children and grandchildren. Frankly, there are a lot of products that can be sold to seniors beyond pharmaceuticals." 🌐

The programming is inviting — makes you feel as if you are at home in a comfortable chair with a great friend who knows lots of music and is sharing that with you.

— Jim Seeman

visits his spouse Kristen Kohler and their dog Colonel Grady — told Radio World via e-mail that one of the first things he

time radio shows, and enjoys the station's focus on the local area.

"In general, the programming is invit-

Mondays at WMKV

A one-day sampler from the WMKV Program Guide. Daily programs also include features such as "Poet's Corner," "Blurbs From the Suburbs" and "Meals on Wheels Hour."

When the White House Conference on Aging was held in Washington recently, General Manager Alan Bayowski and "Washington Report" host Bill Benson covered the event and filed live reports four times daily.

5 a.m.

"Everybody's Planning Hour" — A weekly one-hour call-in program that "focuses on a broad range of subjects important to us all if we are to age successfully." Features Lew and John Gatch as hosts, supported by a grant from The Bahmann Foundation.

9:30 a.m.

"Your Old Economics Professor" — Dr. Martin Gerhard Giesbrecht "makes economics accessible and intellectually enlightening." A real former university economics professor, he also performed with jazz bands and plays the clarinet on the air to open and close his announcements.

10 a.m.

"Music and Memories: With Attitude" — Journalist, broadcaster and author Alice Hornbaker brings listeners music from the big-band era and commentary with "attitude, humor and news for mature adults."

1 p.m.

"The Family Caregiver Hour" — Liz Tassone and "America's First On-the-Air Support Group for Caregivers."

2 p.m.

"Charlie Murdock's Editorials" — Commentaries from the former president and general manager of WLW.

5 p.m.

"Music and Memories: With Attitude" (see 10 a.m.)

7 p.m.

"The Link Pavey Show" — Music for big-band lovers. One hour on Saturdays at 5 p.m. and Mondays at 7 p.m.



VISIT US AT
NAB LAS VEGAS
April 24 - 27, 2006
BOOTH #N3511

In times of change....

Our commitment stands firm.

With all the news and hoopla over dMarc lately, the news striking home was no doubt our strong commitment to leadership in station automation technology. Not only is that commitment as strong as ever, but it's growing ever stronger.

dMarc spends more money on R&D perfecting our industry-leading digital automation systems than do all the other automation companies combined. For our client stations, that means true peace of mind knowing that not only do you have the best digital solutions in the industry, but the inside track to even better technology in the future.

**The best digital systems.
The best broadcasting solutions.
The best service**

ALL FROM DMARC. STILL.

1-888-438-7268
www.dMarc.net

Scott Studios **Maestro**
Scott Studios and Maestro are Product Lines of dMarc

680 Newport Center Drive, Suite 150, Newport Beach, CA 92660



How Vulnerable Are You?

Disaster planning makes headlines year after year, as broadcasters continue to discover that operation of their facilities can be undone or hindered by weather or man-made attack.

The charts shown here constitute a "Local Radio Station Model Vulnerability Assessment Checklist." It was developed by a working group of the Media Security and Reliability Council in late 2004, and is also part of a larger "Local Radio Station Model Disaster Recovery Plan & Incident Response manual," released last November and available online at www.fcc.gov/msrc. With emergency planning yet again on the agenda during the approaching NAB convention, Radio World reprints it now.

The purpose of these charts is to provide guidelines to assist local stations in assessing vulnerabilities. The organizers took pains to point out that the list is not intended to be comprehensive; stations were encouraged to adapt to accommodate their unique requirements.

The group also issued a list of best practice recommendations, noting that radio broadcasters should:

- have appropriate physical security, augmented by security personnel and/or video surveillance at their key facilities, including studios/newsrooms, satellite transmit and receive sites and antenna/transmitter sites;
- employ diverse power grid sources wherever feasible;
- take appropriate measures to provide backup power capabilities for their key facilities, including studios/newsrooms, satellite communications and transmitters;
- if they have local news origination, ensure that they have robust and redundant ways to communicate with external news services and remote

news teams, such as the use of mobile radio and Internet to augment cell phones;

— have backup signal feeds to their primary satellite transmit and receive sites;

— have redundant signal paths to their primary and backup transmission facilities;

— if they have local news origination, plan to have emergency origination capability at a separate location from their primary studio (e.g., backup studio, transmitter site, remote van, another station, etc);

— if they have local news origination, have a remote vehicle, or some means of delivering live news and information from a remote site;

— have the capability of receiving a remote feed at an additional site from their primary studio (e.g., directly at their tower site, at a backup studio, etc);

— have a backup satellite transmitter and receiver, or an alternate means (e.g., a satellite radio receiver, a dedicated phone line or a streaming audio Internet connection) to send and receive signals from and to national news services in emergency situations;

— have a backup transmitter, and should attempt to make practical arrangements for geographic diversity where possible (e.g., provisions for emergency use of other backup transmitter/antenna facilities in the community or other means);

— The group also said radio broadcasters in a market should, with the cooperation of federal and local policy makers, collaborate to increase collective site diversity and redundancy, including their collective news studios, operations, satellite transmit and receive facilities and transmitter and antenna sites.

Disaster Recovery Plan

| | | |
|---|-----|----|
| Does a Disaster Recovery Plan exist which details how to effectively assess impact to the facilities and recovery operations in the event of an emergency? | Yes | No |
| Does the Disaster Recovery Plan address timely activation of any backup origination facility in time of emergency? | Yes | No |
| Does the Disaster Recovery Plan include backup delivery methods for network or other programming? | Yes | No |
| Does the Disaster Recovery Plan include reception and delivery of emergency news? | Yes | No |
| Does the Disaster Recovery Plan identify essential personnel necessary to carry out restoration efforts? | Yes | No |
| Does the Disaster Recovery Plan include agreements to gain assistance from other broadcast, cable and production operations? | Yes | No |
| Does the Disaster Recovery Plan identify essential equipment and service suppliers, including contract engineers, construction and installation companies, fuel, and external telecommunications providers, to ensure availability of critical resources? | Yes | No |
| Does the Disaster Recovery Plan include alternative methods to communicate with key field personnel in the event that radio, cell systems or other primary methods are inoperable? | Yes | No |
| Does the Disaster Recovery Plan include data restoration and offsite backup of program and playback software (restoration of data includes servers, remote control systems, telephones, and routers)? | Yes | No |
| Is the Disaster Recovery Plan periodically reviewed and updated? | Yes | No |
| Is the Disaster Recovery Plan periodically tested and rehearsed? | Yes | No |

Terrestrial Transmission

| | | | |
|---------------------------------------|---|-----|----|
| Backup Transmission Facilities | Is there a backup transmitter and antenna available? | Yes | No |
| | If there is a backup transmitter and antenna site, is it geographically diverse from the primary location? | Yes | No |
| | Does the backup transmitter and antenna provide service to the metro area? | Yes | No |
| Backup Power | Does the primary transmission facility have backup power? | Yes | No |
| | Does the backup transmission facility have backup power? | Yes | No |
| | Can backup power operate long enough to implement the recovery plan? | Yes | No |
| | Where backup power is available is it automatically activated? | Yes | No |
| | Are the backup power systems routinely tested under load? | Yes | No |
| | At least once a year is the backup power tested while the facility is disconnected from the power grid? | Yes | No |
| Security | Are the security protocols sufficient to prevent unauthorized access to the transmission facilities? | Yes | No |
| Redundant Signal Routes | Is there a backup signal path to the primary transmitter facility? | Yes | No |
| | Do these redundant paths include diverse technologies, (i.e., wired and wireless)? | Yes | No |
| | Is there a backup signal path to the backup transmitter facility? | Yes | No |
| | Do these redundant paths include diverse technologies, (i.e., wired and wireless)? | Yes | No |
| | Are there auxiliary TV or radio tuners at the transmitter site that can be used as an alternate source of news and information? | Yes | No |
| | Is a RPU system available for remote broadcasts? | Yes | No |
| | Can the RPU signal be received at the transmitter site? | Yes | No |
| | If so, can the RPU signal be switched into the transmitter by remote control? | Yes | No |
| Transmission remote control | Can the transmitter site(s) be remotely controlled from locations other than the main studio? | Yes | No |
| | Can the transmitter site(s) be controlled with diverse technologies, (i.e., wired and wireless)? | Yes | No |

Studio Planning

| | | | |
|---|---|-----|----|
| Backup Origination Facilities | Does a backup studio exist at an offsite location? | Yes | No |
| Backup Power | Does the Studio facility have backup power? | Yes | No |
| | Does the primary transmission facility have backup power? | Yes | No |
| | Does the backup studio facility have backup power? | Yes | No |
| | Does the backup transmission facility have backup power? | Yes | No |
| | Can backup power operate long enough to implement the recovery plan? | Yes | No |
| | Where backup power is available is it automatically activated? | Yes | No |
| | Are the backup power systems routinely tested under load? | Yes | No |
| | At least once a year is the backup power tested while the facility is disconnected from the power grid? | Yes | No |
| Security | Are security protocols sufficient to prevent unauthorized access to the studio facilities? | Yes | No |
| Emergency News & Information | If national network news agreements do not exist, is there an agreement to carry emergency news from alternate sources? | Yes | No |
| | In the event of a failure of the newsroom computer system is there an alternate plan to get news on the air? | Yes | No |
| | Can Emergency Alert System (iEASi) alerts be received and rebroadcast from backup facilities, if such facilities exist? | Yes | No |

More Info

Charts on this page are reproduced from the "Local Radio Station Model Vulnerability Assessment Checklist," developed by the Toolkit Working Group for the Media Security and Reliability Council, Nov. 16, 2004.

This information is also part of a larger "Local Radio Station Model Disaster Recovery Plan & Incident Response Manual," released November 2005.

Both are available online at www.fcc.gov/msrc.

JUST ENOUGH TEST



Is your bulky bench analyzer more test than you use and more weight than you want?

Sophisticated Minstruments from NTI give you just enough test capability, plus functions not even available on their larger siblings... and these flexible instruments fit in the palm of your hand

ML1 Milyzer Analog Audio Analyzer

The ML1 is a full function high performance audio analyzer and signal monitor that fits in the palm of your hand. The comprehensive feature set includes standard measurements of level, frequency and THD+N, but also VU+PPM meter mode, scope mode, a 1/3 octave analyzer and the ability to acquire, measure and display external sweeps of frequency response generated by the MR1 or other external generator.

With the addition of the optional MiniSPL measurement microphone, the ML1 also functions as a Sound Pressure Level Meter and 1/3 octave room and system analyzer. Add the optional MiniLINK USB computer interface and Windows-based software and you may store measurements, including sweeps, on the instrument for download to your PC, as well as send commands and display real time results to and from the analyzer.

- ▶ Measure Level, Frequency, Polarity
- ▶ THD+N and individual harmonic measurements k2→k5
- ▶ VU + PPM meter/monitor
- ▶ 1/3 octave spectrum analyzer
- ▶ Frequency/time sweeps
- ▶ Scope mode
- ▶ Measure signal balance error
- ▶ Selectable units for level measurements

DL1 Diglyzer Digital Audio Analyzer

With all the power and digital audio measurement functions of more expensive instruments, the DL1 analyzes and measures both the digital carrier signal (AES/EBU, SPDIF or ADAT) as well as the embedded audio. In addition, the DL1 functions as a smart monitor and meter for tracking down signals around the studio. Plugged into either an analog or digital signal line, it automatically detects and measures digital signals or informs if you are on an analog line. In addition to customary audio, carrier and status bit measurements, the DL1 also includes a sophisticated event logging capability.

- ▶ AES/EBU, SPDIF, ADAT signals
- ▶ 32k to 96k digital sample rates
- ▶ Measure digital carrier level, frequency
- ▶ Status/User bits
- ▶ Event logging
- ▶ Bit statistics
- ▶ VU + PPM level meter for the embedded audio
- ▶ Monitor DA converter and headphone/speaker amp

NEW! AL1 Acoustlyzer Acoustics & Intelligibility analyzer

The AL1 Acoustlyzer is the newest member of the Minstruments family, featuring extensive acoustical measurement capabilities as well as core analog audio electrical measurements such as level, frequency and THD+N. With both true RTA and high resolution FFT capability, the AL1 also measures delay and reverberation times. With the optional STI-PA Speech Intelligibility function, rapid and convenient standardized "one-number" intelligibility measurements may be made on all types of sound systems, from venue sound reinforcement to regulated "life and safety" audio systems.

- ▶ Real Time Analyzer
- ▶ Reverb Time (RT60)
- ▶ High resolution FFT with zoom
- ▶ Optional STI-PA Speech Intelligibility function
- ▶ THD+N, RMS Level, Polarity

MR1 Minirator Analog Audio Generator

The MR1 Minirator is the popular behind-the-scenes star of hundreds of live performances, remotes and broadcast feeds. The pocket-sized analog generator includes a comprehensive set of audio test signals, including sweep and polarity signals which work in conjunction with the ML1 Milyzer.

- ▶ Sine and square waves
- ▶ Pink & white noise
- ▶ Polarity test signal
- ▶ Stepped sweep for response plots
- ▶ Balanced and unbalanced outputs

MiniSPL Measurement Microphone

The precision MiniSPL measurement microphone (required for the AL1 Acoustlyzer and optional for the ML1 Milyzer) is a precision reference mic for acoustics measurements, allowing dB SPL, spectrum and other acoustical measurements to be made directly.

- ▶ 1/2" precision measurement microphone
- ▶ Self powered with automatic on/off
- ▶ Omni-directional reference microphone for acoustical measurements
- ▶ Required for the Acoustlyzer; optional for the Milyzer

MiniLink USB interface and PC software

Add the MiniLINK USB interface and Windows software to any ML1 or DL1 analyzer to add both display and storage of measurement results to the PC and control from the PC. Individual measurements and sweeps are captured and stored on the instrument and may be uploaded to the PC. When connected to the PC the analyzer is powered via the USB interface to conserve battery power. Another feature of MiniLINK is instant online firmware updates and feature additions from the NTI web site via the USB interface and your internet-connected PC.

- ▶ USB interface fits any ML1 or DL1
- ▶ Powers analyzer via USB when connected
- ▶ Enables data storage in analyzer for later upload to PC
- ▶ Display real time measurements and plots on the PC
- ▶ Control the analyzer from the PC
- ▶ Firmware updates via PC
- ▶ MiniLINK USB interface is standard



NTI
NTI Americas Inc

PO Box 231027
Tigard, Oregon 97281 USA
503-639-3737
www.nti-instruments.com
americas@nti-instruments.com

GUEST COMMENTARY

What Is the Real Future of HD Radio?

New Channels Will Be a Wasted If They Don't Carry Truly Better Creative Programming

by Bob Raleigh

The author is a programmer/consultant for Jones Radio Networks/Seattle.

The other day I was having a conversation with a market manager about HD Radio. He was going on about how wonderful the audio quality was going to be — much better than what we get now with our main terrestrial signals and certainly better audio quality than what satellite radio has to offer. And here is the best part: It's free! Yippee!

OK. I agreed with him on the audio quality part. It does sound better. The free part, not so much.



Bob Raleigh

Nothing is free. You will have to buy new receivers. Your current ones won't pick up anything in HD. But at least you don't have to pay a subscription for it. Time will tell how willing consumers will be to fork over more money for a new radio.

Waste of time?

Wait; I'm getting to the point behind that last statement.

I then asked the manager how he was going to program his new channels in his four-station cluster. After all, he will now have four more new stations to supply content to.

He immediately answered with "all this great music we can't put on our existing stations. It will be wall-to-wall music for at least a year. No commercials. And we'll stream it online until the receivers get into the marketplace."

So basically, I said, "You're going to be a giant iPod that either I have to leave in my car, or leave in my house. I won't be able to take it with me wherever I go outside of those two places, like I can my iPod."

He suddenly got that blank stare, as if I just told him his daughter was going to marry the station mascot (nothing against those wearing mascot suits, I did it in a previous life).

I said, "If that is all you are going to do, don't waste your time or the bandwidth. I can get that now without investing in an HD Radio. And quite honestly, while music is extremely important and is the first thing music radio listeners

tune in for, it's not the only thing."

Here is my point on whether consumers will fork over money for new radios or not. It's content that is going to drive receiver sales, not better audio quality of the same stuff we've been giving them.

And has always been the case, it will be content that ultimately wins the battle for the listeners' ears.

I've read and listened to all the radio group heads, most of them fairly smart people, and even some of the folks who work for Jones Radio, all really smart

people, talk about how HD Radio will be the thing that saves radio from satellite, iPods, Internet radio and all the other things eroding radio listening.

I've not read or heard one person talk about how we are going to train new radio talent to be compelling on-air talent, how we are going to better serve our community with localism, teach our PDs to be more than a music director on steroids, build a stronger news staff, offer better weather coverage, get involved with community events, or how to simply be better at being entertaining and informative.

It appears we are all going down the same road we've already been down.

We're relying on content we neither own nor have total control over — the music — to get us where we need to go.

Do it now

Most of the big companies and broadcasters are very excited and passionate about the dawn of HD Radio. Fine. Let's be just as excited and passionate about the signals we already have and can actually be heard now by all listeners.

Let's work now to start providing better content between the songs. Let's let our PDs actually program and be creative now. Let's get our talent focused and let them be creative now. Let's start getting back to being community oriented and being creative now.

Because if we don't, and we bring the same type of programming to our HD

See FUTURE, page 75 ►

ENERGYA
FULLY DIGITAL ON AIR CONSOLE

SYNAPSE
CONSOLE UP TO 16 DIGITAL/ANALOG INPUTS AND OUTPUTS

MAXIMUM
DIGITAL AUTOMATION SYSTEM

ITB 302
2 LINES TELEPHONE HYBRID

Telereport Plus
PORTABLE TELEPHONE DIGITAL HYBRID

**OPEN YOUR EYES
AND LET THE FUTURE
COME IN**

WWW.AEV.NET

Tips for Dealing With the Media

I once had client who owned a restaurant.

While I'd like to say I'm a food industry expert, I'd be lying. (I do make mean spaghetti and meatballs, but that's another story). The client hired me to help with the launch of a new eatery.

We worked on the look of the menu, the logo, advertising and public relations. He already knew that the restaurant critic for the biggest newspaper in town was game to write a major story about the place. When I inquired about their relationship, he told me they were good friends and that I shouldn't worry about it.

I said that I was a bit concerned with

that attitude, but my client continued: "It's cool. I asked her not come until a few weeks after we're open and she was fine with that." A few weeks passed and I asked about the critic again. The response: "Oh. I asked her to wait a few more weeks. We're just not ready yet."

My client was shocked when the critic showed up anyway. Worse, the critic hammered the owner in print for asking her to wait. The critic reasoned that if the owner was asking customers to pay full price, he was ready to be reviewed.

No appetite for bad news

I'm sure you won't be surprised to know that the critic delivered a poor

review, which in turn, was damaging for business.

I soon lost the client. It took me a bit to figure out why. I had given him poor advice about his "friend" — or better put, I hadn't expressed how strongly I felt about the minefield he was entering.

Perhaps I can make amends by giving you more pointed advice for times when you are on the other end of the media relationship, dealing with press people when you are the news source rather than the employer or manager.

Don't kid yourself into believing that a reporter is your friend. This is especially true for print journalists, who pride themselves on being non-biased and outside

Promo Power



by Mark Lapidus

the realm of influence. You may have many lunches, dinners and outings with your reporter friend(s), but this only grants you one thing — though a very important thing — which is access.

The fact that a reporter will return your phone call or respond right away to your e-mail is useful. When you have a good relationship, the reporter likely will also listen to your opinion or that of your corporate honchos. If you're lucky and the reporter knows his craft, he will also call you to confirm, deny or defend things when others attack you or your company.

If you build up trust, reporters may even come to use you as a resource to suggest stories or steer them to other sources who can help them in their pursuit of the truth.

But don't expect your "friend" to protect you or comply with what you assume to be reasonable assumptions or limitations on information. That's not his job. You'll do yours better if you understand the professional nature of that relationship. Be truthful with reporters if you decide to share information. But remember that you and the reporter have different professional objectives. Do not be surprised when they see their goals in a different light

See MEDIA, page 76 ►

Future

► Continued from page 74

channels that we have now, it's going to be AM stereo and Quad FM all over again.

Television has had HD for a while. Let's learn from them. Quality programming is what wins, not whether it's in HD or not. Bad programming is still bad programming. Except that it's bad programming in high definition.

Remember the recent ABC-TV show "Emily's Reasons Why Not?" Don't feel badly if you don't. It was a bad show. "But it was in HD!" Still a bad show. It lasted one episode in spite of major marketing and a high-profile star. Let's make sure our new HD channels have truly better creative programming that relies on more than just the music.

Otherwise you just might end up like the above-mentioned TV show, which is not a good thing. Just ask Heather Graham.

This article originally appeared in the Jones Radio Networks Sharepoints client newsletter: RW welcomes other points of view.

Digital Studio System
Broadcast Consoles
Stereo & RDS Coders
Telephone Hybrids
Audio Processors



X TREME



FULLY DIGITAL 5 BAND AUDIO PROCESSOR

AEV S.p.A. Headquarters - Bologna ITALY

Phone +39.051.6634711 - Fax +39.051.6634700 - info@aev.net

Media

► Continued from page 75 than you do.

How important is good press for a radio station?

Goodwill

While difficult to measure, beneficial press can create goodwill among listeners and advertisers. I have witnessed firsthand that goodwill can make a difference in the mind of an advertiser choosing to buy between stations. Perhaps even more important, I have heard listeners in focus groups remark about remembering a station specifically because they read about it in a local paper or saw it on a television

news story.

Our entire Arbitron game is one of recall. Don't discount what goodwill can do for you.

Not all media coverage is of equal value (as you know well, if you work at a news station that sits at the top of the ratings, or if you looking up at another one).

In major markets, it's common for one newspaper to have market-wide reach and to influence other media with the stories they cover. This doesn't mean you should ignore other newspapers or TV stations, but it can dictate your priority level on who gets the story first and with whom you should have the deepest relationship.

A word about press releases: It's not 1990 anymore, but that doesn't seem to prevent stations from ignoring the fact

that e-mail and Web sites exist.

If more than three people know a secret, it's likely to get out through the Internet very quickly. If you spend a day or longer working on a press release that then has to be approved by five people before it's sent out, while others are already talking about it online, you are no longer in control of the message. Someone else will tell your story for you — and they will put their spin on it.

Also, don't underestimate how important it is to send out releases about station events and stunts to TV stations. It only takes a few minutes to do and can get you on TV during a slow news day. You should fax and e-mail all releases.

Send the interesting ones to our own industry trade press as well. Good ideas find a place in publications like this one,

and it can help with your own professional advancement and that of your employer.

Can just anybody handle press relations? No. And the bigger the market, the more there is to lose.

If your media relations person doesn't know how to "go on background," or doesn't clearly know how your station or company wishes to be represented on certain issues, you could be in trouble. I've seen careers ruined when the wrong things were said at the wrong time. Contrary to the common dictum, there is such a thing as bad press.

If you don't believe me, ask my former client.

The author is president of Lapidus Media. Contact him at marklapidus@yahoo.com.

Interested in China?

Come to the China Manufacturers Pavilion
Hall C3, Booth C5107

IMAS Publishing/Broadcast & Production China worked together with NAB to bring you the best of Chinese broadcasting equipment manufacturers. Visit Hall C3, Booth C5107 to see new product offerings, learn more about China and explore potential business opportunities there.

传播与制作
Broadcast & Production



FeiYu

Hansen

FRONTIER



WINSHOW 伟视电子
Let's win together

VS-V-SHINE™

Please also visit all other Chinese Companies at NAB06.



SWIT

For China Manufacturers Pavilion details, please contact Wengong Wang at:



IMAS Media & Exhibitions (Int'l) Limited

Suite 8A, Changle Tower, Central Garden

Fumin Road, Shenzhen, 518048 China

Tel: +86-755-83862930/40/50/60

Fax: +85-755-83862920

Website: <http://www.imaschina.com>

Email: wwg@imaschina.com

Vehicles

► Continued from page 68

If your station serves a large area, consider having your drivers carry cards for "frequent fueler" and rewards programs from the national truck-stop chains like Pilot, T/A and Flying J, for example.

It's worth the time to ask for a membership application; and in most instances these cost nothing. From our experience nationwide at Flying Js, you save at least a penny over the posted price each time you fuel, and can save up to 2-1/2 cents per gallon per month, depending on how much you spend on non-gas purchases. Doesn't sound like much, does it? But remember the business aphorism: If you watch the pennies, the dollars will take care of themselves.

That advice also applies to oil changes, lubrication, vehicle inspection, etc. The cheapest insurance you can buy for a vehicle that is expected to give day in and day out service is an oil and filter change every 3,000-4,000 miles. This is one instance where you should not follow the owner's manual recommendation.

Tires need to be rotated every 6,000 miles in order to equalize wear between the back and front.

If you lubricate and inspect the car every 12,000 miles, you can catch little problems before they become major expenses. If you follow the fleet or severe service recommendations in the owner's manual, you can keep the vehicle running like new for a long while.

Of course, a vehicle should never leave station property without the registration and insurance card in the glove compartment. It also is sound practice to make a legible photocopy of both documents and keep them on file, away from the vehicle. Believe me, it will save time if the separate documents should get misplaced.

If you have further tips for operating a station vehicle or fleet more efficiently, send them to radioworld@imaspub.com for possible inclusion in a future article.

Paul Kaminski is news director for the Motor Sports Radio Network and host of its "Radio-Road-Test" program, on the air since 1993. He contributes reports to CBS News Radio. E-mail him at motorsportsradio@msrpk.com.

got gear?
cables & connectors
racks
tools
problem solvers
test gear
& much more
www.systemsstore.com

SH SHOWCASE SE

Products & Services

The Best RF Equipment Guaranteed!

FM-VHF-UHF-L Band
RF Line Components
Cables and Connectors
Antenna Panels and Systems
Loads
Filters
Combiners
Patch Panels
Splitters & Couplers
Digital Power Meters

10 year GUARANTEE

Booth C2033

Tel: +1 207 627 7474
Fax: +1 207 627 7473
sales@acornrf.com

Acorn **TERACOM COMPONENTS**

Go to Vegas. Work hard. Play hard. Sleep well. AIRcorp's got your back.

The Pro Announcer 500PH

The amazing microphone processor that eliminates room noise and hollow room syndrome, plus provides absolute level control.

AIR corp

www.aircorp.biz **972-304-0455**

PTTEK

Wants Dealers

For DOMESTIC and OVERSEAS sales

We manufacture quality FM Broadcast transmitters, exciters, power amplifiers and LPFM

- Best dealer prices in the industry
- Excellent dealer & customer support
- All products up to 1kW in stock
- 2 year warranty on all parts and labor
- Designed & Manufactured in the USA

Call 408 448 3342
www.ptekpower.com

SOUND SOLUTION

Precise and versatile, the SLM-100 SPL Meter is perfect for your studio.

- ANALOG PRECISION
- SEVEN SPL RANGES
- ±2dB ACCURACY
- A/C WEIGHTINGS
- BATTERY INDICATOR

ATI
Audio Technologies Inc.
154 Cooper Rd. S902
W. Berlin, NJ 08091
856-719-9900 www.atiaudio.com

ELIMINATE JITTER

Make your digital life hassle free – avoid nasty impedance mismatches, clock jitter and signal dropouts.

ATI
Audio Technologies Inc.
154 Cooper Rd. S902
W. Berlin, NJ 08091
856-719-9900 www.atiaudio.com

Unhappy with Short/cut?

VoxPro 4.0 With AGC - MP3

audionlabs.com Available at your favorite broadcast distributor.

©2006 Audion Labs. All rights reserved. Audion, VoxPro are registered trademarks of Audion Labs. Other content and product names may be trademarks of their respective owners.

raduga automation

Automate Your Station in Minutes
...No Degree Required

NEW! Just Released v3.8.7

- Extremely Easy To Use & Understand
- For All Stations, All Formats
- Schedule Spots, ID's, Build Rotations
- Plays All Audio File Formats
- Complete Automation Systems Available
- AirList Music Scheduling Software Only \$259
- Music Libraries Available

...Did we mention **FREE SUPPORT**

Download your **FREE Demo Today**
www.raduga.net/rw.htm
(513) 887-0714

Low as \$149* Buyout

IN THE NEWS

Minot: Davis 'Sets Record Straight'

Steve Davis, senior vice president of engineering for Clear Channel Radio, spoke at the National Alliance of State Broadcasters Associations' 2006 National Summit on EAS and Emergency Communications in Alexandria, Va., last month. The broadcaster previewed his remarks as its "first public comments" after "four years of misinformation" about the Minot incident, which Clear Channel critics and others have used in describing problems with EAS and broadcasters' involvement in it.

Excerpts:

I have the challenge of directing Clear Channel's preparation for, and response to, natural disasters and accidents with dangerous implications.

I personally worked on Clear Channel's response to Hurricane Katrina, which had an impact on Clear Channel's radio operations in a number of our radio markets, besides New Orleans. Damage to our infrastructure resulted in downed towers, loss of electrical power, loss of transmitting facilities and satellite reception capability.

Clear Channel's long tenure in the broadcast industry has enabled us to amass a considerable stockpile of resources that proved invaluable in helping our stations, and our fellow broadcasters, before, during and after the storm. Our staff proved courageous, resourceful and generous as we guided communities through that difficult time.

But as we all know, hurricanes are unlike other disasters such as earthquakes, terrorist strikes and other unforeseeable accidents because there is some advance warning.

This is where the Emergency Alert System is the most critical.

Clear Channel has been working with the EAS since its inception in 1994, as

well as its predecessor the Emergency Broadcast System. Over the years, there have been countless examples of the systems working well, both in situations involving adverse weather and unforeseen, dangerous events.

Core element

There is no debating that EAS equipment is a core element of the country's first response effort. Our responsibility as a broadcaster is twofold: to deliver the

it became clear that local authorities were not successful in activating the EAS system to alert citizens of the dangerous conditions.

For those who aren't familiar with radio engineering jargon, "activated" refers to when a third-party automatically interrupts a radio station's signal remotely. It's a hallmark of the Emergency Alert System. The National Weather Service is the most frequent user of this feature, for things like tornado warnings. But all local

The truth of the matter is that local law enforcement [was] unable to execute EAS procedures that night — they did not and could not activate the EAS ... because, tragically, local law enforcement had not installed their equipment.

— Steve Davis

equipment to local authorities (in many cases, we subsidize the equipment also), and to ensure that the EAS equipment at each of our stations is fully operational so that local or Federal authorities can automatically interrupt our broadcasts with public-safety messages.

But Clear Channel does not stop there. The company's commitment to public safety was evidenced last year when a train derailed in Graniteville, S.C., spilling harmful chemicals causing deaths and endangering citizens. Clear Channel employees in Georgia and South Carolina went above and beyond the call of duty that day to step in when

and Federal authorities have the ability to do this as well.

In the case of Graniteville, Clear Channel collaborated with the National Weather Service in Columbia, S.C., and the local emergency management office in Augusta, Ga., to determine that no station was activated properly.

It is unclear exactly how the local authorities attempted to activate the EAS, but the South Carolina primary station, WCOS(FM), and the secondary station, WLJK(TV), were not activated by the local authorities, even though the EAS equipment at those stations were working properly at the time of the acci-



Steve Davis

dent. We receive test results monthly from both stations, so we know the stations' systems were fully operational.

It was determined later that the local authorities did not properly operate the EAS equipment in their possession, nor did they verify that the attempt to send alerts was received by the public.

Fatal incident

Herein lies the problem. That day, Clear Channel's local engineers manually activated their own stations, helping to avert possible public contact with the dangerous chemicals. But that safety net will not always be there.

Local authorities must have adequate training on the equipment and procedures to ensure the safety of our communities. Yet, sadly they often don't. And the problem is too often hidden from view because EAS equipment at radio stations, the National Weather Service and other federal agencies is fully operational — and the professionals tasked with operating it are well-trained.

But not always.

See RECORD, page 80 ▶

SH Products & Services SHOWCASE SE

STEREO HEADPHONE AMPLIFIER



Shown in AFM-DC1N tabletop chassis

THE ALL NEW AF-SH1 FEATURES:

- Integral Long-Life VCA Stereo Level Control
- Balanced or Unbalanced Inputs
- Switch-Selectable Input Sensitivity
- Switch-Selectable Mono (Left) or Stereo Operation
- Amplifier To Drive High or Low Impedance Headsets
- Convenience of APPFLEX™ Mounting Possibilities

The AF-SH1 is part of the group of versatile APPFLEX products from Radio Design Labs. These modules combine advanced circuitry, durable all-metal construction, attractive RDL ULTRASTYLE™ colors and versatile mounting possibilities. APPFLEX modules are ready to drop in a cabinet, chassis or panel cutout. Numerous ULTRASTYLE wall mounting accessories and tabletop chassis are optionally available to facilitate system design.

SYSTEMS SOLUTIONS

www.rdl.net.com

RDL • 659 N. 6th Street • Prescott, AZ • 86301

RDL Radio Design Labs



New Product At NAB



LCD DISPLAY WATTMETER

Model 81030

NAB BOOTH N1319



Coaxial Dynamics

800-262-9425 • www.coaxial.com

The Preferred Choice for Automation and Switching Solutions

STEREO AUDIO ROUTING SWITCHER



SS 16.16

The SS 16.16 provides audio routing of 16 stereo inputs to 16 stereo outputs. This type of routing allows any one stereo input to be assigned to any/or all stereo outputs. The SS 16.16 may be controlled via front panel encoder controls and/or a multi-drop RS-232 serial port. A 40 x 4 LCD back lit display provides for input descriptions and macro setup. Additional features: headphone amplifier with front panel jack and level control, front panel monitor speaker with mute switch and level control, internal audio activity/silence sensor with a front panel ACT indicator and rear panel open collector, and a 16 GPIO port. FREE Windows NetSwitch remote control software, which supports Serial, USB and Ethernet with the optional ESS-1 Ethernet to serial converter, is available for download. Installation is simplified with plug-in euroblock screw terminals.

AUDIO CONTROL SWITCHER



ACS 8.2

The ACS 8.2 provides matrix audio switching of 8 stereo inputs to 2 stereo plus 2 mono outputs. Any input assigned to output one has fading capabilities. Matrix switching allows any/or all inputs to be assigned to any/or all outputs. The ACS 8.2 may be controlled via front panel switches, contact closures, 5-volt TTL/CMOS logic and/or the multi-drop RS-232 serial port along with 16 GPI's, eight relays, eight open collector outputs, and input expansion port. Installation is simplified with plug-in euroblock screw terminals.

STEREO SWITCHER



SS 4.2

The SS 4.2 provides matrix audio switching of 4 stereo inputs to 2 stereo plus 2 mono outputs. Matrix switching allows any/or all inputs to be assigned to any/or all outputs. The SS 4.2 may be controlled via front panel switches, contact closures, 5-volt TTL/CMOS logic and/or the multi-drop RS-232 serial port along with 16 GPI's, eight GPO's, and input expansion port. Installation is simplified with plug-in euroblock screw terminals.

STEREO SWITCHER



SS 16.4

The 16.4 provides matrix audio switching of 16 stereo inputs to 4 stereo plus 4 monaural outputs. Matrix switching allows any/or all inputs to be assigned to any/or all outputs. The SS 16.4 may be controlled via front panel switches, contact closures, 5-volt TTL/CMOS logic and/or the multi-drop RS-232 or RS-485 serial port along with 24 GPIO's and input expansion port. Installation is simplified with plug-in euroblock screw terminals.

DUAL STEREO AUDIO SWITCHER



SS 8.2

The SS 8.2 provides crosspoint switching/routing with 8 stereo inputs, 2 stereo plus 2 mono outputs. 3 switching modes, I/O trimmers, internal silence sensor, selectable headphone and powered speaker level controls and outputs. LED VU meters, 16 GPI's, eight relays and eight open collector outputs. Multi-drop RS-232 and RS-485 serial ports, plug-in euroblock screw terminals and input expansion port.

BROADCAST tools

Ph: 360.854.9559 • Fax: 360.854.9479

support@broadcasttools.com • www.broadcasttools.com



Be sure to visit our website at www.broadcasttools.com for downloadable manuals, complete product information, and a list of dealers.

See Us at NAB Booth # N1400



STATION SERVICES

Bluegrass Show Expands

The Bluegrass Radio Network has expanded its syndicated program "Into the Blue" to three hours.

The network says the program is the largest syndicated bluegrass radio show in the nation. Founder and host Terry Herd noted "explosive growth" in the popularity of music genre.

The program has approximately 180 weekly affiliate stations. It is described as "a tight, upbeat production with commercial appeal."

"There are so many fans who thirst for the music," Herd said. "Into the Blue" is available to commercial radio stations on a barter basis.

For information contact the company in Kentucky at (859) 881-9155 or e-mail alradio@aol.com.

Play 'Would You Rather'

The website BitXchange said it obtained radio rights to "Would You Rather," which offers participants the option of two potential situations and has them pick the one they would rather choose.

The site offers affiliates the opportunity to get 10 new questions each week and uses the game options as discussion and debate starters for morning shows and talk radio programs.

BitXchange is a show prep service. The site also has news clips and information, guest booking opportunities and "bit sharing" with other shows in the same format. L.A. programmer and consultant Mike Marino is chief editor. The site offers barter deals; it is offered through Envision Radio Networks.

For information call (216) 378-5101 in Ohio or visit www.thebitxchange.com.

GreenStone Introduces Format For Women

GreenStone Media LLC is pitching its "mass-appeal talk format for FM radio, expressly for women, by women." The effort is headed by Executive Vice President/Chief Operating Officer Edie Hilliard.



Edie Hilliard

The target demo is women 25-54, skewed 35-44. Hilliard described its programming as a "a foreground talk format to engage today's woman ... contemporary and relevant, talking about the issues and events that real women talk about every day."

The company will have three daypart shows plus weekend programming. Mornings feature Maureen Langan, Cory Kahaney and Nelsie Spencer; middays are anchored by Lisa Birnbach; afternoon drive hosts are Kathy Najimy and Mo Gaffney.

For information contact the company in Seattle at (206) 778-3808 or e-mail jimlamarca@greenstonemedia.net.

Sean and Richie Salute Cops

WGNA(FM) in Schenectady, N.Y., held its second annual Blue Friday and raised \$11,700 for the group Concerns of Police Officers, C.O.P.S., which helps families of law enforcement officers killed in the line of duty.

BLUE FRIDAY
February 10th, 2006
WGNA's SEAN AND RICHIE SHOW
Salutes the "COPS"



Listeners to the Regent Communications station were encouraged to wear blue that day, and they were invited to stop by two locations — a local car dealer and a mall — to purchase blue carnations, Blue Friday T-shirts and C.O.P.S. shirts. The "Sean and Richie" morning show did a remote and representatives from numerous police agencies took part.

The morning show began Blue Friday last year to commemorate the anniversary of the deaths of Albany Police Lt. John Finn and Schenectady Police Officer Eric Verteramo and the sacrifices made by other police officers.

Record

► Continued from page 78

On Jan. 21, 2002, this problem came into plain view. I'm speaking of the train derailment in Minot, N.D., when harmful chemicals were spilled creating a toxic cloud that affected residents and was responsible for at least one death.

Unfortunately, the failure of specific local law enforcement officials to accept responsibility for the situation that ensued has prevented the situation from being corrected, even four years later.

Regardless of what you've heard or read, the truth of the matter is that local law enforcement [was] unable to execute EAS procedures that night — they did not and could not activate the EAS — as the National Weather Service has done without incident before that day and since — because, tragically, local law enforcement had not installed their equipment.

Instead, that night, in the midst of chaos, they turned to telephone lines that were already clogged by calls to them from citizens — including our own radio staff — attempting to learn what was happening. And as a result, the local community was not fully and immediately informed of a life-threatening situation.

And so we reluctantly discuss this topic with you today with the hope that it demonstrates a critical gap in what we all discuss at forums like this, and what can actually happen when disasters hit. We have worked behind the scenes to make this information public, but to no avail.

So I speak with you today first, remind local law enforcement of their responsibility, and second, to highlight a problem that will be repeated if it's not

corrected.

It is not enough to subsidize the cost of EAS equipment and deliver it to local law enforcement. Local law enforcement must be properly trained in EAS procedures and equipment — and the equipment must be properly installed. This is especially critical in the nation's smallest communities, which are at the highest risk.

It bears repeating that success depends on three things:

- That the federal agencies overseeing the nation's Emergency Alert System ensure that EAS equipment at local law enforcement facilities is operational and that local law enforcement and emergency personnel are properly trained in its use and EAS procedures.

- That local broadcasters ensure that their equipment is operational and that their staff is properly trained.

- That there is a healthy dialogue and collaboration among local authorities and broadcasters ... And that means that if there are individuals that cannot perform in this manner, those individuals are replaced with individuals who can.

We must all accept our collective and interwoven responsibility as first responders.

And so we implore those with the authority to correct the problem to do so in a timely fashion. The EAS system can, and has, worked. We need 100 percent cooperation to ensure it will work 100 percent of the time.

So, with the goal of moving forward and working towards a safe 2006, I thank you for your time today and I look forward to the collaboration between the public and private sector in ensuring public safety is a number one priority. 🌐

Radio World
The Newspaper for Radio Managers and Engineers

Our readers have something to say

"The Engineering Extra with Michael LeClair is super. Thank you for it."

Lyle Henry, CPBE
"The Radio Doctor"
Contract Engineer/SCA Consultant
Los Angeles

HEIL SOUND
www.heilsound.com

Shown: Heil PR40 Large-Diameter Dynamic Studio Microphone.

BROADCAST BROADCAST 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

AcousticsFirst™
Toll-Free Number: **888-765-2900**
Full product line for sound control & noise elimination.
www.acousticsfirst.com

ANTENNAS/TOWERS/CABLES

WANT TO SELL

Bird Thurline inline watt meter - D-125 MHz, carries 50,000 watts forward - 5,000 watts reverse. \$2,000 - weighs about 50 lbs ask for Allen @ alleo21@yahoo.com or call (770)-300-9287 8-6pm EST

AM Ground Systems

Reliable, On-time Installation
Quality Workmanship
Ground System Evaluation and Repair
www.amgroundsystems.com
1-877-766-2999

Antennas: one bay of ERI roto tiller, power input to 30kW, 3 1/8" and ready from At. GA to shipping about 60 lbs \$350. ask for Allen @ alleo21@yahoo.com or call (770)-300-9287 8-6pm est

New unused 6 bay omnidirectional, center-fed, side mounted "Penetrator" style FM antenna. Can be tuned from 102.7 to 106.7. With Radomes. Only \$18,500 plus shipping. For more information call 707 786-5104 or e-mail patrick@khum.com.

AUDIO PRODUCTION

WANT TO SELL

Telos Zephyr 9202 Digital Audio Unit Layer II & III, Factory Restored - \$1800 - contact Allan at allan@radioreultsnetwork.com

Radio World Equipment Exchange

AUTOMATION EQUIPMENT

WANT TO SELL

Now available, radio automation for the Linux operating system. Schedule music, voice track, create shells, auto or announcer assist mode, set intro and ending cues, hit the vocal every time with your voice tracks, execute exact time events, join networks, and more. Visit digitaldevelopment.net and click on RADIO AUTOMATION for screen shots. The software is free, there is a small duplication fee. For more info call 406.665.1832.

Macromedia Airport- A pair of airport workstations with Crown audio cards music on hard drive, live assist or sat network. Very reliable \$4000 obo-Call Jason Cave 540-801-1057

CAREERS

Where can I find... a job?
an engineer?

RESUME Bank
SBE Jobs ONLINE
(317) 846-9000
Go to Career Services at www.sbe.org

CART MACHINES

WANT TO SELL

ITC/Dynamax - 6 cart machines in good working order with a box of various carts. \$125 takes them all! Call Greg Myers at 928-341-9730

CODECS

WANT TO SELL

Musicam Roadrunner ISDN Codec - used in studio, v. lightly for 3 months and resealed into orig carton, as new - \$1900 obo (Two available) plus ship. Please call Mathew at 225-229-3453 or email at mathew@1stco.com

COMPLETE FACILITIES

WANT TO SELL

NEW OR USED COMPLETE PACKAGES
STUDIO/STL/TRANSMITTER /ANTENNA OR ANY COMBINATION OF ABOVE.
-LEASE OPTIONS-
-EMERGENCY RENTALS-
-REMOTE BROADCAST RENTALS-
SCMS, Inc. (800) 438-6040
"You Know We Know Radio"

CONSOLES/MIXERS

WANT TO BUY

Amplex AM-10 mixer in operating condition. Bill Cook, 719-687-6357.

LIMITERS/AUDIO PROCESSING

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

MISCELLANEOUS

WANT TO SELL

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

Airtools Profanity delay 6000 - As new, rack mount, adjustable delay with dump and remote dump, used lightly in studio for three months then resealed in orig box. \$1900 obo, plus ship. Please call Mathew at 225-229-3453 or email at mathew@1stco.com

BAY COUNTRY BROADCAST EQUIPMENT

BUY - SELL - TRADE

Your #1 Source

For Quality Used Radio Broadcast Equipment

View The Latest List Online at: <http://www.baycountry.com>
Or call and we will fax it to you.

7117 Olivia Rd., Baltimore MD 21220

Toll Free: 877-722-1031 • FAX 443-596-0212 • E-mail: sales@baycountry.com

RECORDERS/PLAYERS (PORTABLE/STUDIO)

WANT TO SELL

Tascam #32 Reel-to-reel, rack mounted, \$600 + shipping (obo). Call Curt Marker 906-249-1423

REMOTE & MICROWAVE

WE RENT FOR LESS

Blueboxes FM Exciters
Zephyrs FM Power Amps
POTS Codecs STL's
RF/Audio Gear Test Equipment

If we don't have it, we will get it!
SCMS, INC. (800) 438-6040
"You Know We Know Radio"

WANT TO BUY

RPO gear needed for 5 African FMs in Ghana, Uganda & Sudan. Help us as we teach radio to young people. Will pay cash or you can donate. Danpeters45@yahoo.com 417-335-3532

SATELLITE EQUIPMENT

WANT TO SELL

Zephyrus 304 4-card Satellite main frame card holder. Excellent Condition. Make an offer plus shipping. Call Curt Marker 906-249-1423

STATIONS

WANT TO SELL

Great opportunity. Profitable AM near Atlanta. Land and building included. New transmitter. Great retirement area. Contact wyyz1490@aol.com.

Seattle area FM commercial translators: BNPFT 20030317BUB 154893 and BNPFT 20030317BUW 155196. Includes excellent eq package & tower relationship. E-mail your offer to CommunityPublicRadio@Prodigy.net

OWN YOUR OWN!! AM/FM Great Facilities in Super College town! Fulltime AM sleeper with limited competition & great terms! Fulltime AM in exploding small market...great Hispanic buy! Fulltime AM in Resort area...perfect Mom & Pop-possible terms. RETIRE DOWN SOUTH-CALL DAVE!! -256-613-2630

TRANSMITTERS/ EXCITERS/ TRANSLATORS

WANT TO SELL

COLLINS - 20V2 Excellent condition on the air weekly as back up. Tuned to 1570khz. Available for inspection. Please call Richard at KUAU (877) 572-1600 or (808) 572-5534 Price: B/O

OFF THE AIR? Emergency Back-up Rentals

FM Exciters - STLs - FM Pwr Amps - Antennas - Studio & Test Equipment

SCMS Inc (800) 438-6040

"You Know We Know Radio"

RCA BTE 10C Exciter - Tube Type \$1000 432-266-1663

www.RUOnline.com

TAPES/CARTS/ REELS/CDs

WANT TO SELL

Otari MX 5050 2 reel-to-reel machines in good working order. Call Greg Myers at 928-341-9730 - \$200 for both!

WANT TO BUY

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-687-6357.

Looking for music bridge thought to be form PAMS "music power" series that was used on AFVN Saigon network cut-away. Call Bruce Campbell 325-370-8722.

BESCO World Leader in AM - FM Transmitters
"Now in our 34th year"
AM & FM Pre-Owned Units In Stock
All Powers • Manufacturers • Instruction Books • Spares & All Complete
Visit our Website: www.besco-int.com
Or Call Rob Malany, National/Int'l Sales at **321-960-4001**

RCA BTF 2-E1 - Transmitter (FM) Clean, 69404.1 FIL. HOURS. Works great. \$3000 OBO - Call Chris Wilk 540-368-5026

Rest Assured! FCC Certified FM Stereo Transmitter

✓ 50W RF output, continuous duty!
✓ Auto protect with auto soft fail & auto restore!
✓ Automatic battery backup!
✓ Digital display of all parameters
✓ Perfect for LPFM, Translators, as well as stand-alone exciters
www.ramseyelectronics.com

ramsey 800-446-2295
In Our 33rd Year!

Collins/Rockwell Transmitter - 1 Kw AM Power Pebble - works great. \$1000 obo - Call Chris Wilk 540-368-5026

Elcom-Bauer 2.5 Kw transmitter at 99.1 Very good condition with fairly new BEXT exciter. You pick up \$4500. Jerry Evans 775-884-8000

QEI Quantum "E" 300 watt transmitter and exciter combo, frequency agile. Price \$3000 plus shipping. Call Curt Marker 906-249-1423

WANT TO BUY

HARRIS - MX-15 Need extender card, Modules, working or not. Please call Richard at KUAU (877) 572-1600 or (808) 572-5534

Radio World
Broadcast Equipment Exchange
For more information, call Claudia Van Veen at 703-998-7600 ext. 154

TRANSCOM CORPORATION

Serving the Broadcast Industry Since 1978

Transmitters and Broadcast Equipment for Radio & Television

| Used FM Transmitters | |
|----------------------|--|
| 1.5 KW | 1983 BE FM 1.5A |
| 2.5 KW | 1984 Continental 814R-1 |
| 5 KW | 1982 Harris FM 5K |
| 6 KW | 1995 Henry 6000D |
| 7+IBOC | 2005 Harris Z16 HD |
| 10 KW | 1988 BE FM10A |
| 10 KW | 2001 Henry 10,000D-95 |
| 20 KW | 1978 Collins 831G2 |
| 20 KW | 1985 Harris FM20K |
| 25 KW | 1980 CSI-T-25-FA (Amp Only) |
| 25 KW | 1982 Harris FM25K |
| 30 KW | 1986 BE FM30A |
| 35 KW | 1990 Continental 816R-5B |
| 50 KW | 1982 Harris Combiner w/auto exciter-transmitter switcher |

| Used AM Transmitters | |
|----------------------|-----------------------------------|
| 1 KW | 1999 Omnitronix 1000A solid state |
| 1 KW | 1983 Harris MW1A Solid State |
| 5 KW | 1985 Continental 315R1 |
| 5 KW | 1982 Harris MW5A |
| 12 KW | 2000 Nautel XL12 Solid State |
| 50 KW | 1985 Continental 317 C2 |

Exciters
New 20 w & 30W Synthesized exciters
Used Continental 802A Exciter
Used Harris Digit CD (2nd generation)

New TV Transmitters- Analog and Digital
OMB & Technalogix
VHF and UHF TV Antennas
(10 W to 10 KW) TV STL

Used TV Transmitters
5 KW UHF Harris Diamond CD Solid State
55 KW UHF GE TT59B, CH 25
55 KW UHF RCA TTU-55B, CH 25

Used Misc. Equipment
Bird RF Thurline Wattmeter, 50S
Dielectric 4 Port, 3-1/8" Coaxial Switch
Denon 720R Cassette Player
Delta TCA
Dummy Loads, 10 KW
Potomac Phase Monitor 1901 Digital 2 Twr
Sola Voltage Reg. 60hz 1 KVA s-phase

Please visit our website for current listings.

800-441-8454 • 215-938-7304 • FAX: +1-215-938-7361

www.fmamtv.com • E-mail: transcom@fmamtv.com
RETUNING & TESTING AVAILABLE • CALL US FOR A QUOTE!

Consultants

**Consulting Communications Engineers
EMC Test Lab**

- FCC Applications and Field Engineering
- Frequency Searches and Coordination
- AM-FM-CATV-ITFS-LPTV
- EMC Test Lab-FCC and European (IEC)

OWL ENGINEERING, INC.

E-mail: info@owleng.com **651-784-7445** Fax (651) 784-7541
5844 Hamline Ave. N., Shoreview, MN 55126 *Member AFCEE*

EVANS ASSOCIATES Consulting Communications Engineers

FCC Applications • Design • Field Engineering • Tower Detuning Upgrade & Relocation Studies • AM Directional Array Tuning & Proof

EXPERTS IN:
TV • DTV Transition • FM • Directional Antennas • RF Exposure

210 S. Main St., Thiensville, WI 53092. (262) 242-6000, FAX (262) 242-6045
http://www.evansassoc.com Member AFCCE

COMMUNICATIONS TECHNOLOGIES, INC.
RADIO FREQUENCY/BROADCAST ENGINEERING CONSULTANTS

- AM, FM, TV coverage & Upgrades
- Broadcast transmission facility design
- FCC applications preparation - construction permit and license engineering

Clarence M. Beverage • Laura M. Mizrahi
P.O. Box 1130 Tel: (856)985-0077
Marlton, NJ 08053 Fax: (856)985-8124
www.commtechr.com

Mullaney Engineering, Inc. *Serving Broadcasters Since 1948*

9049 Shady Grove Court
Gaithersburg, MD 20877
(301) 921-0115
Fax: (301) 590-9757
mullaney@mullengr.com

Doug Vernier Telecommunication Consultants

Broadcast Engineering Consulting
AM/FM/TV/LPTV/DTV
Custom mapping service
Frequency searches
Propagation prediction
FCC application preparation

VSoft Software for your PC
(800) 743-3684
www.v-soft.com

Herb Kravitz Broadcast Engineering Consultants

AM~FM Professional Technical Support
Comprehensive Field Service

phone 609-347-4821
fax 609-347-6397
hkradio@msn.com

The Coverage Map Store

REALcoverage.com

High Performance Engineering for Maximum Coverage

FASTER... MORE ACCURATE RADIO COVERAGE

- Real Time 3-D Displays
- Interference calculations
- Cost effective mapping
- Fully integrated databases
- Used by the FCC
- Latest standards built-in

RADIO SOFT

Visit us on the web at www.radiosoft.com
101 Demorest Sq., #E, Demorest GA - 706-778-8811

Check out our Web site:
www.rwonline.com



PROMOTE YOUR BUSINESS!

To advertise, call 703-998-7600 ext. 154
or e-mail: cvanveen@imaspub.com

DISTRIBUTOR DIRECTORY

The following distributors serving the broadcast industry would be glad to help you with any of your requirements.

CORNELL-DUBILIER MICA CAPACITORS

FROM STOCK

JENNINGS VACUUM CAPACITORS

FROM STOCK

JENNINGS VACUUM RELAYS

SURCOM ASSOCIATES
2215 Faraday Ave., Suite A
Carlsbad, California 92008
(760) 438-4420 Fax: (760) 438-4759
e-mail: link@surcom.com web: www.surcom.com

MÉXICO
INGENIERIA EN RADIODIFUSION Y TELECOMUNICACIONES
+52-81-83-583027 FAX: +52-81-83-581172
E-mail: elamezescamilla@axtel.net, elamez@ATT.net.mx

Empresa dedicada a: Venta de equipo. Asesoría y Gestoría en A.M., F.M., T.V. y MMDS. Elaboramos Memorias, Peritajes, Pruebas de Comportamiento, Características Técnicas, Planos, Proyectos, Instalaciones, Homologaciones y trámite para el NOM.

Are You a Distributor?

ADVERTISE HERE!
Space is available
Call 703-998-7600

ACTION-GRAM

EQUIPMENT LISTINGS

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.

Are you currently a subscriber to Radio World?
 Yes No

Please print and include all information: Signature _____ Date _____

Contact Name _____
Title _____
Company/Station _____
Address _____
City/State _____
Zip Code _____
Telephone _____

Brokers, dealers, manufacturers and other organizations who are not legitimate end users can participate in the Broadcast Equipment Exchange on a paid basis. Line ad listings & display advertising are available on a

WTS WTB Category: _____
Make: _____ Model: _____
Brief Description: _____

WTS WTB Category: _____
Make: _____ Model: _____
Brief Description: _____

*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.
Broadcast Equipment Exchange • PO BOX 1214, Falls Church, VA 22041

Radio World

5827 Columbia Pike, 3rd Floor Falls Church, VA 22041
PHONE: 703-998-7600 ■ FAX: 703-671-7409

Classified Advertising Rates Effective January 1, 2006

| | 1x | 6x | 13x | 26x |
|---------------------------|-----------------|-----|-----|-----|
| 1-9 col inch (per inch) | \$110 | 105 | 100 | 95 |
| 10-19 col inch (per inch) | \$95 | 85 | 75 | 65 |
| Distributor Directory | \$135 | 130 | 125 | 120 |
| Professional Card | \$105 | 100 | 95 | 90 |
| Station/Studio Services | \$200 | | | |
| Classified Line Ad | \$2/word | | | |
| Blind Box Ad | \$16 additional | | | |

Call Claudia Van Veen, at 703-998-7600 ext. 154, to reserve space in the next issue. Use your credit card to pay, we now accept VISA, MASTERCARD and American Express.

www.rwonline.com



**POWER TUBES
REBUILT

1/2 THE COST
OF NEW!**

ECONCO

TEL: 800-532-6626
INTL: +1-530-662-7553
FAX: +1-530-666-7760
www.econco.com
SE HABLE ESPAÑOL



TUBES & COMPONENTS

D And C Electronics

An International
Distributor of RF Components
Tubes
NEW & REBUILT

TRANSMITTERS, STUDIO EQUIPMENT, STLS, ANTENNAS,
RADIO DATA SYSTEM (FOR CAR RADIO DISPLAY)
EXCITERS-TRANSMITTERS, TRANSLATORS, MIXERS-CONSOLES, RADIO LINK
RPU, MOSFETS, VACUUM CAPACITORS, SOCKETS



Pro-Tek®



EEV

BEST PRICES

To Order:
1-800-881-2374
Outside U.S. (352) 688-2374
Se Habla Español

FROM OUR STOCK

3089 Deltona Blvd.
Spring Hill, FL 34609

BEST SERVICE

352-688-2374
Fax 352-683-9595

Website: www.dandcelectronics.com

FOR THE BEST PRICE
& 24 Hr service on transmitting tubes &
sockets/parts, new & rebuilt call Goodrich Ent. at
402-493-1886 day or night,
www.goodrichenterprises.com



ISO 9001 Certified

The Choice of Successful
Broadcasters Since 1934

NEW POWER TUBES

Triodes
Tetrodes
Pentodes

**NEW SOCKETS &
REPLACEMENT PARTS**

Worldwide Availability

Made in U.S.A.

CALL 800-414-8823
Int'l (650) 592-1221
Fax (650) 592-9988

Visit our Web Site at
www.eimac.com



Q: How do I advertise in Radio World?



A: To advertise, call Claudia at 703-998-7600, ext. 154, or e-mail: cvanveen@imaspub.com.

RF PARTS CO.
From Milliwatts to Kilowatts™

EIMAC • TAYLOR • ECONCO • SVETLANA
Motorola • Toshiba • SGS • Thomson & Mitsubishi Semiconductors

Se Habla Español **800-737-2787** We Export

760-744-0700 Email: rpf@rfparts.com Web: www.rfparts.com

EMPLOYMENT

HELP WANTED

GRAMAM BROCK, INC., a nationally known full service (AM/FM/TV/AUX) broadcast technical consulting firm located in SE Georgia is seeking an Associate Engineer to work on a variety of broadcast engineering matters. The job consists primarily of in office work. 10 years of broadcast engineering work preferred. Contact Marilyn Matheny at 912-638-8028 or marilyn@grahambrock.com.

AMERICAN BROADCASTING SCHOOL Interviewing for a Job Placement Director for Oklahoma. Broadcasting experience preferred. Fax resume to (405) 672-6488 or email to staci@radioschool.com

AMERICAN BROADCASTING SCHOOL Interviewing for a bilingual Radio Broadcasting Instructor for Dallas/Ft. Worth. Fax resume to (405) 672-6488 or email to staci@radioschool.com

Rare Opening at Greater Media - Greater Media, a privately held company noted for technical excellence and long term employee loyalty and stability, has two rare openings for station level engineers within its New Jersey station cluster. Candidates should be well versed in all facets of radio station technical operation and have 3-5 years of experience in station related engineering. An associates or bachelors degree in a technical discipline will be given consideration in lieu of a portion of the experience requirement. SBE certification and/or FCC licensure is highly desirable. We are looking for very talented technical people and compensation is consistent with that goal. Full benefits. Please e-mail your resume to Keith Smeal, director of technical operations engineering@greatermedianj.com. Greater Media is an equal opportunity employer and encourages female and minority applicants to apply for these positions.

POSITIONS WANTED

Every Great Radio Station needs a motivated team player and much more... such as: creative writing, voiceover, and on-air talent. Contact Gary Fentress @ 817-501-9690

Radio station manager with over 25 years in broadcasting, 15 years in management, seeks G.M. or station manager position at a CCM station in the continental US. Please send details about your opening to: radiomanager@charter.net

Dedicated, reliable, follows directions, works well with others, and willing to move. Skills in Cool Edit, boards, on-air, production, copywriting. Call me Jesse Graves 817-598-9733

Friendly, Eager to work, IS CET Certified, Commercial FCC License with radar, NABER Certified two-way radio technician, amateur radio extra, seeks CE, asst. CE F/T, P/T Contract, AM/FM, Cable, TV. Contact: Mitchell Rakoff, mitchellrakoff@yahoo.com 718-969-5224

Great self-motivated determined broadcaster, goal oriented, team player, production wizard, professionally refined, and vocally dominant equipped to handle any voicing endeavor. Torrance Walker 972-937-8584 torrancewalker@yahoo.com



I'm a young man who would love a job in radio! American Broadcasting School trained, but willing to learn more at your station. Will do what it takes. Willing to travel. Solomon 405-677-2561

If you need someone for voiceovers, digital, news/commercial writing and on-air work in the Dallas area - don't miss this opportunity. Jennifer Reneau 972-424-4634.



Out with the old...
...In with the new!

NEED TO MAKE ROOM FOR THE NEW EQUIPMENT YOU ORDERED?

Sell your used equipment here in the pages of Radio World Broadcast Equipment Exchange.

It's easy....just fill out the Action-Gram in the back of the issue and mail or fax it in. We'll run your listing (s) for two consecutive issues!

DON'T LET YOUR OLD EQUIPMENT COLLECT DUST...COLLECT \$ INSTEAD!

If you have any questions regarding the procedure, you can call Claudia at 703-998-7600 ext. 154 or email her at cvanveen@imaspub.com, for more information.



To advertise, call 703-998-7600 ext. 154 or e-mail: cvanveen@imaspub.com

ADVERTISER INDEX

This listing is provided for the convenience of our readers.
Radio World assumes no liability for inaccuracy.

| PAGE | ADVERTISER | WEB SITE URL |
|------|---------------------------------------|--------------------------|
| 66 | 25-Seven Systems, Inc. | www.25-seven.com |
| 77 | Acorn | www.alcornrf.com |
| 65 | AEQ, SA | www.aeqbroadcast.com |
| 74 | AEV SpA | www.aev.net |
| 77 | Air Corp | www.aircorp.biz |
| 24 | Altronic Research | www.altronic.com |
| 63 | Antenna Nord Telecomunicazioni S.r.l. | www.antgroup.it |
| 51 | Aphex Systems | www.aphex.com |
| 25 | APT | www.aptx.com |
| 22 | Armstrong Transmitter Co. | www.armstrongtx.com |
| 39 | ATA Audio | www.ataaudio.com |
| 77 | ATI | www.atiaudio.com |
| 77 | Audion Labs | www.audionlabs.com |
| 8 | AudioScience, Inc. | www.audioscience.com |
| 41 | Audio-Technica U.S. Inc | www.audio-technica.com |
| 13 | Axia - A Telos Company | www.axiaaudio.com |
| 17 | Axia - A Telos Company | www.axiaaudio.com |
| 69 | Balsys Technology Group | www.balsys.com |
| 50 | Bext, Inc | www.bext.com |
| 68 | BIA Financial Network | www.bia.com |
| 33 | Broadcast Depot | www.broadcastdepot.com |
| 19 | Broadcast Electronics | www.bdcast.com |
| 79 | Broadcast Tools, Inc | www.broadcasttools.com |
| 57 | BSI | www.bsiusa.com |
| 23 | BSW | www.bswusa.com |
| 12 | Burk Technology | www.burk.com |
| 55 | Burli Software | www.burli.com |
| 50 | Circuit Werkes | www.circuitwerkes.com |
| 26 | Cke/Hvca | www.rectifiers.com |
| 50 | Coaxial Dynamics | www.coaxial.com |
| 78 | Coaxial Dynamics | www.coaxial.com |
| 7 | Comrex Corporation | www.comrex.com |
| 61 | DAWNco | www.dawnco.com |
| 71 | dMarc/Scott Studios | www.dmarc.net |
| 27 | Electronics Research, Inc. | www.eriinc.com |
| 4 | Electronics Research, Inc. | www.eriinc.com |
| 30 | ESE | www.es-web.com |
| 67 | Eventide | www.eventide.com |
| 6 | Global Security Systems | www.gssnet.us |
| 50 | Gorman Redlich Mfg | www.gorman-redlich.com |
| 70 | Grace Broadcast Sales | www.gracebroadcast.com |
| 70 | Grace Broadcast Sales | www.gracebroadcast.com |
| 1 | Harris Corporation | www.broadcast.harris.com |
| 41 | Heil Sound | www.heilsound.com |
| 35 | Henry Engineering | www.henryeng.com |
| 52 | HHB Communications U.S. | www.hhbusa.com |
| 41 | Inovonics Inc | www.inovon.com |
| 45 | Inovonics Inc | www.inovon.com |
| 46 | JK Audio | www.jkaudio.com |
| 18 | Kintronic Labs Inc | www.kintronic.com |
| 36 | Klotz Digital Audio Systems Inc | www.klotzdigital.com |
| 43 | LBA Technology, Inc. | www.lbagroup.com |
| 10 | Logitek | www.logitekaudio.com |
| 47 | Moseley Associates | www.moseleysb.com |
| 44 | Mouser Electronics | www.mouser.com |
| 21 | Nautel Ltd. | www.nautel.com |
| 29 | NPR Satellite Services | www.nprss.org/rworld |
| 73 | NTI Americas, Inc. | www.nt-instruments.com |
| 9 | Omnia - A Telos Company | www.omniaaudio.com |
| 56 | Omnirax | www.omnirax.com |
| 37 | OMT Technologies/Media Touch | www.omt.net |
| 59 | Orban/CRL | www.orban.com |
| 38 | Pristines Systems | www.pristinesys.com |
| 14 | Prophet Systems Innovations | www.prophetsys.com |
| 77 | PTEK | www.ptekpower.com |
| 78 | Radio Design Labs | www.rdlinet.com |
| 5 | Radio Systems Inc | www.radiosystems.com |
| 77 | Raduga USA | www.raduga.net |
| 31 | RCS | www.rcsworks.com |
| 70 | RTI | www.timeandtemp.net |
| 3 | S.C.M.S. | www.scmsinc.com |
| 28 | Sabre Communications | www.sabrecom.com |
| 20 | Shively Labs | www.shively.com |
| 41 | Sierra Automated Systems | www.sasaudio.com |
| 53 | Sierra Automated Systems | www.sasaudio.com |
| 42 | Sine Systems | www.sinesystems.com |
| 50 | Stormin Protection Products | www.opticsield.com |
| 34 | Studio Technologies | www.studio-tech.com |
| 49 | Symetrix, Inc. | www.airtoolsaudio.com |
| 15 | Telos Systems - TLS Corp. | www.telos-systems.com |
| 11 | Tieline Technology | www.tieline.com |
| 16 | Transradio SenderSysteme Berlin AG | www.tsb-ag.com |
| 50 | Videoquip Research Ltd | www.videoquip.com |
| 87 | Vorsis | www.vorsis.com |
| 48 | Ward-Beck Systems | www.ward-beck.com |
| 2 | Wheatstone Corporation | www.wheatstone.com |
| 88 | Wheatstone Corporation | www.wheatstone.com |

◆ READER'S FORUM ◆

The RW Crystal Ball

A few weeks ago, I got to chatting with a radio bud about Radio World. I mentioned to him the great articles you folks publish; I especially like the historical ones. RW needs more pictures and stories in that category.

I also enjoy looking into the Radio World crystal ball to see what will happen in the future. Sad to see many of us radio folks are no longer working full-time in the business, but as the crystal ball opens to the future, maybe with HD2 we can all get back on the air.

Keep up the great work, Radio World. It keeps us thinking, puts us in tears and even sometimes makes our blood boil.

— Al Ogrizovich

Keep up the great work, Radio World. It keeps us thinking, puts us in tears and even sometimes makes our blood boil.

The paper also needs more articles on DXing. Some radio folk think of us DXers as something out of "The X Files."

Al Ogrizovich
Jacksonville, Fla.

IBOC Should Not Be Embraced

I disagree with your opinion that "broadcasters should embrace IBOC" (Reader's Forum, Feb. 15).

Originally we were told that IBOC would improve audio quality and signal coverage. While an improvement to audio quality may be likely, it comes at a tremendous cost. Not only a major initial and ongoing financial cost, but IBOC has been shown to cause significant interference to other stations.

In addition, IBOC often provides less coverage than analog in real-world tests. It amazes me that the FCC is allowing co-channel and adjacent-channel interference from IBOC that it would never allow with analog.

Until IBOC can broadcast a clean signal that doesn't interfere with other stations, IBOC should not be embraced.

Richard Van Zandt
Broadcast Engineer
Edgewater, Fla.

Internet an Alternative to LPFM

I have read with great interest over the past few years about community LPFM radio stations. Many articles stress what great media representation they make in their communities.

Unfortunately in the urban areas, LPFM radio stations cannot be done due to the already crowded radio dial. Perhaps urban community broadcasters looking to get their message out should look into the possibility of a community Internet radio station.

With the technology of today's computers being wireless as well as the possibility of future options for automobiles being able to get Internet access and most cell phones being able to access the web, Internet radio can be an alternate and viable solution.

LPFM radio stations cannot sell time for commercials. Internet stations can, thus offsetting the costs for the station.

Our radio station offers to our community free air time for meetings, church services and concerts, which can be done either live or on tape delay. WHPW.com also offers local musicians a chance to air their music in FM stereo quality audio on our radio station.

Our costs for running the station are much less than those of an LPFM station; streaming, telephone and electric are our major charges. WHPW.com has two professionally built studios and broadcasts 24 hours a day.

For the urban areas, community internet radio can work and works well for the community.

Michael R. Newell
WHPW.com
Staten Island, N.Y.

PMD660 Settings

The reviewer says the Marantz PMD660 will only record MP3 at 64 kbps ("PMD660: Versatility at Half the Size," Feb. 15). This is untrue.

In the menu there are several MP3 settings. I have been using the 128 kbps stereo mode for months to record our church's three Sunday services, which are later podcasted (<http://homepage.mac.com/pryzm/podcast.xml>) with no modification needed since they are already in a good format. I use MP3 Trimmer to join and slice off heads and tails of each service. Uncompressed on a 2 GB card still was not enough unattended recording time.

One thing not mentioned in the article is the line input is -10 consumer level. When I first hooked this up to record Christmas Eve services, the +4 coming out of the board was way too hot for the input stage and I had to run home and get a pad. Other than that, this unit has been great.

The one thing to look out for is to not shut off the AC power externally with the unit in record. The last clip recorded would be lost. I found that out after someone had turned off the system but did not stop the recorder. I have since wired it to an always-on AC and let the silence sense stop the unit.

Also, if you like to take out dead spots, it has a 10-second buffer so when it does start recording again it never upcuts the recording. But you have to make sure you have the 10-second buffer turned on for that to work correctly.

Charlie Wilson
Communications Director
St. Marks Lutheran Church
Springfield, Va.

GUEST COMMENTARY

EAS: Bypassing Blame for Solutions

by Richard Rudman

I commend Radio World for printing "Reconsidering Minot and EAS" by Dr. M. Marion Mustoe (Jan. 18). There is over 60 years of research into public warnings. For readers interested in this topic, much of this body of knowledge is housed at the Natural Hazards Center of the University of Colorado (www.colorado.edu/hazards). Dr. Mustoe's study certainly adds to this body of knowledge.

The cut line under the title says that both emergency managers as well as corporate radio are to blame for EAS failures. I would submit that before you can blame, you have to assign responsibility. This was never really done for EAS by the FCC in a meaningful way.

As the author points out, EAS has been labeled as an "unfunded mandate." More accurately EAS, at least at the local and state levels, is an unfunded voluntary mandate without specifically assigned responsibilities for all participants.

In short, I would submit that EAS is really a transmission line with a broken input connector.

Question of partnership

Nothing in the FCC's EAS Rules now formally brings emergency management to the party. To prove my thesis, local civil EAS successes have almost always occurred where a public/private partnership of dedicated emergency managers and broadcasters have voluntarily come together despite lack of a clear FCC mandate.

Such partnerships recognize that warnings must be uttered and distributed to EAS entry points that reach the public by those with the legal duty to warn. Broadcasters are more likely to volunteer eagerly to run local and state EAS events once they meet, get to know and learn to trust those who issue EAS warnings.

If we are going to have an effective public warning system, the FCC must bring emergency management warning originators into the EAS family in clear and unequivocal Part 11 language.

The converse proof: When there is an EAS failure of tests or real civil alerts, it is almost guaranteed that no such partnership exists, or if it does exist on paper, it has become a dysfunctional reality. EAS is nothing more than a Part 11-compliant version of the old EBS in jurisdictions without functional public/private warning partnerships.

In perfect hindsight, Part 11 almost guaranteed that EAS would become a derivative of EBS, complete with poten-

tial for failure. The LP assignments called for in the Part 11 EAS model were supposed to be reliable multipoint distribution systems to bridge the gap between warning originators and all broadcast stations. Dr. Mustoe documents accurately many of the factors in the current broadcasting business environment that explain why such a model did not work.

If we are going to have an effective public warning system, the first thing the FCC has to do is bring emergency management warning originators into the EAS family in clear and unequivocal Part 11 language.

Next, the FCC has to mandate that local and state warning centers provide their own multipoint distribution system (MDS) and no longer rely on privately controlled LP stations for these vital links to all stations.

Third, distribution channels from all civil warning originators to the National Weather Service National Weather Radio entry points already experimentally tested must be built. There are other details that must be put in place, but those are the basics needed to move us forward to better warnings in a changed and changing broadcasting world.

CAP-enabled warnings

The radio channels in the spectrum for civil nationwide basic warning MDS already are in place. They can be commandeered from existing public works radio spectrum that can be interrupted by brief EAS tests and alerts. All it would take would be for the FCC to put specific language in Part 11 that such overrides for life safety EAS are permitted.

Washington state, California and some other states and local jurisdictions have, on their own, already created various other MDS warning models. What Washington state calls Local Relay Networks are really MDS systems for

EAS warnings. California's Emergency Digital Information Service accomplishes much the same purpose using satellite distribution and a special warning device language. This language is the Common Alerting Protocol.

CAP is an international open standard subset of XML language as certified by OASIS (www.oasis-open.org). Other states that have contracted with private warning system vendors have addressed this issue. Many of these warning MDS solutions are now, or will become, CAP-compliant. FCC blessing for this is not necessary. It will just happen.

What we will have done if we get to this point is create a warning system that is no longer quite as vulnerable to single-point failure in the broadcast distribution world. All stations will be able to get EAS tests and alerts from originators

who have not only the responsibility, but the legal duty to deliver them reliably, accurately and timely.

All stations will get warnings at the same time from either warning originators and/or NWS. The current local level EAS (PEP) can be adjusted to fit this model. Net result: If one or more stations

are off the air, the public is covered when they tune to any station still on the air.

Comments on the current EAS Further Notice of Proposed Rulemaking have been filed with the FCC by the Society of Broadcast Engineers, and should be available to everyone on the SBE Web site, www.sbe.org. When you read it, I think you'll agree that SBE has outlined many solutions, and not placed blame. *Richard Rudman is a member of the SBE EAS Committee, and vice chair of California SECC.*

In short, I would submit that EAS is really a transmission line with a broken input connector.

See related story, page 78.

◆ READER'S FORUM ◆

Up for a Challenge

You might remember me as the maker of the lamp from the ITC Cart Machine (*Reader's Forum*, June 16, 2004). It is amazing how many places the article that was printed in *Radio World* shows up on a search on the Internet.

I thought the following might be of interest.

We were challenged to make good on our statement that "We can make a lamp out of anything" by the radio DJ team of Bandy & Bailey on Lexington, Ky., station WLXX(FM) 92.9 The Bear, to make a lamp from a guitar that had been autographed by Clint Black. The lamp was to be auctioned off as a charity fundraiser.



The finished lamp looked better than the radio guys or our staff at Shannon Lamp Service could have ever imagined. The autographed Epiphone guitar was presented to the radio station as a promotion for USA Networks, Nashville Star. With the quality results of the finished lamp and because we wanted to help with the charity auction, we purchased the lamp with the high bid. We now have the lamp available for purchase on our Web site. The lamp production can be seen at www.shannonlamp.com/guitarlamp.htm.

I guess it's true. We can make a lamp out of anything.

*David Shannon
Shannon Lamp Service Inc.
Lexington, Ky.*

How to ...

Send a letter to the editor:

E-mail radioworld@imaspub.com with "Letter to the Editor" in the subject field.

Change your mailing address:

Visit www.rwonline.com, click on Subscribe to RW and follow instructions to change a subscription address.

Contribute freelance articles:

E-mail radioworld@imaspub.com and request our Writer's Guidelines.

Get information about advertising:

Download a media kit including editorial calendar at www.imaspub.com.

Purchase reprints of articles:

E-mail Emmily Wilson at ewilson@imaspub.com.

Correction

In the March 1 issue, Ms. Aliah Git of CBS Radio News was incorrectly referred to as a "he" on the People News page.

◆ READER'S FORUM ◆

Take It From Ed

Thanks for the story and interview with Edward De La Hunt ("De La Hunt Troubled by HD Radio," Feb. 1). He's right on the money and I salute his core set of values.

What we need now is a scientist who can clone him.

Harvey Twite
General Manager
KEDU(LP)
Ruidoso, N.M.

I appreciated Paul McLane's interview with Ed De La Hunt.

Maybe the industry and the commission could take a breath and listen to what a guy like Ed has to say. After all, not many people on the commission — or executives/engineers of big radio groups — have ever owned a radio station. If they had to pay the bills every month while striving to keep the technical facility, employment unit and tower "legal" they might not be so quick to shove HD down everyone else's throats.

Ed speaks volumes when he says he doesn't need or want HD AM service inflicted on his stations because he's plenty busy broadcasting local sports, news, etc. without having to decide where to spend the "extra" money he makes from his operation. My guess is that Ed would rather invest in his existing stations vs. having six to eight new HD streams to manage; that's assuming his existing AMs don't get squashed by all the hash coming out of neighboring stations from larger markets.

The AM band is no picnic now. Just wait until they throw the switch on all those HD signals.

Jack Taddeo
President
WLKN(FM)/Radio K-T Inc.
Park Ridge, Ill.

Thank you for your current and informative articles. I want to especially thank you for your interview with Ed De La Hunt.

De La Hunt's comments are very technically correct and important for continued optimum radio service to the greater public. I hope all AM broadcast station owners, and FM owners too, read this interview and seriously evaluate the consequences of their technical decisions and the impact it will have on their listeners.



I have continued in AM and FM radio engineering since I started work with Westinghouse Broadcasting Co. in 1956. Digital radio has a future potential for AM as De La Hunt mentioned with his support of Cam-D. Unfortunately, radio service in the "public's interest, convenience and necessity," as formerly required by the FCC, seems to be past history.

Robert A. McClanathan, P.E.
Portland, Ore.

Paul, I want to express my appreciation for your interview with Mr. Ed De La Hunt. It is so heartwarming to read about a broadcast owner of small market station(s) who has years of experience, and knows and understands full well what he is talking about and is willing to express it.

His family and the way he talks about his experiences go a long way in telling us about his knowledge of broadcasting and his integrity. I know many broadcast owners who would echo his views and experiences.

I am a registered professional broadcast engineer, licensed in January 1955 and practicing broadcast engineering for small broadcaster stations for 50 years continuously since that time, and fully active today. In the above time period, I have worked for thousands of broadcast stations. I know them, and have understanding and affection for broadcast owners, managers and engineers.

I am a long-time member of AFCCE and SBE. Over 60 years ago I got my first broadcast job as chief engineer of a 5,000-watt broadcast station. My radio ham license dates back to 1935, having had three call signs: W7FMI, D4AJD and AA&H.

I am a longtime subscriber to Radio World, and have been most impressed with the quality of reporting, even though my views as to where we are headed are

Growing the Radio Channel Family

Our industry has witnessed a baby boom. No longer does a radio station consist of only one on-channel signal. Facilities all over the country have given birth to additional offspring, "radio" channels that are delivered over other platforms.

First-born fledglings appeared in the form of webstreams with commercial replacement content. Those online stations provide audio, video and other content. Then came HD main channels on the air, soon to pass 1,000 signals. Podcasting was born. Now HD-2 channels have appeared, along with associated web streams. A few stations have even spawned HD-3 siblings.

If you work for a multi-station cluster, this may mean that each station has multiplied by three or four, or even five. A six-station group could soon be the family home to almost 30 "signals," if it isn't already — signals that ownership and staff must support if they expect these babies to grow up and become mature, successful adults.

As recently as a year ago, we suspect, many owners and managers did not anticipate that they'd be new parents. Managers now must confront these hungry little mouths, expense line items that, for the time being, return little added income to pay for their upkeep.

It has always been thus with babies.

Web streams at some stations now have reached the toddler stage. But many still are viewed as expensive, "value-added" offspring enjoyed by only a limited number of admiring fans. Few stations have found a way to make real profit with their streams in the face of bandwidth costs.

But streaming is getting better all the time as the Internet grows. More folks are finding and liking radio on the Web. Wireless delivery of Web resources to portable and mobile devices, including cell phones, promises to open opportunities to reach new audiences.

The HD rollout will gain slow but steady momentum as more stations come online. But until consumers actually start buying receivers and use the new HD offerings in significant numbers, the investment in HD will not begin to pay off.

As new parents, we find ourselves at the start of a long development period that will no doubt be paved with some red ink. Those of us who envision a brighter future for our families and our new additions will need to be patient.

Creativity, hard work and perseverance — to make the content and listening experience of all these new signals the best they can be — are the only path that will lead to a happy graduation someday. Let's hope most of us will be there for our kids, as proud parents or even grandparents, in the not-too-distant future.

— RW

sometimes vastly different from many of the articles. I like your style of interviewing. Your questions allow the person being interviewed to say what is on his mind. You covered a lot of ground in a short article, and I wish I could comment on all of it.

The fiasco of AM stereo didn't just happen. Most any AM knowledgeable engineer could see that one coming. The using of a phase modulated carrier to develop the left minus right channel robbed sideband power from the mono channel, and with that a stereo station could not hope to compete with a pure mono station.

Now we are about to repeat a similar situation with IBOC, only this time the results will end not in a fiasco but in a

disaster for the AM broadcast band, as expressed by De La Hunt in paragraph three. Here the clue is the attempt to add a digital audio system on an already existing AM double sideband base. CAM-D doesn't do that, and there are other single sideband systems that could be developed. AM radio will only be further damaged by narrowing the analog bandwidth, raising the noise floor and broader-banding the noise. It may fit within the NRSC Mask, making it legal, but that doesn't make it right.

One more thing — there are a lot of people who like nighttime radio, and my wife and I are two of them. She uses it to put her to sleep.

George M. Frese, P.E.
East Wenatchee, Wash.

—EDITORIAL STAFF—

| | | |
|--------------------|----------|--|
| Paul J. McLane | ext. 117 | Editor in Chief, U.S. |
| Leslie Stimson | ext. 129 | News Editor/Wash. Bureau Chief |
| Kelly Brooks | ext. 136 | Associate Editor, RW & Production Editor, RWEE |
| Timothy Kimble | ext. 140 | Assistant Editor, Buyer's Guide |
| Thomas R. McGinley | — | Technical Adviser |
| Michael LeClair | — | Technical Editor, RWEE |
| John Bisset | — | Contributing Editor |
| Skip Pizzi | — | Contributing Editor |
| Marguerite Clark | — | Editor (International), Milan |
| Rogelio Ocampo | ext. 121 | Latin America Editor in Chief |
| Karina Gerardi | ext. 137 | Latin America Editor |
| Anne-Marie Smith | ext. 126 | Assistant Editor (International) |
| Keith Tate | ext. 144 | Editorial Assistant |
| Peter Finch | — | Editorial Assistant, Milan |

—EDITORIAL CONTRIBUTORS—

W.C. Alexander, Bruce Bartlett, James Careless, Naina N. Chernoff, Harry Cole, Mark Durenberger, Charles Fitch, Ty Ford, Scott Fybus, Frank Grundstein, Harold Hallikainen, Craig Johnston, Paul Kaminski, Peter King, Mark Lapidus, Sharon Rae Pettigrew, Carl Lindemann, Ted Nahil, Tom Osenkowsky, Ken R., Rich Rarey, Tom Ray, Randy Stine, James G. Withers, Travis the W/O Guy, Barry Umansky, Tom Vernon.

Vol. 30, No. 8 March 29, 2006

Telephone: (703) 998-7600 • Business Fax: (703) 998-2966 • Editorial Fax: (703) 820-3245
E-mail: radioworld@imaspub.com • Web site: www.rwonline.com

—ADVERTISING SALES REPRESENTATIVES—

| | | | |
|---|-------------------|-----------------------|---------------------------------|
| US East: John Casey | 330-342-8361 | Fax: 330-342-8362 | e-mail: jcasey@imaspub.com |
| US West: Dale Tucker | 916-721-3410 | Fax: 916-729-0810 | e-mail: dtucker@imaspub.com |
| Classified Ads: Claudia Van Veen | 703-998-7600 x154 | Fax: 703-671-7409 | e-mail: cvanveen@imaspub.com |
| European Sales Mgr., Africa, Middle East: Raffaella Calabrese | +39-02-7030-0310 | Fax: +39-02-7030-0211 | e-mail: rcalabrese@imaspub.com |
| Japan: Eiji Yoshikawa | +81-3-3327-2688 | Fax: +81-3-3327-3010 | e-mail: callens@world.odn.ne.jp |
| Asia/Pacific: Wengong Wang | +86-755-5785161 | Fax: +86-755-5785160 | e-mail: ww@imaschina.com |
| Latin America: Alan Carter | 703-998-7600 x111 | Fax: 703-671-7409 | e-mail: acarter@imaspub.com |

NEXT ISSUE OF RADIO WORLD APRIL 12, 2006
NEXT ISSUE OF ENGINEERING EXTRA APRIL 5, 2006

For address changes and subscription renewal, please visit www.rwonline.com and click on "Subscribe to RW." To submit letters or story proposals, to request writer's guidelines, or for other editorial matters, e-mail the editor at radioworld@imaspub.com.

—ADMINISTRATION & PRODUCTION—

| | | |
|-------------------|-------|------------------------------------|
| Stevan B. Dana | ..... | President |
| Carmel King | ..... | Chief Executive Officer |
| John Casey | ..... | Publisher |
| Marlene Lane | ..... | Chief Operating Officer |
| Chuck Inderrieden | ..... | Chief Financial Officer |
| Eric Trabb | ..... | Vice President, Sales |
| T. Carter Ross | ..... | Editorial Director |
| Davis White | ..... | Production Director |
| Karen Lee | ..... | Production Publication Coordinator |
| Lori Behr | ..... | Ad Traffic Manager |
| Linda Sultan | ..... | Classified/Product Showcase Layout |
| Robert Green | ..... | Circulation Manager |

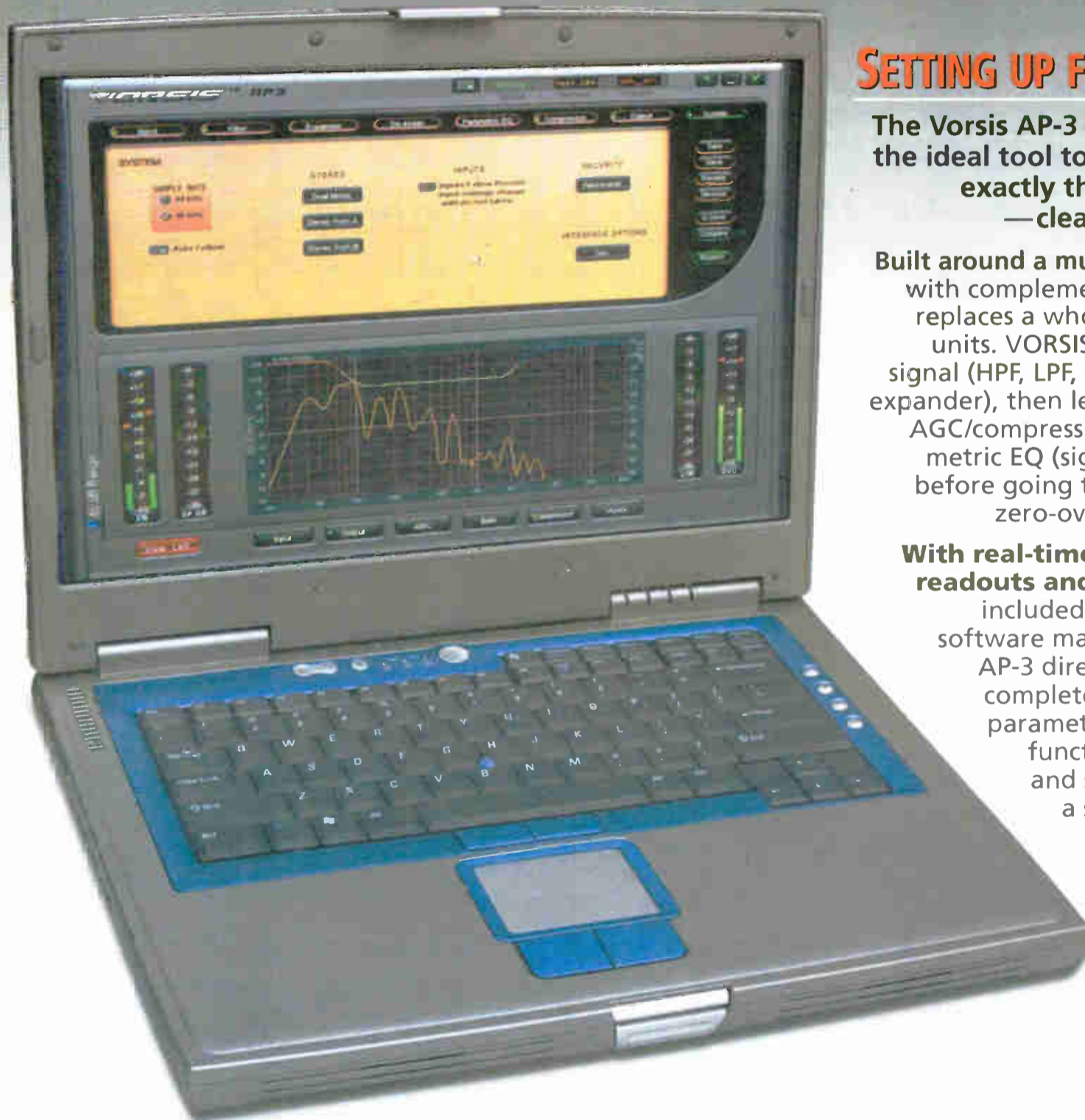
Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by IMAS Publishing (USA), Inc., P.O. Box 1214, Falls Church, VA 22041. Phone: (703) 998-7600, Fax: (703) 998-2966. Periodicals postage rates are paid at Falls Church, VA 22046 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 1214, Falls Church, VA 22041. REPRINTS: For reprints call or write Emmily Wilson, P.O. Box 1214, Falls Church, VA 22041; (703) 998-7600; Fax: (703) 998-2966. Copyright 2006 by IMAS Publishing (USA), Inc. All rights reserved.

This Little Unit



Can Do BIG Things!

Our new AP-3 is the perfect HD Processor:



SETTING UP FOR HD RADIO?

The VORSIS AP-3 digital processor is the ideal tool to shape your sound exactly the way you want it — cleanly and efficiently.

Built around a multi-band compressor with complementary AGC, the AP-3 replaces a whole *rack* of dedicated units. VORSIS pre-conditions your signal (HPF, LPF, notch filter, de-esser, expander), then let's you apply 3-band AGC/compression *and* 4-band parametric EQ (signal chain reversible) before going through a final stage zero-overshoot peak limiter.

With real-time spectrum density readouts and full metering, our included PC graphic interface software makes operation of the AP-3 direct and easy, offering complete control of all audio parameters, presets, monitor functions, system settings and security—all through a single RJ-45 ethernet connection that lets you control one or many AP-3 units.

TAILOR THAT SOUND

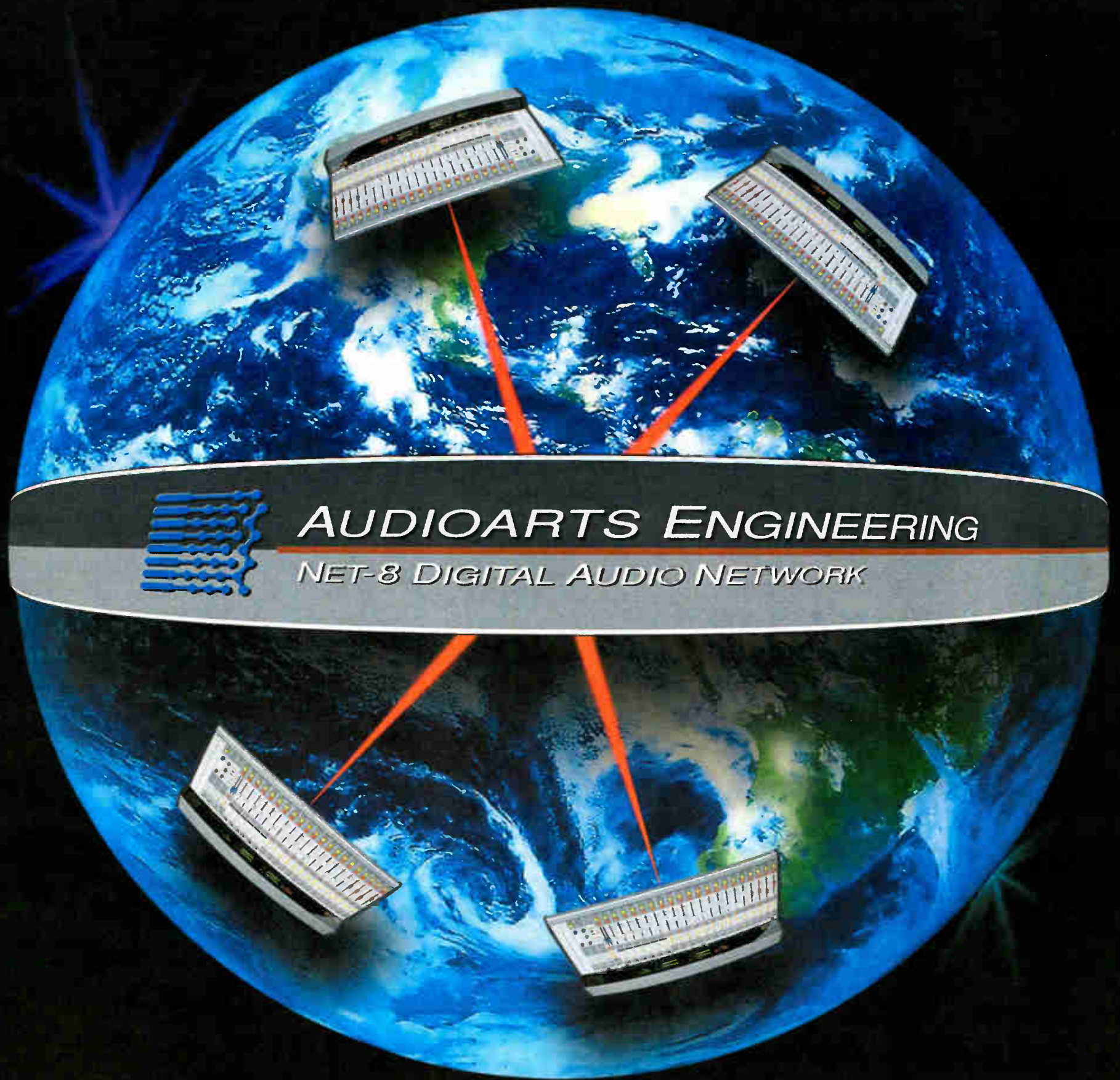
VORSISTM

tel 252-638-7000 / sales@vorsis.com / www.vorsis.com

Copyright © 2005 by Wheatstone Corporation

World Radio History

It's a Whole New WORLD!



AUDIOARTS NET is the *EASY* way to interface your D-75N digital consoles! And because D-75Ns are also standalone designs each studio can operate *INDEPENDENTLY*, relying on the network only to share resources. And by *EASY* interface we *MEAN* it—you don't have to be a software guru or IT professional to get up and running—and *STAY* running! And because it's *AUDIOARTS*, you can rest assured it'll be reliable and preserve your budget. **TAKE ADVANTAGE** of *WHEATSTONE's* extensive expertise in **DIGITAL TECHNOLOGY!**

 **AUDIOARTS ENGINEERING**

sales@wheatstone.com / tel 252-638-7000 / www.audioarts.net

Copyright © 2006 by Wheatstone Corporation