Multicasting
Commercial radio starts to pay closer attention to the potential.
Page 3

Flagship Optimod
We test-drive the new top-of-the-line processor from Orban/CRL.
Page 18

Radio World

$2.50 The Newspaper for Radio Managers and Engineers March 30, 2005

NEWS MAKER

Fritts: A Career Steeped in Broadcasting

WASHINGTON *Edward O. Fritts, known as "Eddie" in and outside of the industry, has been president and chief executive officer of NAB since 1982. The 64-year-old plans to remain a consultant to the association after he leaves his position next year; a search committee has begun the process of finding his successor.*

NAB President/CEO Eddie Fritts

Fritts leads what many consider one of the most powerful lobbying organizations in Washington. But he has had his share of political battles, trying to balance the needs of radio members vs. those of TV, of large-market stations and networks vs. small-market members — and trying to get members to speak as a cohesive group before lawmakers and the FCC.

Some battles have left scars in the association, such as differences over media ownership limits that caused television networks Fox, Viacom and ABC to drop out of NAB and, in the case of the latter two, take their

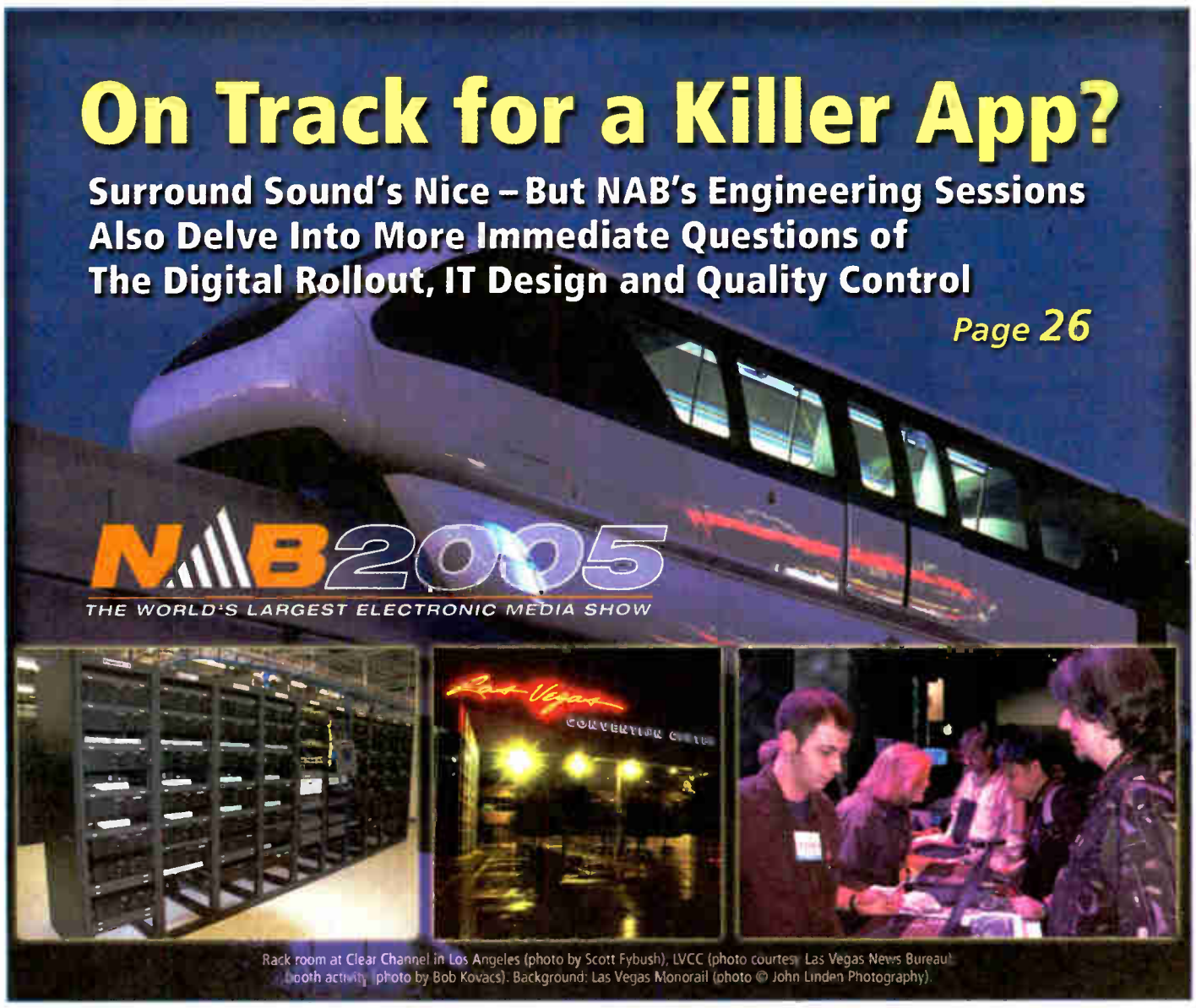
See FRITTS, page 8 ▶

Sign Up For NewsBytes Weekly Digest at www.rwonline.com

On Track for a Killer App?

Surround Sound's Nice – But NAB's Engineering Sessions Also Delve Into More Immediate Questions of The Digital Rollout, IT Design and Quality Control

Page 26



Rack room at Clear Channel in Los Angeles (photo by Scott Fybush), LVCC (photo courtesy Las Vegas News Bureau), booth activity (photo by Bob Kovacs). Background: Las Vegas Monorail (photo © John Linden Photography).

We're Reshaping The Future Of Radio From A Solid Foundation Of Leadership.

The newest force in radio was forged from a rich heritage of leadership that is decades strong. We're bringing a breath of fresh air and a re-energized spirit to an industry we helped to build. At Team Harris Radio, we've brought together the industry's largest and most comprehensive range of products, services and people dedicated to advancing radio. All working together in perfect harmony and focused on the success of your business. From our innovative products to our forward-looking services, management tools and expert support teams, we're dedicated to our mutual future of pioneering and growth. So whether you're audience is around the corner or around the world, Harris Radio is on the air with the resources you need to succeed.

To learn more about the new Harris Radio Team, call us at **800-622-0022** or visit us at **www.broadcast.harris.com**.

HARRIS RADIO IS ON AIR

THE NEW HARRIS RADIO TEAM IS ON THE AIR

AM/FM | AUDIO CONSOLES | DIGITAL RADIO | BROADCAST STUDIO | HIGH POWER AM | SYSTEMS & SERVICE

www.broadcast.harris.com

HARRIS

World Radio History

◆ NEWSWATCH ◆

McCain Proposes Shorter License Terms

WASHINGTON Sen. John McCain, R-Ariz., former head of the Commerce Committee and now chairman of the committee on Indian Affairs, has introduced a bill that would require the FCC to scrutinize stations' public service efforts more heavily at renewal time.

The measure also would reduce station license terms from eight years to three, so stations would need to justify retaining their license more often. The measure would also require all the commissioners to review 5 percent of renewals and license applications, and not leave that to staff.

McCain said the measure would have a small impact on stations currently meeting their public interest obligations, but have "a large impact" on those that do not.

He cited a study by the Lear Center that McCain said indicates that television stations and networks are not doing enough political coverage. NAB disputes the findings, which it said "are clearly slanted to fall in line with the authors' predetermined conclusions."

Ibiquity Gets More Financing

COLUMBIA, Md. Ibiquity Digital's non-broadcast investors, which constitute the bulk of its backing, have ponied up more big bucks. The technology developer has gone back to Wall Street investors and raised another $30 million.

Ibiquity confirmed it closed the new Series C financing from existing investors New Venture Partners, Grotech Capital Group, J.P. Morgan Partners, Gannett Co. and Pequot Capital. Waller-Sutton Media Partners, Whitney & Co. and MidOcean Capital Partners also participated in the financing.

Ibiquity completed a separate financing package with the Washington-based Columbia Partners L.L.C. for up to $30 million in additional structured debt financing.

The technology developer has now raised a total of about $135 million, excluding the $30 million in structured debt financing according to Ibiquity; it said the new money would "reinforce the significant momentum" of HD Radio, along with recent commitments from more than 2,000 radio stations to deploy IBOC.

PREC 2005 Registration Open

WASHINGTON The agenda for the Public Radio Engineering Conference 2005 in Las Vegas focuses on digital radio and NPR's new ContentDepot plan for audio distribution.

Individual sessions over the two-day event April 15-16 include surround sound, multicasting, program-associated data and others. To register, go to: *www.npr.org/euonline*

DRM Tests Begin In Mexico

MEXICO CITY The Mexican government is due to select a digital radio technology this year and has authorized testing to begin for Digital Radio Mondiale for the AM band. The public radio network is carrying out the testing.

Mexico is considering both IBOC and Eureka-147 for its FM digital technology.

"DRM is recognized as the worldwide

See NEWSWATCH, page 7 ▶

CHECK OUT OUR LATEST!

The NEW AUDIOARTS D-75 DIGITAL RADIO CONSOLE

A CLEAN, CLEAR on-air design: straightforward layout, easy tabletop installation, and best of all—*completely modular.*

A TRUE plug-and-play radio board from the Wheatstone digital design team!

AUDIOARTS ENGINEERING

sales@wheatstone.com / tel 252-638-7000 / www.audioarts.net

Copyright © 2005 by Wheatstone Corporation

Index

NEWS

Fritts: A Career Steeped in Broadcasting	1
Newswatch	2
Radio Groups Ponder Multi-Channel	3
From the Editor	4
SBE Eyes Schooling Prospects	5
Digital News	6
Data and HD Rollout Featured at NAB	7
Lombardo Sees 'Indecency Disconnect'	12

FEATURES

Workbench: Out of the Closet and Onto the Rack	14
New Definition of 'Successful Broadcaster'	16
Flagship Optimod 8500 Impresses	18
A Twisting, Low-Noise Balancing Act	20
Entercom KC Plans Big Move	20
RadioSHARK Prowls the Airwaves	22
One Song, Many Voices	24

NAB2005 PREVIEW

Sunday: Here Comes Surround	26
Monday: The New World of Test & QC	30
Tuesday: Radio, Building Big	33
Wednesday: Plan for the Unthinkable	34
The Next-Generation Master Control	36
Also at the Show	36
Management: Climate Changes Hourly	38
Jack Buck Enters NAB Hall of Fame	40
'Pioneers' Honored at Breakfast	41
Monorail Map	42
Travel Tips From a Road Warrior	44
Radio Booth Listings	47-59

GM JOURNAL

Fries Sees Healthy Future	61
'Seeker' Looks for Broader Reach	61
Pay Radio in Your Hand	64
Radio in the Midst of the Storm	64
People News	65
Your Station: Does It Print?	66
Yee, Ha! The Grand Ole Opry	67
Radio and the American Imagination	68

STUDIO SESSIONS

AT2020 a 'Contender' for On-Air	71
Tascam Offers Kamesan KS-342 Mixer	76
Plug-In Cuts Hash With Noise Gate	77
Library Has Foreign, Sci-Fi Bites	80

READER'S FORUM

NAB Should Focus on Spring	84
The Quest for What's Next in Radio	85
Reader's Forum	85-86
A Surround Standard? Not Yet	86

World Radio History

NEWS ANALYSIS

Radio Groups Ponder Multi-Channel

Commercial Radio Considers Combining Efforts on Multiple Digital Channels

by Leslie Stimson

The ability to air several digital streams of programming is an alluring one to broadcasters accustomed to thinking of one radio station as one channel.

How stations might use additional channels — to make back money on the cost of converting to digital, and beyond — is being discussed by groups among themselves and with suppliers. While public radio took the lead on the concept, commercial radio is starting to pay attention.

Business models for auxiliary data uses of HD Radio are not firm, for a variety of reasons, according to experts.

Radio World reported from the Consumer Electronics Show in January that several radio groups with investments in Ibiquity are looking at data services possibilities enabled by HD Radio, including multi-channel audio, and that the groups might at some point combine efforts.

At the time, Jeff Littlejohn, executive vice president of distribution development for Clear Channel Radio, said all the groups are looking at supplemental audio, including his company. "We're all trying to figure out how to make this work."

Radio One Chief Financial Officer Scott Royster predicted collaboration in the industry, "because it does not make sense for every radio company to go out and do its own thing. We'd end up just beating each other up."

'Free' vs. 'pay' radio

The potential value of multi-channel radio is making an impression at the management and finance level.

Executives began dropping mentions of multi-channel audio during their quarterly conference calls with financial analysts in February. A common theme is that airing specialized formats might be an attractive way for "free" radio to combat "pay" or satellite radio for audience.

Entercom CEO David Field, releasing company financials, said it's too early to speak about specific ways to use auxiliary data capabilities of HD Radio. But he said a "consortium" that could roll out programming for new channels at an attractive incremental cost "opens up some interesting opportunities for either a subscription-based or advertising supported vehicle" to deflect the appeal of other radio services.

NPR already plans to give affiliates four programming streams by June. These would be free to its affiliates for their second-channel use. The formats are jazz, news/talk, classical and a fourth, with format yet to be announced.

Experts say one 96 kbps FM channel could be divided into up to eight streams of digital programming, including a main channel and seven others.

Harris broadcast executives say that, in discussions with customers and others, they are hearing these ideas being discussed, as well as others such as on-demand functionality or a TiVo-like service for radio.

"One of the more interesting ones we've heard about is the ability to push a button on your radio when you hear a song that you like, know it's going back to a central location where they send you an MP3 of that song to your home PC and then charge you for it," said Tom Jones, director of radio transmission products for Harris Broadcast.

Another possible use for the new channels is on-demand traffic and weather services, which would allow stations to compete directly with the satcasters. Sirius and XM offer on-demand traffic and weather in some markets; the channels are available to all subscribers.

Experts say one 96 kbps digital FM channel could be divided into up to eight streams of digital programming, including a main channel and seven others.

"Rather than waiting for a certain time, such as 10 minutes after the hour, you can get it instantaneously the minute you want it," said Jones.

Ibiquity Digital offered such a display at CES, showing how a station broadcasting a digital signal could send information to a vehicle's navigation system. Several sources pointed to on-demand traffic and weather as an example of a possible subscription service.

Such a service also would allow a station to "re-purpose" content, lowering costs to produce the channel, said Rich Redmond, director of broadcast systems for Harris.

"The station already owns the intellectual property; they've done the local weather in the newscast," he said.

Al Kenyon, formerly an engineering executive at Clear Channel Radio and now a senior technical consultant with Denny and Associates, offered what he called a rough comparison of what radio could do. Some commercial television stations, he noted, are using a portion of their digital bandwidth to provide weather.

Using the NBC television affiliate in Washington as an example, he said, "NBC thinks (the concept) has some legs because they're trying to compete with The Weather Channel by delivering directly to their affiliates to the digitally-equipped home."

He cautioned that acceptance of this concept or of multi-channel services for radio is to be determined, as there are few digital receivers in the hands of consumers.

Radio ownership groups are mindful of using their multiple digital channels to deliver services that make good business sense. Royster noted that publicly held groups must be accountable to shareholders in whatever they decide to do.

CPB also is thinking about the cost, having asked public station executives for ideas to develop the multi-channels last fall (Sept. 8, 2004, page 14).

While several public radio station managers are eager to put on Supplemental Audio Channel formats that would be unique to their markets, Luis Guardia, senior director of media technologies for CPB, said that after discussions with colleagues and station personnel over the past few months, public radio must be mindful of expenditures.

"In the near term, I think our aspirations for SAC may need to be tempered with practicality. Therefore, SAC applications may have to be low cost as you consider that the digital radio audience is just starting to grow, and will need to get a sense of how SAC services will affect public radio's current business and operational model."

He said, "As more stations adopt news/talk formats in lieu of music, SAC also presents the ability for stations who abandoned one format to bring it back on SAC. Also, re-purposed materials and formatted music streams may provide cost-effective solutions that are not music-based." That is important because the more the digital signal is divided, the fewer available bits are available to carry data for each channel.

NPR, Harris and Kenwood initially divided the stream into a 64 and a 32 kbps channel for the so-called Tomorrow Radio concept. This summer, codec tests showed it was possible to achieve two high-quality channels, plus up to four additional voice-grade channels with minimal interference to existing analog radios, according to NPR.

Ibiquity prefers to see the bit rate maintained at a certain level, so if music is played on the supplemental channel, it has high audio quality, experts said.

Many questions

In general, commercial radio groups and public stations are cautious when speaking about their supplemental audio channel plans and what they intend for HD Radio data services. Competitive issues are involved; and how IBOC data services might shake out remains undetermined in many areas.

Receivers must be available to decode multiple digital channels. Boston Acoustic plans to ship a tabletop HD Radio that can decode a second channel this spring; Kenwood has said it would be ready with product when the FCC approves supplemental channels.

IBOC proponents hope the commission approves supplemental audio as well as other outstanding digital radio issues by mid-year, though there is no guarantee of that. In early March the agency clarified that stations can seek experimental authorization to split the digital signals and then submit test results to the FCC.

Also undetermined is whether the agency would place any restrictions on the use of additional channels such as a base channel size and/or other radio rules such as programming or ownership restrictions. The agency is expected to include the details of multichannel implementation in a subsequent Report & Order.

SCMS INC.
YOU KNOW WE KNOW RADIO!

Check it out!
The refined, revamped, and reconstructed SCMS web site!

Many of you are currently linked to the SCMS site and it's important to us that your links stay with us! We'd like to update you on the addresses of a few of our new pages:

Home/main page - www.scmsinc.com
Broadcast section - www.scmsinc.com/SCMSbroadcast.htm
Used Equipment - www.scmsinc.com/SCMSused.htm
Contacts, personnel - www.scmsinc.com/SCMScontacts.htm
Manufacturers - www.scmsinc.com/SCMSmanufacturers.htm

Mid-South Sales: **Bob Mayben** Voice: 877-391-2650
Central Sales: **Bernie O'Brien** Cell: 731-695-1714
West Coast Sales: **Doug Tharp** Sales: 866-673-9267
Mid-West Sales: **Mary Schnelle** Sales: 513-899-3036
South-Atlantic Sales: **Art White** Sales: 770-632-1295
North-East Sales: **Jim Peck** Sales: 315-623-7655
South-West Sales: **Tyler Callis** Sales: 877-699-9151

Call: BOB, MIKE, ERNIE or MATT
Toll FREE: 1-800-438-6040
1-704-889-4508
Fax: 1-704-889-4540
E-mail: sales@scmsinc.com
www.scmsinc.com
CORPORATE SALES OFFICE
Pineville, N.C.

World Radio History

Digital Helps Suppliers Feel Upbeat

From the Editor

Paul J. McLane

How's business?

I ask this of broadcast vendors when the NAB show is approaching and my feet start to ache in sympathy with former colleagues who have to stand in their booths, keep smiles plastered on their faces and answer the same product questions over and over.

How's business? I ask because a vibrant supplier marketplace not only keeps this publication in business but provides choice and competitive pricing to you, the buyer.

We know from headlines and financial reports that the supply business comes with its share of lumps. A big antenna manufacturer reports declines in its broadcast and communications business. A big RF and audio supplier cuts broadcast manufacturing staff twice within a year. A digital console/routing company restructures.

All of these stories have been reported in RW of late. But based on subsequent chats I've had with buyers and sellers, it seems to me that overall, business feels better.

One big reason is digital. Radio has gone through its eras of studio computerization and facility consolidation. What's driving the hardware business now? HD Radio and the continuing conversion of platforms from analog to digital.

The 'up-fit'

"I feel good about the industry. There's plenty of business," says Gary Snow, president of Wheatstone, whose company recently made a million-dollar improvement in capital plant, expanding console assembly and cabinetry manufacturing capabilities. ("We can laminate a countertop in 45 seconds," Snow told me.)

Last fall, he had reported to me that Wheatstone's sales for 2004 were up 25 percent. The strong trend continued into this year, he said later. His manufacturing staff is up 7 percent, to 120 people.

He declined to share sales figures but said the company's growth comes from digital. Broadcasters, he said, have been focused for years on consolidating stations and sharing audio resources. Now, it's all about the "up-fit" to digital.

"This is an era of digital radio, it's high-definition; digital storage; digital transport. And we're into the digital mixing age," Snow said. "The difference is that most of the clients have not bought an entire system before; they bought pieces and put them together. Now they buy the entire infrastructure; so making the right decision is far bigger than buying 10 pieces of gear."

Customers are no longer asking *why* they need digital, Snow said; clients now say, "I *need* it — to consolidate electronics, reduce wiring, reduce ground loops." He also said customers are less likely to mix brands, more inclined to build console/routing purchases around one vendor.

Peter Burk, president of Burk Systems, which makes remote control products and RDS gear, told me business has been up. "We had to work a little harder to post an increase last year, but December and January both busted budget," he said. "One big group virtually doubled its anticipated needs for this year."

Why? "I wish I knew; I'd be in another business," he said, although Burk has benefited from its acquisition of Gentner's remote facilities management business four years ago. "I suppose the HD Radio build-out is part of that (too), a chance to bring the plant up to current standards," he said. "We're also seeing gains in TV."

Burk's business, he says, has grown over 20 years (it will note the anniversary in June and will give away an ARC-16 and a GSC3000); he doesn't anticipate any change in growth. "But we have to put a little more attention to making sure we put the right stuff in front of the right people. Targeting our products carefully has become even more important."

Tim Schwieger, president of BSW, a distributor, also says business is "very good," although like executives of other private companies quoted here, he declined to quantify that. He attributes the trend to capital spending on HD Radio and studio upgrades to all-digital.

"We think capital spending is on the rise. It is too early to tell if it will come to fruition by the end of the year."

Up the road from BSW, Audion Labs, which makes the VoxPro line, said business was up 12 percent last year. Before leaving that company for family reasons, President Tyrone Noble told me recently, "The advertising revenue challenges experienced in previous years have waned. Larger transmitter and RF product purchases were the first-on-the-block purchases after funds to buy were made available to stations and groups. Studio products followed, and are expected to be healthy throughout 2005."

Others echo the theme. Ryan Steelberg, president of dMarc Broadcasting, new owner of Scott Studios, told me the company ended 2005 with its best December in six years. Larry Titus of Titus Technological Laboratories said business is "booming" thanks to IBOC and to his company's emphasis on customized products.

'More mature'

We should not put *all* of our faith in upbeat pronouncements from privately held companies; business leaders will put the best face on their situations, always. (I remember working for Radio Systems and watching Jack Williams of PR&E, a high-end competitor, walk by. I called out, "How's business?" and Jack, tanned and smiling as always, hefted his briefcase and said, "Full of orders!" He didn't offer to show me the paperwork, though.)

So we'll also have to watch how the year develops and take hints from the financial announcements of those few companies whose numbers are public. For instance, Harris, which has endured broadcast layoffs and a period of sales declines, recently said quarterly broadcast revenue rebounded in double digits thanks in part to HD Radio, analog TV and a studio/networking equipment contract for the Iraqi Media Network.

Hopefully 2005 will bring more such news from the manufacturing sector.

And what do engineering managers at the groups say? Are their budgets this year any bigger? Buyers sound a bit more cautious than sellers.

"As Clear Channel's position in markets has become more and more mature, we have been able to decrease the amount of capital required for major project capital like studio consolidations," Jeff Littlejohn, the big chain's executive VP for distribution development, told me. "However, our demand on replacement capital has increased as some of these earlier consolidations start to age.

"The result is that Clear Channel has an overall decrease in the amount of capital needed to maintain our radio division."

However, Littlejohn said, he thinks vendors are seeing the effects of HD Radio. "I think for most groups this is an additional capital budget in addition to their normal capital spending."

Another radio group engineering executive, who spoke on the condition he not be identified, said that, like me, he wonders about the direction of capital spending.

"I can tell you that our cap-ex budget is not tremendously higher than last year. I think a lot of the purchasing that is taking place may be related to IBOC. A lot of groups have made commitments that require them to be purchasing transmitters, antennas, racks, feed line, remote controls, audio gear, etc."

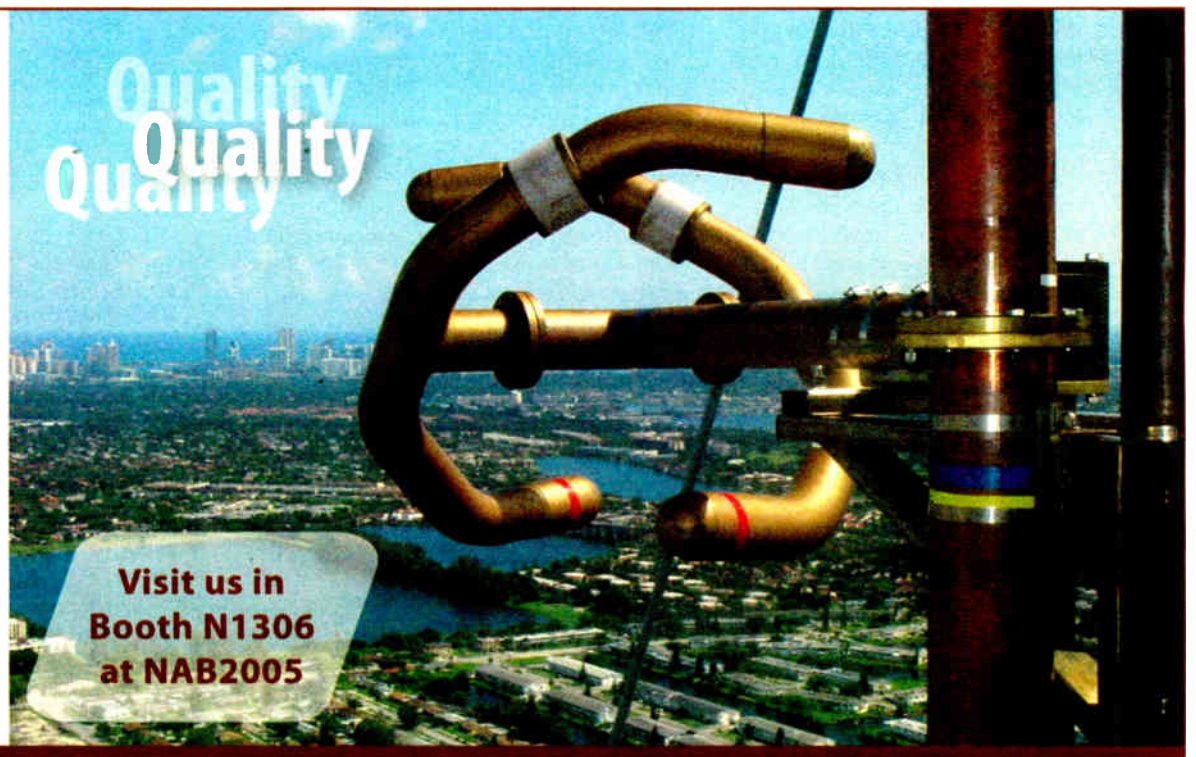
This engineer has heard numbers bandied about that put the industry's hardware cost of HD Radio in the upper hundreds of millions of dollars. I can't confirm that; but given the potential expenses involved, there's no question IBOC represents a boost for the supply industry — probably much, if not most, of its growth for the next few years. The era of HD.

Ty Noble of Audion Labs sounded an upbeat note: "I truly believe there's no better time to be in radio and TV. The challenges coming to traditional media via online, podcasting, wireless, blogging — every avenue is up for grabs in our lifetimes." Whether that optimism will translate to more business and continued health for suppliers will be seen.

We Define Quality

For more than 60 years, ERI has served the broadcast industry with products and services of the highest quality and dependability. Our professional team of engineers, drafters, fabricators, installers, and project managers deliver broadcast systems that meet your exacting specifications. We take pride in contributing to your success by providing you with the best RF and structural products.

qual·i·ty *n.* the highest or finest standard.



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

World Radio History

SBE Eyes Schooling Prospects

Society Develops Broadcast Engineering College Curriculum, Groundwork for RF Hazard Training

by Randy J. Stine

WASHINGTON On solid financial footing and maintaining steady growth, the Society of Broadcast Engineers is in position to move ahead with critical issues facing the national organization, including RF hazard training and industry frequency coordination standards, according to its elected leader.

SBE President Ray Benedict's second and final year as leader of the national group will focus on those issues along with the education demands facing broadcast engineers. SBE now has nearly 6,000 members.

Benedict, director of spectrum management for Viacom in Washington, says education continues to be at the top of his agenda for SBE. The organization formed an education committee in 2004 to examine how to address training for broadcast engineers working in an ever-changing industry.

Higher-ed certification

The committee is addressing education needs of members and others involved in the technical operations of broadcast facilities, Benedict said.

"We want to help broadcast engineers cope with the significant changes they are facing, including IBOC, digital TV, RF hazard standards and everything else coming along in their universe. We have two areas of interest there: Education for new engineers and continuing education for existing engineers — and ways to standardize those things."

Benedict said SBE plans to detail at NAB2005 its "multi-pronged approach" to how chapters train members, including the development of a program to work with colleges and universities that offer broadcast engineering classes (RW, Oct. 6, 2004, page 22).

"We have developed a suggested curriculum for use by post-secondary schools that offer a broadcast engineering program or wish to develop one. The curriculum will provide a baseline education to students," Benedict said.

SBE will introduce exams in several certification specialties beginning in April 2005. The first specialty will test on maintaining AM directional antennas. "We chose AM directional antennas first because it's an established technology with established experts to draw on. We feel there has been a long-standing educational deficit in this area.

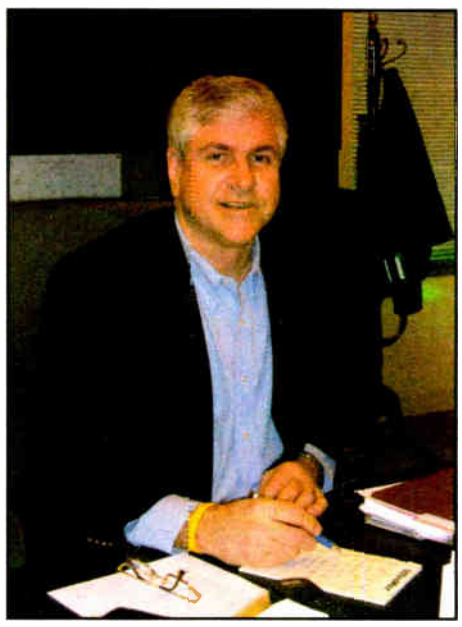
"We think (certification specialties) will be an important designation. Broadcast engineers will be able to add these specialty certifications to their primary certifications. The specialty designations will make engineers more attractive from a competitive standpoint," Benedict said.

On the horizon is at least one other major issue "that could affect every single broadcast engineer" working today, Benedict said. The FCC is expected to release a Report and Order this year that will require some formal RF hazard and exposure training for all broadcast engineers and for anyone who goes into a controlled area.

RF hazard training

"This could be something of a bombshell. It's been flying under the radar for several years now, ever since the FCC sought comment (in a Notice of Proposed Rulemaking) on radio frequency exposure. They have stepped up enforcement in a number of areas as a result. We are already working with suppliers that are doing that kind of training. We will enact formal training that will be acceptable to the FCC," Benedict said.

Benedict says he expects the commission's action to amend the RF rules to be released sometime in 2005. He said, "It's really a groundbreaking kind of thing, affecting not only broadcast engineers but HVAC and the telephone industry as well."



Ray Benedict

The RF exposure training issue is a good example of what Benedict perceives to be the SBE's role in the lives of its membership.

"(SBE) looks ahead and determines possible issues that will impact our membership and then we devise a solution, whether it is through training or the regulatory route, to the problem."

Another area of need is the frequency coordination of point-to-point microwave links, Benedict says. A subcommittee on BAS (Broadcast Auxiliary Service) Frequency Coordination Standards committee was formed in 2004 and is working to develop new interference standards in the 900 MHz band.

The subcommittee is looking at dBu ratios and antenna standards to determine what new receivers and existing ones are capable of, Benedict said. All 950 MHz Aural BAS stations became subject to the FCC Section 101.103(d) rule requiring a formal frequency coordination study and exhibit as of November 2003.

"When people try to relocate their STL aural links or even establish news ones, they are coming up with lots of interference cases," Benedict said. "I've seen cases where the software has come up with 20 to 30 different interference cases from existing links."

In Las Vegas

The subcommittee could develop frequency coordination criteria in time for NAB2005, but Benedict believes it's more likely the work would be completed in time for SBE's national meeting in Dallas in October.

"We hope the FCC will accept this work as industry-accepted procedures and allow the new format," he said.

SBE expects to introduce a second version of its frequency coordination

See SBE, page 6 ▶

NEWS WATCH

Clear Channel, Stern Call Truce on Lawsuits

SAN ANTONIO Clear Channel and Howard Stern have agreed to withdraw their dueling lawsuits.

After Clear Channel dropped Stern's show from six stations — having been fined nearly $500,000 by the FCC for indecency for Stern's programming — Stern and Infinity had sued for $10 million, claiming breach of contract.

Clear Channel counter sued for $3 million, seeking indemnification of the $495,000 fine that Clear Channel paid as part of a $1.75 million settlement with the FCC, as well as damages for lost ad revenue from the show's cancellation and attorney fees.

Both sides have withdrawn their lawsuits and dropped their claims for damages.

"We are pleased to resolve this contractual dispute with Howard Stern without further legal expense and delay," said Andrew Levin, Clear Channel's executive vice president and chief legal officer. "Today, Clear Channel stations are entertaining listeners without being indecent, and we intend to keep it that way,"

He said Clear Channel remains concerned about growing disparity in federal government regulations concerning media content as it is delivered over competing platforms.

"Congress and the FCC should be troubled that the current law unwittingly creates a safe haven for indecent programming on other media platforms, including satellite radio," said Levin. "Unfortunately these outlets are fast becoming the wild west for sexually explicit programming."

World Radio History

DIGITAL NEWS

XM Hikes Service Fee, Moves Content From Paid

WASHINGTON XM's basic service fee will increase about 30 percent on April 2.

The company announced basic service will go from $9.99 to $12.95 per month — the same as its rival, Sirius. XM is also moving some content from what had been paid channels, and offering current customers the opportunity to lock in current rates if they sign up for a prepaid plan of one to five years. The company positioned this move as adding value to its basic service, and said this has been the only price increase since its launch in 2001.

The company said its basic service will now include XM Radio Online, which includes 70 channels of XM music and talk programming; that service had cost an extra $3.99 per month, plus the channel that carries Opie & Anthony, which had been $1.99. XM's Family Plan service is not affected.

President/CEO Hugh Panero said the new pricing would help fund technology development, enable XM to offer lower-priced radios and devote more money to content. He predicted that the company would surpass its current target of 20 million customers by 2010.

Pay Radio Demand Unclear

Satellite radio demand is hard to gauge, judging by a recent survey from an audience analysis firm and what analysts are saying.

Seventy-four percent of listeners said they would follow Howard Stern to Sirius Satellite Radio in 2006, according to a survey by Bridge Ratings, which surveyed those who identify Stern as their favorite morning show personality.

But asked whether they would definitely subscribe to the satellite service, the number drops to 22 percent, with undecideds at 44 percent and 37 percent saying they would not.

Asked about hardware and subscription costs associated with satellite radio, 7 percent said they would subscribe, with 49 percent undecided and 44 percent saying they would not follow Stern, Bridge found. The audience analysis service surveyed about 1,850 listeners age 12+ in the fall and winter.

Separately some analysts recently told Reuters the projections of satellite radio boosting subscribers as much as tenfold in the next five years may be overly optimistic. Those projections are based largely on estimates of satellite radios installed in new cars in the next few years.

"Subscriber growth is the key and critical driver for satellite radio," media analyst Frederick Moran of Stanford Group told Reuters. "Any snag in obtaining that growth could cause a sharp correction in the stocks of these companies."

XM has said it expects to reach cash-flow break-even in 2006, yet analysts told Reuters profitability could still be several years away for both satcasters.

Sirius Snares NASCAR Exclusive As of 2007

NEW YORK Right now, NASCAR races are heard on both satellite radio services. In 2007, they all move to Sirius. That includes Nextel Cup Series, Busch Series and Craftsman Truck Series races.

In announcing a new deal, valued by the companies at $107.5 million over five years, NASCAR Chairman/CEO Brian France said, "Sirius is the sports leader on satellite radio, and sports programming is a leading reason subscribers choose Sirius." He said Sirius' decision to create a 24/7 NASCAR channel factored into the decision to move the programming.

NASCAR says auto racing is the No. 2 sport on television, after only to the NFL.

"We believe (NASCAR) will be an important driver of subscriber growth and advertising revenue," said Sirius CEO Mel Karmazin. Sirius becomes the official satellite radio partner with NASCAR, with the right to sell all ad time on its NASCAR channel and during the race broadcasts. Sirius gains NASCAR trademark and marketing rights and both companies will develop a marketing plan that could include ways for current NASCAR fans to switch to Sirius.

Sports Carriage Issues

LAS VEGAS The past winter's CES show had a great deal of news in the satellite radio arena. Here are more items that didn't fit into Radio World's previous issue about CES:

XM's new baseball channel debuted in February, while Sirius began airing NFL programming last fall. Local broadcasters that have rights to air the games in their markets have questions about how the satellite radio firms would re-air the local feeds, compensation and other issues.

XM believes baseball is a good product for satellite radio because of the long season and the number of games. It says there is not a total game package available on satellite television or on local radio that it plans to offer.

David Butler, an XM spokesman, told Radio World the company has no plans to alter the local baseball broadcasts it will pick up and re-air; it believes most of its advertising opportunities would be via the 24-hour original XM baseball channel rather than in the rebroadcasts of local feeds.

With the NFL, Sirius Spokesman Ron Rodrigues said, Sirius airs two feeds of each game, the away and home team feeds, so listeners can choose.

Asked if Sirius covers or drops any portion of the feed, he said, "For the most part, we air the feed as is." During those times when there's a pause for a local station ID, he said, "That's where we'll stick in, 'You're listening to the NFL on Sirius Satellite Radio.'"

Panero: XM Is Satellite Radio 'Big Dog'

LAS VEGAS Reacting to recent headline coverage enjoyed by Sirius, at CES, XM Satellite Radio President/CEO Hugh Panero countered with, "We are the big dog in satellite radio," a reference to the Sirius dogstar logo and its slogan, "Ride With the Big Dog."

XM had 3.2 million subscribers at the end of 2004, and Panero predicted the company would reach 5.5 million subscribers this year.

— Leslie Stimson and staff

SBE

▶ Continued from page 5

software at the NAB show in Las Vegas in April, Benedict said. The software includes a new module to help regional frequency coordinators handle special short-term events such as sporting and major news events, "such as a plane crash when you have 300 media people there covering it," he said.

NAB2005 is expected to mark the debut of a new radio "Chief Operator's Handbook." Also, "Master Control" will be the topic at the Ennes Workshop on Saturday, April 16 (see story in the NAB preview section of this issue). The Ennes Education Foundation Trust is the educational arm of the SBE.

Benedict has been part of the leadership at SBE for many years. He has served the society as vice president, secretary and board member.

"The role of president is to chair its board of directors, work with the SBE staff, including SBE Executive Director John Poray, set goals and procedures for the national staff and to help set the strategic direction of the society," Benedict said.

The association is in a strong financial position, Benedict said, with nearly $1 million in equity from its investments. SBE's 2005 income is anticipated to be near $885,000, with an expense budget of $843,000 for this year.

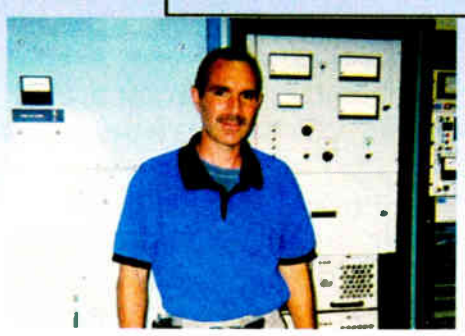
"We are showing financial growth year to year. We have done very well with our equity investments. That allows us to do more things for our membership."

Balloting to fill board member positions will take place this summer and will be tabulated on Sept. 1. Those elected will be installed during SBE's national meeting in Dallas.

Benedict began his broadcast career nearly 50 years ago in Montpelier, Vt., at the former WSKI(AM), where he began hosting a radio show "playin' rock-n-roll" in the eighth grade. Benedict eventually took up broadcast engineering, and except for several years in the U.S. Army, has spent his career in broadcasting.

He and his staff oversee approximately 2,000 broadcast and communications licenses for Viacom and its subsidiaries, including main broadcast, BAS, earth station, weather radar, experimental and Part 90 communications licenses for Viacom's non-broadcast entities such as Paramount Parks.

WHAT ARE CUSTOMERS SAYING ABOUT
KINTRONIC LABS, INC.
WIDE BAND ANTENNA SYSTEM PERFORMANCE?



Rick Sewell, CBRE
Chief Engineer,
KSTL-AM/ Crawford Broadcasting–St. Louis

After installing his new Kintronic ATU, this is what Rick had to say:

"The ATU is a custom design by Kintronics and I would like to give them a tip of the hat. We didn't have to move a single tap in the ATU after connecting everything together. It was tuned perfectly from the factory."

Cris Alexander, Director of Engineering At Crawford Broadcasting added:

"This station sounds better than ever before."

Kintronic Model LTU-1B,
1kW ATU Installed At
KSTL-AM/ Crawford Broadcasting–St. Louis

Telephone : (423) 878-3141 Fax: (423) 878-4224 Email: ktl@kintronic.com Web Site: www.kintronic.com

World Radio History

Data and HD Rollout Featured at NAB

by Leslie Stimson

Multichannel and surround sound, as well as other capabilities associated with HD Radio, will be discussion topics on the show floor at NAB2005 in Las Vegas, featured by Ibiquity Digital and transmission gear vendors.

Ibiquity Digital wants to show off to broadcasters the list of manufacturers that plan to make HD Radios. In its booth, it plans to showcase additional automotive radios coming to market, as well as tabletop and custom high-end home units.

The company also hopes to provide a demo of supplemental audio broadcast on a local station.

"We're getting a lot of interest (on the concept) on the both the public and commercial radio sides," said Ibiquity Vice President of Marketing Dave Salemi.

A navigation overlay demo will demonstrate how HD Radio information can be integrated with navigation systems.

Ibiquity said it is beefing up staff to help stations market HD Radio. The company has hired Rene Jamerson, former director of FM operations and promotions for Infinity's five-station Maryland cluster in Baltimore, and Roy Sampson, former marketing/promotions manager for Times-Shamrock station WZBA(FM) in Baltimore, as broadcast marketing managers.

Jamerson and Sampson will help Don Kelly, director of broadcast marketing, position HD Radio to station on-air staff and support station efforts to reach consumers.

Supplemental

"We have good relationships with station engineers and executives. Now, we need to get education out to sales staffs and PDs," said Salemi. "We need to reach out almost station-to-station."

The company also is working to put its marketing handbook online for stations to access, he said.

HD Radio transmission vendors such as Harris, BE and Nautel plan supplemental audio demos in their booths. (More about Nautel's HD Radio product plans in the next issue.)

Ibiquity vendors Harris Broadcast and Broadcast Electronics plan to introduce more HD Radio products.

Harris will display the Flexstar exciter, to be shipped later this year. This is the third Flexstar product, following the introduction of the HDI-100 data importer and HDE-100 program exporter, which multiplexes HD audio and data services into a single bitstream.

Harris executives are discussing ways to help stations with the digital rollout "without huge marketing budgets being developed," said Debra Huttenburg, vice president and general manager of radio broadcast systems. "There could be a situation where if we had some large group deal as part of the negotiation, we might offer some type of marketing budget for HD Radio promotion. That's what we're kicking around now: How can we work together with broadcasters to drive the solution vs. just looking at ourselves as a supplier to the market?"

BE is focused on how stations can manage data for HD Radio and RDS. It plans to unveil RDS generators, data software applications and text services for the Web, all the result of its recent acquisition of another company, The Radio Experience. BE also will demonstrate the compatibility of AudioVault with the surround sound schemes being proposed for use with HD Radio.

Asked how he believes the digital rollout is progressing, BE Vice President of Strategic Marketing Neil Glassman said, "With the introduction of HD Radio transmission and data components that are more flexible and 'fill out' the complete digital radio equipment chain, we anticipate the rate of implementation to continue to increase."

However, he said, "There remains some confusion and concern about second-generation HD Radio architecture. While this architecture enables Secondary Program Services — e.g., Tomorrow Radio — multichannel sound and advanced data services, stations are not yet certain when these services will be permitted and when compatible receivers will roll out.

"Stations need more information on the second-generation and future architectures and the assurance that purchasing decisions today will not result in costly upgrades later."

Newswatch

▶ Continued from page 2

standard for shortwave," said Jorge Rodriguez Castaneda, the director general of radio and television systems for the Mexican Ministry of Communications and Transportation.

"We will study DRM for application in the AM bands, and maybe the FM bands in the future."

While the DRM system covers the broadcasting bands below 30 MHz, the DRM General Assembly planned to vote on a proposal to extend it to the broadcasting bands up to 120 MHz at its meeting in Paris this month.

During a DRM symposium in Mexico City on Feb. 9, 80 attendees heard a live broadcast of Radio Educacion from analog medium-wave/AM to DRM, as the Mexican testing process began, according to the DRM press office.

For the symposium, Harris Broadcast installed a DRM modulator board within a DX50 transmitter, and RIZ installed a 200-watt SW DRM transmitter system on 25.620 MHz.

DRM's European commercial launch is to take place later this year.

SHOW US YOUR REMOTE
Email photos and stories of the interesting ways you use YOUR Comrex. Send to: story@comrex.com
You WILL win a prize.

BE THE ACTION...
"WE HAD THIS GREAT IDEA... WE'D BE THE BILLBOARD!"

"Our Christmas-eve-eve billboard food drive remote is still in progress on the Matrix, but I wanted to get a few photos to you before the end of the day. It worked very well, although the temp was -1 when we started, so we left the Matrix in the van rather than letting it freeze, and ran REALLY long mic cords between it and the announcers. Thanks, Comrex, and Merry Christmas!"

--Tom Weeden, WNWC

Matrix Portable:
Delivering the sound of holiday cheer to listeners around the world is as simple as pressing a button. Only the advanced Comrex Matrix POTS codec delivers the highest quality audio and superior connection reliability over both standard wired and GSM wireless phone connections. Our road-proven design and construction, plus ease of operation and real-world features, make Matrix your best choice for all your POTS and ISDN remotes. The results? Your listeners become the most generous people on the face of the planet.

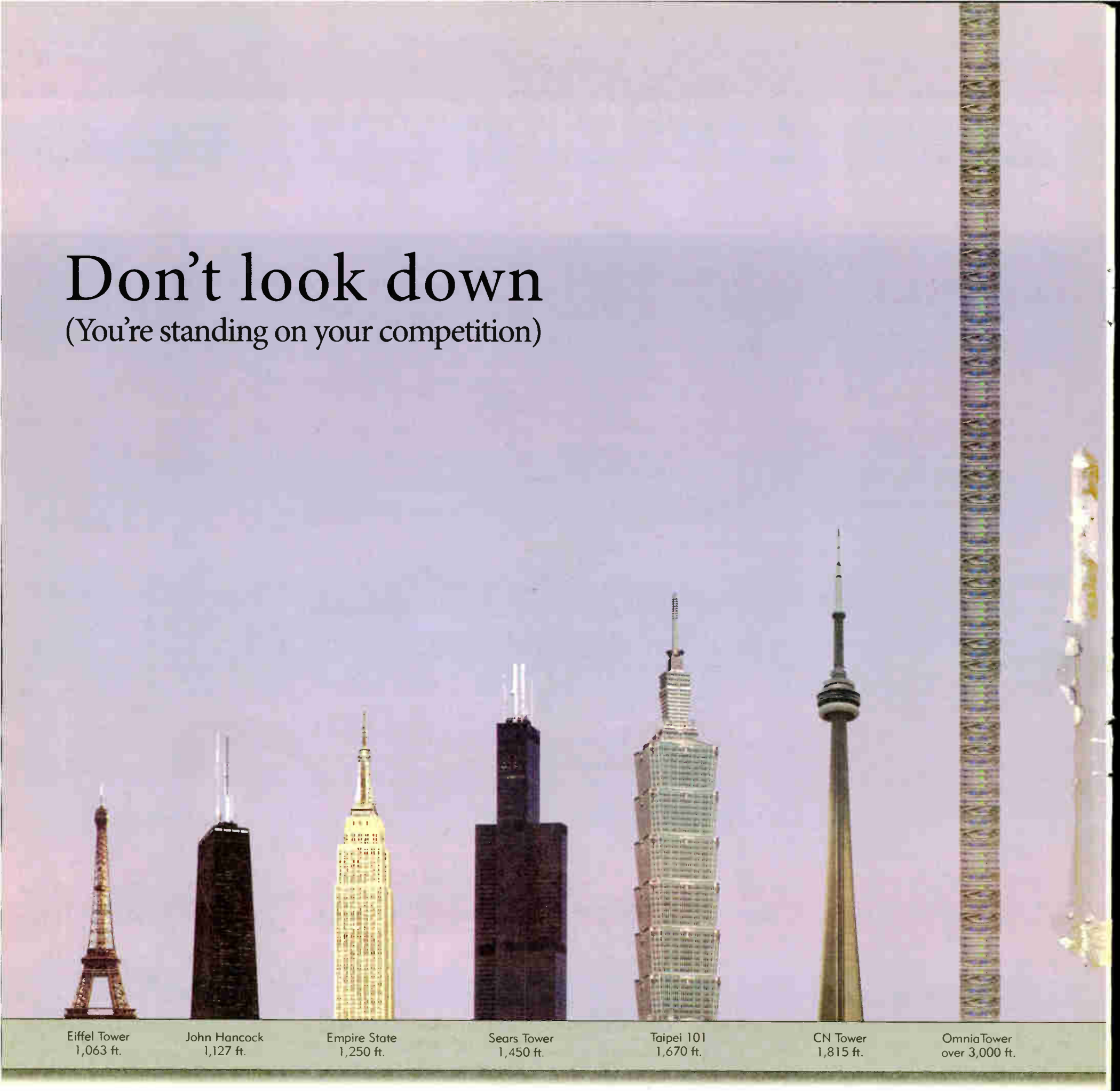
Matrix Rack:
Sure all the action is in the field, but a great remote needs a great home base. And there's nothing better than the Matrix Rack. It's compatible via POTS and ISDN with ALL Comrex codecs as well as those from nearly everyone else. Perfect for receiving those calls from the field. Make the Matrix Rack the center of communications for ALL your remotes.

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

World Radio History

Don't look down

(You're standing on your competition)



More than 60% of the Top 100 highest-rated FM stations in the USA have already upgraded to Omnia-6EX—the six-band dual-path processor for standard FM and HD Radio signals. The reasan these leaders choose Omnia? Once you've heard it, you'll know.

The Empire State building is pretty tall. Taipei 101? CN Tower? Even taller. But Omnia dwarfs them all. In fact, if you stacked up all the Omnia audio processors in use around the world, you'd have a tower well over 3,000 feet high.

In just a few short years, Omnia has emerged as the best-selling audio processor in the world. More importantly, it's the most successful stations in top markets like New York, London, Paris, Rome, Beijing, Tokyo, Amsterdam and Berlin, that have put Omnia on top. And more broadcasters are upgrading every day, using Omnia as their secret weapon to stay miles above the competition.

Speaking of heights, did you know that Omnia processing now powers stations broadcasting from every one of the famous structures pictured above?

Big or small, isn't it high time you upgraded to Omnia?

Omnia
A Telos Company
www.omniaaudio.com

Omnia is a registered trademark of TLS Corp. ©2005, TLS Corp. All rights reserved

World Radio History

Fritts

▶ Continued from page 1

radio stations out of NAB as well.

He counts as victories the deregulation of media and loosening of ownership limits, as well as the NAB's ability to convince Congress to force the FCC to limit the amount of low-power FMs allowed in a market. But he says he regrets not always being able to unify membership consistently.

Fritts will leave the NAB at a time when traditional over-the-air media face declining viewers and listeners, and cable, satellite, the Internet, iPods, MP3 and other technologies gain consumers' attention.

Much attention no doubt will be focused on Fritts' achievements and failings at NAB during his final "lap" in office. Less well known are his sense of humor and the details of his early days in radio. Fritts, visibly more relaxed now with the end of his tenure in sight, spoke with Radio World News Editor/Washington Bureau Chief Leslie Stimson.

***RW:** Is it a big load off your mind that the big decision is made and out there?*

Fritts: Absolutely.

***RW:** Tell us about your plans.*

Fritts: I've been here 23 years and am pleased that we're going to have a seamless transition to a new CEO; and I will stay at NAB until the new CEO is on board and has done, so to speak, a lap around the track... At which point I will step aside. But I'll still be a — quote — friend of the family of NAB and be available on a consulting basis to provide assistance if and when called upon.

***RW:** So we'll see you at the next Radio Show?*

Fritts: You'll see me at a lot of NAB events, exactly, but definitely at the next Radio Show.

***RW:** Are you going to open a consultancy?*

Fritts: What I would like to do is look at an opportunity to invest in some broadcast properties, open a political consultancy firm here in Washington, or affiliate with a larger established firm and serve on a board or two.

***RW:** That's a lot of different irons in the fire.*

Fritts: I guess I'm somebody who runs on hyper energy, so this will be par for the course. I need something to stay busy and to look forward to. I believe strongly in broadcasting and I think it's got a great future, and certainly I want to be a part of the growth of the industry.

You know, I've only done two things in my life: one is build a broadcast company and two is build the NAB.

***RW:** You mentioned you might want to invest in broadcast properties. Radio? TV?*

Fritts: I just haven't crossed that bridge yet. I don't have anything working or any deals in the works at this point because it would be inappropriate. I want to just make sure I take care of the business here at NAB first.

***RW:** What radio issues will you focus on while you're still at NAB?*

Fritts: Radio clearly has challenges ahead of it. You have the LPFM third-adjacent channel issue bubbling around in Congress. Some would like to populate the universe with as many LPFM stations as there are flowers.

We don't have a problem with LPFM as long as it doesn't cause interference with existing radio. We certainly can't have third-adjacent channel interference knocking our stations off the air.

If you look at what is the commission going to do on un-rated (Arbitron) markets, our smaller market members are very concerned about that.

***RW:** I don't think the commission's plan is done yet.*

Fritts: The commission's plan is not done yet; they'll have to vet that publicly and we'll have to give them some ideas along the way.

I would really like to be a part of HD Radio becoming a success in the marketplace, and I think we're right at the brink of that occurring. Many great things have happened through the transition to digital for radio. I think (it) is going to be very exciting.

It's going to open new opportunities for new streams of revenue, for new services to consumers and that will be the next generation of radios that will, really, shake up the marketplace.

***RW:** NAB has been involved in that effort for a long time...*

Fritts: It's been a long, torturous road, and we've been supportive of the Ibiquity plan, as you know, because we think our future is in digital. The radio transition plan, as juxtaposed with the television plan, is one that does not disenfranchise all radios at one time because it sort of rides on the analog spectrum as opposed to needing new spectrum.

That's a real plus and a benefit and I think there's real momentum now from the major group broadcasters behind HD Radio. You're going to see major automobile manufacturers in the '06 models begin to install HD Radios in their luxury models. That will, of course, cascade down to all models in future years.

***RW:** Is NAB talking to the broadcasters about promoting digital radio?*

Fritts: Absolutely. One of the things I think you've seen is our radio marketing campaign that has begun to take hold across the country. The new one. *("You Hear It Here First")*

I would predict that in the future, you're going to see more of that type of activity coming from NAB in support of local radio all across the country.

***RW:** As radio combats satellite radio and iPods...*

Fritts: Well, as the marketplace changes. A good friend of mine once said, "NAB should be about government relations and public relations." And that's sort of taking the story to the consumer.

***RW:** On the challenges, you had mentioned LPFM and the FCC looking at unrated markets...*

Fritts: And HD Radio. Then you have issues like indecency, you have issues like (Sen. John) McCain wanting to change licenses terms from eight to three years. And the Congress putting the three strikes provision in legislation for indecency which can certainly, be problematic for broadcasters.

***RW:** So you have a little bit of work ahead of you still...*

Fritts, right, testifying before Congress in 1988.

Fritts: Look, we never for a moment thought that we would have a quiet time with respect to this session of Congress or the new FCC that will be coming on board.

***RW:** How do you think the transition's going to go at the FCC?*

Fritts: With a new chairman of the FCC, we'll still (have) a Republican-dominated FCC. I anticipate that most of the policies that have been in effect will continue. But we look at this as an opportunity take a fresh look at all of the policies regarding radio. And, quite frankly, we believe there's some opportunities here.

***RW:** Would you go further into that?*

Fritts: For the past 20-plus years, our goal has been to get the government off of our backs, to make sure that broadcasters continue serving their communities ... to validate what they are doing.

We, as you know, initiated the census broadcast program, where we collectively add up all of the public service and public interest programming that broadcasters provide on an annual basis.

Radio is far and away the largest contributor by a large order of magnitude in that process. So radio has a great story to tell. What we have to do as the Congress turns over and as the FCC turns over, we have to continue educating members of Congress and the FCC commissioners as to the importance of radio in the daily lives of all Americans.

Currently you have 225 million people a day who are listening to free, local radio. What we don't announce is that Detroit rolled out 52,000 cars last month, all with free, over-the-air radios in them. And next month, we don't announce that there's another 50,000 or whatever the number is.

But each one of them, you can count of having free radio. We haven't made big issue out of that because I think radio has pretty much been taken for granted. It's a one-to-one medium, where people listen to their favorite personalities and develop great loyalty.

***RW:** Those involved with the digital transition are talking about ways to combat satellite radio. Multicasting is starting to bubble up as an idea, as stations look to "How are we going to make our money back with subscription services possibly or doing different formats." How do you think this is all going to shake out?*

Fritts: Look, I think the most exciting time for radio is not behind us, but ahead of us. The transition to digital is going to take us into the next generation.

Everything in the universe is converting to digital. Cell phones that were analog are now moving to digital. Computers are digital. Cable is trying to add digital tiers and that's good. Satellite radio is digital. Terrestrial radio *will* be digital and it will provide us with many more opportunities to provide services to the public — free as well as provide potential new revenue streams for radio.

***RW:** Speaking of radio, we're told you might have a couple of stories about when you were a station owner.*

Fritts: Those are so far ago I can't even remember.

***RW:** You brought in $22 on your first day as a station owner in 1963?*

Fritts: That's how much I billed; I didn't collect that much. This was all credit.

When I was 23 years old, I bought my first station, and when I added up the sales for that first day of operation I knew I had a really tough road to hoe.

We were able, through hard work and community service, we were able to build it up to a respectable number and then add additional stations to it. We ended up, I think, having eight stations in four markets when we took the job at NAB. *(Fritts, under the name Fritts Broadcasting Inc., was the sole owner of four AMs and four FMs in Mississippi, Arkansas and Louisiana. He sold off his stations from 1982 to 1985 after he came to NAB.)*

I used to fly my own airplane. One of the promotional items that we were going to do is fly over a shopping center and drop out ping-pong balls from the plane at an appointed hour. Each ping-pong ball had a discount that they could take that discount and go into the stores ...

***RW:** The discount was printed on the ping-pong ball?*

Fritts: Correct, so if you got a five percent or a 50 percent discount you could take it to the store and get 50 percent off. It really attracted a huge crowd. They knew at the appointed hour the plane would fly over. They didn't know I was the pilot, but they knew at the appointed hour I would fly over and ping-pong balls would be dropped.

We did a sort of a test run. We dropped out a few ping-pong balls to see which way the wind was blowing. Then we buzzed around for 10 to 15 minutes and then came back to drop the ping-pong balls over the shopping center parking lot.

As it turned out, the wind had changed somewhat and we were flying a little higher than we were the first time. The wind

See FRITTS, page 10 ▶

World Radio History

Fritts

▶ Continued from page 8

caught the ping pong balls and blew them all on top of the shopping center. So people climbed up the gutters of the shopping center and punched holes in the roofs of all the stores, scraping around ... either knocking gutters down or jumping on the awnings.

It turned out to be under the category of promotions that don't work.

RW: I bet the shopping center was not happy with you.

Fritts: Actually, when I was a small-market broadcaster, NAB asked me to do — along with a couple of other small-market broadcasters, and a guy who at the time was the head of NBC Radio from New York, Jack Thayer, who's long since passed away — a session on promotions that don't work. (*Fritts said later this session was in the late 1970s.*) Many of these actually showed up on "WKRP" later.

They weren't necessarily original with me. Steve Bellinger was the one who threw the turkeys out of the airplane with $100 bills tied to their legs. He told the story at the same session where I was (telling about) my promotions that didn't work and he was doing his promotions.

He didn't realize turkeys couldn't fly. He tells the story: One of them went right through the roof, (and) the ceiling of one of the downtown dress shops that had a number of ladies in it. And there it landed on a rack of skirts with blood, guts and feathers flying everywhere. It was coming in just like a bomb!

He expected the turkeys to fly around and everybody would chase them around and they'd come to a graceful landing. He would pluck a $100 off its leg and life would be good.

This thing came down like a cannon ball; it just went right through the roof, through the attic. It just went "kaboom."

So, we've had a lot of fun in radio and it continues to be a fun business. Make no mistake, it is a business, but it is one wherein everybody's staff can have fun as well as be informative.

RW: What were the call letters of your first station?

Fritts: The first one was, I changed it actually. When I bought it was WDLT(AM). I changed the call letters to WNLA.

RW: What did it stand for?

Fritts: It stood for Nola, in the little town of Indianola, Mississippi. It was a 500-watt daytime AM; and then I later built an FM station to go with it. It was a small, hometown radio station.

RW: What was your format?

Fritts: The format was community service radio. We had a lot of local announcements, followed all the local tornadoes. (We had an) agrarian economy. We couldn't afford to hire a farm director so we went together with a couple of friends and built the Mid-South Agricultural Network. We provided farm news and market quotes to about 40 stations across the south and ultimately sold that to Southern Living Magazine and Progressive Farmer Network.

Fritts and pal Smokey Bear in 1997.

RW: So you did well...

Fritts: There was a need to provide farm-related information because the community economy was based on farming. At the time it was cotton, rice and soybeans, and later catfish farming became a big part of where I lived. You become familiar and you're totally immersed in the community.

RW: Did you do everything? Were you on the air, were you selling...

Fritts: When I first started, I was on the air, yes. But I wasn't on that long. My job was to make sure that we had enough money coming in to make the payroll every week.

RW: Which is a big job for a 23-year-old.

Fritts: It was. And a 23-year-old with a pregnant wife and one automobile. A lot of juggling, that's right. (*Fritts and his wife, Martha Dale, eventually had three children and now have several grandchildren.*)

RW: Are there other stories from your ownership days that stand out?

Fritts: I used to also fly hot air balloons. We used those for promotional vehicles at shopping malls and large individual stores. If they bought the grand opening package they could get the hot air balloon tethered above the store with big signs on it: Grand Opening, that type thing.

From that hung some speakers; and they would get the remote radio broadcast because I had a motor home that was outfitted as a remote studio. So, as they would say, it was like "Brother Love's Traveling Salvation Show" when we came down the road. I had a helium blimp, hot air balloon, motor home, airplane — all of those items used in support and promotion of the stations. ... In those days you couldn't own clusters in a market, so I flew to get around.

...

One time I went to apply for a bank loan and I tapped on the (office) window and there was the president of the bank with his feet up on the desk, smoking a cigar. I walked in and identified myself and gave him my business card and said, "I'm thinking about buying the radio station here in town and I was wondering if you would be interested in handling the paper, meaning doing the financing."

He slowly took his feet off the desk, put his cigar in the ashtray, leaned forward on his elbows and said, "You ain't going to change that country music, are you?" And I said, "I think we can work that out." He said, "Fine. We can do business."

You can't make those things up. So I bought the station and he financed it.

RW: And you kept it as country?

Fritts: Oh yeah, absolutely.

RW: You were afraid he would call the note due if you changed the format!

Fritts: I did change the format in a 100,000-watt station in Tupelo that was a beautiful music station. I changed it to rock, and the banker where I financed the station came to me one day and said, "You know you've really, made my wife angry." I said, "Why is that?"

"Well, she loved the beautiful music, but actually does not like the rock music you're playing." And I said, "Does she have a record player?" He said yes. I said, "I've got a lot of albums I'm not using." So I sent a truckload of albums over to her house of the beautiful music she liked to listen to, and I said, "Just listen to this, and you'll be fine and I'll make the payments and life will go on."

She liked it so much she could have it permanently. I needed to do business. And that format at that time, in that market ... keeping in mind, this is Elvis' hometown ... this was not a format that would generate much revenue in that market; so I went to a format that would.

RW: What do you think about, looking back on your career?

Fritts: I go back to when Sen. Bob Packwood was chairman of the powerful Commerce Committee. He came to, I think, it was my first NAB convention as president, and pronounced that NAB could not lobby its way out of a paper bag.

When he did that, I sort of took that as a personal challenge ... and the moral to the story is, I learned from working with the Mississippi broadcasters and as a broadcaster myself how important it was for members of Congress to understand that our audiences and their constituents were one and the same. And what was good for our audiences was also something their constituents were interested in.

As a result, I saw that when we from Mississippi came up to talk to our congressional delegation, they listened. It seemed like it was a pretty simple equation: put the local broadcaster in front of the member of Congress and tell your story.

RW: And have them make that connection.

Fritts: And have them make that connection. So we decided to do that nationwide, and it seems to have worked for these last 20 years or so. Any modicum of success we've enjoyed actually goes to the hometown broadcasters who've carried the message.

The industry standard reaches new heights

- 24-bit/192 kHz converters
- Hardware sample rate converters
- 66 MHz/64-bit PCI interface
- More powerful DSP
- Comprehensive set of drivers: Digigram np, WDM DirectSound, Wave, ASIO
- Short-length PCI format
- Maximum input and output level: + 24 dBu

Presenting the new HR series of PCX sound cards

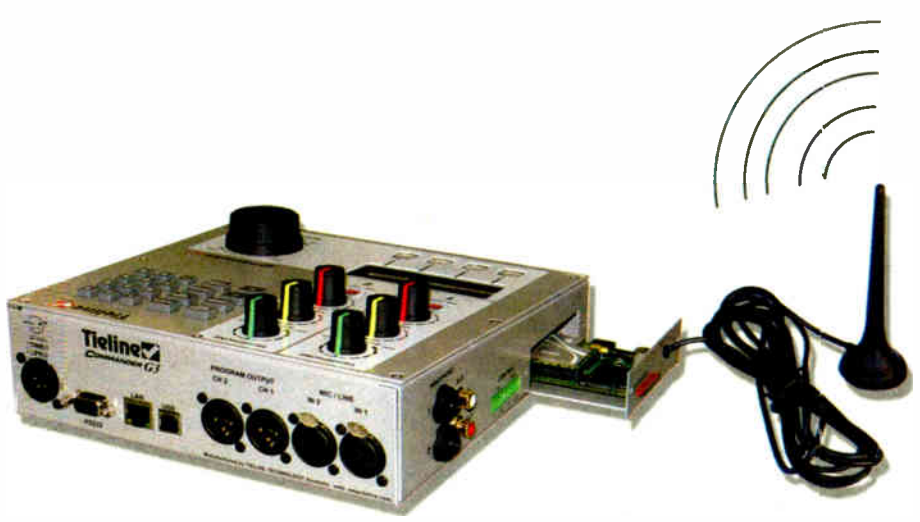
Digigram's PCX range of sound cards has become the de facto standard in the broadcast industry since its launch in 1989. The new HR series sets new benchmarks for the industry and underlines Digigram's commitment to superior audio quality, reliability, and innovation.

Digigram
Networking Your Sound

www.digigram.com - Tel: +33 (0)4 76 52 55 01 - sales@digigram.com

World Radio History

WIRELESS REMOTES NOW



Tieline's broadcast quality GSM codecs now come with up to...
15,000 FREE* GSM minutes!

Choose any GSM mobile plan and we will contribute towards your first bill. This potentially could be worth up to 15,000 FREE GSM minutes.

The Tieline GSM module slots into the Commander G3 or i-Mix G3 codec and works in all GSM coverage areas throughout the USA and in over 200 countries around the world. Insert your SIM card and you're ready to broadcast.

You can even remote control your talent's audio input level from the studio during your broadcast.

Contact Tieline Technology to order your free demonstration today.

"Compared to what we were using before, Tieline GSM is better hands down.

We're pleased with the performance and quality.

We purchased the Tieline GSM system primarily for remotes and our morning show on the road."

- Randy Mullinax
(Tyler Broadcasting, Oklahoma City)

800-750-7950

Tieline® TECHNOLOGY

www.tieline.com/rw

*This special limited offer valid when you purchase any two Tieline Codecs and at least one Tieline GSM module. Tieline will include a $50.00 rebate voucher in your codec purchase which is redeemable on return to Tieline with a valid purchase receipt from your broadcast dealer. The $50.00 voucher holds a potential value of up to 15,000 FREE GSM minutes. Based on a major national cell phone carrier's plan.

World Radio History

Lombardo Sees 'Indecency Disconnect'

ARLINGTON, Va. *In his 50 years as a broadcaster, NAB Joint Board Chairman Philip Lombardo, chief executive officer of Citadel Communications, has never seen more concern among his colleagues. He's referring to the government's indecency crackdown.*

Lombardo says an NAB task force expects to release a report soon on "responsible programming." The following are excerpts from his speech in February before the Media Institute, a nonprofit research foundation focusing on communications policy and the First Amendment.

The FCC's inconsistent application of indecency rules — coupled with concern over a small number of what some would call "tasteless" programs — has prompted unprecedented anxiety at every level of our business.

In 2004, the FCC levied a record $7.7 million in indecency fines against broadcasters, up from just $48,000 in 2000. Compare that $7.7 million in broadcaster fines to the *zero* fines levied against cable and satellite providers, and you can appreciate the local broadcaster's growing concern over indecency.

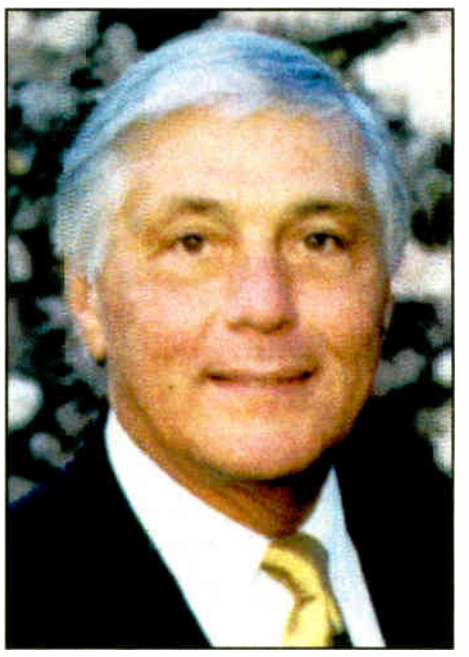
The "indecency disconnect" in Washington is apparent for all to see. At the same time that indecency regulations are being ratcheted up against local broadcasters, cable giants like Comcast and Time Warner are raking in hundreds of millions a year from pay-per-view, hard-core pornography. ...

Inconsistency of treatment

The breadth of this disparate treatment creates confusion among both broadcasters and consumers. In an era of expanding program diversity, when nearly 85 percent of households receive local television signals from cable or satellite, is it appropriate for only one medium — broadcasting — to face large fines and threats of license revocation?

Does the average cable and satellite customer even differentiate between an over-the-air channel and a cable or satellite channel?

Cable programming targets younger, appealing demographics with uncut Hollywood movies and sexually explicit and violence-laden shows like "Sex and the City" and "The Sopranos." For their part, satellite radio providers XM and Sirius are doing the same by luring Opie & Anthony and Howard Stern away from "free radio." ...



Philip Lombardo

I would submit it is our viewers and listeners who suffer the most from the government crackdown. Case in point: after the FCC reversed its own staff and found Bono's fleeting use of the "F-word" to be profane, ABC affiliates in 66 cities across America preempted a Veterans' Day airing of "Saving Private Ryan" — even though the film aired twice previously.

Applying the Bono decision, we calculated that if my company had run "Saving Private Ryan" on our three ABC affiliates, Citadel Communications could have been liable for over $3 million in fines to the FCC. ...

Amber Alerts, charity needs

When tornadoes ripped through Lincoln, Neb., last May, my station — KLKN(TV) — aired many hours of coverage without commercial interruption, and scores of viewers thanked us for saving their lives. If KLKN had been fined over $1 million for airing "Saving Private Ryan," the cash flow of our station would have been wiped out. Simply put, we would not have had the resources or the staff to provide this type of coverage. ...

In recent months, scores of radio and TV stations have been forced to buy equipment that delays a broadcast by five seconds to protect against indecency fines. Five-second delays have been added to live programming.

All of this is being done to protect against the occasional alleged indecent utterance. Incidentally, I am not aware of a single five-second delay instituted by a cable operator or cable network anywhere in America.

Further, the NAB has appointed a Task Force to respond to concerns of policymakers in the program content area, and we will have a final proposal ready soon. Responsible self-regulation is what we are about.

(At press time, the lenders of both Commerce Committees in Congress vowed to help broadcasters achieve parity with satellite and cable on the indecency issue.)

What's your view? Radio World welcomes comment on all topics. E-mail to radioworld@imaspub.com.

How to outwit, out-maneuver and out-perform your competition.

Every Automation Company says they do Voice Tracking, WANcasting, Satellite Feeds, the basics. But, does everyone support:

✓ HD Radio (High Definition)
✓ SPS (Secondary Program Service)
✓ PAD (Program Associated Data)
✓ RDS/Datacasting
✓ Digital Logging
✓ Audio over IP (e.g. RTSP)
✓ Streaming/Content Insertion

Sure we know automation, but our expertise just starts there.

What Solutions Are You Looking For?

"Our radio program is syndicated nationally and we're on seven days a week, which means we needed a system that was not only stable but also flexible. I feel like I've seen everything in the world of music and radio but I've never worked with a system that's more creative than Prophet's NexGen. The only mistake you can make with this system is not using it."

John Tesh
The TeshMedia Group

When you ask the right questions, do you get the right answers?

It takes more than technology to build a station. It requires individuals with a common vision, working as a team. The strength of any team rests not only in its people, but in the companies they work with. That's why our focus is on the strong relationships we build with our clients. Our expert team of developers and engineers go beyond the basics to help you design the perfect broadcast solution for your station, whether you're looking for customized broadcast software, turnkey systems or modular software options. We even make it easy for you to research and buy at YOUR convenience, with our One Stop Online Shop!

PSi PROPHET SYSTEMS innovations
1-877-774-1010
www.prophetsys.com

Work Smart! Buy Prophet.

See us at NAB Booth # N1402

Yesterday's traditions, today's technology, tomorrow's innovations.
Technology doesn't have to be complicated.

World Radio History

Our client list is secret.

Every day, more than 750 broadcasters rely on TWOx12 twelve-line phone systems to insure their critical talk radio programming. Two advanced digital hybrids deliver the best caller audio possible, thanks to our famous Digital Dynamic EQ. Status Symbols visual call management (a Telos exclusive) helps producers screen calls easily, without guesswork.

Planning a big, consolidated build-out? Consolidate your phones as well with Series 2101, the world's only multi-studio talkshow system. Series 2101 lets you expand your facility's call capacity when needed — allows control of up to 96 callers and 32 studios. Not only that, Series 2101 uses high-quality digital phone lines to deliver caller audio that's next-room clear (and help reduce Telco wiring, too).

At Telos, we're all about choices. Take our Desktop Director (right); it works with TWOx12 and Series 2101 systems, can be expanded to control up to four hybrids or up to 24 lines when used with Series 2101, and has a built-in handset, speakerphone and headset jack. Or, choose the new Call Controller (left) and "bring your own phone" for screening... even works with wireless phonesets.

ONE-x-Six is perhaps the world's most popular auto-nulling multi-line phone system. Also the world's most affordable! Like all Telos talkshow systems, ONE-x-Six integrates with our optional Assistant Producer software to allow fast, intuitive remote screening via LAN or WAN connections.

Naturally, we are obligated to protect the identity of clients who use Telos talkshow systems. We would no doubt get a Stern warning from any user whose name we revealed.

But rather than Rush to superlatives, let us just be Frank'n get to the point. When you're ready for the world's best talkshow system, the answer is Clear; it's as easy as ABC. Whether your station is located in Salem or Susquehanna, Telos has a broadcast phone system just right for you. Why, the possibilities approach Infinity.

In our eyes, reliability is King. After all, if there's a failure, you can Kiss your ratings goodbye. You need your phone system to be a Citadel of Mega reliability. Not to Mix metaphors, but you need something Hot, Lite on the pocketbook, and full of Power. Really, it's Radio One-oh-one.

And unlike gear with tech as dated as an old Bonneville, Telos talkshow systems undergo constant improvement. With us, it's a never-ending Saga of advancement.

Telos. Striving for Greater Media through advanced technology.

(And don't worry... we'll keep your secret.)

Telos

AUDIO | NETWORKS

www.Telos-Systems.com

Telos, the Telos logo and all product and feature names herein are registered trademarks of TLS Corporation. © 2005 TLS Corporation. All other trademarks are property of their respective owners.

World Radio History

Out of the Closet and Onto the Rack

by John Bisset

In the Feb. 2 *Workbench* we showed pictures of wiring conduit used by Tony Gervasi and Dirk Nadon of Nassau Broadcasting. Needing a means to route wires into and out of their equipment racks in the technical center, they chose large diameter PVC pipes, painted black to match the racks and connected to the top of each rack.

Frank McLemore runs a contract engineering business that serves as the market engineer for the Clear Channel cluster in Columbus, Ga. There are three AMs and five FMs in the group. Frank performed contract engineering for most of these stations going back to when they were owned separately by individual companies. The stations were consolidated into an eight-station group by Cumulus in 1999 and sold to Clear Channel the next year.

Frank agrees with Nassau's use of PVC pipes to clean up cables leaving an equipment rack. During the studio consolidation for Cumulus, similar pipes were installed. As seen in Fig. 1, the PVC pipes also support a wire trough.

Looking for a cheap source for wire racks? Try the shelving and closet organizer section of a hardware store. The white vinyl-covered wire shelving is inexpensive, looks nice and keeps the wires organized as you can see in Fig. 2.

At the Columbus site, Frank has two rack rooms joined by the wire rack trough through a hole in the wall. He suggests that if you need to bend the shelving, take it to a sheet metal shop for a good straight bend.

McLemore can be reached at *fdmn4tkt@att.net*.

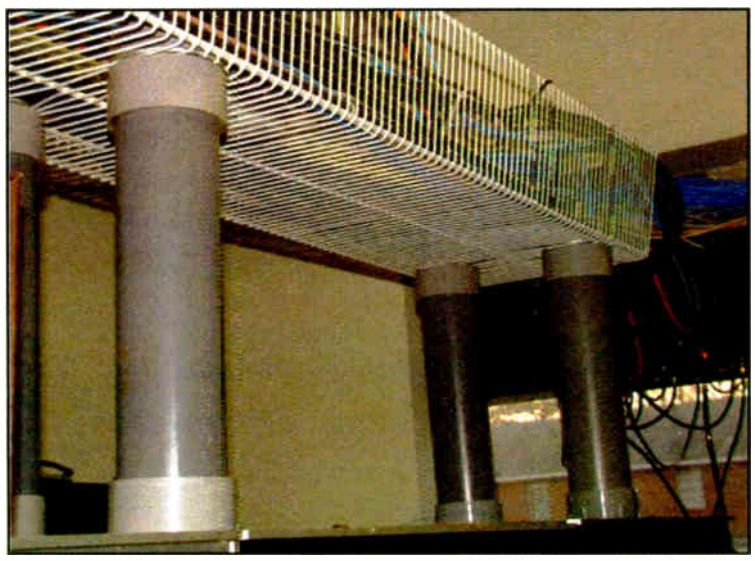


Fig. 1: PVC pipe serves as a conduit.

★ ★ ★

The breadth of knowledge and experience possessed by *Workbench* readers amazes me. It also makes this column great fun to compose.

You'll recall that Mark Goff of Eagle Communications had questions about E. F. Johnson components used in a very old phasor belonging to a station his group had acquired (Feb. 16).

What better resource to answer his questions than a former employee of E.F. Johnson? Veteran engineer Jim Stanley, W6GH, is now with Infinity's KOOL(FM) in Phoenix. Jim writes that he worked at E.F. Johnson in Waseca, Minn., as manager for the engineering department during the mid to late 1990s. In 1997, the company was sold to Transcrypt International in Lincoln, Neb.

To Jim's knowledge, there were prints, procurement documents and drawings stored in the print room in Waseca. As a number of years have passed, he's not sure if the material Mark needs is still there. But it's Jim's guess that the information is still available in some form. The challenge will be finding the right person to help you.

Jim suggests calling the main number in Waseca and inquiring as to who is in charge of the print room and documentation. Mark will need the EFJ part number, which should be embossed on the inductor in question.

The main number at E.F. Johnson is (507) 835-6222. Thanks, Jim for providing this resource. If you maintain an older AM, with E.F. Johnson components, keep this number handy.

Jim Stanley can be reached at *jsstanley@cbs.com*.

★ ★ ★

Like Jim, Mark Humphrey, the engineering manager at Radio One in Philadelphia, has been around the engineering block a few times. Mark is well versed in a variety of broadcast engineering issues, and especially RPU matters.

Mark replied to Dick McGraw of McGraw-Elliott Media Group. In our Feb. 16 column, Dick was looking for a portable FM receiver that was immune to Marti/RPU 161MHz interference. Mark's suggestion is to try a notch filter, or trap, ahead of the FM receiver to reduce the interference. He has had good results with the 5KV "FasTrap" product, made by Microwave Filter Co. in East Syracuse, NY.

Visit these two Web sites and bookmark them: *www.microwavefilter.com/tubularbody.htm* and also *www.microwavefilter.com/negative-traps.htm*.

These traps are inexpensive and normally are sold to cable TV operators to delete pay channels from non-subscribers. However MFC can supply them for any frequency in the VHF range. Just specify your Marti frequency when you order. The price is around $25 per filter. Mark has also used these filters in the 2 meter ham band.

The filter should attenuate the Marti interference by at least 30dB. Install the trap directly on the antenna input terminals of your FM receiver. Mark suggests finding a portable receiver with a metal case, and an "F" connector for the antenna input for best results.

At Mark's WPLY they use an older Dayton Industrial FM/SCA tuner in the remote truck, and the FM receive antenna (a homebrew folded dipole inside PVC tubing) is mounted atop the mast, just 30

See IT'S A TRAP, page 15 ▶

See Us At NAB Booth # N1300

World Radio History

It's a Trap

▶ Continued from page 14

inches above the Marti's transmit yagi. Mark says they typically run 40 watts on 161.67 MHz.

With the trap in line, there has been no overload problem. In fact, even the SCA (which is used for IFB from the studio) is clean.

Mark Humphrey can be reached at *mark@y100.com.*

★ ★ ★

Fig. 3: A notch filter or trap can help attenuate Marti interference by at least 30 dB.

You Read It Here

Five years ago, we began archiving *Workbench* columns online. Here's a sampler of what you can find at *www.rwonline.com.*

"I'm an Engineer, Not a Bricklayer" — For too many years, engineers have included the title of plumber, electrician, even exterminator when it comes to our day-to-day duties. (March 1, 2003)

"Got Your Sterno and Spaghetti-Os?" — One of the benefits of doing contract engineering and project work is the breadth of experience each job brings. No two jobs are the same, and each brings a new twist to "the same old task." (March 13, 2002)

"Understand the Rules on RFI" — It's probably one of the most disturbing phone calls you'll receive as a chief engineer. A neighbor calls and explains he is picking up your AM or FM station on their new television, and the new TV is encased in this nice big piece of furniture they bought from Sears. (June 19, 2002)

"Not Just Any Rubber Glove Will Do" — I'll never forget the first time I witnessed an engineer "hot-tune" an AM tuning unit. The OIB dials were set for 50+j0, and the engineer grabbed the coil clip with his bare hand and "tapped" it around the coil 'til the null meter on the bridge read zero. (April 11, 2001)

"Spring's Almost Here: To Bee or Not to Bee" — As our thoughts turn to spring, let us remember our tiny winged friends and their desire to wreak havoc in our lives by building nests in the most unusual of spaces. (2000)

Dr. K. Dean Stephens is a Senior Broadcast Engineer. He suspects that we've probably been blitzed with suggestions for handling dirty power from a generator feeding an unhappy UPS (and we have; watch for a future column).

Dean offers one of the simplest solutions. The problem is solved by charging the UPS system from the generator. Don't switch critical equipment to the generator power, just wire the generator output to a DC charger, which will feed and charge the UPS batteries. The equipment will run off the UPS, but the charger will keep the batteries happy.

Thanks, Dean! Reach Dr. Stephens at *kdstephens@rmaxtech.com.*

Submissions for this column are encouraged, and qualify for SBE recertification credit. Write to jbisset@bdcast.com

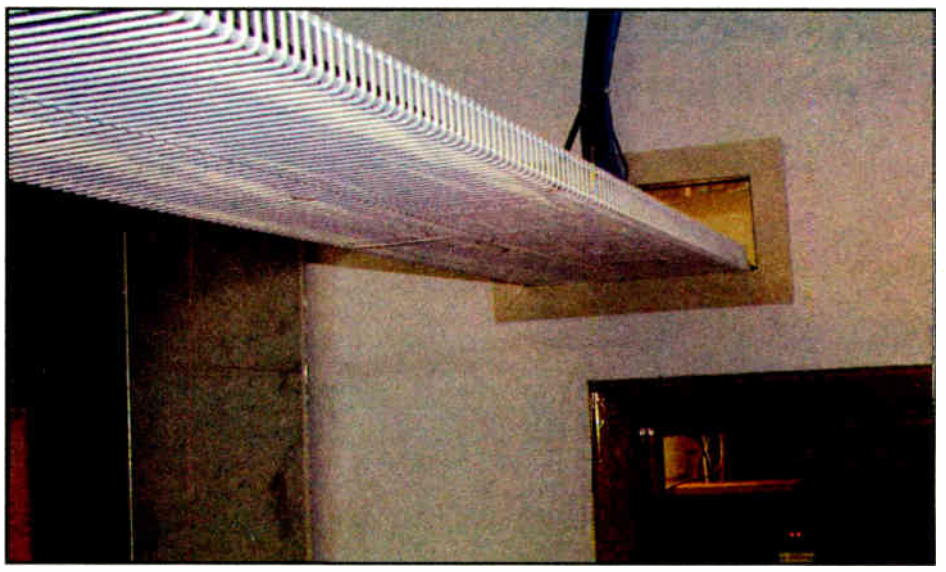


Fig. 2: Close organizer shelving makes an inexpensive wire trough.

Crash!

It's Not a Sound You Want to Hear at Your Transmitter Site.

Only BE delivers fully-functional second-generation HD Radio architecture, eliminating the need to have a PC at your transmitter site. How? The reference-design HD Radio signal encoder runs on a Linux computer installed at your transmitter site. The encoder could become a wildcard with a risk (at minimum) of taking a very long time to reboot. BE's second-generation HD Radio architecture puts this computer in your studio, next to all the rest of the mission-critical PCs that you have learned how to effectively coddle. While others promise this solution down the road, only BE delivers today.

BE

Broadcast Electronics, Inc. • 4100 North 24th Street, P.O. Box 3606, Quincy, Illinois 62305-3606 U.S.A.
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.
HD Radio is a registered trademark of iBiquity Digital Corporation.

World Radio History

GUEST COMMENTARY

New Definition of 'Successful Broadcaster'

by William G. Covington Jr.

Financial success is a limited measure of accomplishment, yet if you read some of the trade publications of broadcasting, you'd think it was the only standard by which effectiveness was measured. This "bean counter" mentality has the excitement of the widget industry.

Historically, broadcasters defined themselves in terms much more expansive. They were professionals who sought to make an impact on the lives of people, both audiences and colleagues.

Early textbooks on station management reflected this approach. There was discussion on community involvement and service. A sense of responsibility was inherent in the profession. It wasn't simply because the FCC placed the licensee in a fiduciary role, either. This sort of accountability wasn't external; it was something a broadcast just knew intuitively.

With the deregulation of the industry in the 1980s there seemed to be a gradual paradigm shift in the thinking of the decision makers in the industry. Programming content seemed to take a back seat to profitability. Creativity was no longer associated with the product (content), but with the bottom line.

Broadcasters lost control, the accountants took over. Anything that was profitable was considered "good" in that it got the desired results.

In this new paradigm, success was anything that got the largest numbers or the target demographic. Even superficial lip service about educating and informing the audience disappeared in the trade press. The marketplace measure of success heightened programming aimed being "least objectionable." Mediocrity was the new standard. "Average" was now the standard of success. Newt Minnow's "Vast Wasteland" description of broadcast programming was more appropriate than ever.

Jean de la Bruyere, writing in 17th century France, noted, "There are certain things in which mediocrity is not to be endured, such as poetry, music, painting, public speaking." Could we add broadcasting to that list? I think it would fit with the spirit of Bruyere's comments. Broadcasters are storytellers. We deal with the mind of our audiences whether we acknowledge that or not.

Both fiction and nonfiction programming influence the way people think. Even music carries storylines about the human condition. People learn what is socially acceptable by what they see, hear and read in the media. They mix this with input from friends and relatives to draw their own conclusions.

Jean de la Bruyere wrote, 'There are certain things in which mediocrity is not to be endured, such as poetry, music, painting, public speaking.' Could we add broadcasting to that list?

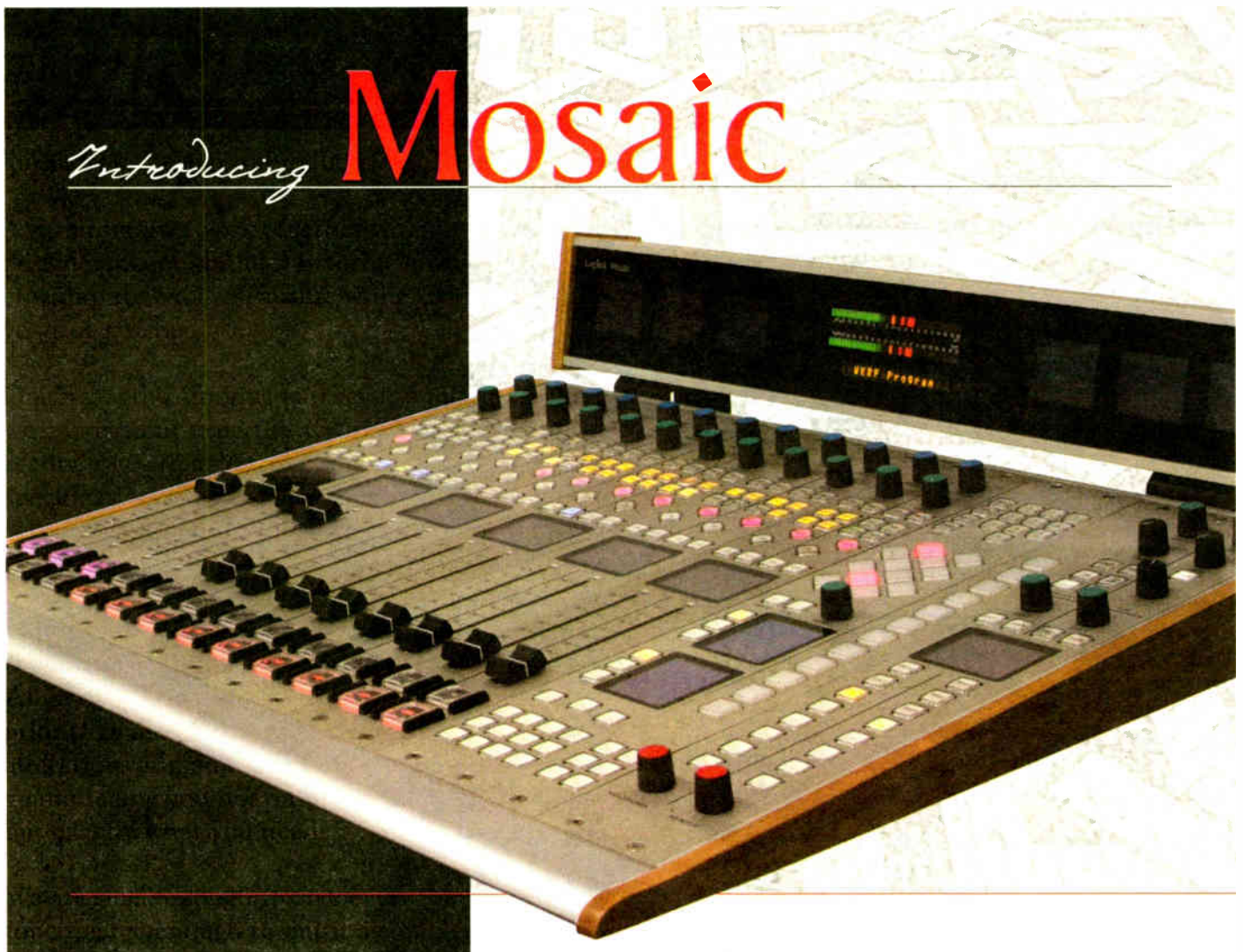
Programming for the masses has taken broadcasting down to a lower common denominator. Rather than appeal to the mind, the easy route as been to titillate, tease, amuse and get the easy response. The bean counter mentality hasn't raised our standards as a society; broadcasters have acquiesced to please the masses.

You don't have to conduct a scientific study to see that people are less kind and ruder now than they were 25 years ago. Where do they learn social behavior? The songs on the radio, the movies they watch and the television characters coming into their homes. Who were the gatekeepers who let that content into the system? The bean-counters who "succeeded" in getting the bottom line they wanted.

Russell Kirk told us "ideas have consequences." Some unintended consequences of programming that gave audiences instant gratification play out in social interactions every day. Themes repeated consistently in the media are accepted as valid by people continually exposed to those messages.

People don't enter broadcasting with an objective of only looking at profits. Broadcasting attracts people who want to express themselves creatively. This business is unique in that engineers, sales people, programmers and office staff bring vastly different perspectives to an organization. It's no wonder management

See SUCCESS, page 17 ▶



Art meets technology in the latest digital console from Logitek. Like its namesake, the Mosaic uses individual pieces (modules) to make up a work of art for your facility.

The Fader module contains all controls for two input channels. Narrow and wide Softkey modules supply user programmable buttons for extensive machine and router control. The Monitor module has dedicated source and gain controls for a speaker and two headphone outputs as well as intercom controls. Narrow and wide Meter bridges are equipped with an LED high resolution meter as well as user configurable LCD screens for display of auxiliary meters, clock, timers, talk delay or user graphics.

- Multiple frame sizes allow configuration of systems ranging from 2 to 24 faders
- 16-character names allow clear and complete source identification for fader and meter inputs
- Full color LCD screens—at least one on each module—provide meters, clocks, timers, delay information, text messages, downloaded bitmaps, etc.
- Programmable backlight colors in ON/OFF buttons alert users to operational conditions or separate faders by source type
- Dedicated LCD screen and controls above each fader give local access to all channel functions

The Mosaic is available now.
For more information, contact us today.

Logitek Electronic Systems, Inc.
5622 Edgemoor • Houston, TX 77081 USA
713.664.4470 **1.800.231.5870**
© 2005 Logitek Electronic Systems, Inc.

www.logitekaudio.com
info@logitekaudio.com

Logitek
Console Router Systems

World Radio History

Success

▶ Continued from page 16

feels frustration when so many temperaments are brought together.

No station can remain in business unless it earns a profit. That's a given, but success as a broadcaster is so much broader than that. Success comes in several layers. A well-rounded broadcast professional will consider these tiers in putting success in a broader perspective.

Let's look at a few of the measures of success that extend beyond the financial:

Influence. Anyone who influences another person is a leader regardless of the title one holds. When I was 14 years old I became interested in broadcasting as a profession. I looked up to people in the industry, regardless of their function at the station. This continued through my junior high, high school and college years. As a broadcaster, you do not always know who you are influencing on a daily basis. Young people seeking to enter the field observe what you do.

Prominence. Gatekeeping was mentioned earlier in the discussion about various matters getting on the air. By the nature of the medium, broadcasters have a limited inventory; therefore when something gets on the air it has prominence. Not all songs make a playlist, not all oldies are put in rotation, not all stories are included in a newscast. The role of gatekeeper determines what will be on the public agenda. People talk about ideas they're exposed to. If it's on the news, it gets on the public agenda.

Community. The FCC didn't invent the idea of community service. A federal agency doesn't operate in a vacuum. All businesses are relevant to their communities or they cease to exist. One way to increase the station's value in the community is by becoming more community-conscious. Service pays positive dividends. Linking to your community gives you more "psychological ownership" in the minds of the people who feel that your station is their station.

Spiritual. Radio World recently ran a feature story on Howard Enstrom, who talked about World War II by saying, "God answered my fervent prayer to survive and allow me to serve Him." Enstrom has been called the "father of translator service" because of the engineering creativity he brought to the industry in filling a unique niche.

Legacy. One of the most quoted phrases of motivational writer Stephen R. Covey is "to live, to love, to leave a legacy." Broadcasters have the option of doing that at two levels. The people who observe them, such as family members and colleagues, can be touched directly by their contributions. Audience members can be influenced indirectly through programming. Even a small change for the better is more desirable than no change or a negative change.

Satisfaction

Becoming more focused on a broader mission is a matter of expanding one's awareness of new options. It's a way of bringing back excitement to a career that may have grown stale by viewing "success" in a distorted way. True success is multi-dimensional. Lives are being influenced by broadcasters. Taking this into consideration causes one to make more informed decisions.

In summary, broadcasters are not accountants. We're producing an intangible product that influences a lot of people. Being aware of the leadership role we play is a paradigm shift away from limiting success to only a station's profit/loss statement.

We're producing an intangible product that influences a lot of people.

Your job is part of who you are. Your daily decisions define you. A more holistic view of the ramifications of your decisions takes you beyond the familiar. "Ideas have consequences," and new ideas give you new consequences.

Awareness influences action. Remembering why you got into this business in the first place takes you back to the time when things were exciting for you.

I've heard that part of Vince Lombardi's success was that he kept returning to the basics, reminding his team, "Gentlemen, this is a football." Perhaps we need to remind ourselves and staff members more frequently, "This is a radio station." It's a fun business, and there's no reason fun can't be profitable in more ways than one. By keeping the focus on what we do, we inform and entertain, positioning us to meet the expectations of our audience.

William G. Covington Jr. holds a Ph.D. in Mass Communication with an emphasis in Media Management from Bowling Green State University. He has taught at colleges and university in Missouri, Indiana, Ohio, Massachusetts and Pennsylvania.

RW welcomes other points of view.

World Radio History

PRODUCT EVALUATION

Flagship Optimod 8500 Impresses

by Phil Simon

In 2000, I had the privilege of test-driving and reviewing the new Orban Optimod-FM 8400 for Radio World. Every succeeding version of Optimod, starting with the 8000 three decades ago, has delivered a leap in technology and user friendliness.

The author says the new flagship Optimod is near perfect.

The Optimod-FM 8500 is no exception. When it seems there is no useful blood left in the audio processing turnip, Bob Orban comes up with a fresh list of improvements and features.

Code

The all-digital age has turned Bob and his intrepid colleague Greg Ogonowski into code writers instead of circuit designers. Their challenge now is to make any new audio processor sound better than its predecessor in the new world of radical bit-rate reduction and digital radio.

What processing power and coding skill add, lossy compression and the HDC codec taketh away. In the end, these gentlemen still rely on their keen senses of hearing and sonic judgment to refine and perfect what consumers will hear out of their speakers.

The 8500 is similar in look and feel to its five-year-old predecessor, although the Fisher-Price colors have been replaced by a sleeker metallic blue appearance. The easy-to-use joystick, knob and button navigation system and menu structure with the less/more control scheme have been retained.

A bright, active-matrix color LCD makes it easier to program the 8500 from its front panel. Aging eyesight trapped in bifocals like mine will most certainly appreciate this improvement.

Like the Optimod 8400HD, the 8500 features an integrated and optimized parallel processing chain structure that serves the needs of existing FM analog plus HD digital. The digital output is also well suited to netcast streaming and Eureka-147 applications. The Ibiquity HD Radio system blends to analog during loss of HD lock. This challenges any dual-chain processing to sound as similar as possible to reduce distraction for the listener.

Orban takes advantage of ever-higher available processing horsepower for the 8500 in the form of a dozen 150 MHz Motorola 24-bit DSP 56367s. This is about double the net DSP processing power of the 8400 and provides a 64 kHz sampling rate for the HD path bandwidth at full 20 kHz response. That is adjustable down to 15 kHz to optimize low-bitrate codec performance where desired. Plenty of resource headroom has been left to handle future additions and enhancements.

Dual path

The 8500 creates similar sonics for the analog and digital outputs by using a common multi-band compressor/expander section for both, plus parallel tracking look-ahead peak limiter functions. This is especially demanding for any processor, as FM analog uses preemphasis limiting while HD Radio remains open and flat. The 8500 achieves a more consistent and natural sounding FM analog high end when compared to HD than any processor I've heard.

Four processing structures using both the classic two-band and the more powerful five-band layout are offered. Forty-two programming factory presets, including seven low-latency and ultra-low-latency choices, are available. These cover almost every imaginable format sound signature, ranging from "Protection 0 dB" to "Loud+Slam."

The user can pick any of these as a starting point and then modify parameters at three control levels to achieve and save a custom sound signature. I had a favorite preset from my 8400, which imported into the 8500 easily.

After playing with most of the presets for several hours, you may find as I did that twisting parameters around to find something you like that is different and better than the factory's, just so you can put your name on it, is mostly a matter of ego massage and self-gratification. (But Ogonowski apparently knew how important that is, so he's already got three presets in there with his name on them.)

Some may wonder if the 8500's presets in general are better for one type of format or another, like the various "loud" choices for CHR or several of the "urban" presets to get better bass; but I really don't think such generalizations are valid. You can achieve almost any sound you want. The best thing one can say about Optimod is that its consistency song to song is superb.

Delay

Perhaps the most important 8500 feature for HD broadcasters is a built-in adjustable eight-second analog FM channel delay. This allows the onboard stereo encoder and patented new "half cosine interpolation" composite limiter to be used without the restriction of passing the analog signal through the HD exciter. If that exciter fails or locks up, as they sometimes do, you are still on the air with your analog exciter fed directly by the 8500.

Even if your station has no plans to add HD Radio anytime soon, the improvements provided by the new internal DSP-based stereo encoder and patented composite limiter are worth having. A noticeably cleaner high end and accurate stereo image at higher average loudness is produced for the analog FM signal than with any other processor I've used.

One of the more troublesome side effects of digital processing is the induced

See 8500, page 19 ▶

Product Capsule:
Orban Optimod-FM 8500

Thumbs Up

- ✓ Best sounding Optimod ever
- ✓ Built in 8 sec delay for FM analog
- ✓ Superb mechanical engineering
- ✓ Excellent ergonomic design
- ✓ Bright full color LCD display

Thumbs Down

- ✓ Pricey

Price: $13,990

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

The all-digital age has turned Bob and his colleague Greg Ogonowski into code writers instead of circuit designers.

World Radio History

8500

▶ Continued from page 18

time delay, making real-time monitoring difficult if not impossible. Anything greater than about 7 ms is noticeable by most jocks. Users of the 8400 recall the initial 50 ms delay, which was considerably reduced in later software releases.

The 8500 offers a multitude of processing modes that deliver 37 ms down to an ultra low-latency 3.7 ms mode; 18 ms is the most typical. The front-panel headphone monitor delivers processed audio delay of only 2 ms no matter what processing structure is chosen for the output.

As with the 8400, you won't need any external AGC or flavoring boxes ahead of the 8500. Best results are obtained by feeding it unprocessed audio straight out of the control studio console. If an STL is used, the 8500 really belongs at the transmitter, so Orban suggests engaging an 8200ST or 8100A/ST studio chassis to protect the STL from overshoots. We sneaked in an Aphex Compellor to do this job and it worked just fine.

Control

Remote control and programming of the 8500 has been simplified by the addition of a 100 Mbps Ethernet jack. No longer do you need to acquire the recommended third-party PCMCIA card to control it via remote PC on a LAN. Two separate serial ports are supplied that can be used for direct or modem connection to a PC.

The 8500 PC remote software supplied with the unit runs under Windows 2000 or XP and allows full control of parameters, including archiving and restoring presets and other system setups. The unit includes an internal tone generator for setup assistance and a real-time clock to support automation and day-part programming.

Orban provides a comprehensive and easy-to-understand operating manual, one of the best you'll encounter for a piece of complex broadcast equipment. Every aspect of the 8500's operation is explained in detail, with excellent supporting screen pix, graphs, charts and schematics. Operation Section No. 3 is especially enlightening on how to achieve the sound you want, with a special section devoted to bass processing. The troubleshooting section is thorough.

This is the most expensive Optimod ever, and the high price is a negative, although only a bit higher than its most direct serious competitor. Obviously large-market stations will be interested in it and better able to afford the processor before medium and smaller stations; but there's nothing new in that. The processor is especially appropriate for stations still running 8200s or other non-Orban processors they are not completely happy with, and for those going HD Radio. It's a perfect product for them.

Pressed to come up with anything to criticize here, I'd have to say it's hard to think of anything unless the cost stops you. Users should consider whether the additional features warrant the higher price over an 8400, or the 8400HD if they are doing HD Radio.

But with the 8400 at five years old and with processing power now doubled, this new box is a welcome addition to the Optimod FM family; it should earn a permanent place in the air chain of every station that gets a test-drive, especially those with HD Radio running or about to deploy. I thought I could get away with only AGC and peak limiting on our new HD station; but after using the 8500, I wouldn't even think of doing HD without this box.

If you're planning for an HD conversion, put this in your equipment budget as a necessity. You'll be amazed and delighted with its performance.

The author is a frequent contributor to Radio World. His opinions appear here under a pseudonym due to the competitive nature of the market in which he engineers.

Orban Also Has Single-Space 5300

In addition to the 8500 described on the facing page, the company is out with the mid-priced Orban Optimod-FM 5300. This unit puts Optimod five- and two-band processing into a single-rack unit package for the first time. Retail price is $6,490.

Bob Orban told us, "The 5300 offers the same features as 8300 version 1.1 — that is, it runs the equivalent of 8400 'low-latency' presets." He said it shares certain signal processing technology with Orban's Optimod-FM 8400 but with fewer features.

Compared to the new 8500, he said, the 5300 does not offer 64 kHz sample rate, HD processing, diversity delay, large color display or a headphone jack. It lacks a second RS-232 port that permits simple serial control via a terminal program or automation system that emits ASCII strings. Orban said the unit does, however, have one port that supports serial or modem connections to Orban's PC Remote application running on Windows 2000 or XP.

There's no AES11 sync input to permit synchronization of the processor's digital output sample rate to "house sync."

The company also will show 8300 V2.0 software at NAB, which supports HD processing and offers more of the signal processing features that only the 8400 used to offer — "although its processing is still not completely equivalent to 8400 processing," Orban said.

For information call the company in California at (480) 403-8300 or visit www.orban.com.

World Radio History

WIRED FOR SOUND

A Twisting, Low-Noise Balancing Act

by Steve Lampen

Balanced circuits require that the two wires must be the same length, the same size and as close to the same place as possible. You can see why we twist wires together: to keep them close. And the more twisting we do, the more noise is rejected, up to a point.

Table 1 shows the effect up to one twist per inch.

You can see that even casual twisting gives significant noise reduction. It also shows you that twisting the heck out of a pair gets you less and less improvement in noise rejection.

Twists Per Foot	Noise Rejection
0	0 dB
3	-23 dB
4	-37 dB
6	-41 dB
12	-43 dB

Table 1

In Category data cable (Cat-5, -5e or -6) these pairs are UTP, unshielded twisted pairs. If they were the same twist they would talk to each other a lot — crosstalk — so we have to twist them differently. In audio pairs, we usually put foil or braid shields around each pair to reduce crosstalk.

The problem with unshielded pairs is that, when you bend the cable, the pairs tend to move around. If they separate, they break one of rules ("staying as close as possible") and they begin to radiate that signal to adjacent pairs and even nearby cables (alien crosstalk).

There are two tricks done in the wire world to overcome this problem.

Get bonded

The first is to use bonded pairs. Bonded pairs are extruded together. They're not glued, as glue would move them apart, just what we are trying to avoid.

The problem with bonded pairs is that you add one step to using them: You have to split the pairs to put them in a connector. Many data installers avoid bonded pairs for this reason. However, the added performance, especially the performance after installation, is well worth the few seconds it takes to cut the pairs apart.

I think most installers who bad-mouth bonded pairs haven't actually done an install with bonded pairs. It dramatically reduces callbacks for defective cables, which may account for a lot more money than their added cost.

There are many different types of bonded pairs, such as Category 5e and Cat-6. There are even specialty cables with low skew (timing) for applications like RGBHV or 1000baseT ("gigabit") networks where all pairs are used simultaneously. The choice of connector is just as important as the cable. Be sure to use a 5e connector with 5e cable, or Category 6 connectors with a Cat-6 cable.

I've mentioned in previous columns how you can use Category cables to run analog and digital audio. And now you understand how critical the balance of the source and destination devices can be. If you have poor balancing, you can unbalance a perfect pair. Then that pair will radiate its signal, or pick up noise from other pairs or sources.

At audio shows like the AES or the radio side of NAB, you often will find me talking to console manufacturers. I ask them what their typical CMRR "common-mode rejection ratio" is for each mic input. (Line level, because it is +4 or +8 dBm, is much less sensitive to unbalancing.) A -60 dBm mic signal is the ultimate test.

Those giant, super-fancy, million-buck recording and movie consoles usually have CMRR in the -80 to -90dBm range, in other words, excellent. And those little cheapie active balanced mixers can also have good numbers like that, if the manufacturer spends just a little time making sure the outputs are balanced; 1% resistors or better on the output of the chip usually indicate that the manufacturer has done his job. These resistors may be different values, even between different channels, because they are used to rebalance the imperfections in the chips.

Steve Lampen's latest book "The Audio-Video Cable Installer's Pocket Guide" is published by McGraw-Hill. Reach him at shlampen@aol.com.

Entercom KC Plans Big Move

Planning is underway for an $11 million, 24-studio facility move at Entercom in Kansas City, with a target completion date of the end of November.

Mike Cooney, market director of engineering and IT for Entercom KC, told Radio World, "This is a totally new facility located in Mission, Kan., about four miles west of our current Westwood facility. We will build a new 160-foot, self-supporting tower for microwave relay to our six transmitter sites.

"We have outgrown our existing facility and have been looking at move options for almost four years. We currently have 23,000 square feet in one building and a 7,500 sales annex down the road; the new building is 60,000 square feet and we will occupy and build out about 45,000 to start."

The $11 million project includes about $2.5 million in technical budget. Cooney will be project manager; he expected to appoint a systems integrator this winter or spring.

Entercom ordered a Wheatstone Bridge networked audio system, one of the largest to date, including digital audio routers and satellite router cages as well as Generation series control surfaces of various sizes for a total of 20 individual control surfaces, 15 Bridge routers and 10 satellite router cages as well as Wiremax studio pre-wiring.

Stations include AM stations KCSP, KMBZ and KXTR, and FMs KRBZ, KUDL, KQRC , KYYS and WDAF.

"Everyone is moving and we will rent the current facility after we move. Two of our AMs broadcast from our current studio location so we will continue to have transmitter space for 980 KMBZ and 1660 KXTR."

The facility will have 21 on-air and production studios on the third floor and three more production studios for the creative services department on the second floor. Almost all of them will get new Wheatstone consoles. The stations use a BE AudioVault system and will upgrade to a new Vault II system. It will have about 7 TB of storage. Cooney said the studio phone systems will be Telos 2X12s. The group will also be moving to an Audion Labs Vox Pro system "so we can network our studios easier."

For program haul, Entercom will use some of its existing Moseley Starlink systems and will install a new 5.8 GHz BE Big Pipe microwave system. "We will have a bi-directional microwave system with 45 Megabits to each of our large transmitter facilities," he said. The facility will use approximately 100 computer servers mounted in a rack room and using Cybex technology.

Entercom KC's new home will be in this building in Mission, Kan.

Announcer's Consoles for Live Events

Whether used in radio, television, or stadium announce applications, the Model 200-series of announcer's consoles provide uniformly excellent performance. With four models to choose from and a host of options, 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, visit the Studio Technologies website or give us a call.

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

World Radio History

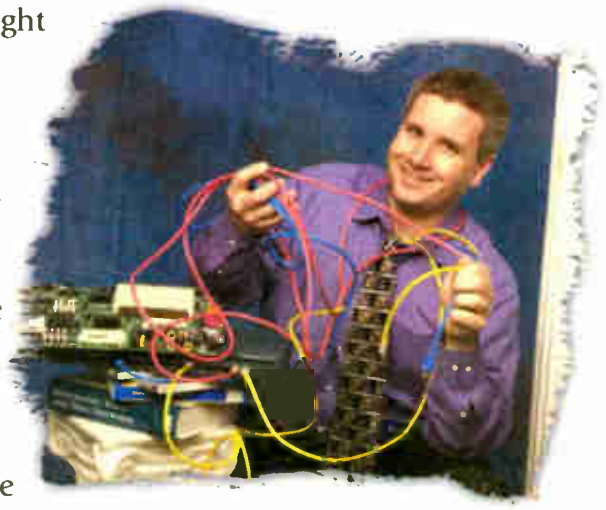
Susquehanna People

Experience. Stability. Vision. *And Chris Lawton.*

Chris Lawton
Sr. Systems Engineer
Susquehanna Radio Corp.

Chris Lawton is wired for success. He first hooked up with us in a part-time role while studying electrical engineering in Atlanta. That was back in the late 80's when new technologies were emerging. Later, as an assistant engineer, Chris asked to install the company's first LAN system. Now, as a member of the corporate IT team, Chris travels to every market we serve, helping our radio stations with their LANs, WANs, digital audio systems, and network upgrades.

What's different about Susquehanna Radio Corp.? "Doing things right has always stood out," says Chris. "If someone says, 'this is what I believe should be done,' if they're passionate about it, they will often be given that chance, because the company does listen."



Make a Sound Career Choice!

With operations in major markets across the USA, Susquehanna Radio Corp. offers a number of radio career opportunities. For more information call our Human Resources Department at (717) 852-2132.

SUSQUEHANNA RADIO CORP.

A subsidiary of Susquehanna Pfaltzgraff Co.

Susquehanna Commerce Center West
221 W. Philadelphia St. ■ York, PA 17404
(717) 852-2132 ■ Fax (717) 771-1436
www.susquehannaradio.com

Susquehanna Radio Corp. is an Equal Employment Opportunity Employer, an ESOP Company, and maintains a Drug-Free Work Environment.

World Radio History

PRODUCT EVALUATION

RadioSHARK Prowls the Airwaves

by Carl Lindemann

Griffin's radioSHARK is a consumer electronics gizmo that is the audio equivalent of the digital TV recorders that are changing the way people watch TV.

The radioSHARK hasn't gained the same currency, as yet. But it does point to how radio listening habits may be evolving from a broadcast to an on-demand paradigm. As a bonus, the unit offers utility to radio professionals, too. It can provide an inexpensive way to log broadcasts.

The radioSHARK is a USB 1.1 device shaped like (what else?) a dorsal fin that also serves as an antenna. The kit consists of the device, a USB extension cable, a thin manual and a CD with the installation operating software.

Click-button tuning.

Because this is a consumer item using fairly mature technologies, installation was simple. Installation on a Windows XP Pro PC was everything plug-and-play is supposed to be. The system also runs on Mac OSX. The fin lights up in blue to show that it is connected and powered by the USB port.

The key to the radioSHARK is the simple application that carries out tuning, recording and scheduling. These core functions are easy to figure; the control panel has three "buttons" on either side of a virtual tuning dial. On the left side, the top button toggles between AM and FM bands, the second scans frequencies for signals and the last is an instant "record" command to capture and store audio on the hard drive.

The right side of the dial opens the schedule menu, sets EQ or starts the "time shift" function. Frequencies can be selected by clicking on the "dial" with a computer mouse. Presets identifying favorite stations can be saved for fast access.

Swimming with radioSHARKs

In its most basic use, the radioSHARK operates as a simple tuner, allowing you to listen to over-the-air broadcasts on your computer.

Saving recordings in progress is easy. Levels are set automatically. Under XP, the only format options are WAV uncompressed or the WMA (Windows Media Audio) codec (AAC and AIFF on the Mac). While it would be nice to have MP3 here, too, the plethora of bitrates, sample rates and mono/stereo options for recording these gives plenty of latitude to capture audio with the right balance of quality vs. storage size.

Scheduling a recording isn't much more difficult. Click on the pop-up calendar and punch in the time to start. This can be programmed to run once only, daily, weekly or monthly. The "duration" parameter is somewhat limiting, only offering 15-, 30-, 60- or 120-minute options. If you just want to let it run, you have to start it manually.

Also, given that many radio time slots run longer than two hours, it would be nice to get past these preset times and just punch in how long you want it to record.

An extra application for the record function is "time shift." The software will automatically cache a "live" broadcast to the hard drive. So if you're called away in the middle of listening to something over the air, you can step back on the fly to where you left off and not miss anything.

A nice added feature allows for "broadcast over network." Other computers on the same network can access the station that is tuned on the host computer. This could save an enormous amount of bandwidth with listeners tuning online to sidestep poor reception in office buildings.

With the radioSHARK, just place the host computer and device at a location with the best reception and everyone can listen. It isn't quite as flexible as having everyone have their pick, but it keeps bandwidth costs down.

Fishing for signals

Operating the radioSHARK was a mixed bag.

Everything functioned fine initially, with the automatic levels yielding excellent results. Uncompressed recordings were as good as the broadcast. A test recording of a local AM talker captured quality audio with WMA at 64 kbps. An hour recorded at this compression rate took up 28 megs of storage meaning that a full day will shoehorn nicely into a single 80-minute/700MB CD-R or a full week onto a single DVD-R.

In other words, the radioSHARK could be an economical way to keep an ongoing archive of a station's broadcasts. Either store the archive regularly on CD-R/DVD-R, or a large hard drive can capture months at a time. With the low PII 400 MHz PC requirements, an aging computer easily could be pressed into service.

The downside to the radioSHARK is that the tuning quality could be hit-or-miss. Reception was downright lousy on occasion and I could not pin down the problem. Perhaps this could be remedied if the unit had a connector for an external antenna. The other glitch came from intermittent conflicts when operating alongside some other USB devices. The simple solution if you want to use this to log your audio is to set it up on a dedicated computer.

When operating as it should, the radioSHARK feeds the need for listeners to set their own listening schedule. For broadcasters, it gives an economical way to save what's been broadcast.

Griffin makes other products that merge radio with other media, such as the RocketFM, a wireless solution for broadcasting Mac or PC audio applications to any FM radio, and the iTrip, an FM transmitter for the iPod.

Carl Lindemann writes about technology, business and society between radio and Podcasting gigs in Portland, Maine.

Product Capsule:
Griffin Technology
RadioSHARK AM/FM Radio
With Time Shift Recording

Thumbs Up

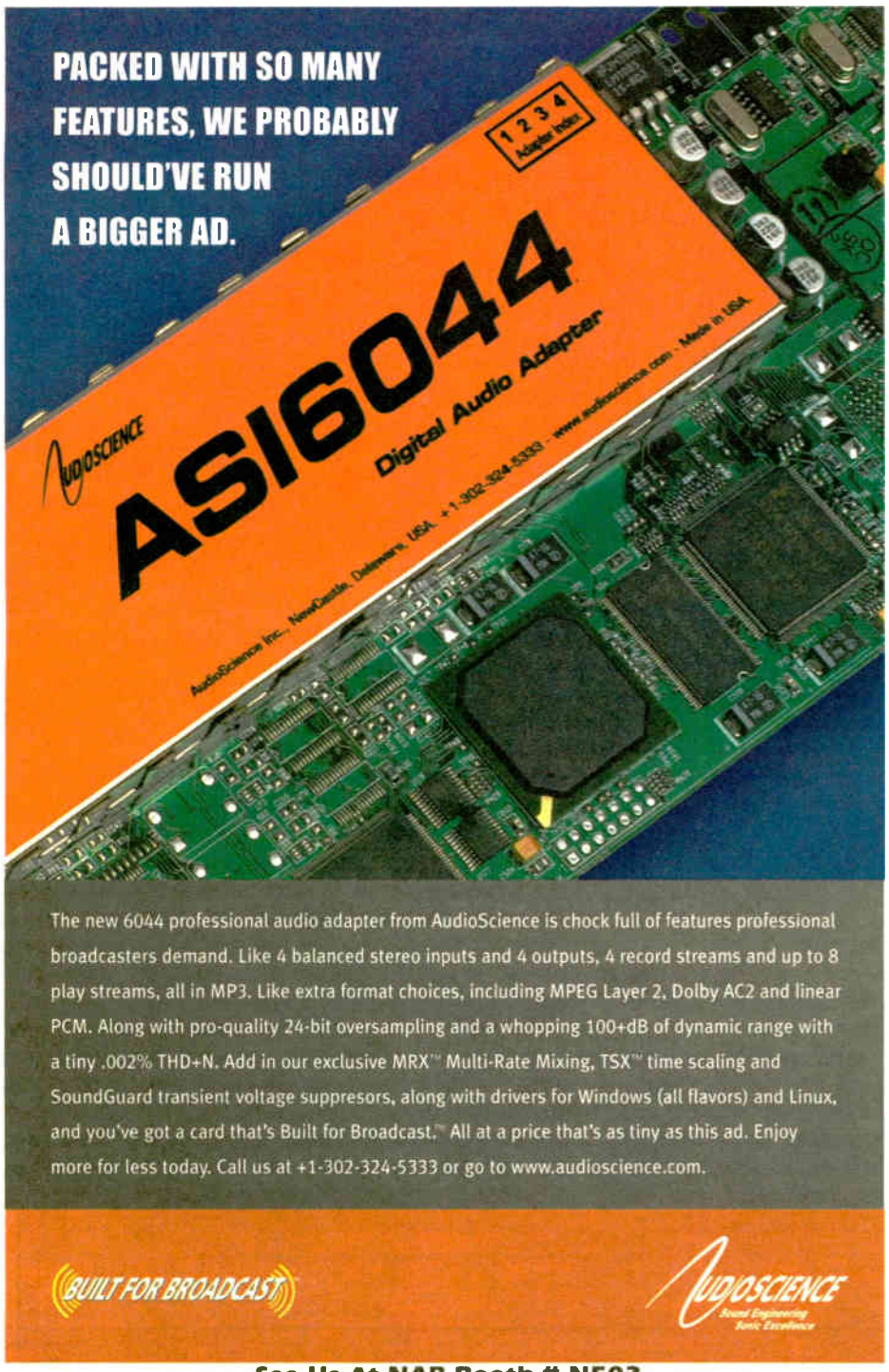
✓ Simple installation/operation
✓ High-quality recordings

Thumbs Down

✓ Intermittent issues with reception and system conflicts
✓ Limited flexibility in setting recording lengths

Price: $69.99

For information contact Griffin in Tennessee at (615) 399-7000 or visit griffintechnology.com.



World Radio History

Here's to the next 20 years!

Dear Broadcaster,

We are now celebrating our twentieth year, and our commitment to broadcast hasn't changed since we opened our doors in 1985. From day one, you've counted on us for our standard same-day repair service, a customer support team dedicated to your satisfaction, and our best efforts to ship your order just hours after we receive it.

In 2005, we're putting our tradition of continuous improvement behind an exciting new remote control expansion series. At the same time, we're designing upgrades and enhancements to the Burk equipment you already own.

We can't wait to show you what we're up to.

Best regards,

Peter Burk
President

G-LINK™
G-BUS EXPANSION SERIES

Managing equipment at remote facilities just got easier. The G-Link™ G-Bus Expansion Series provides the most direct way to integrate a wider range of equipment with a new or existing GSC3000 system. Find out more – visit us in booth N3602 at NAB2005.

BURK TECHNOLOGY

7 BEAVER BROOK ROAD, LITTLETON, MA 01460 / TEL 800-255-8090 (MAIN OFFICE), 800-736-9165 (KANSAS CITY) / **WWW.BURK.COM**

World Radio History

One Song, Many Voices

Broadcasters' Content Can Flow to Listeners by Multiple Avenues

by Skip Pizzi

From its inception, broadcasting has been about delivering content via wireless means, using a one-way, point-to-multipoint format. In practical terms, and essentially by necessity, broadcasters also established the tradition of generating (or funding the creation of) the *content* they delivered on these services, as well. This duality of content-plus-service has embodied the core of broadcasters' product offerings since the business began.

The growth of on-demand delivery does not mean that real-time service will wither and die.

Today, however, this paradigm is changing. Station operators can now leverage paths other than their own RF carriers for getting their content to listeners. Streaming via the Internet is the best example of this to date, of course. Yet even though the same content that is broadcast over the air may also be carried in the online environment, the business of streaming audio is very different than that of broadcast radio — as many have already learned.

The options for these multiple pathways to listeners are about to increase, and broadcasters will want to explore their appropriateness as alternate venues for carriage of their content to audiences.

Along a separate track, a wholly new content-delivery approach generally categorized as "on-demand" is also developing, as we discussed in our previous column. The growth of on-demand delivery does not mean that real-time service will wither and die, however. In fact, the opposite may be true, as new real-time systems emerge with even greater capacity than current broadcast services, and bidirectional cross-promotion of real-time and on-demand services improve broadcasters' overall business results.

Consider the following list of new signal delivery methods now available to broadcasters (besides AM and FM analog transmissions): IBOC-AM, IBOC-FM, Internet radio, satellite radio (two proprietary systems), analog cable audio, digital cable audio, IPTV audio, NTSC SAP, ATSC DTV multicast audio and proprietary online services (such as those offered for specific media-oriented PCs, or radio streams presented by online music stores).

Today most online audio services are delivered to the PC or Mac platform, which is then used either as the terminal listening device, or as a gateway to other peripheral devices. Increasingly, however, when home networks are involved, streaming audio services can be accessed directly by WiFi or Ethernet audio appliances, without the need for a PC/Mac at the listening site.

Next-gen systems will bypass this route entirely and feed streaming audio directly to wireless devices like PDAs and advanced cell phones, via 2.5/3G cellular services and digital broadcast services like DAB or DVB-H (more about these next time).

Station operators can now leverage paths other than their own RF carriers for getting their content to listeners.

Certainly some of these services are not readily available to local broadcasters, but they are accessible to many consumers in any given market, so they must be at least factored into broadcasters' competitive analyses from a defensive perspective. There is also a life span to each of these systems, with some (like analog cable audio) currently fading away, while others (like IPTV audio) are just emerging.

Note also that audio is not the only service delivered by most of these alternate pipes. Radio broadcasters that avail themselves of any such delivery path should be able to optimize non-audio content (i.e., metadata text, graphics, etc.) to the channel and terminal device(s) involved.

Finally, consider that several of the above systems can provide a broadcaster with multiple simultaneous services, such as IBOC-FM (assuming current directions toward supplemental audio services are maintained and ultimately FCC-approved) and Internet radio (with its virtually infinite capacity for carrying additional audio streams, each at a data rate that can be optimized for the particular content delivered).

FM still rules

As an important aside, however, when examining these new options, it becomes clear that FM radio — and the VHF band in which it operates — is almost optimally suited for wireless audio delivery. Among today's wireless services, FM has the greatest availability, with direct access to a single transmitter's output by fixed, mobile and portable devices at a very high and consistent statistical rate of success, over a wide physical area.

No other competitive service extant today (e.g., AM, satellite or Internet radio) can make this claim. Audio fidelity is also reasonably high via this service, and IBOC service will improve this further.

The Big Picture

Photo: Gary Hayes, BBC

by Skip Pizzi

Nevertheless, each of the alternative services provides unique features that FM may not be able to match — not the least of which is simply access to additional audiences. So broadcasters must evaluate these services and decide which might make a good fit for their future.

Source code

Given the expected need to render content in multiple forms, broadcasters need to also develop sensible methods of creating, storing, distributing and otherwise managing their content assets. Ideally, a sort of "über-format" should be used for ultimate storage, which includes all possible content types associated with a given item in a single "container." These elements can then be parsed, selected and appropriately converted into the particular subsets required by each delivery system.

A current example of the need for such technology is the process now being developed for delivering song-title and artist metadata to both FM analog (via RBDS) and IBOC-FM (via PAD). A special case here is the need to maximize consistency between the main IBOC audio service's and the analog FM signal's metadata, so that as much text integrity as possible is preserved when the receiver "blends" from the IBOC to the analog signal in areas of difficult coverage.

This is but one facet of the myriad to be managed in the multi-format future faced by broadcasters. Next time we'll look at what tomorrow's converged service offerings might look like, and how radio might play in this space.

Skip Pizzi is contributing editor of Radio World.

World Radio History

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 "edits" 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 patented 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 Precision Delay mode which allows the delay to be adjusted in 100 nanosecond increments, useful for synchronizing the analog signal with the digital signal for HD broadcast installations.

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.

HD COMPATIBLE

Eventide®

Eventide is a registered trademark of Eventide Inc. ©2005 Eventide Inc.

World Radio History

In This Section:
Radio World offers a day-by-day look at radio presentations of interest in the Broadcast Engineering Conference, plus other highlights and a listing of radio-related exhibitors.

What: NAB2005

Where: Las Vegas Convention Center

When:
Conferences: April 16-21
Exhibits: April 18-21

Cost: Various package prices apply. Price for an NAB member registering by April 13 is $425 and for others $825, which gives access to the NAB Broadcast Engineering, Broadcast Management and Multimedia World Conferences among other events. Discounts are available for spouses, government, students, groups, selected events.

Info: *www.nabshow.com*

Attendance of Selected Past Shows:

1990:	50,400
1995:	83,400
2000:	115,300
2003:	89,000
2004:	97,500

Sunday: Here Comes Surround

Hot Debate Over New Service for Radio Promises to Enliven Weekend Session

- ***Sunday morning, April 17:*** *"Surround Sound — A New Frontier for Radio"*
- ***Sunday afternoon, April 17:*** *"HD Radio Technology""*

by Cris Alexander

Few topics have burned up the pages of Radio World in recent months as much as surround sound. That's also the focus at NAB2005 of a Sunday morning series of Broadcast Engineering Conference presentations.

An afternoon session looks at HD Radio issues.

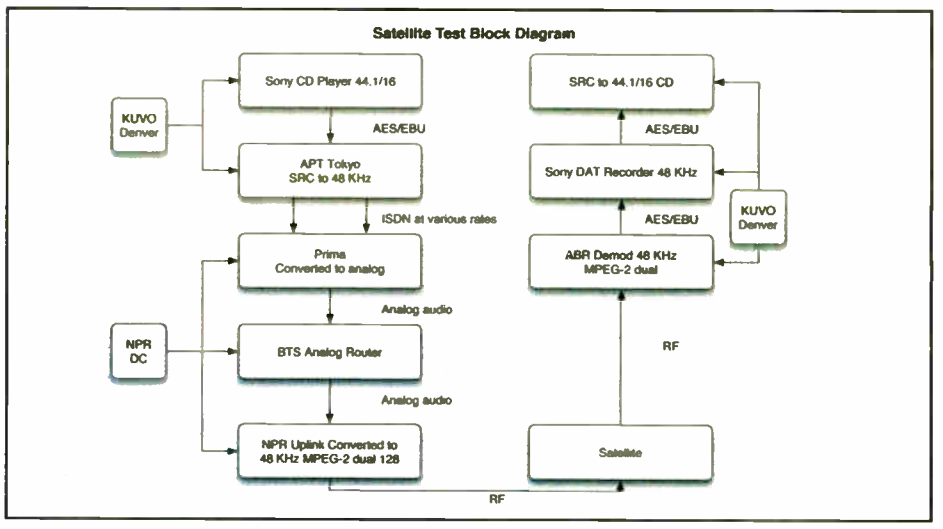
All around you

"Surround Sound — A New Frontier for Radio" is to be chaired by Milford Smith, vice president of engineering for Greater Media and winner of this year's NAB Radio Engineering Achievement Award.

Surround has already shown up in real-world HD Radio situations. But what is involved in implementing surround for a typical broadcast station, and is it worth it?

"There is a lot of buzz going around that surround sound might just be the 'killer app' for HD Radio," Smith told us. "I'm not ready to make that prediction quite yet, but I do think it is a very attractive technology to both listeners and receiver manufacturers and has the potential of being implemented at a relatively rapid rate because of that attractiveness."

He continued, "I think the real implementation hurdle is the number of currently incompatible systems. At the moment, it would be a bit difficult to decide on which one to implement with any certainty that it would be 'the' system or at least the dominant system. System architectures also vary, some are completely matrixed based within the two stereo channels … others have supplementary steering information that needs to be transmitted," Smith said.



Robert Reams of Neural Audio is among the speakers discussing approaches to surround sound for radio. This diagram is from the New Year's 'Toast of the Nation' broadcast on NPR.

"I am glad to see the NRSC DAB subcommittee start up a surround sound working group to take a look at these systems, collect the relevant information and better inform all of us as to their capabilities."

Frank Foti, president of Omnia Audio, is one who thinks surround sound may be the "killer app."

He leads off the morning with his paper, *"The Killer App for FM: Distinct 5.1 Surround Sound."* His presentation introduces a spatial audio coding system developed by the Fraunhofer Institute that takes advantage of current research in aural perception.

The system is the only one so far to provide a distinct multi-channel listening experience to the FM radio audience, he says.

"HD Radio needs a 'wow' factor for the FM IBOC system, and 5.1 surround is it," he said. "Of importance, though, is that our industry chooses the best system for this technology. This session will reveal the strengths and weaknesses of the various surround methods."

"HDC Surround, 5.1 Surround Over HD Radio" is the title of a paper written by Jonas Rödòn, senior research engineer for Coding Technologies Sweden.

David Frerichs, vice president and U.S.

See SUNDAY, page 28 ▶

Sounds so good, you'll want to take it home.

HD Radio Modulation Monitor.

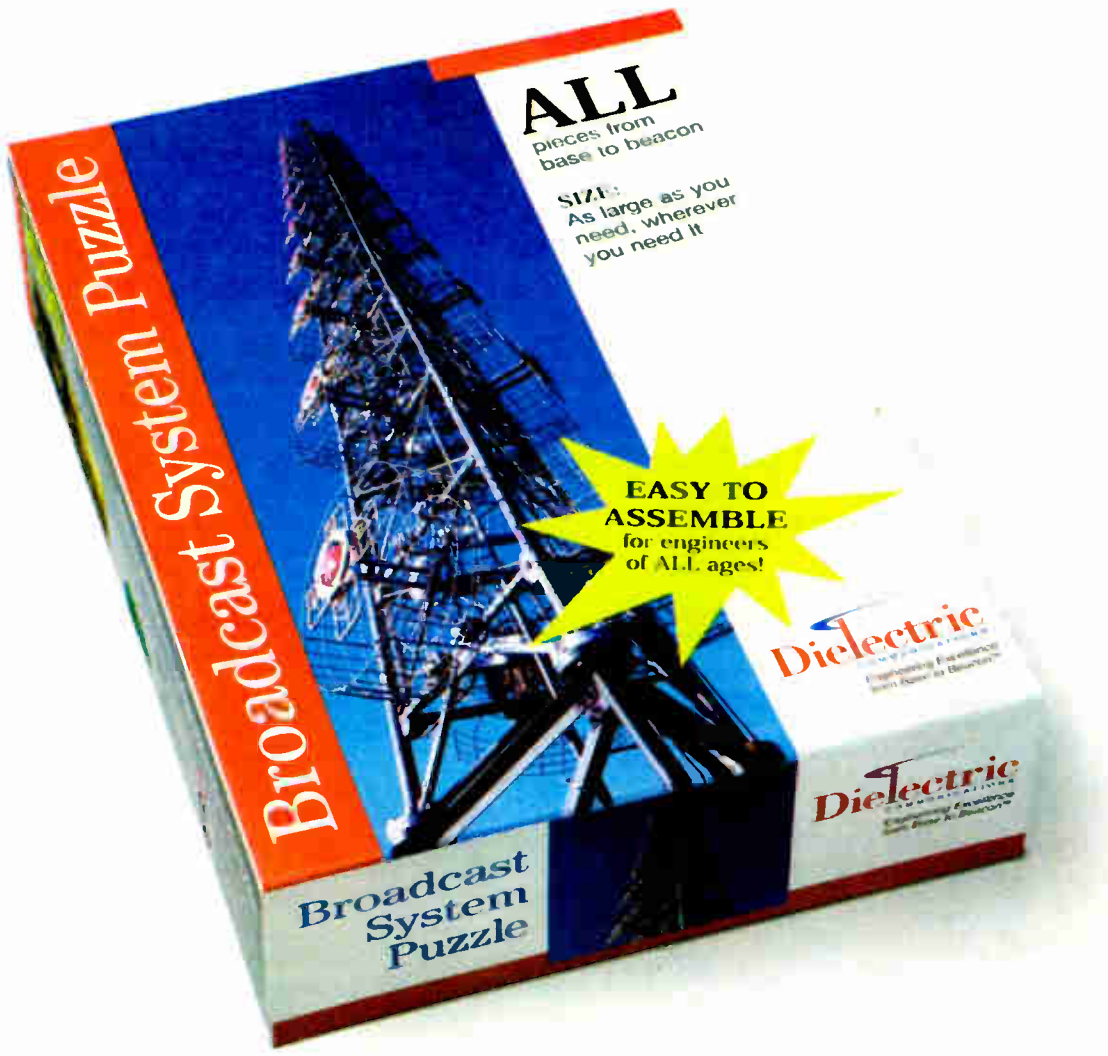
The M2 is designed to meet the demands of the professional broadcast market and deliver the highest quality monitoring of HD Radio AM & FM broadcasts.

- BUILT-IN RF PRESELECTOR
- BRIGHT, ACCURATE METERING
- ANALOG AND DIGITAL AUDIO OUTPUTS
- DYNAMIC, NEAR-CD QUALITY PLAYBACK

DaySequerra
An ATI Group Company
154 Cooper Rd. S902 ■ W. Berlin, NJ 08091
856-719-9900
www.daysequerra.com

World Radio History

Radio and TV broadcast systems made simple.



Dielectric has all the essential pieces to make your TV or radio project anything but puzzling. From design and site surveying, to excavation and construction, rigging and maintenance — we'll connect you with everything you need from the transmitter output, including:

Towers • Rigid or flexible transmission lines • Lighting • Antennas • Combiners • RF Systems

The warranty you want. The capability you need. The experience you demand.

Put Dielectric to work on your next project and watch everything seamlessly come together in picture perfect fashion.

Dielectric
COMMUNICATIONS
Engineering Excellence from Base to Beacon™

See Us at NAB Booth # C7804

1-866-DIELECTRIC • www.dielectric.com

World Radio History

Sunday

▶ Continued from page 26

general manager of Coding Technologies, will present the paper and explain the technical basics of the 5.1 surround system developed by his company and Philips.

He will show how a high level of quality can be achieved and explain how HDC Surround fits into the bigger picture of radio.

"Digital radio should not be limited to an analog solution for surround sound," he said. "HDC Surround is a fully scalable, digital system built by Coding Technologies, the brains behind the current HDC codec used in HD Radio. With HDC Surround, broadcasters can go from minimal steering to full steering, maximizing the quality according to the available bandwidth.

"Analog matrix and watermark solutions just cannot reach the 'data rate' required to provide a satisfactory surround experience. Instead of saddling a new radio system with old, limited technology, we should embrace a fully digital, scalable technology for digital radio," he said.

"5.1 & 2.0 Interspersion: A Reality" is to be presented by Robert Reams, CTO, cofounder and chief scientist for Neural Audio Corp.

Reams will discuss the interspersion of legacy 2.0 and 5.1 content and says failure to deal with this on a system basis will result in transition problems. He will present Neural's spatial compression and rendering methodology, which allows the distributor or broadcaster the ability to capture original source 5.1 content and "downmix" it to a 2.0 channel format while giving consumers the option to render the content in any spatial format they choose.

"Widespread acceptance of 5.1 radio broadcasting isn't as far away as once thought," he said. "2.0 and 5.1 content interoperability doesn't have to be scary, expensive or dangerous. Modern digital signal processing can modernize the 'workhorse' content distribution infrastructure every bit as effectively as replacing it. The key is planned, staged transitioning from where the broadcaster is now to where the broadcaster wants to be at a rate of adoption that makes tactical and fiscal sense."

Shigeru Aoki, R&D engineer for the Japan FM Network, is scheduled to present *"The Surround Sound Program for Radio."* Aoki plans to discuss his experiences with putting 5.1 surround on the air on his network in both digital and analog services and show how 5.1 can be encoded onto analog FM stations. Note that at press time, this speaker said his attendance in Las Vegas was uncertain.

Digital in the real world

"HD Radio Technology" will be the topic for the afternoon radio engineering session, chaired by Norm Phillips, technical operations manager for Susquehanna Corp. in Dallas, and Chriss Scherer, editor of Radio magazine.

There is a lot of buzz going around that surround sound might just be the 'killer app' for HD Radio. I'm not ready to make that prediction quite yet, but I do think it is a very attractive technology.

— Milford Smith

Phillips is a strong supporter of HD Radio and thus a natural choice as chair.

"The audio improvement of a well-done FM HD Radio station is a total lack of multipath-induced noise," he said. "The installation of HD transmitters can be very simple or extremely complicated, depending on the amount of knowledge and planning an engineer begins with.

"This session will not only present some new technology but will have over an hour of HD Radio installation case studies from five markets. Low-level, high-level, combined antenna, split-level, electrical needs, HVAC and other issues will be covered."

Addressing HD Radio STL issues is Sunil Naik, engineering director of Moseley Associates. In *"Hitless Space Diversity STL Enables IP and Audio in Narrow STL Bands,"* Naik will discuss means of transmitting a 300 kbps IP channel alongside a 44 kHz stereo pair within a 300 kHz STL channel. He will present a new transfer panel that allows "hitless" switching for real-time implementation of space-diversity antenna systems for 128 QAM.

"Linearizing HD Radio Transmitters — A Technology Survey" will be presented by Anders Mattsson, principal engineer at Harris Broadcast Communications. Mattsson will cover advanced equalization techniques, including Volterra-based and Neural-based equalizers.

In addition, the differences between baseband and RF pre-distortion and their respective advantages and disadvantages will be discussed.

Henry Downs, associate principal electrical engineer of custom RF products for Dielectric Communications, will present *"IBOC Considerations for Multichannel FM Installations."*

Downs plans to discuss the combining of multiple analog and digital signals into a common antenna, with an emphasis on site-specific solutions.

"The key to successful HD Radio implementation is the minimization of the losses incurred when the existing analog signal is combined with the new digital sidebands," he said.

"In the case of a multi-transmitter site with a master antenna, the least lossy solution offered is to effect combination of the analog and digital portions of the signal in the antenna itself."

"Split Level Combining Explained" will be presented by Steve Fluker, director of engineering for Cox Radio in Orlando.

"In order to understand this technology, it's important to have a good understanding of just what HD Radio is, how it works and what combining is." He plans to explain "how the analog and digital signals are basically two separate radio stations and the challenge is how to transmit both carriers at the same time," Fluker said.

Jerry Westberg, senior design engineer for Broadcast Electronics, will talk about his paper, *"4M Modulation and Its Benefits on Digital Radio."*

Westberg will discuss limitations of PWM transmitters trying to pass an IBOC signal and how these limitations can be overcome by using a DSP-based 4M modulation scheme with no PWM filtering. The result is much higher quality in both the digital and analog domains, the company argues.

"HD Radio Installation — Two Case Studies" will be presented by Erick Steinberg, director of technical operations at Susquehanna Radio San Francisco. Last year, Susquehanna installed HD Radio systems at three of its Bay Area FM stations. Steinberg will discuss his experiences with the high-level system used for KFOG and the low-level system on KSAN.

Paul Shulins, director of technical operations for Greater Media in Boston, will discuss his HD Radio experiences in *"HD Radio at Greater Media Boston."* Shulins will discuss his research and data collection techniques for measuring the coverage of the HD Radio signal, correlating it with the analog signal and local topography. He will talk about leveraging the investment in HD Radio transmitters to provide benefits to the analog systems already on the air.

"Improving Transmitter Linearity in FM HD Radio Using Digital Adaptive Pre-Correction" will be covered by Tim Hardy, head of development for Nautel Ltd. Hardy will look at the theory of pre-correction in general and will go into detail on the adaptive system.

"The advantage of adaptive pre-correction is in its ability to keep the emissions below the mask under changing conditions," he said. The paper will include measured results that he says demonstrate that fixed pre-correction cannot guarantee compliance in certain real-world situations while the adaptive system is compliant in those same situations.

Derek Kumar, vice president of engineering for Digital Radio Express, will present, *"A New Approach to Digital Radio Broadcasting in the FM Band."* In his paper, Kumar will introduce a new digital FM subcarrier technology promising an order of magnitude increase in data throughput and reliability.

"This is accomplished by using state-of-the-art digital modulation, error correction coding (turbo coding), equalization and audio compression (world standard aacPlus v2 technologies)," he wrote.

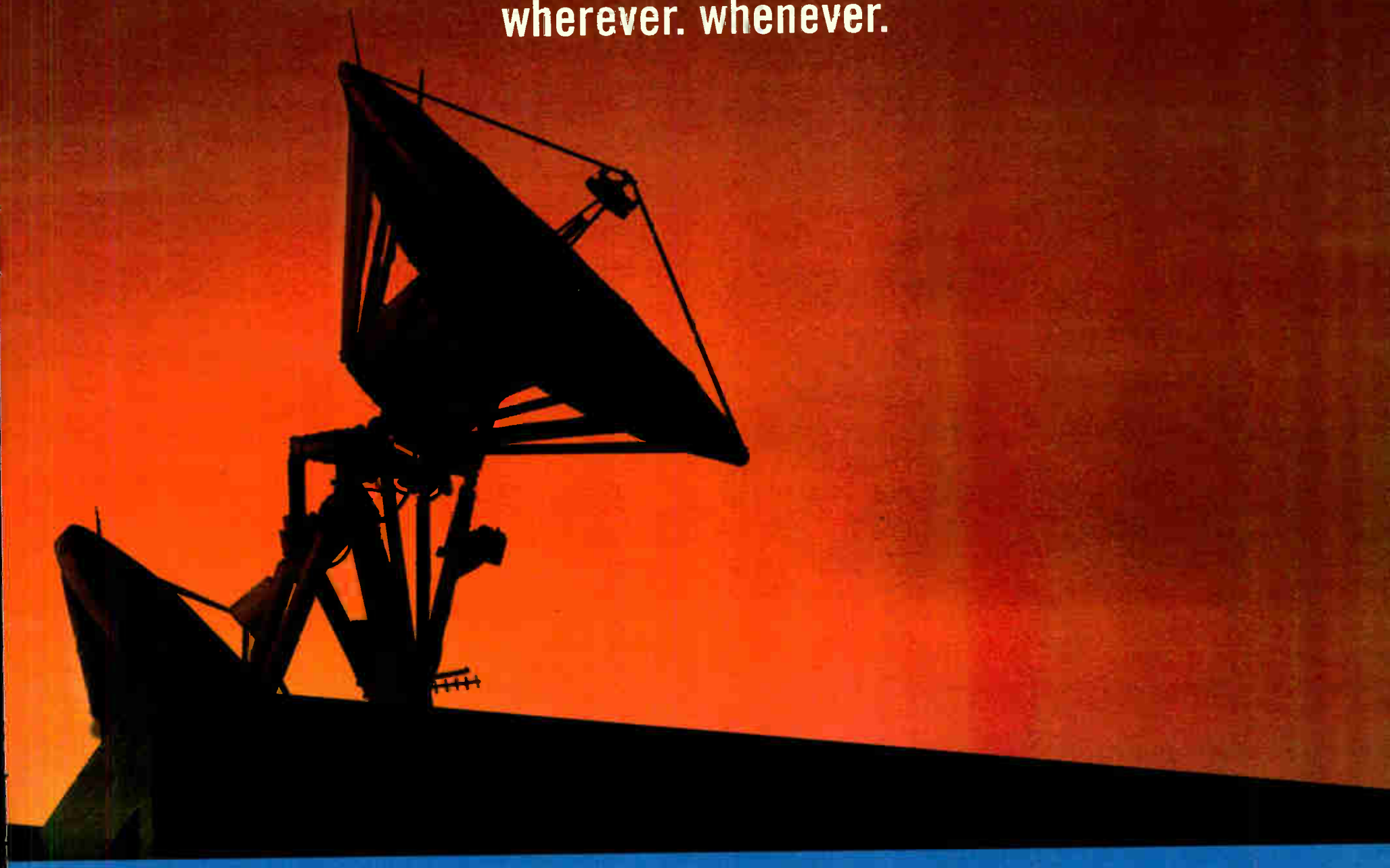
Also on tap Sunday, in addition to the above sessions, Charles Morgan, the senior vice president of Susquehanna Radio Corp., will provide an update of activities at the NRSC in a morning talk.

In the afternoon, Don Messer, director of the Spectrum Management Division of International Broadcasting Bureau, speaks about *"The DRM Digital Modulation System: Performance in the AM Band, Including Comparisons with Amplitude Modulation."*

World Radio History

Visit us at
NAB 2005. Booth #C5944

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 202.513.2526, or visit www.nprss.org/nworld.

npr satellite services

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

World Radio History

Monday: The New World of Test & QC

Sessions Also Delve Into the Merging Worlds of IT and Broadcast Technology

- ***Monday morning, April 18:*** *"Test, Measurement and Quality Control for a Digital Radio Plant"*
- ***Monday afternoon, April 18:*** *"IT in the Radio Broadcast Facility"*

by Tom Osenkowsky

Monday morning's session "Test, Measurement and Quality Control for a Digital Radio Plant," part of the NAB Broadcast Engineering Conference, will be chaired by Tom Ray, corporate director of engineering for Buckley Broadcasting/ WOR Radio in New York.

Digital detail

"The coming of IBOC has made our standard ways of test, measurement and quality control in radio passé in many areas," he said. "Being at one of the first high-power AM IBOC stations in the country, I have experienced many of the topics being presented first-hand, and the ways in which to do our jobs in the digital radio era may be an eye-opener to many."

An afternoon session turns to IT concerns.

Examining AM and FM IBOC measurement issues in the morning will be David Maxson, managing partner of Massachusetts-based Broadcast Signal Lab, who will speak on *"Performance Measurements of Hybrid IBOC Signals."*

"The unveiling of IBOC has brought subtleties of performance measurements to light," he said. "We need to peel back the onion and look more deeply into measurement issues for hybrid AM and FM IBOC implementation."

Earlier papers have examined FM IBOC emissions specifications. This paper is expected to examine all facets of the IBOC signal.

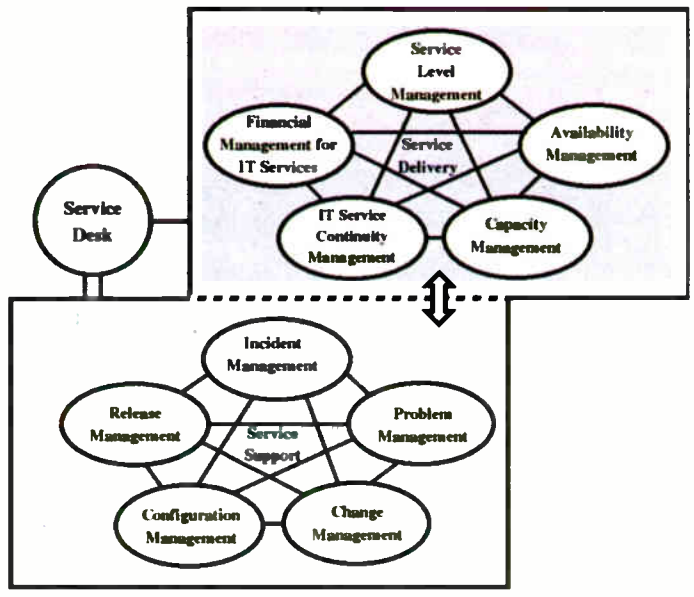
Why power and VSWR measurements are important will be explored by Tim Holt, director of application and system engineering at Bird Electronic Corp., in *"Practical Considerations in the Measurement of Power and VSWR in Broadcast Transmission Systems."*

"The accurate and reliable measurement of transmitter output power has always been an important consideration in the operation of broadcast transmission systems," he said.

"In addition, an ongoing knowledge of the VSWR or return loss of the antenna and feeder system is also of critical importance, as these parameters will have a direct impact on the radiated energy of the system. These measurements are important for older-generation analog transmission systems, and are even more important today than the advent of digital broadcast methods based on the latest technology.

Traditional STLs are one-way paths from the studio to the transmitter site. HD Radio raises new issues for the connection to the IBOC transmitter. Bill Gould, broadcast sales engineer with Moseley Associates Inc., said, "New broadcast applications such as remote mirrored servers, RDS and IP-addressable equipment place bidirectional requirements on the once-simple STL."

His presentation *"New STL/TSL Solutions for LAN/WAN Extension to Transmitter Sites"* will explore the narrow-



Service Support and Service Delivery

Bill Eldridge says that while IT Service Management is a useful new paradigm for broadcast systems, it requires care and planning to make it balance out in practice. This is a graphic from his presentation.

"Finally, we will present some data which compares the accuracy of various methods for the measurement of power."

Ben Dawson and Ron Rackley of the dTR/H&D Joint Venture supervised the measurement of bandwidth characteristics of over 50 CPB-qualified AM stations. Dawson's presentation is *"Examples of AM Antenna Bandwidth From Over 50 Typical (?) Cases."*

"We found cases where remedial measures will be inexpensive and simple as well as cases that will be more costly and complicated," Dawson said.

"We also found cases where a practical implementation will not be possible without complete antenna system redesign. This presentation will detail actual stations and provide an insight to those who are interested in IBOC implementation as to what they may expect when bandwidth is considered." Also examined are the IBOC capabilities of the transmitters involved.

Radio IT

Of interest to radio attendees on Tuesday afternoon is "IT in the Radio Broadcast Facility," chaired by Clear Channel Radio Senior Vice President/Engineering Steve Davis.

"As radio broadcasting technology continues to evolve, the line between 'broadcast technology' and 'information technology' continues to blur," he said.

"Today's broadcast engineer must understand and manage a variety of technologies that may in past years have been considered in the IT director's domain. In many modern broadcast facilities, the IT infrastructure is a mission-critical component of the broadcast delivery system."

The session will explore IT-related challenges, issues and opportunities that broadcast engineers may encounter in a modern radio facility.

ing distinction between information and broadcast technologies.

"Studio Structures for Surround Broadcasting," by Steve Church, founder and CEO of Telos Systems, will look at the necessity of upgrading studio facilities to accommodate 5.1 surround sound.

"There is growing interest among broadcasters to deliver a surround listening experience to their audiences," he said. "Surround is clearly the hot topic at audio, consumer electronics and computer shops. Visit any of these and you will see plenty of surround audio set-ups.

"The one price to be paid is the need to upgrade studio facilities to surround. Specifically, we need to store, network and mix in the 2 + 5.1 format. So let's walk through how one would build a modern 2 + 5.1 plant, with a careful eye to cost."

William Eldridge, vice president of strategic operations for U-Turn Media in the Czech Republic, will address *"IT Service Management Applied to Broadcast Facilities,"* discussing sharing of storage, network and computer-based applications.

"ISP costs are cheap enough and laptops with good software plentiful, so even smaller stations can provide some reasonable level of off-site backup of both IT systems and broadcast/call-in facilities," Eldridge states.

AES/EBU-encoded audio, multichannel digital audio, bit rates and frequencies, synchronous and asynchronous data, co-existence with analog as it pertains to nominal level and FSC (Full Scale Digital) and encoding techniques to deliver these multi-channel digital signals — these are some of the details that Al Salci, vice president and co-founder of Sierra Automated Systems &

See MONDAY, page 33 ▶

World Radio History

COMREX

FREE Interview Audio Package with Matrix Codecs (a $281.95 Value)!

Electro-Voice 635A interview mic, Sennheiser HD477 headphones and Comrex gear bag with system purchase.

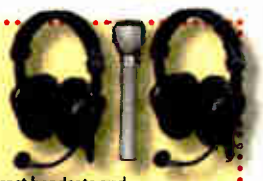
Top-Selling Comrex Matrix Codecs

Right now, purchase a complete set of codecs (Matrix, MatrixRack and Matrix Battery Kit) and receive FREE from BSW: Electro-Voice 635A interview mic, Sennheiser HD477 headphones and Comrex gear bag. A $281.95 value! Hurry, offer expires April 30th.

MATRIX	Portable POTS codec	List $3,700.00
MATRIXRACK	Studio POTS codec	List $3,200.00
MATRIXISDN	ISDN module	List $850.00
MATRIXGSMD	GSM module domestic	List $850.00
MATRIXBATTERYKIT	$499.00	
SMALLROADCASE	$219.00	

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

FREE On-Air Broadcast Package with Comrex Codecs (a $750 Value)!



Two BeyerDynamic DT290 broadcast headsets and an Electro-Voice 635A interview mic - with system purchase.

Comrex Envoy/Vector Codecs

Purchase a complete set of codecs (Envoy, Matrix Rack w/ ISDN module and LargeRoadCase; or Vector, Matrix Rack and LargeRoadCase) and receive FREE from BSW: two BeyerDynamic DT290 broadcast headsets and an Electro-Voice 635A interview mic. A $750 value! Offer expires April 30th.

ENVOY	Portable ISDN codec	List $3,750.00
VECTOR	Portable POTS codec	List $3,800.00
MATRIXRACK	Studio POTS codec	List $3,200.00
MATRIXISDN	ISDN module	List $850.00
LARGEROADCASE	List $450.00	

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

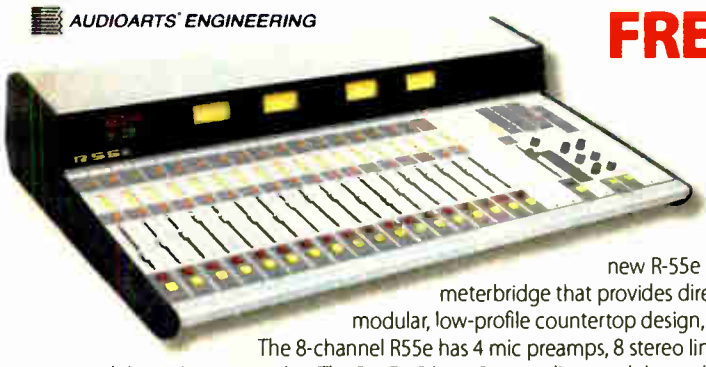
BSW's Field Recording Package!

Includes the Hot Marantz PMD660 Flash Recorder, Sennheiser MD46 Mic, Sony Headphones, Cable and Case.

Record dozens of hours of MP3 audio on a single Compact Flash card (or as uncompressed WAV files) and easily transfer to your computer via USB port. You can even edit in the unit itself. The PMD660 offers onboard stereo mics for on-the-spot recording, or use your own via two balanced XLR inputs and stereo line inputs. The Sennheiser MD46 interview mic features a rugged, all-metal body and is very insensitive to pop and wind noise. The Sony MDR-7502 is a popular lightweight, sealed-ear headphone. BSW even includes a 5 ft. XLR mic cable and quality Marantz carrying bag to protect your recorder. Get in on this great deal today!

LowestPrice@bswusa.com **Package Only $759!** Order Item Number: PMD660PKG

AUDIOARTS® ENGINEERING



FREE Phone Module with Audioarts Modular Console (a $644 Value)!

Audioarts R-55e Modular Consoles

Get an incredible deal on a new Audioarts console at BSW! The new R-55e broadcast console offers illuminated LED switches and a flip-up meterbridge that provides direct access to I/O connectors and dipswitches. It features a sleek, modular, low-profile countertop design, with opto-isolated logic control and built-in machine interface. The 8-channel R55e has 4 mic preamps, 8 stereo line input modules, control room/studio monitor module, output module, and a cue speaker. The R55E-12 has 12 stereo line modules and a digital timer. The larger 18/12 and 18/18 models add a digital clock/timer. Order your new Audioarts console by April 30th, and get a FREE SPN55E phone module from BSW! A $644.00 value!!!

R55E	8-channel modular console	List $4,795.00	**R55E-1812**	18/12 modular console	List $6,995.00
R55E-12	12-channel modular console	List $6,295.00	**R55E-18**	18/18 modular console	List $9,900.00

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

FREE GuestPod (with system purchase)!

Henry Engineering Headphone System

Multiphones is a multi-user distributed headphone system providing independent stereo headphone listening facilities for up to 12 users. The Multiphones system consists of the master unit and satellite GuestPods interconnected using Cat-5 cable. The Multiphones master unit has inputs for stereo program audio and talkback audio and talkback facilities. Three RJ45 jacks are provided to distribute audio and power to the GuestPods. Each GuestPod has a headphone amp, volume control, jacks (both 1/8" and 1/4") and a cough button. Buy Multiphones and three GuestPods and get a 4th GuestPod FREE from BSW! Offer expires 4/30/05.

MULTIPHONEPKG (Multiphone with 3 Guestpods + 4th guestpod free) List $520.00 LowestPrice only $449!

Great Prices on EV RE Series!

A favorite of broadcasters everywhere, the Electro-Voice RE20's Variable-D design is famous for eliminating bass-boosting proximity effect when close micing. The RE27ND's neodymium magnet provides wider frequency response.

RE20	List $798.00	$399.00
RE27ND	List $840.00	$449.00
309A	Shockmount	$99.00
W51BLACK	Windscreen	$29.00
WACRE20	Pop filter/mount	$36.00

LowestPrice from $399!

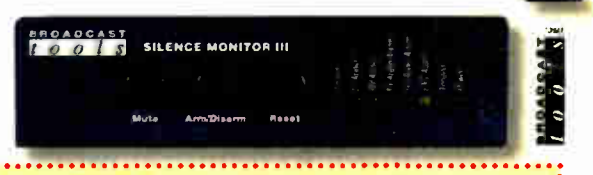
HURRY! Special Offers in this ad expire 4/30/05!

BSW Exclusive!! ProBoom Elite Only $139!!

OC White ProBoom Elite Mic Boom w/Riser

The OC White ProBoom Elite heavy-duty boom holds any microphone quietly in position, hiding the cable and improving appearance. The base provides a wire channel through the riser which is prewired to a built-in XLR female jack with 3 feet of pigtail from the base for the user to wire as needed. Premium music wire springs are used, for silent use. BSW just bought a large quantity of these premium booms especially for our broadcast customers. Get them while they last for only $139! Only at BSW!!

61900BG List $199.00 LowestPrice only $139!



FREE RackMount Shelf (with Silence Monitor purchase)!

Broadcast Tools Silence Monitor Offer!

The Silence Monitor III is designed to monitor any stereo or two independent monaural sources, generate alarms and transparently switch to back-up source equipment when silence is detected.

SMIIIPKG List $259.00 LowestPrice only $229!

Orban Optimod 8500!! NEW!! orban

Introducing the new Optimod 8500 for HD Radio! This top-of-the-Orban-line processor is the ideal choice for FM stations simultaneously transmitting iBiquity's HD Radio, Eureka 147, or a netcast. Independent processing for analog FM and digital radio is standard: Orban's state-of-the-art FM high-frequency limiting and clipping systems peak-limit the analog-FM output while a look-ahead limiter controls the digital radio output. The base sample rate is now 64 kHz, allowing the 8500 to offer 20 kHz audio bandwidth in the digital radio processing path. A built-in eight-second delay allows HD Radio broadcasters to bypass the delay in the iBiquity exciter and to use the 8500's stereo encoder and patented "Half-Cosine" composite limiter instead. This means that broadcasters won't have to compromise loudness of their analog channel to broadcast HD.

8500 List $13,990.00 LowestPrice@bswusa.com OR CALL: 1-800-426-8434

Incredible SOUND! New Ultrasone HFI Series Headphones

The new technology in the Ultrasone HFI-550 creates sound that moves out of your head and into the room around you. The sound is no longer locked in, but appears broad and detached. Directions and distances can be perceived – just like in a live environment. The HFI550 offers 10 Hz -22 kHz response with 64 ohm impedance. The HFI650 extends to 25 kHz with 75 ohm impedance.

HFI550	$189.00
HFI650	$249.00

LowestPrice from $189!

Lowest Prices on everything at: www.bswusa.com

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 Web orders over $189
For a limited time, all web orders over $189 get FREE ground service delivery to the contiguous 48 states. Excludes heavy or oversized items.

BSW

Knowledgeable Staff
Our sales professionals have real-world broadcast and studio experience to offer expert help with your equipment purchase.

LowestPrice@bswusa.com
For the best prices on all of your gear visit us on the web at www.bswusa.com or email us for a quote at LowestPrice@bswusa.com

1-800-426-8434

World Radio History

Wednesday: Plan for the Unthinkable

Sessions Look at Disaster Preparations, Workflow/Automation Issues for Broadcast

- ***Wednesday morning, April 20:*** *"Disaster Prep and Recovery"*
- ***Wednesday afternoon, April 20:*** *"Workflow, Asset Management and Automation"*

by Paul Kaminski

How to think about disaster planning in the post-9/11 world is the theme of a Wednesday morning Broadcast Engineering Conference session, while an afternoon event focuses on questions of asset management.

Thinking 'worst-case'

For Wednesday morning's "Disaster Prep and Recovery," Entercom Vice President of Engineering Marty Hadfield, the moderator, has assembled a panel of speakers to offer solutions to problems most broadcasters hope they never have to face.

The panel will focus on the balance between safety and the cost of various levels of emergency operations, of which Hadfield says, "These (two) topics will provide a good framework for assessing which options are best for any GM's local expectations for performance under adverse conditions."

Because the Southeast was hit hard during last hurricane season, owners and managers are likely to sit up and take notice of the morning sessions.

Joseph Pollet, director of engineering for Entercom's New Orleans cluster, will present a paper on *"Hurricane Preparedness in a City Below Sea Level."* Pollet is scheduled to discuss general planning and the resultant specific checklists that went into the development and evaluation of the WWL Radio hurricane operating plan and its on-going effect on the station's news, programming and engineering departments.

Roz Clark of the six-station Cox Radio cluster in Tampa, Fla., will focus on *"Disaster Survival and EAS."* Clark's stations faced an acid test during the 2004 hurricane season by maintaining an on-air presence for public safety concerns and as a vehicle for Emergency Alert System messages. Clark will share the survival lessons learned from emergency operations during the hurricanes, and how they relate to emergency operations from the financial side.

Michael Patton, owner of Michael Patton & Associates in Baton Rouge, La., will discuss disaster recovery case studies from the "real world." His presentation is *"Disaster Recovery — Tales from the Damaged Side."*

Patton says such stories can teach valuable lessons from the viewpoint of engineers who've made mistakes and "have been there, done that, got the t-shirt and worn it out." Those lessons involve suggestions and strategies for recovery from fallen towers, destroyed buildings and missing or vandalized equipment.

Cover your assets

Meredith Broadcasting's Director of Engineering Joe Snelson moderates an afternoon BEC group of presentations about "front-end" issues, the management and protection of the programs stations broadcast, under the umbrella of "Workflow, Asset Management and Automation."

The panel will present papers on different phases of the process, which touches every department of a broadcast operation.

A vintage photo from the WWL Radio archives depicts the aftermath of a 1947 hurricane on the station's former lakefront transmitter site. DOE Joe Pollet says, 'Site access was by boat only, which can be seen tied to the hand rail.' Current images of WWL's elevated, storm-hardened facility also are part of his presentation.

archives. Presentations of interest for radio managers, engineers and operators include this sampling:

In *"A New Approach to Digital News Archiving,"* Nicolas Hans, product strategy Director for Dalet Digital Media Systems in France, will discuss his company's techniques for managing news content digitally.

According to NAB preview information, Hans suggests that a move to tapeless production environments creates new challenges for the production and re-use of news archives. Newscasters, he says, tend to focus energy on choosing the type of storage system whereas a bigger challenge lies in the consistent collection and manipulation of descriptive metadata and associated digital rights information.

His presentation will suggest ways to balance the administrative and operational considerations of [illegible] agement system.

"PBCore: A Common Foundation for Metadata" will be presented by Gerry Field of the WGBH National Center for Accessible Media in Boston. He is to talk about the challenge of managing metadata in the public broadcasting community, and how it resulted in version 1.0 of PBCore, the Public Broadcasting Metadata Dictionary. This is a standard for descriptions and use of data that allows it to be shared by colleagues, software systems and institutions doing radio, TV and Web work.

PBCore is built around the Dublin Core, an international standard for resource discovery. Field says he will talk about efforts to harmonize and map the basic PBCore elements with related international standards.

Bottlenecks between the creative and administrative departments at a radio station can be eliminated or exacerbated when automated playback and management systems are installed.

"Workflow Support in Media Asset Management" by Peter Thomas, chief technology officer of Blue Order in Germany, gives station project designers

Tuesday

▶ Continued from page 33

Chairperson Dane Ericksen, senior engineer at Hammett & Edison, says the issue of interference protection and spectrum allocation is hitting broadcasters across the spectrum, including the 2 GHz band, where TV broadcasters face a massive (and massively expensive) relocation of the auxiliary service they use for live shots and other remote purposes, and the broadcast TV bands, where new wireless devices and the coming of digital TV create threats to existing users of the spectrum.

For radio broadcasters, though, the biggest issue is a change in the way the FCC handles the 950 MHz broadcast auxiliary service.

Since last year, the FCC has required broadcasters to coordinate their use of that spectrum through "Part 101" coordination, which has required broadcasters to use a frequency-coordination service such as Comsearch (whose vice president, Tim Hardy, will be speaking) to notify other nearby 950 MHz users every time they need to make changes to an STL path or other BAS use that could cause interference. Hardy's presentation is *"Auxiliary Broadcast Microwave Implementation: Six Steps to Success."*

Ericksen says it's been a challenge to come up with a clear understanding of what constitutes interference in that service, as the FCC still uses a technical service bulletin that's more than a decade old and not designed with broadcasters in mind.

"A group was formed at the SBE national meeting in Boston last October to come up with frequency coordination specifications for broadcast auxiliary services," Ericksen said.

Much of the afternoon session will be of interest to those involved in TV. Topics include the 2 GHz BAS relocation; interference to UHF TV reception from wireless mics; potential UWB interference to DCII, ATSC and DVB-S C-Band reception; evaluating the impact of unlicensed operation in the TV broadcast bands; and implementation of DTV rules for LPTV and TV translators.

Disaster recovery anecdotes, says Michael Patton, can teach valuable lessons from the viewpoint of engineers who've made mistakes and 'been there, done that, got the t-shirt and worn it out.'

"(Some of) our sessions will likely cover how this facilitates the sharing of data between operations — a co-owned television station with a radio operation, for example," Snelson said.

"When news content is repurposed for radio, as it is with Meredith radio and TV properties in Michigan, it needs to be made easily available to everyone who 'touches' the data, from the radio news people, to the Web developers to traffic and management."

The discussions will likely appeal to engineers who design systems that integrate program content, distribution, protection of digital performance rights and and managers a roadmap into the processes behind the design and deployment of automation systems.

Thomas suggests that an understanding of workflow processes (structured and unstructured) will help those managers evaluate systems more efficiently and get the most out of them when they are installed and deployed across each area of the station.

He believes that "enabling enterprise-wide business processes creates a strong demand for workflow support. Business processes may comprise system workflows, which can be supported by workflow automation, and human workflows."

World Radio History

North Hall Exhibits

FORESIGHT is 2020

The **$99*** studio condenser that's way ahead of its time.

AT2020
Cardioid Condenser Microphone

audio-technica.
always listening.

*Estimated street price.

Booth N3322

NEW! AT NAB 2005

LIVE, IN OUR BOOTH: A Working Demo of One-Box FM / IBOC Audio Processing!

We are the one-box-solution pioneers, featuring the Omega parallel, dual-path digital processor.
Take a 'demo ride' in our car!

631 Off-Air FM Receiver – new design, better specs, more features.

Two new RDS/RBDS Encoders – an updated "Mini-Encoder" with USB/Windows® connectivity, and a full-function TCP/IP encoder with on-board parsing support for scrolling messages.

NAB **Booth N1818** *Radio/Audio Hall*

Inovonics
www.inovon.com

There's A New Sheriff in Town !

It looks like a condenser. It acts like a condenser.
It SOUNDS like a condenser but it is a large 1.5" dia.
DYNAMIC from the wizards at Heil Sound, Ltd.

Come hear this new technology and we'll give you a new sheriff's badge !

28 Hz. - 18 kHz.
YES - 28 ! Come listen

BGS booth N3304

NEW for NAB 2005

SAS
rubicon™
Rubicon™ Digital Control Surface, the new favorite console of hundreds of major market programmers.

Rubicon SL for the smaller market station or less demanding studio

32KD 750-channel networking module

RIOLink stand-alone and emergency backup

Microphone and effects processing

Radio/Audio Hall Booth **#N-806**

World Radio History

COMREX

FREE Interview Audio Package with Matrix Codecs (a $281.95 Value)!

Electro-Voice 635A interview mic, Sennheiser HD477 headphones and Comrex gear bag with system purchase.

Top-Selling Comrex Matrix Codecs

Right now, purchase a complete set of codecs (Matrix, MatrixRack and Matrix Battery Kit) and receive FREE from BSW: Electro-Voice 635A interview mic, Sennheiser HD477 headphones and Comrex gear bag. A $281.95 value! Hurry, offer expires April 30th.

MATRIX	Portable POTS codec	List $3,700.00
MATRIXRACK	Studio POTS codec	List $3,200.00
MATRIXISDN	ISDN module	List $850.00
MATRIXGSMD	GSM module domestic	List $850.00
MATRIXBATTERYKIT	$499.00	
SMALLROADCASE	$219.00	

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

FREE On-Air Broadcast Package with Comrex Codecs (a $750 Value)!

Two BeyerDynamic DT290 broadcast headsets and an Electro-Voice 635A interview mic - with system purchase.

Comrex Envoy/Vector Codecs

Purchase a complete set of codecs (Envoy, Matrix Rack w/ ISDN module and LargeRoadCase; or Vector, Matrix Rack and LargeRoadCase) and receive FREE from BSW: two BeyerDynamic DT290 broadcast headsets and an Electro-Voice 635A interview mic. A $750 value! Offer expires April 30th.

ENVOY	Portable ISDN codec	List $3,750.00
VECTOR	Portable POTS codec	List $3,800.00
MATRIXRACK	Studio POTS codec	List $3,200.00
MATRIXISDN	ISDN module	List $850.00
LARGEROADCASE	List $450.00	

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

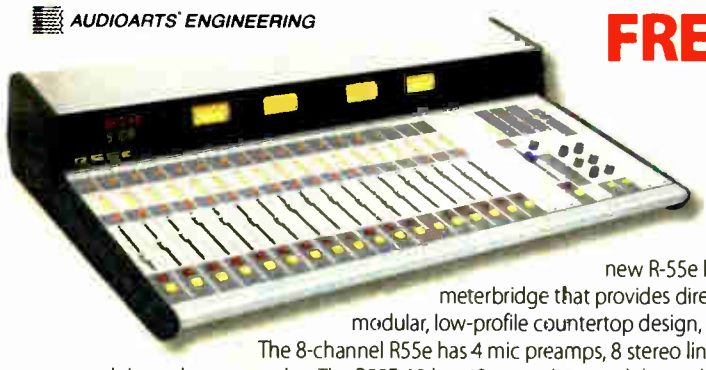
BSW's Field Recording Package!

Includes the Hot Marantz PMD660 Flash Recorder, Sennheiser MD46 Mic, Sony Headphones, Cable and Case.

Record dozens of hours of MP3 audio on a single Compact Flash card (or as uncompressed WAV files) and *easily transfer to your computer* via USB port. You can even edit in the unit itself. The PMD660 offers onboard stereo mics for on-the-spot recording, or use your own via two balanced XLR inputs and stereo line inputs. The Sennheiser MD46 interview mic features a rugged, all-metal body and is very insensitive to pop and wind noise. The Sony MDR-7502 is a popular lightweight, sealed-ear headphone. BSW even includes a 5 ft. XLR mic cable and quality Marantz carrying bag to protect your recorder. Get in on this great deal today!

LowestPrice@bswusa.com **Package Only $759!** Order Item Number: PMD660PKG

AUDIOARTS ENGINEERING



FREE Phone Module with Audioarts Modular Console (a $644 Value)!

Audioarts R-55e Modular Consoles

Get an incredible deal on a new Audioarts console at BSW! The new R-55e broadcast console offers illuminated LED switches and a flip-up meterbridge that provides direct access to I/O connectors and dipswitches. It features a sleek, modular, low-profile countertop design, with opto-isolated logic control and built-in machine interface. The 8-channel R55e has 4 mic preamps, 8 stereo line input modules, control room/studio monitor module, output module, and a cue speaker. The R55E-12 has 12 stereo line modules and a digital timer. The larger 18/12 and 18/18 models add a digital clock/timer. Order your new Audioarts console by April 30th, and get a FREE SPN55E phone module from BSW! A $644.00 value!!!

R55E	8-channel modular console	List $4,795.00	**R55E-1812**	18/12 modular console	List $6,995.00
R55E-12	12-channel modular console	List $6,295.00	**R55E-18**	18/18 modular console	List $9,900.00

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

FREE GuestPod (with system purchase)!

Henry Engineering Headphone System

Multiphones is a multi-user distributed headphone system providing independent stereo headphone listening facilities for up to 12 users. The Multiphones system consists of the master unit and satellite GuestPods interconnected using Cat-5 cable. The Multiphones master unit has inputs for stereo program audio and talkback audio and talkback facilities. Three RJ45 jacks are provided to distribute audio and power to the GuestPods. Each GuestPod has a headphone amp, volume control, jacks (both 1/8" and 1/4") and a cough button. Buy Multiphones and three GuestPods and get a 4th GuestPod FREE from BSW! Offer expires 4/30/05.

MULTIPHONEPKG (Multiphone with 3 Guestpods + 4th guestpod free) List $520.00 LowestPrice only $449!

Great Prices on EV RE Series!

A favorite of broadcasters everywhere, the Electro-Voice RE20's Variable-D design is famous for eliminating bass-boosting proximity effect when close micing. The RE27ND's neodymium magnet provides wider frequency response.

RE20	List $798.00	$399.00
RE27ND	List $840.00	$449.00
309A	Shockmount	$99.00
WS1BLACK	Windscreen	$29.00
WACRE20	Pop filter/mount	$36.00

LowestPrice from $399!

HURRY! Special Offers in this ad expire 4/30/05!

BSW Exclusive!! ProBoom Elite Only $139!!

OC White ProBoom Elite Mic Boom w/Riser

The OC White ProBoom Elite heavy-duty boom holds any microphone quietly in position, hiding the cable and improving appearance. The base provides a wire channel through the riser which is prewired to a built-in XLR female jack with 3 feet of pigtail from the base for the user to wire as needed. Premium music wire springs are used, for silent use. BSW just bought a large quantity of these premium booms especially for our broadcast customers. Get them while they last for only $139! Only at BSW!!

61900BG List $199.00 LowestPrice only $139!

FREE RackMount Shelf (with Silence Monitor purchase)!

Broadcast Tools Silence Monitor Offer!

The Silence Monitor III is designed to monitor any stereo or two independent monaural sources, generate alarms and transparently switch to back-up source equipment when silence is detected.

SMIIIPKG List $259.00 LowestPrice only $229!

Orban Optimod 8500!! NEW!! orban

Introducing the new Optimod 8500 for HD Radio! This top-of-the-Orban-line processor is the ideal choice for FM stations simultaneously transmitting iBiquity's HD Radio, Eureka 147, or a netcast. Independent processing for analog FM and digital radio is standard: Orban's state-of-the-art FM high-frequency limiting and clipping systems peak-limit the analog-FM output while a look-ahead limiter controls the digital radio output. The base sample rate is now 64 kHz, allowing the 8500 to offer 20 kHz audio bandwidth in the digital radio processing path. A built-in eight-second delay allows HD Radio broadcasters to bypass the delay in the iBiquity exciter and to use the 8500's stereo encoder and patented "Half-Cosine" composite limiter instead. This means that broadcasters won't have to compromise loudness of their analog channel to broadcast HD.

8500 List $13,990.00 LowestPrice@bswusa.com OR CALL : 1-800-426-8434

Incredible SOUND! New Ultrasone HFI Series Headphones

The new technology in the Ultrasone HFI-550 creates sound that moves out of your head and into the room around you. The sound is no longer locked in, but appears broad and detached. Directions and distances can be perceived – just like in a live environment. The HFI550 offers 10 Hz -22 kHz response with 64 ohm impedance. The HFI650 extends to 25 kHz with 75 ohm impedance.

HFI550	$189.00
HFI650	$249.00

LowestPrice from $189!

Lowest Prices on everything at: www.bswusa.com

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 Web orders over $189
For a limited time, all web orders over $189 get FREE ground service delivery to the contiguous 48 states. Excludes heavy or oversized items.

BSW

Knowledgeable Staff
Our sales professionals have real-world broadcast and studio experience to offer expert help with your equipment purchase.

LowestPrice@bswusa.com
For the best prices on all of your gear visit us on the web at www.bswusa.com or email us for a quote at LowestPrice@bswusa.com

1-800-426-8434

World Radio History

Wednesday: Plan for the Unthinkable

Sessions Look at Disaster Preparations, Workflow/Automation Issues for Broadcast

- ***Wednesday morning, April 20:*** *"Disaster Prep and Recovery"*
- ***Wednesday afternoon, April 20:*** *"Workflow, Asset Management and Automation"*

by Paul Kaminski

How to think about disaster planning in the post-9/11 world is the theme of a Wednesday morning Broadcast Engineering Conference session, while an afternoon event focuses on questions of asset management.

Thinking 'worst-case'

For Wednesday morning's "Disaster Prep and Recovery," Entercom Vice President of Engineering Marty Hadfield, the moderator, has assembled a panel of speakers to offer solutions to problems most broadcasters hope they never have to face.

The panel will focus on the balance between safety and the cost of various levels of emergency operations, of which Hadfield says, "These (two) topics will provide a good framework for assessing which options are best for any GM's local expectations for performance under adverse conditions."

Because the Southeast was hit hard during last hurricane season, owners and managers are likely to sit up and take notice of the morning sessions.

Joseph Pollet, director of engineering for Entercom's New Orleans cluster, will present a paper on *"Hurricane Preparedness in a City Below Sea Level."* Pollet is scheduled to discuss general planning and the resultant specific checklists that went into the development and evaluation of the WWL Radio hurricane operating plan and its on-going effect on the station's news, programming and engineering departments.

Roz Clark of the six-station Cox Radio cluster in Tampa, Fla., will focus on *"Disaster Survival and EAS."* Clark's stations faced an acid test during the 2004 hurricane season by maintaining an on-air presence for public safety concerns and as a vehicle for Emergency Alert System messages. Clark will share the survival lessons learned from emergency operations during the hurricanes, and how they relate to emergency operations from the financial side.

Michael Patton, owner of Michael Patton & Associates in Baton Rouge, La., will discuss disaster recovery case studies from the "real world." His presentation is *"Disaster Recovery — Tales from the Damaged Side."*

Patton says such stories can teach valuable lessons from the viewpoint of engineers who've made mistakes and "have been there, done that, got the t-shirt and worn it out." Those lessons involve suggestions and strategies for recovery from fallen towers, destroyed buildings and missing or vandalized equipment.

Cover your assets

Meredith Broadcasting's Director of Engineering Joe Snelson moderates an afternoon BEC group of presentations about "front-end" issues, the management and protection of the programs stations broadcast, under the umbrella of "Workflow, Asset Management and Automation."

The panel will present papers on different phases of the process, which touches every department of a broadcast operation.

A vintage photo from the WWL Radio archives depicts the aftermath of a 1947 hurricane on the station's former lakefront transmitter site. DOE Joe Pollet says, 'Site access was by boat only, which can be seen tied to the hand rail.' Current images of WWL's elevated, storm-hardened facility also are part of his presentation.

archives. Presentations of interest for radio managers, engineers and operators include this sampling:

In *"A New Approach to Digital News Archiving,"* Nicolas Hans, product strategy Director for Dalet Digital Media Systems in France, will discuss his company's techniques for managing news content digitally.

According to NAB preview information, Hans suggests that a move to tapeless production environments creates new challenges for the production and re-use of news archives. Newscasters, he says, tend to focus energy on choosing the type of storage system whereas a bigger challenge lies in the consistent collection and manipulation of descriptive metadata and associated digital rights information.

His presentation will suggest ways to balance the administrative and operational considerations of any [illegible] agement system.

"PBCore: A Common Foundation for Metadata" will be presented by Gerry Field of the WGBH National Center for Accessible Media in Boston. He is to talk about the challenge of managing metadata in the public broadcasting community, and how it resulted in version 1.0 of PBCore, the Public Broadcasting Metadata Dictionary. This is a standard for descriptions and use of data that allows it to be shared by colleagues, software systems and institutions doing radio, TV and Web work.

PBCore is built around the Dublin Core, an international standard for resource discovery. Field says he will talk about efforts to harmonize and map the basic PBCore elements with related international standards.

Bottlenecks between the creative and administrative departments at a radio station can be eliminated or exacerbated when automated playback and management systems are installed.

"Workflow Support in Media Asset Management" by Peter Thomas, chief technology officer of Blue Order in Germany, gives station project designers and managers a roadmap into the processes behind the design and deployment of automation systems.

Thomas suggests that an understanding of workflow processes (structured and unstructured) will help those managers evaluate systems more efficiently and get the most out of them when they are installed and deployed across each area of the station.

He believes that "enabling enterprise-wide business processes creates a strong demand for workflow support. Business processes may comprise system workflows, which can be supported by workflow automation, and human workflows."

"(Some of) our sessions will likely cover how this facilitates the sharing of data between operations — a co-owned television station with a radio operation, for example," Snelson said.

"When news content is repurposed for radio, as it is with Meredith radio and TV properties in Michigan, it needs to be made easily available to everyone who 'touches' the data, from the radio news people, to the Web developers to traffic and management."

The discussions will likely appeal to engineers who design systems that integrate program content, distribution, protection of digital performance rights and

Disaster recovery anecdotes, says Michael Patton, can teach valuable lessons from the viewpoint of engineers who've made mistakes and 'been there, done that, got the t-shirt and worn it out.'

Tuesday

▶ Continued from page 33

Chairperson Dane Ericksen, senior engineer at Hammett & Edison, says the issue of interference protection and spectrum allocation is hitting broadcasters across the spectrum, including the 2 GHz band, where TV broadcasters face a massive (and massively expensive) relocation of the auxiliary service they use for live shots and other remote purposes, and the broadcast TV bands, where new wireless devices and the coming of digital TV create threats to existing users of the spectrum.

For radio broadcasters, though, the biggest issue is a change in the way the FCC handles the 950 MHz broadcast auxiliary service.

Since last year, the FCC has required broadcasters to coordinate their use of that spectrum through "Part 101" coordination, which has required broadcasters to use a frequency-coordination service such as Comsearch (whose vice president, Tim Hardy, will be speaking) to notify other nearby 950 MHz users every time they need to make changes to an STL path or other BAS use that could cause interference. Hardy's presentation is *"Auxiliary Broadcast Microwave Implementation: Six Steps to Success."*

Ericksen says it's been a challenge to come up with a clear understanding of what constitutes interference in that service, as the FCC still uses a technical service bulletin that's more than a decade old and not designed with broadcasters in mind.

"A group was formed at the SBE national meeting in Boston last October to come up with frequency coordination specifications for broadcast auxiliary services," Ericksen said.

Much of the afternoon session will be of interest to those involved in TV. Topics include the 2 GHz BAS relocation; interference to UHF TV reception from wireless mics; potential UWB interference to DCII, ATSC and DVB-S C-Band reception; evaluating the impact of unlicensed operation in the TV broadcast bands; and implementation of DTV rules for LPTV and TV translators.

World Radio History

Tuesday: Radio, Building Big

Major New York and Los Angeles Projects Highlight NAB Facility Session

- ***Tuesday morning, April 19:*** *"Radio Broadcast Facilities"*
- ***Tuesday afternoon, April 19:*** *"Broadcast Technical Regulatory Issues"*

by Scott Fybush

From 1,200 feet above Times Square to "beautiful downtown Burbank," Tuesday morning's session of the Broadcast Engineering Conference will [illegible] some of the biggest recent projects in the broadcasting world, as well as offering solutions for broadcasters with more modest budgets.

The "Radio Broadcast Facilities" session takes place 9 a.m. to noon. An afternoon session deals with technical regulatory issues.

Photo by Scott Fybush

Rack room at Clear Channel's new consolidated facility in Los Angeles. Terry Grieger is chief engineer.

If you build it ...

The morning begins with a presentation from Jim Moser, senior staff engineer at Kintronic Laboratories, who will provide an overview of a new *"Medium-Wave Feeder Design for Digital Broadcast."*

His paper presents a design methodology for improving the impedance and pattern bandwidth of MW directional antenna feed systems for digital broadcast, whether IBOC or DRM.

After that, it's off to Hollywood — or rather, just over the hills in the San Fernando Valley, for the *"Clear Channel Los Angeles Consolidation."* The big broadcaster recently completed a move of its entire Los Angeles radio operation — three AM stations, five FMs — into one facility.

The stations moved from four locations scattered across the sprawling Los Angeles market into a 100,000-square-foot space that overlooks NBC Studios. Each station occupies a "pod" of studio space that incorporates a production room, a studio for a morning-show producer, call screener or newscaster and a main air studio.

As Chief Engineer Terry Grieger will explain, each station is also now tied into a building-wide network that incorporates Harris consoles and audio networking and Prophet Systems automation.

And, being in the entertainment capital of the world, the facility has some "only-in-L.A." touches, including a studio (one of 55 in the plant) right off the main lobby designed to accommodate live performances, of which the Clear Channel stations have plenty.

The morning will next turn to some seat-of-the-pants solutions for unusual facility issues. The session is *"Remote Radio From Challenging Venues on a Budget."*

Radio Free Asia's headquarters are in Washington, but Chief Technology Officer David Baden says the network's typical remote in a country such as Cambodia or India presents challenges that most domestic broadcasters never have to consider.

"They don't even have ISDN in some countries," Baden said — or even, in many cases, a clean POTS line, when crafty locals hack their own home-brewed connections to what's supposed to be a private line.

"You end up with party lines that weren't supposed to be party lines," he said.

As a result, Radio Free Asia has been experimenting with the use of VoIP connections and satellite-fed ISDN to get broadcasts on the air. In at least one case, as Baden and co-presenter Andrew Janitschek, RFA's manager of production support, will discuss, the old "headphones-against-the-mouthpiece" trick turned out to be the best way to get one critical broadcast from the mountains of northern India on the air.

From India to the swamplands of north Jersey, the session turns to a project that's become less and less common: construction of a new high-powered AM transmitter plant.

Tom Ray, corporate director of engineering for Buckley Broadcasting, is taking on that task at WOR(AM), New York, where an existing transmitter facility is soon to be razed for construction of a golf resort. His presentation is *"Building a 50 kW AM Facility in the Jersey Meadowlands."*

Ray says building a new $9 million site, complete with three 670-foot towers less than a mile away has been a lesson in bureaucracy.

"We've had to deal with everything from the Army Corps of Engineers to the Bergen County soil conservation permit," he said. Those were easy compared to the big challenge, getting FAA clearance for new towers in close proximity to Newark Liberty International Airport and the private Teterboro Airport, where the FAA had to be persuaded to alter the standard rate of climb for a takeoff in order to clear the new towers.

"Plus the fact," Ray noted, "that we're literally building in a swamp, with bedrock at 165 feet down."

The morning will conclude with a project that's been going up within sight of Ray's swamp, as session chair John Lyons of New York's Durst Organization shows off his recently-completed work at Manhattan's *"4 Times Square Construction Project."*

"We want to show how four manufacturers could work together in a timely fashion to get this done in a tight urban area," Lyons said of the project, which added a 385-foot mast and 6,000 square feet of transmitter space to the building to provide much-needed FM and TV transmission capacity in the wake of the 9/11 attacks.

Lyons will be joined by partners in the project, Phil Cindrich of Myat, Kerry Cozad of Dielectric Communications, Thomas Silliman of ERI and Bob Surette of Shively Labs to discuss the challenges they faced to get the job done in a short time frame during 2003.

"Shively had to do literally a whole redesign of the transmission path right in the middle of the project," Lyons said. Delivery of equipment and supplies had to be tightly coordinated to avoid overflowing the limited workspace at the building, and to avoid leaving expensive union work crews idle.

Rules, rules, rules

In the wild new world of spread-spectrum broadband and other services that operate without licenses in the upper reaches of the radio spectrum, broadcasters face challenges they never could have imagined a decade ago.

Those challenges will be discussed Tuesday afternoon at the "Broadcast Technical Regulatory Issues" session.

See TUESDAY, page 34 ▶

Monday

▶ Continued from page 30

Engineering Corp., will address in *"Data Transport for Audio."*

"We will discuss how we apply this technology in our products and illustrate practical applications for radio broadcast facilities," Salci said.

Demand for original media programming combined with a hunger for vintage content has created a need for archiving materials.

"Information Lifecycle Management for Broadcasters," by Tom Hallewell, manager of network and information services at Radio Free Asia, will explore questions of what should be saved, how should it be saved and for how long. Considerations include corporate and user data, program archives and production outtakes. Decisions on volatility, accessibility and sensitivity will be examined.

"This paper hopes to help get your organization thinking about information lifecycles so that you do not fill up all your storage or lose valuable content and data," he said.

"Broadcast Infrastructure Engineering of the Future" is to be presented by Ray Miklius, vice president of studio systems at Broadcast Electronics.

"This is an exciting time to be a broadcast engineer," he said. "As domestic radio broadcasters grapple with Ibiquity's HD Radio technology as well as with RBDS datacasting initiatives, engineers must begin to plan for implementation, not only with the RF plant, but also with the implications for studio facilities and multimedia transport equipment."

He said he will attempt to preview applications that will arise out of HD Radio and datacasting and give a guideline on how to prepare for eventual implementation.

"Particular emphasis will be on the potential datacasting initiatives, both for today's analog FM RBDS, and for tomorrow's secondary audio channel and data channel provisioning associated with HD Radio."

An overview of Wheatstone audio networking products and its associated components will be given by Phil Owens of Wheatstone in a presentation on *"Data Transport for Audio."*

Examples of various interconnection topologies will be presented along with discussions on redundancy and risks associated with router-based systems. Comparisons with competing topologies will be examined.

"Empowering Your Audience: Creating Rich Online Archives for Talk Radio" features Frederick Gleason, director of broadcast software development at Salem Radio Labs. He is expected to examine solutions for Internet streaming of talk radio programming using available open-source software.

"Many organizations still have not found an optimum method for presenting their audio content in the online environment," he states.

"Distributed Intelligence Applied to Routing of Audio and Control in a Radio Broadcast Environment" by Ted Staros, senior engineering manager of Harris' Broadcast Communications Division, will describe a distributed routing architecture for radio broadcast as opposed to the traditional centralized X-Y approach.

"This new approach extends the routing mechanism beyond a centralized routing device, and establishes a fully distributed, extensible community of routing resources," he said.

"Audio consoles, with their high quantity of sources and destinations, become an integral part of this distributed routing fabric. Issues of extensibility, redundancy, latency and distributed control are examined."

World Radio History

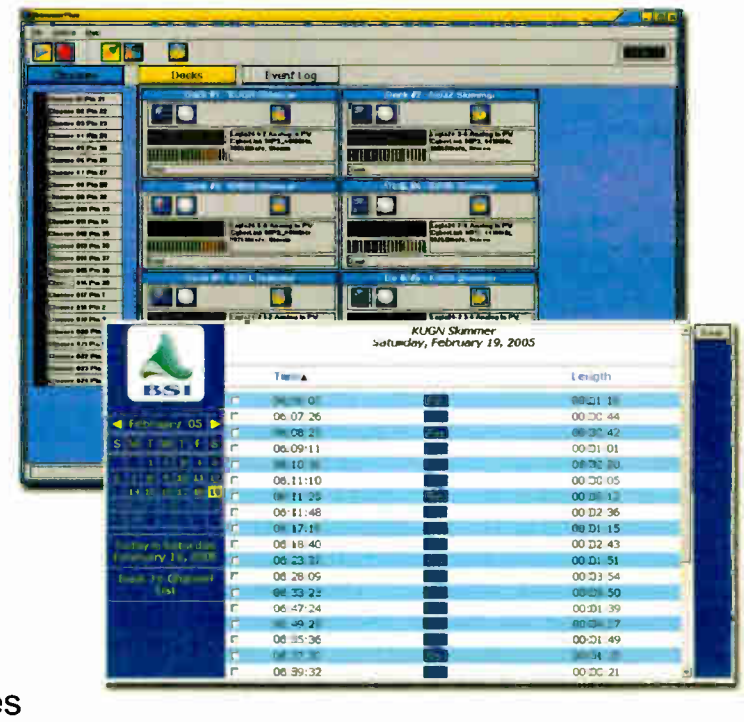
Broadcast Software International

888 BSI-USA1 (888-274-8721) info@bsiusa.com

Professional Audio Skimming & Logging Software

SkimmerPlus

SkimmerPlus is a highly versitile tool for audio skimming and / or long-form audio logging of multiple audio sources.



Features Include:

Starting at $399

- 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

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

BSI

World Radio History

SBE NEWS

The Next-Generation Master Control

Ennes Workshop Teams With PBS Event; Design Topics Encompass Radio and TV

by Fred Baumgartner

This space is provided regularly by Radio World to the Society of Broadcast Engineers as a service to the industry.

For many years, PBS has sponsored a wonderful technology conference in Las Vegas in the days prior to the NAB convention. At the same time, SBE has supported the Ennes Educational Foundation Trust in providing a daylong workshop on the Saturday that kicks off the NAB Broadcast Engineering Conference (BEC).

Problem was you couldn't be in two places at once. This year, PBS and SBE have come together to champion the Ennes Workshop, which will constitute the third and concluding day of PBS's annual three-day Technology Conference.

The Ennes Educational Foundation Trust is a non-profit, charitable organization attached to the Society of Broadcast Engineers. The Trust receives backing from individuals, chapters, manufacturers and broadcast groups. In return, it provides scholarships and educational programs to the broadcast engineering community, and on occasion, the mechanism to collect and distribute funds for special causes, such as a fund for the families of the engineers lost in the World Trade Center disaster.

Harold Ennes wrote the first set of now-classic books for training broadcast engineers, and upon his passing, first the Indianapolis chapter of SBE, and then the national SBE, took on the task of supporting education in his name.

Intensive

The largest single event that the Ennes Trust sponsors is the Ennes Workshop at NAB. The program is designed to be an intensive tutorial, and the topic is always a reflection of the subject material most needed by front-line engineers all the way through directors and vice presidents of engineering.

A much larger venue at the Las Vegas Convention Center will replace last year's standing-room-only setting. The Ennes Trust actively seeks out our trainers, and you will note that speakers are overwhelmingly engineers.

This year's program, which is held the Saturday before the convention and lands on April 16, will cover building the next-generation master control for radio and TV. The day begins with opening remarks at 9 a.m., followed by the first session in which TV Technology's technology editor, Bob Kovacs, will discuss the basics of design and future-proofing.

Fred Baumgartner

Steve Davis

If you have ever been asked to schedule your next outage or contemplated the effects of various architectures on reliability, my morning session goes into the tools and rules of thumb needed to calculate real-world facility availability. Five nines, Six-Sigma and MTBF might take a back seat to Ohm's Law in broadcast engineering, but everything from the subtleties of power supply redundancy to the number of shelf spares has a predictable effect on the stability of a broadcast facility.

Options for master control range from the PBS ACE project, where you'll get a look under the hood and lessons from one of the first installations from Iowa Public Television's Director of Engineering Bill Hayes, to surround sound for both radio and TV in the master control room, which will be covered by Omnia Audio President and founder Frank Foti.

Will data networks replace crosspoint routers? Pro-Bel's chief technology officer, Neil Maycock, says it's not "if" but "when," and we're already in the midst of the transition.

No one has built more control rooms than Clear Channel, and Senior Vice President of Technical and Capital Management Steve Davis, CSRE, is the man at the helm. Davis will cover Clear Channel's well-tuned process and tricks of the trade.

Branding has gone from novelty to a mainstream master control function. Leitch's Steve Sulte, manager of command and control systems applications, covers advances in GPUs (general-purpose graphics processing units) and how this affects the core design and workflow of TV master control rooms.

Fundamental trends in the digital video broadcast domain drive the business toward a compressed IP environment. Terayon's Michael Adams, vice president of Video Architecture & Technology, will explain how a transition to this environment will result in simple, open standards and inexpensive, scalable, future-proof solutions for the broadcast industry.

And what of SCTE 35/30 and its implications for multichannel spot insertion? Paul Woidke, vice president of technology for Comcast Spotlight, provides instruction on the nuances of everything from stream splice marking and audio and data insertion and substitution under this standard that is fast finding its way into broadcast facilities.

Systems integrators install most new master control rooms, and the Ennes Trust has invited Luke Freeman, senior staff member for solutions development at SignaSys, Inc., and Bill Van Bloom, director of technology for AF Associates / Ascent Media Systems and Technology Services, to address the "dos and don'ts" of construction and design.

The Ennes Workshop requires a full NAB convention registration. SBE members receive a significant discount by registering at the NAB Partner rate, a $300 discount off the NAB non-member rate.

This Ennes program may well be the single most valuable educational event you or your staff can attend this year. I hope to see you there.

Fred Baumgartner, CPBE, CBNT is a senior systems engineer for Leitch Technology. He is a trustee of the Ennes Educational Foundation Trust and chairs the SBE Education Committee.

Also at the Show

A selection of other radio events at or around NAB2005. Where location is not indicated, see on-site programs. Some events may require separate tickets or registration.

2005 Public Radio Engineering Conference
Fri.-Sat., April 15-16
Hilton
(Public Radio Engineering Dinner is Sunday evening at Venetian; Public Radio Reception is Monday evening in LVCC N235/237.)
www.euonline.org/prec/

National Radio Systems Committee
Subcommittees RBDS, AMB and DAB, followed by full meeting.
Sat., April 16, 1 p.m.
Hilton
www.nrscstandards.org

NAB Broadcast Engineering Conference Keynote
Sun. April 17, 9 a.m.
LVCC
Dr. Robert Pepper, FCC chief of policy development.

Nautel Users' Group
Sun., April 17, 9 a.m.-1:30 p.m.
Riviera
www.nautel.com/about

Logitek Users' Group
Sun., April 17, 2-4 p.m.
Tuscany Hotel
e-mail *john@logitekaudio.com*

NAB Global Matchmaking Reception
Sun., April 17, 5:30-7:30 p.m.
Hilton Ballroom A

NAB Congressional Breakfast
Mon. April 18, 7:30-8:45

5.1 Pavilion
During Exhibit Hours
LVCC Central Hall
Produced by NAB with Radio World, TV Technology, AudioMedia and Pro Audio Review

NAB All-Industry Opening Ceremony
Mon., April 18, 9-10:15 a.m.
Hilton Barron Room
Lowry Mays of Clear Channel receives Distinguished Service Award; Howard University receives "Spirit of Broadcasting" award.

NAB Super Session: Convergence and Content on the Move
Mon., April 18, 2-3:35 p.m.
LVCC S222

RTNDA Paul White Award Reception & Dinner
Mon., April 18, 7-9:30 p.m.
Charles Osgood honored.

NAB FCC Breakfast
Tues., April 19, 7:30- 8:45 a.m.

NAB Radio Luncheon
Tues., April 19, 12:30-2 p.m.
Sun Microsystems' John Gage keynotes; Jack Buck inducted into NAB Broadcasting Hall of Fame.

The Orban All-Star Band
Tues., April 19, 6-9 p.m.
Entertainment by Randy Meisner, co-founder of Poco and the Eagles; Billy Swan, country rock singer of "I Can Help" fame; Augie Meyers, original member of "The Sir Douglas Quintet"; and musician Charlie Rich Jr.

NAB Technology Luncheon
Wed. April 20, 12-1:45 p.m.
Hilton Barron Room
Radio Engineering Achievement Award goes to Greater Media's Milford Smith. TV award to Oded Bendov.
Keynote by Dr. Robert W. Lucky, "Is Bandwidth Infinite?"

Milford Smith

NABEF Career Fair
Wed., April 20, 12-5 p.m.
Hilton
Held in conjunction with Broadcast Education Association and RTNDA conventions. Note new day and time.

Amateur Radio Operators' Reception
Wed., April 20, 6-8 p.m.
Hilton Ballroom A

BEA2005
Thurs.-Sat., April 20-23
Broadcast Education Assn. conference; note new days.
LVCC
beaweb.org

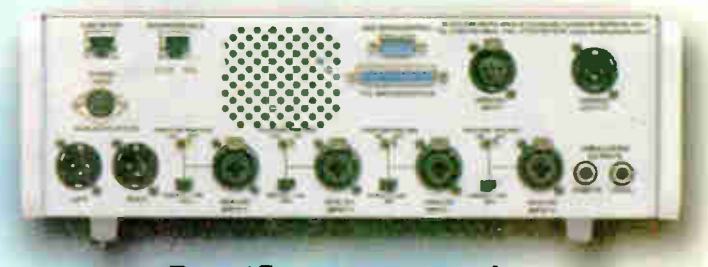
World Radio History

RoadStar™ & NetStar™

On the road or in the studio, deliver perfect stereo via IP or ISDN

Both RoadStar and NetStar come complete with IP and ISDN connections, AAC, AAC Low Delay, MPEG 2, MPEG 3, G.722 and G.711 encoding, and can even send and receive linear uncompressed audio. Both are effortless to operate, with automatic recognition of the calling codec and a built in Web Server for remote control from anywhere. Both give you 8 contact closures and ancillary data. Both can automatically switch from IP to ISDN, or vice-versa, if the primary link becomes unreliable.

NetStar is rack or tabletop mount. RoadStar is portable, with a built-in 4-channel mixer, 48 VDC phantom power, analog and AES/EBU inputs and outputs and a dual headphone monitoring system. Now, you can take your *stereo* show on the road and deliver spectacular audio your way.



RoadStar rear panel

MUSICAM USA

670 North Beers Street, Bldg. #4
Holmdel, NJ 07733 USA
732-739-5600
732-739-1818 fax
sales@musicamusa.com
www.musicamusa.com

MUSICAM USA is the d/b/a of Corporate Computer Systems, Inc.

See us at NAB Booth # N3914

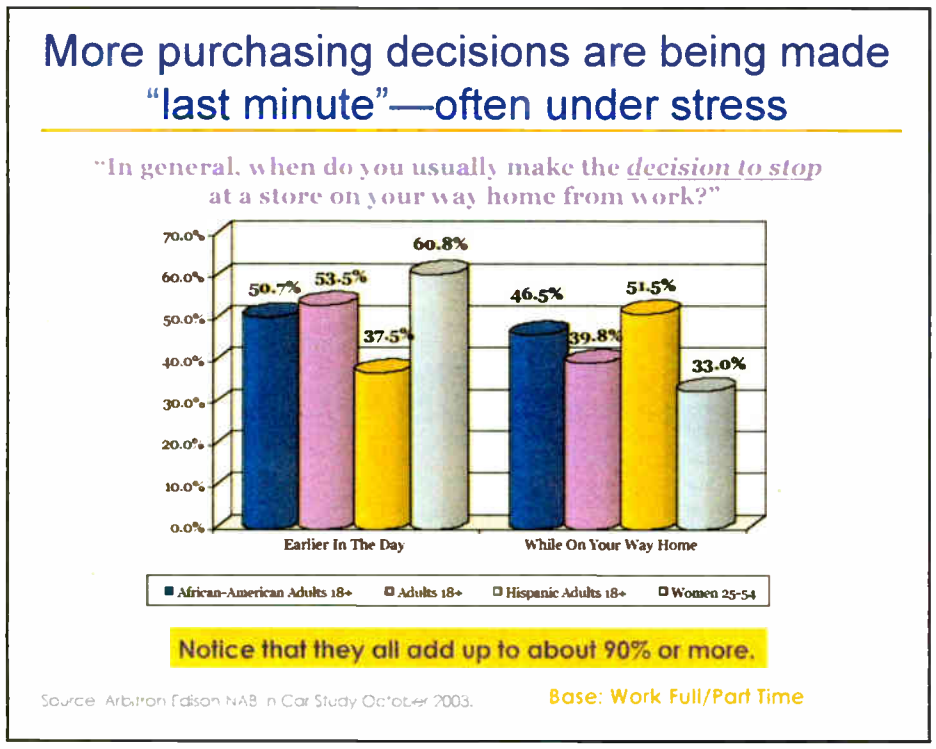
World Radio History

Management: Climate Changes Hourly

• NAB Broadcast Management Conference

by Ken R.

While computer technology drove recent changes in radio operations, industry leaders say management will now have to focus on how to employ human resources against expanding competition for the listener.



Slide from the presentation 'The New Virtual Neighborhood: A New Way to Sell.'

Sessions in the NAB Broadcast Management Conference reflect that. Here's a sampling.

Sean T. Clark, senior vice-president national marketing, and Gary Fries, president/CEO of the Radio Advertising Bureau will share a podium for a session Monday, April 18 at 10:30 a.m. called *"Building Radio's Share: Understanding What Our Advertisers Want and How to Deliver It."*

Clark does not take the growth of XM and Sirius satellite radio lightly.

"The power of radio as an ad medium is linked to the personal and local connection, attributes absent in large degree with satellite," he said. "Satellite is less advertiser-friendly because it is mainly commercial-free and content-deep, which flies in the face of an advertiser's need for a receptive audience and one that is less inclined to treat ad messaging as uninvited interruptions."

Referring to results of a recent Radio Ad Effectiveness Lab study, he added that consumers appear to place a much deeper value on the one-to-one nature and personally relevant information contained in local radio ads.

When asked about the biggest threat to radio's ability to grab its share of the advertising dollar, Clark cited status quo complacency in innovation.

"In the past, too much time was spent on mergers and consolidation; but now the industry has turned an acute ear to the voice of the advertiser," he said. "High definition and more vertical format expansion are renewed efforts by the industry to further engage the consumer with an even better experience."

Global village, local communities

In a Monday session at 2:30 p.m., former advertising executive, radio manager and national rep Mary Beth Garber will address the topic of the new "virtual neighborhood" which radio can create. She is president of the Southern California Broadcasters Association. Her session is *"The New Virtual Neighborhood: A New Way to Sell."*

Mary Beth Garber

"The most perfect virtual neighborhood is the radio station," she said. "There are more cars on the road. We leave home earlier, stay away longer and shop on the way home. This has affected how we purchase and makes us 'last-minute, Plan B' people. We have moved from small neighborhoods to no physical neighborhoods."

Garber believes basic television and newspaper will wane while cable and the Internet will grow.

"Mass magazine titles will continue to die while niche magazines will be in demand," she said. "Radio formats will continue to fragment because we are not home to create geographical communities. Most of us would be hard-pressed to name five of our neighbors."

How can radio take advantage of these trends?

"Listeners as a group or per station behave the way their 'neighborhood' behaves," Garber said. "If a radio station misjudges how powerful that neighborhood is, or it misreads the values or walks away from those values of the virtual neighborhood, its ratings will plunge."

She added that radio stations have to make it easy for people to belong to their neighborhoods.

"If you have taped DJs at night and no one answering the phone, you're saying to that neighborhood that you're closed and your listeners should find another neighborhood."

Big, bad newspaper

When she was president and general manager of Los Angeles' KIIS(FM), Lynn Anderson helped push the station to become the top-billing FM in the United States. Now as senior vice president of the RAB Training Division, she focuses on providing radio with facts it needs to get its share of the advertising dollar.

"Consumers are spending less time with newspaper every year," she said. "They spend about three hours per week, while they spend about 20 hours each week with radio. So radio has to ask itself, 'Why do we get less of the ad budgets?'"

Anderson will present the studies and figures to back up this revelation in her session Tuesday April 19 at 10:30 a.m., *"Breaking the Daily Habit: Winning New Radio Dollars from Print."*

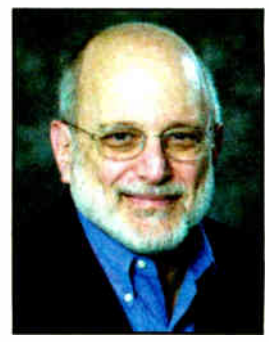
"Newspapers are an American tradition; just ask any retailer," she said. "But this is a perception perpetrated by the newspaper. The retailer thinks if his ad isn't in the paper, what will his competition, customers, employees, friends and relatives think? He may lose face!"

But Anderson points out that in actual coupon tests, the results from newspaper may be underwhelming.

"We need to get better at directing our listeners to our Web sites where they can download and print coupons," she said. "It behooves radio professionals to become teachers. We need to be passionate about our medium, informed about effectiveness and educate our customers about how to move product."

What business are you in?

"Strategy is how we keep our current listeners and find ways to bring in new ones," said John Lavine, professor and director of the Media Management Center at Northwestern University. "To be strategic, we can't just focus on being a little better from an operational standpoint. We have to ask what our audience will look like and what our advertisers will need in three to five years."



John Lavine

In *"Grand Slam Strategy: Determining your Winning Game Plan,"* Sunday April 17 at 1:30 p.m., Lavine says he will offer unusual ways to look at sales effectiveness.

"I'm not talking about teaching how to cold call or how to close," he said. "The average sales person across all sectors spends a lot of time driving around the market or fixing billing problems. If station reps only average 15 percent real selling time and that station can figure out how to bring that number up to the national average of 30 percent, it's like doubling the sales force without adding another person. Then, the increased productivity has to be tied to the programming and positioning changes that will face the station and advertiser in five years."

Lavine asks other tough questions.

"How do you know when you have enough sales people? How do those people know when to use the phone, when to go face-to-face? Strategy determines the return on investment of these approaches."

Just as important is the evolving definition of radio.

"I can't think of a radio station that is just in the radio business," he said. "Surely you are also in the Internet business, the event business and maybe in the printed products business. Your strategy must reflect that."

The full list of radio management sessions is at www.nabshow.com/broadcast-management.asp.

World Radio History

The Dorrough Loudness Monitor

Two 40-A2 meters in an optional dual rack

Today's audio requires careful attention to precise level control...

Simultaneous display of Peak & Average. See the actual loudness of program content with the Dorrough ballistics based on Time and Amplitude. Select from 6 different models including AES/EBU meters.

Features common to all models:

Peak hold functions • Sum/Difference • Alarms for audio loss and full scale
Scale selection for 14dB and 20dB of headroom
AES/EBU includes more features

Remote

A wired remote for accessing phase from the 280 analog and 280 digital reading meters. Display the functions of L/R, Sum/Diff, Phase, Overs Display/Overs Reset, 3 sec. Peak Hold, Peak Hold Permanent, and Reference Mode. Red alarm status lights for Phase, BSC, and Full Scale.

Model RW-100

Please visit our web site
www.dorrough.com

Dorrough Electronics Inc. 5221 Collier Place • Woodland Hills CA 91364
Tel: (818) 998-2824 Fax: (818) 998-1507

dorrough

See Us at NAB Booth # C1833

World Radio History

Jack Buck Enters NAB Hall of Fame

by Peter King

Baseball Hall of Fame Broadcaster Jack Buck enters another exclusive club Tuesday April 19 when he joins the NAB Broadcasting Hall of Fame during the convention's Radio Luncheon.

For millions of radio listeners, the late Buck *was* St. Louis Cardinals baseball, from 1954-2001 on KMOX(AM) and the Cardinals' radio network. The 2004 Cardinals Media Guide states, "He never swung a bat or threw a pitch. Yet, Jack Buck ranks as one of the most popular individuals ever associated with the Cardinals — perhaps the most popular."

A real person

What made him so revered? It wasn't just his booming voice, or his love for St. Louis or the Cardinals, although none of that hurt. Tom Langmyer, former vice president and general manager of KMOX, described Buck as "very smart, naturally talented and witty," but believes it was his real-life background that helped him connect with listeners.

"He wove all of his experiences into who he was. Jack wasn't a 'sportscaster,' a 'talk host' or an announcer. He was a *broadcaster*. Jack could relate to men and women in the service because he was a Purple Heart veteran of World War II. He could relate to the working person because he labored aboard a Great Lakes ore carrier.

"He could relate to parents because he had eight kids."

Langmyer said, "He connected life to broadcasting without grandstanding his own life. He connected thousands across the Midwest through conversation. He was just part of life in the Midwest."

He never swung a bat or threw a pitch. Yet, Jack Buck ranks as one of the most popular individuals ever associated with the Cardinals.

— St. Louis Cardinals Media Guide

Langmyer called Buck "a true ambassador. The real deal."

Born in Holyoke, Mass., Buck began broadcasting Ohio State University basketball and football games as a student after his war service. He later broadcast baseball in Columbus, Ohio, and for the Redbirds' Triple A affiliate in Rochester, N.Y., before making it to St. Louis.

Buck broadcast six Cardinals pennant winners, three of them World Championship teams. He called scores of memorable moments and milestones including Mark McGwire's 61st home run in 1998 and Ozzie Smith's game-ending homer to beat the Dodgers in game five of the 1985 NLCS. Smith will be at the NAB show to help honor Buck.

Jack Buck

'Unbelievable'

But not all of Buck's outstanding baseball moments came with the Cardinals. He broadcast several All-Star Games, League Championships and eight World Series on CBS Radio. He was lead broadcaster for CBS television's baseball coverage from 1990-91.

His best-known call may have been Kirk Gibson's shocking, walk-off home run in the first game of the 1988 Dodgers-Athletics World Series. "Unbelievable!" he exclaimed. "I don't believe what I just saw!" He repeated it several times. When that home run is played on television, Buck's call often is used in place of Vin Scully's NBC television call for added dramatic effect.

Buck was widely respected for his work on NFL football. He broadcast the famous "Ice Bowl" game, Dallas at Green Bay, for CBS in 1967; from 1978-96, he and former Kansas City Chiefs coach Hank Stram were the voices of Monday Night Football on CBS Radio.

Bill Ceverha produced those broadcasts for 15 seasons and says when it came to the game, Jack Buck was all business.

"All he wanted was the game information (and for everyone to) let him do his job. He was very professional and great to work with."

Ceverha says Buck was prepared for games and the unexpected, with an ability to seize the moment. He recalls a Tony Dorsett 99-yard touchdown run during a Dallas-Minnesota game. Buck exclaimed, instantly, "Here's a record that'll never be broken!" Of course, he knew there could never be a hundred-yard TD run.

Buck called 17 Super Bowls (16 on radio), the most of any broadcaster. In 1996, he received the NFL's Pete Rozelle Award. He covered hockey, basketball and even pro bowling during his career. He worked for CBS, NBC and ABC and received a lifetime achievement Emmy in 2000.

Sports fans know Jack's son, Joe, Fox-TV's lead announcer for Major League Baseball and the NFL. Joe Buck's major-league career began on the radio, calling Cardinals' games side by side with his dad in 1991.

Jack Buck died in 2002. Some 10,000 Cardinals fans joined friends and family at a memorial service at Busch Stadium, a tribute to his enduring popularity. Ceverha remembers the crowd and that St. Louis reacted as if the city had lost a god or a saint.

Buck's wife Carole will accept his Hall of Fame Award on behalf of the Buck family at this year's NAB convention in Las Vegas.

Over
946,080,000 seconds
of precision timing

WHEN you require the best, most accurate in precision timing look only to ESE. Designed for "Precision Timing", ESE Master Clocks & Accessories have been the industry standard for over three decades. Whether using GPS, WWV, Modem, Crystal or line frequency accuracy – all ESE Master Clocks can drive digital or analog slave clocks, as well as interface with video and/or computer based systems. Call or visit our web site for more details.

• 3-Year Warranty •

ESE

142 Sierra Street • El Segundo, CA 90245 USA
Phone: (310) 322-2136 • Fax: 310.322.8127
www.ese-web.com

See Us At NAB Booth #C2639

WE GIVE YOU ALEXANDER

Name: Cris Alexander

Column: Feed Line

Experience: 27 years in radio, television, land mobile and computer industries, Director of Engineering for Crawford Broadcasting Company since 1984

Certifications and industry honors: SBE Certified Senior Radio Engineer, member SBE, AFCCE, selected by Radio Ink Magazine in 2003 as one of "The 30 Most Admired Engineers in Radio"

Mentors/heroes: Charlie Gallagher; Ed Lorentz; John Furr; and my late father, Maurice Alexander

Quote to live by: "One crisis at a time, please."

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

World Radio History

'Pioneers' Honored at Breakfast

Radio veterans Joe Field, Arthur Carlson and Richard Harris will be among six recipients of the Pioneer Award next month. The Broadcasters' Foundation will confer the awards during a breakfast in Las Vegas.

The event is Wednesday, April 20 at 7 a.m. at the Bellagio. This brings to 58 the number recognized in the program's nine years.

Excerpts from biographies provided by the Foundation:

ROBERT M. BENNETT

As president of Metromedia Broadcasting, partnering with John Kluge, Bennett "guided the country's largest broadcast station group," the foundation stated. The entertainment firm included TV stations in six major markets as well as 13 AM/FM stations in 10 big cities. It also owned the Harlem Globetrotters, Ice Capades and Metromedia Producers.

In 1965 Bennett, Kluge and two partners took Metromedia private in what was considered the world's largest leveraged buy-out at the time. Later he was licensed as owner, and then sold, WCVB(TV) in Boston.

ARTHUR W. CARLSON

Carlson managed and grew Susquehanna Radio Co. for 33 years before retiring in 1994; he continues to consult to the firm.

Arthur W. Carlson

He took up a career in radio/TV sales in Minneapolis. In 1957 he moved to New York to work for the ABC Radio Network, working with affiliates, then moved to Susquehanna to manage its second station, in Scranton/Wilkes Barre, Pa. By 1961 he had moved back to York, Pa., to run the three-station radio group.

Carlson served as a director of the RAB for over 30 years, including two years as chair. He was a member of the NAB Board and several other industry organizations. He also was president of the Library of American Broadcasting Foundation.

JOSEPH M. FIELD

Broadcasters know him for founding Entercom Communications.

But the foundation also took pains to note in his biography that while attending Yale Law School, Joe Field served as assistant concertmaster of the New Haven Symphony Orchestra; that he performs as an amateur violinist with chamber music groups and in solo performances with the Chamber Orchestra of Philadelphia; that he has been admitted to the bar in three states and that he served as an assistant U.S. Attorney.

Field founded Entercom with FMs in San Francisco, Houston and Minneapolis. From 1968 until 2002, he was chairman and CEO; his son David replaced him.

He was an advocate of IBOC digital radio on the NAB Board, and a pioneer in music television through a subsidiary that produced "The Now Explosion" in 1969.

JAMES FLETCHER GOODMON

Jim Goodmon's grandfather, A. J. Fletcher, flipped the switch on WRAL-TV in Raleigh, N.C. in the 1950s. The grandson has led Capitol Broadcasting Company Inc. for three decades. It was the first station to broadcast a DTV signal and the first to convert its local news operations to HD.

CBC also owns WRAL(FM), other TV outlets and the Durham Bulls and Myrtle Beach Pelicans baseball teams.

HERBERT A. GRANATH

The former chairman of Disney/ABC International is now chairman emeritus of ESPN and a board member of Central European Media, which owns TV and radio stations in central and eastern Europe.

At Disney he was responsible for the international television production and program distribution activities of the company and its subsidiary ABC. He was chairman of ESPN, A&E, The History Channel, The Biography Channel and Lifetime Television, and is credited with early interest in European local TV production.

RICHARD H. HARRIS

For 17 years Harris was president of Westinghouse Broadcasting's Group W Radio, the largest non-network station group when he retired 14 years ago.

Richard Harris

The foundation called Harris "a major force in developing the concepts that lead to the evolution of all-news radio into one of the top-rated radio formats." Group W Radio also did early work in reach and frequency research models.

He was an RAB board member and former chairman, and co-founded the RAB Managing Sales Conference; he served on the NAB board and did a term as vice-chairman of the radio board.

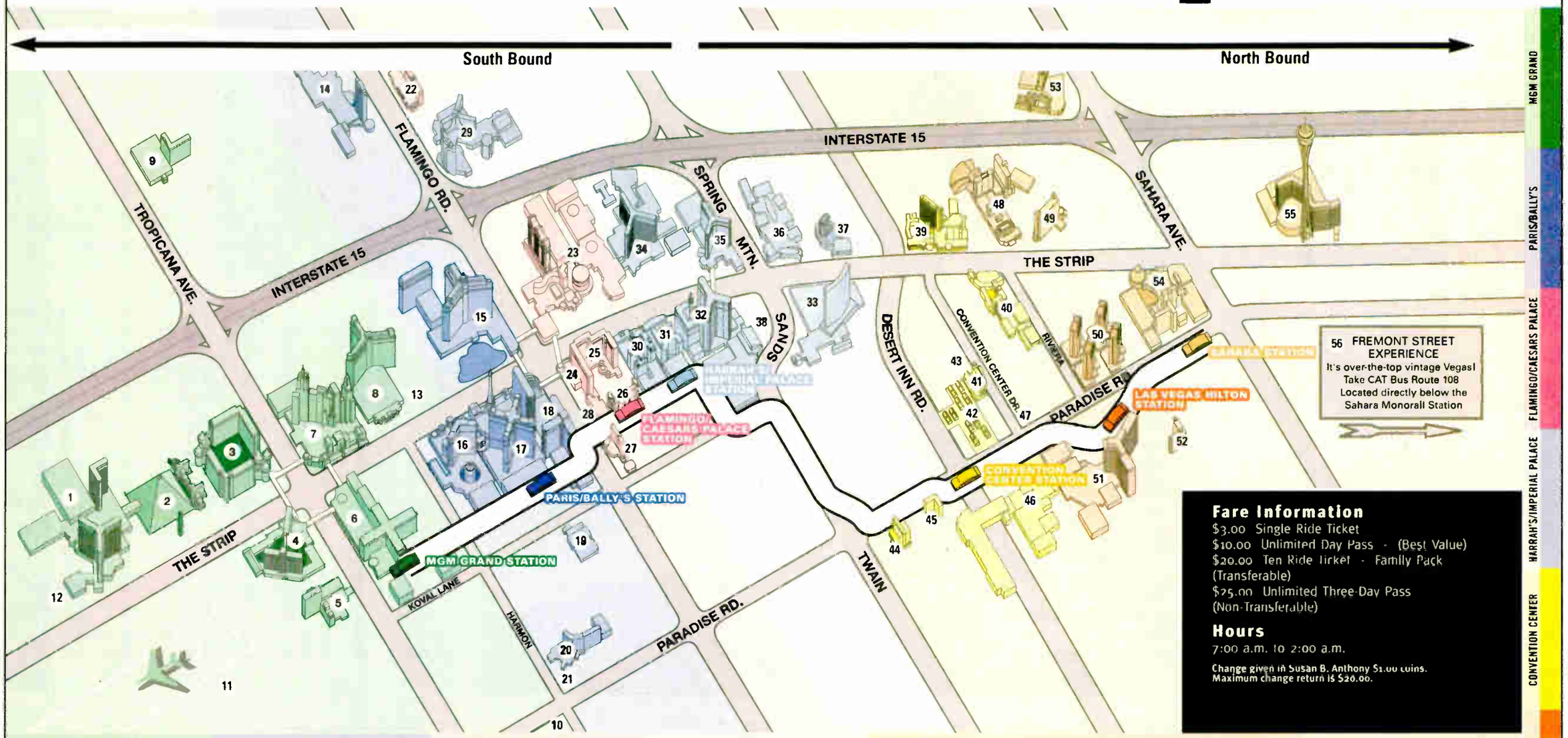
With family members, he was owner for a time of radio stations in Milwaukee and Sarasota, Fla., and helped launch DG Systems, a supplier of broadcast commercial delivery services, as its board chairman.

He is former GM of KYW Newsradio in Philadelphia, WBZ Radio in Boston and WIND in Chicago. He started his career in sales in Missouri.

The National Association of Media Brokers, the Radio Advertising Bureau, the Television Bureau of Advertising and the NAB sponsor the free breakfast. To register call (203) 862-8577 by April 10.

World Radio History

Monorail Map



MGM GRAND
1-Mandalay Bay
2-Luxor
3-Excalibur
4-Tropicana
5-San Remo
6-MGM Grand
7-New York New York
8-Monte Carlo
9-The Orleans
10-Hofbräuhaus
11-McCarran Int'l Airport
12-Four Seasons
13-Boardwalk

PARIS/BALLY'S
14-The Palms
15-Bellagio
16-Aladdin
17-Paris Las Vegas
18-Bally's
19-Ellis Island
20-Hard Rock Hotel
21-Hard Rock Cafe

FLAMINGO/ CAESARS PALACE
22-Gold Coast
23-Caesars Palace/ Forum Shops
24-Barbary Coast
25-Flamingo
26-Hilton Grand Vacations
27-Westin
28-Bourbon Street Battista's Restaurant

HARRAH'S/ IMPERIAL PALACE
29-Rio
30-Imperial Palace
31-Harrah's
32-The Venetian
33-Wynn Resort
34-Mirage
35-TI
36-Fashion Show Mall
37-New Frontier
38-Sands Expo

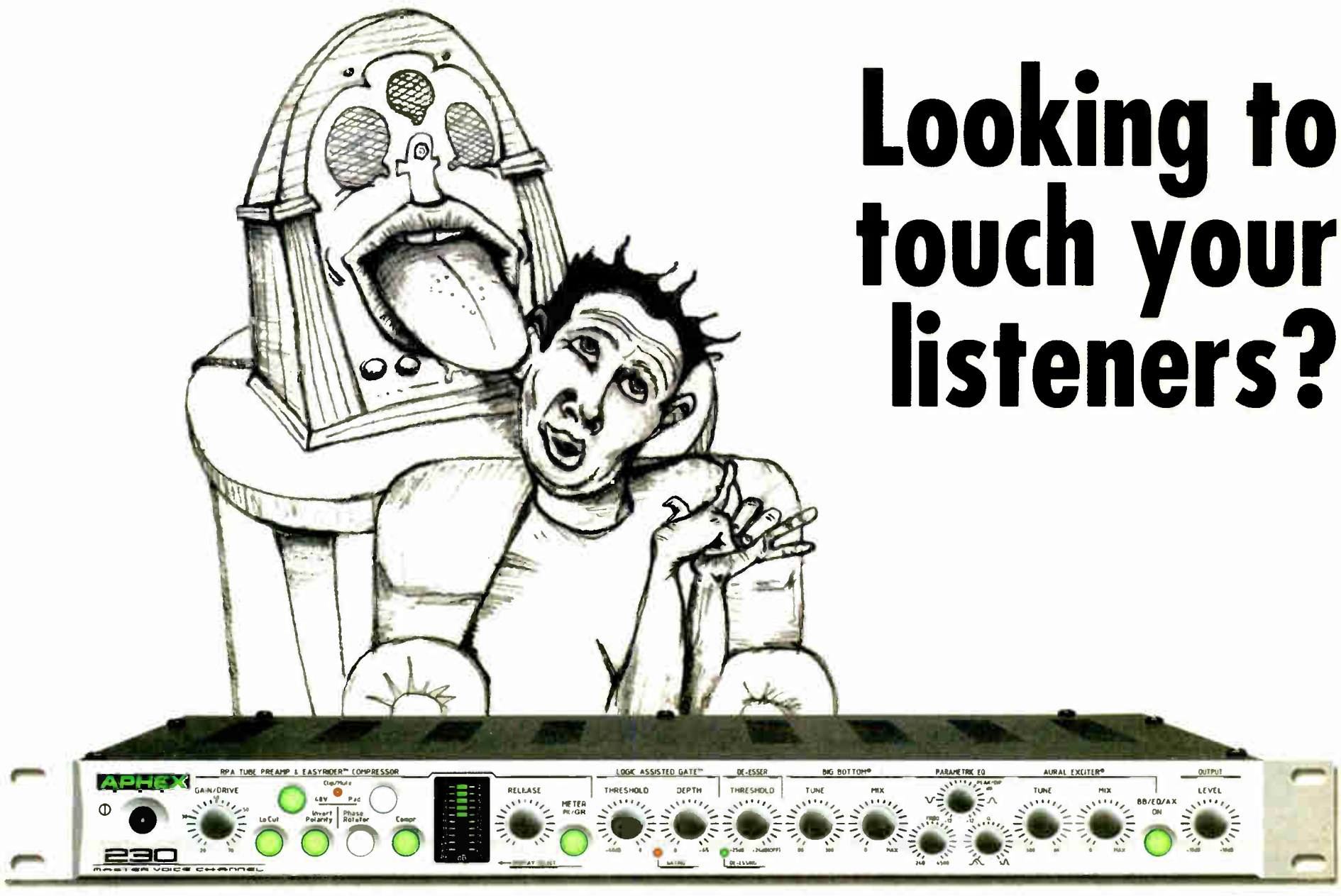
CONVENTION CENTER
39-Stardust
40-Riviera
41-Marriott-Residence Inn
42-Courtyard by Marriott
43-Greek Isles
44-Embassy Suites
45-Marriott Renaissance
46-Las Vegas Convention Center
47-Visitor Information Center

LAS VEGAS HILTON
48-Circus Circus
49-Hilton Grand Vacations
50-Turnberry Place (Stirling Club)
51-Hilton
52-Hilton Grand Vacations

SAHARA
53-Palace Station
54-Sahara
55-Stratosphere
56-Fremont Street Experience

Map Courtesy Las Vegas Monorail

World Radio History

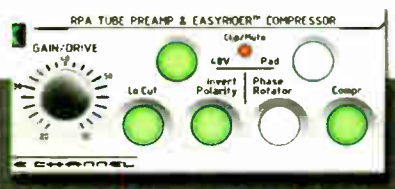


Looking to touch your listeners?

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 waif – without changing its essential quality.



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.

See Us at NAB Booth # N1815

www.aphex.com

© 2005 Aphex Systems. All Rights Reserved. Designed and manufactured in the USA

Genuine APHEX

World Radio History

Travel Tips From a Road Warrior

by John Bisset

Air travel since 9/11 can be a real experience. For the uninitiated, it can be a nightmare.

As you make your way to the NAB this year, here are some road-warrior tips that have served me well. Careful planning is the key.

Decide on how you're getting to the airport. Compare the daily parking rates — which have escalated — to the cost of a cab or shuttle. If you drive and park at the airport, give yourself plenty of time. This will let you choose from terminal (very expensive) to long-term parking (more reasonable) at the airport.

In most cases, the closer you are to the terminal, the higher the daily rate; so if you're late, it's going to cost you. Larger airports also have private, long-term contractors that offer parking at greatly reduced rates. You park a couple of miles from the airport; a shuttle runs you to the terminal, and your reward is a $5 or $6 per day rate.

Lead time

Arriving two hours before flight time is not unreasonable. Parking aside, if you're leaving from a large international airport, expect lines. And if you end up getting to the gate early, you can sit, relax and read the paper.

If you hold a complete ticket or e-ticket, consider curbside check-in. The couple of bucks you tip the skycaps for checking your bags and issuing boarding passes at the curb beats the lines inside.

Many airlines now offer check-in kiosks at which you check yourself in using a touchscreen monitor. That beats long lines.

Whether you use curbside, kiosk or counter check-in, watch as the agent puts the luggage tag on your bag. Flights terminating in Las Vegas will be marked with the airport code LAS. Today's computerized luggage check-in has reduced the problem of lost bags, but a bag can still be misrouted, especially when the terminal is busy. Keep alert to where your bag is going. A little attention now can save a headache later.

At the check-in counter, the airlines provide luggage tags. Make sure one is on your bag, then grab a second to fill out and slip inside the zippered compartment. Should the outside tag be ripped off, the inside tag can help identify your bag. I usually stick a business card inside too. Some suitcases have a clear plastic holder for this purpose; use it.

Transportation Security Administration

Home | FAQs | Sitemap | Contact Us

ELEVATED

Travelers & Consumers | Employment | Business Opportunities | Industry Partners | Law & Policy | Security & Law Enforcement | About TSA | Briefing Room

Site Search keyword

Security Checkpoint Wait Times

The following wait times are historical averages for **Thursdays** at McCarran International Airport (LAS) between 10am and 2pm. Please note that your personal experience may differ due to weather, airport flight schedules, staffing conditions, holidays or special events.

Airport websites often contain the most current information on airport layouts, airline locations, and descriptions of which terminals or concourses service which airlines. For more information on McCarran International Airport (LAS), visit http://www.mccarran.com/.

McCarran International Airport (LAS)

	10am		11am		12pm		1pm		2pm	
	avg.	max.	avg.	max.	avg.	max.	avg.	max.	avg.	max.
International Terminal	1 min.	2 min.	1 min.	1 min.	2 min.	5 min.	3 min.	8 min.	4 min.	6 min.
Terminal 1 - A/B Checkpoint	18 min.	30 min.	18 min.	32 min.	7 min.	14 min.	3 min.	5 min.	4 min.	6 min.
Terminal 1 - C Checkpoint	3 min.	8 min.	2 min.	4 min.	1 min.	2 min.	9 min.	16 min.	6 min.	10 min.
Terminal 1 - D Checkpoint	7 min.	10 min.	6 min.	8 min.	4 min.	7 min.	7 min.	8 min.	7 min.	10 min.

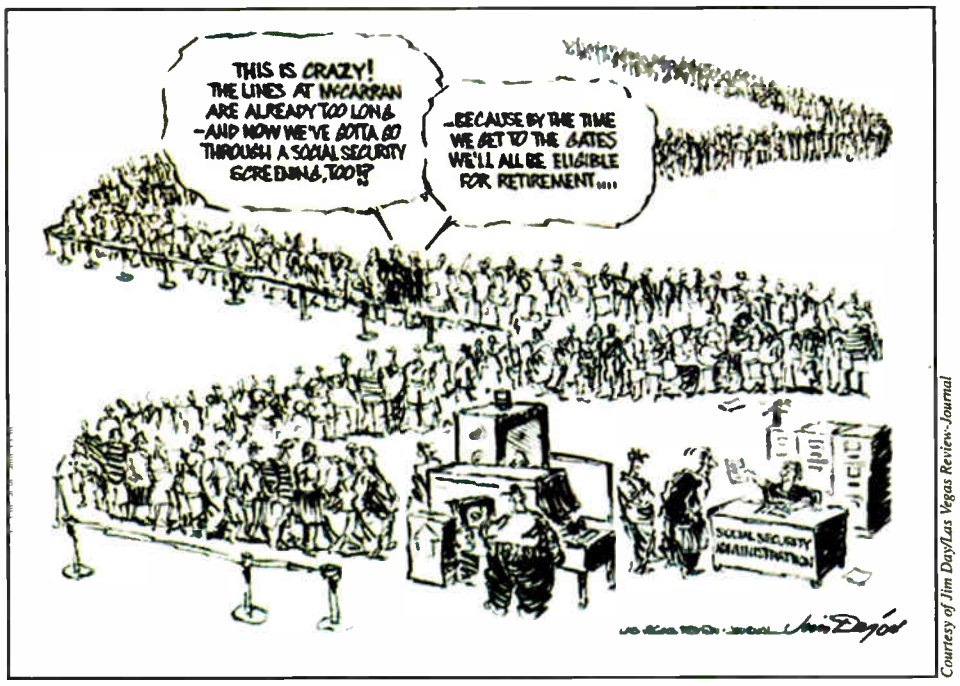
Notes:

"n/a" indicates the checkpoint is closed or data is not available during that hour. If a checkpoint is not listed at all, it means the checkpoint is closed during the entire time period displayed.

Wait times are based on historical data collected between Feb 2, 2005 and Mar 2, 2005 for TSA SECURITY CHECKPOINTS ONLY. When calculating your arrival time, remember to build in time for non-security related issues, including parking, checking in with your airline and other activities.

The site *www.tsa.gov* provides average security checkpoint wait time information.

Don't place high-speed (800ASA or higher) film, or cameras with such film, inside checked baggage. The new X-ray scanners will ruin high-speed film.



Courtesy of Jim Day/Las Vegas Review-Journal

A local newspaper cartoon comments on lines at the Las Vegas airport.

Don't lock your bags; if security needs to get inside and inspect them later, they'll cut off the lock. Some travel centers now offer locks that security can access but which keep others out.

Pretty ribbons

Identify your bag. I use bright, multicolored ribbon tied on each handle. You can spot the bag regardless of which side is up as it travels down the claim belt. I chose the unique ribbon to differentiate my bag. At the carousel, you'll be amazed how many look alike.

Some folks like to carry bags on board. If you choose this method, be careful what you have packed. Nail files, knives, anything that could be considered a weapon will be confiscated at the security checkpoint.

It's a hassle to have to leave the security area, go back to the check-in counter and "check" the item (or mail it to yourself), then pass through security again. Better to just check the bag and not worry about it.

How ridiculous can baggage screening get? I was stopped for carrying a sample 9-inch piece of 7/8-inch transmission line. I was told it could be a component for a bomb. It didn't matter that I had a catalog sheet and company business card. On another occasion, my can of Atkins Mocha Shake was snatched; the heavy can could be used as a weapon, I was told. I started to complain about all the cans of soda the flight attendants pass out, a virtual arsenal on board every plane, but decided to keep my mouth shut.

A combative demeanor will keep you off the flight, too.

It's no joke

Transportation Security Administration agents can and will remove you from a flight if they perceive you as a threat. They take any discussion of bombs, guns or hijacking seriously. Don't go there.

On my most recent flight, two college-aged guys were joking about the plastic explosive in their pockets and whether the scanner would pick it up. They had been in line with me and, judging from their discussion, I doubt seriously they were a threat. But a TSA agent overheard them and they were whisked away. I don't know whether they flew that day. But I imagine their experience was not pleasant.

You'll need a photo ID not only to check in with the airline but also to get through security. Add to that a boarding pass, which you got when you checked in. TSA will check these documents to make sure you belong. Gone are the days when a friend could walk you to the gate.

See AIR TRAVEL, page 45 ▶

World Radio History

Air Travel

▶ Continued from page 44

You'll have to kiss your sweetie goodbye at the security checkpoint.

After you've displayed your ID, put it back in your wallet. Once, packing dirty shirts in my hotel, I found my ID in a shirt pocket; I'd forgotten to put it back in my wallet. With all the confusion at security, it's easy to misplace an ID. I've heard that you *can* board a plane without an ID, but it's still a royal hassle, if true. You're better off keeping an eye on your ID.

Some airport checkpoints now use a 'shoebox' that lets you check your shoes for metal prior to entering security and without taking them off.

To say the security checkpoint is another time-cruncher is an understatement. Although the airlines may let latecomers cut ahead of others in line, TSA staff usually do not. Depending on the line, it may take you from 5 to 15 minutes or longer just to get through the security checkpoint.

Contents of pockets

To pass through the security checkpoint, remove all metal on your person. Loose change, a watch, PDA or cell phone, keys and the like will trigger the metal sensor, requiring you to undergo secondary screening. This takes up more time.

If your belt has a big metal buckle, remove it. Remove your shoes, too. Many shoes have a metal shank in the sole that will trigger the sensor. Some of the security checkpoints now have a "shoebox" that lets you check your shoes prior to entering. You put your foot on the box; if it beeps, there's metal in your shoes and they must be removed.

The point is that you can be delayed if you trigger the metal alarm. I stick all my "metal" in a pocket in my computer bag.

What's the hassle of a secondary inspection? Your belongings are sitting on a conveyor belt while you're being frisked, and although security has gotten better, those items could be snatched by someone behind you.

Speaking of computer bags, if you bring a laptop, you'll need to remove it and place it, by itself, in one of the gray plastic bins provided by TSA. Don't forget to zip up the bag, so when it rolls down the conveyor, you don't lose all your pens or other objects you placed inside.

Here's another tip: Before walking through the security screener but after you place your computer on the conveyor belt, wait until you see your computer and other belongings disappear through the scanner. A scam is for people behind you to grab your computer or other belongings after you leave, and before the items move through the scanner. Then they move to another conveyor belt while you wait fruitlessly for your belongings to come through. The TSA staff has gotten better about monitoring passenger belongings, and there is video surveillance; but the responsibility to keep an eye on your belongings is still yours.

Any jacket or coat must be placed on the X-ray conveyor, again, in a plastic bin to keep pocket contents contained.

If you carry your suitcase aboard, expect it to be opened and inspected at the security checkpoint. Depending on what the scanning monitor shows, the entire contents could be removed and inspected. More time passes by, and another reason to check your bag.

After you pass through security, you should only need your boarding pass to board the plane.

Drink hearty

Avoid the unpleasantness of jetlag by hydrating yourself on the flight, drinking water. Save the beer, wine and mixed drinks for the casino.

Bring fruit or light snacks to nibble on; I like those miniature carrots in Ziplock bags. Want to really drive your fellow passengers crazy? Bring an orange. As they snack on peanuts and salted snack mix, you're enjoying a juicy piece of fruit. It tastes good and is good for you.

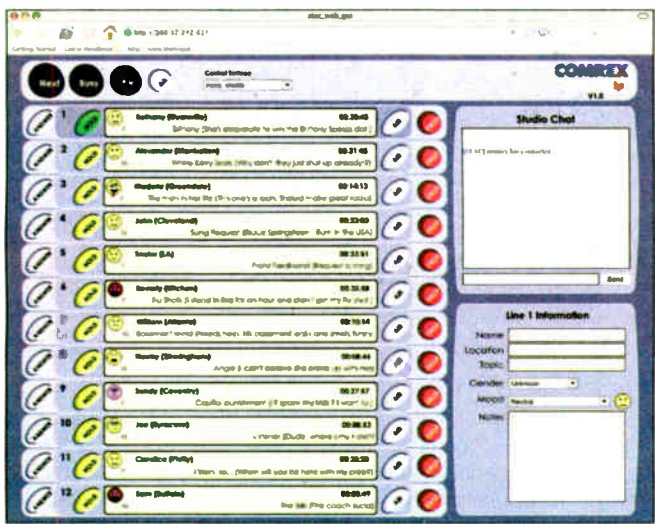
Try to select an aisle seat; they provide easier access to stretch your legs or use the facilities. The rear of the plane usually fills up last, so if you like lots of room, select a seat in the back.

When you land in Vegas, if you check your bag, make sure you have your luggage claim ticket. Because of the potential of baggage theft, you can't leave the baggage claim area unless your bag matches your claim check.

The site *www.tsa.gov* contains other tips.

Air travel in 2005 sounds like a pain, but it's not so bad if you know the rules. Try some of these tips and see if you don't have a better flight. Drop by the BE booth and let me know. See you in Vegas!

John Bisset authors Radio World's "Workbench" column. He is the northeast regional sales manager for Broadcast Electronics.



Use STAC any place there's a web browser!
If you have a computer, you've already got all the hardware and software you need. Just log onto the internet using a standard web browser — NO SPECIAL SOFTWARE TO INSTALL — go to your STAC IP address, and you are there! STAC 'EM from home, the studio or that great beach in Cancun!

Cool features include:
- **STAC IP** allows call control from multiple networked computers.
- **Busy-All** makes starting contests a breeze.
- **Auto-Attendant** answers, plays your message and STACs callers on hold. Great stress relief for screeners and producers!

GOT CALLERS?
STAC 'EM!

No matter what they're talking about, STAC is the best way to manage your calls.

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

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

Got Calls? 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: 978-784-1776 • Fax: 978-784-1717
COMREX

World Radio History

Products & Services SHOWCASE

MAGER SYSTEMS, INC.

Custom Studio Furniture

TEL: 623-780-0045
FAX: 623-780-9860
mager@magersystems.com
www.magersystems.com
Visit our website for more information

Since 1979 Mager Systems, Inc. has been custom designing and fabricating *award winning* furniture for the broadcast industry nationwide. We are still the innovators and leaders in *solid surface tops* and applications which comes with a *10-year warranty* Our complete *one-stop-shop* includes installation, *turnkey prewiring*, switches and components,conference rooms, reception desks, and office furniture. Our blending of art form with cutting edge techniques, and a clear understanding of each client's application allows us to produce your *showplace* tailored to your budget.

MSI introduces our new award winning "Sound Choice" furniture. Our modular in stock furniture boasts unsurpassed quality for the economical budget with a 10-year limited warranty. See details on our website.

Touch Sensitive Switches & Keyboards

See us at NAB Booth N1231

raduga.automation

Automate Your Station in Minutes
...No Degree Required

NEW! Just Released v3.8

- 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*

Raduga Software

Download your FREE Demo Today
www.raduga.net/rw.htm
(513) 887-0714

Low as $149* Buyout

See us at NAB Booth N2111

Efficient
Effective
Affordable

RADIO WORLD'S
Products and Services Showcase
provides a perfect medium for
marketing your products and services.

For more information, contact
Simone Fewell at
703-998-7600, ext. 154
to request a media kit.

Radio World

The New CircuitWerkes MicTel

- Outputs & Inputs for telephone handset, cellular phone or balanced line level at up to +10dBm.
- Operates up to 36+ hours on two 9V alkaline batteries.
- High quality, user-switchable, internal limiter prevents clipping.
- External power input with silent, auto-switching battery backup
- Individual gain controls for send, receive and headphones levels

Amplified Mic/Line to Telephone Interface

Check out this & our other remote solutions at www.circuitwerkes.com

CircuitWerkes, Inc. - 2805 NW 6th Street, Gainesville, Florida 32609, USA 352-335-6555

RECEIVERS

OUTSTANDING specifications and pricing on professional quality receivers for EAS, monitoring and translators.

The AFC3 is a three receiver rack mount that is configured to your EAS or monitoring specific application. Each receiver has internal frequency selection (PLL) switches, front panel controls and indicators, and rear panel connections.

Price: Approximately $1200 (depending on receiver choice)

Select three receivers from our FM or FM/SCA, NOAA Weather, Public Service and/or AM Monitor/Receivers. All receivers are PLL (synthesized) designs using the latest state of the art components and are available as stand alone receivers as well as in AFC3 combinations.

DAYTON INDUSTRIAL CORPORATION
2237 Industrial Blvd., Sarasota, FL 34234 Tel. (941) 351-4454
Email: SCARadio@aol.com WebSite: www.DaytonIndustrial.com
Quality Receivers Designed and Manufactured in the USA since 1980

World Radio History

NAB2005
Exhibit Hours

Mon. April 18	9 a.m.-6 p.m.
Tues. April 19	9 a.m.-6 p.m.
Wed. April 20	9 a.m.-6 p.m.
Thurs. April 21	9 a.m.-4 p.m.

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

The following is a selection of exhibitors of interest to radio attendees at NAB2005. 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, MM is Mobile Media, MR is Meeting Room. Booths preceded by RT are RTNDA booths at the Las Vegas Hilton.

25-Seven Systems **N2432**
Intro: Audio technologies for more efficient and profitable radio operations. Audio Time Manager (ATM) is a unique, user-friendly processor that lets stations delay the start of live programs, then catch up to real time seamlessly. ATM can create extra breaks to add content, commentary or more inventory.

360 Systems **SU11011**
On Display: Instant Replay, Short/cut, DigiCart/E, DigiCart II

615 Music Companies **RT407, C3256**
Intro: Kingsize Music Library from New York

A.F. Associates, Inc. **C5434A**

A.N.T. Antenna Nord Telecom. **N4027**
Intro: RDF Remote control and telemetry unit for broadcast. Delivers data via phone, GSM, TCP/IP, VHF/UHF radio, satellite etc. Data collection from equipment via parallel I/O's special probes or RS-485 using protocol converter with drivers for virtually any kind of equipment. ANT Supervisor control software: Client server, Internet capable, call, SMS or e-mail in case of alarms to one or more shift-compatible technicians. Graphical readout with user-definable screens; also, analog radio transmission quality controller can scan through a number of channels and measure many typical FM and AM levels like deviation, subcarriers, RDS quality and content. DAB coming soon; RF power probe, capable of analog and digital transmission power readings.
Also: Remote control and telemetry.

AccuWeather **C5111**

Acoustic Systems **N4311**

Acoustical Solutions Inc. **SU10714**
Intro: AlphaSorb Barrier Fabric Wrapped Wall Panels offer sound absorption value of standard wall panels combined with the sound blocking capabilities of our AudioSeal Sound Barrier. With the addition of the sound barrier septum, the AlphaSorb Barrier wall panel offers a STC 29 - 33 rating combined with an NRC rating of .65 – .85. Standard or custom sizes up to 4x10' in 1-1/8 inch or 2-1/8 inch thicknesses; also, SoundSuede Fabric Wrapped Wall Panels answer acoustical and aesthetic needs with sound-absorbing performance and durability, used for noise reduction and reverberation control. Standard or custom sizes up to 4 x 10 feet and thicknesses ranging from 1/2-inch to 4 inches. Panels are Class 1 fire-rated and offer various edge details as well as installation options; also, Alpha Resilient Isolation Clips & AudioSeal Sound Barrier achieve a high sound transmission rating with new or existing, wall, ceiling or floor construction.
Also: Audio Seal Sound Barrier, AlphaSorb, SoundSuede, SONEX

Acoustilock by Noren Products Inc. **SL3618**
Intro: rCAB noise reduction cabinet for storage RAID devices. This cabinet will reduce noise by 99 percent and remove the waste heat. Suitable for the studio, video suite, office or home studio.

Active Power **C2659**
Intro: The CleanSource XR, an alternative to batteries for UPS and telecom applications, stores energy in the form of heat and compressed air. During a utility outage, the compressed air is routed through a thermal storage unit to acquire heat energy. The heated air spins a turbine-alternator to produce electric power. Air that exits this turbine is below room temp and can be used to cool the protected load. Tanks that store the compressed air become cold during discharge, absorbing heat from the ambient environment and converting this heat into additional backup power. Also contains a continuous-duty flywheel that handles small fluctuations in power and supports the critical load during the brief period required for the air turbine to reach speed in the case of an extended outage.
Also: CleanSource UPS, CleanSource DC, GenSTART

Adobe Systems **SL3370-MR, SL313**
On Display: Adobe Audition 1.5

AEQ S.A. **N1418**
Intro: BC-2000D Routing System built around the TDM bus, housed in the BC 2000D Router frame, can route, mix or distribute 2,048 channels. MADI link interconnection between subracks allows the system to be decentralized via optical fiber or coaxial cable between racks. Each sub-rack has a max configuration of 160 x 160 local channels, plus the interconnecting 128 x 128 MADI links, and the analog and digital I/Os can be combined. Mic inputs and GPI/O provided. TDM bus is divided into input bus and output bus, with possibility of inserting DSP cards, achieving higher processing capacity; also shown, BC-2000D console can route audio between studios or outside through analog, digital or ISDN lines, handle phone talk or multiplex between stations and stadiums; it can incorporate a technical intercom system. Backbone is the TDM bus, housed in the BC 2000 D frame, which can route, mix or distribute up to 2,048 channels. Unique is redundancy of the control network, where control signals can arrive not only through the TCP/IP network, but also through assignable user-bit of the AES/EBU bitstream and MADI (AES-10) links or through RS-422, ensuring system control even if the TCP/IP network temporarily stops working.

Agiosat Global Comm. **C11048**

AIR Health Program **RT622**
Intro: "Terrorism and Other Public Health Emergencies: A Reference Guide for Media" was compiled by the U.S. Department of Health and Human Services. It is offered as an information resource for media professionals reporting on a health emergency or terrorism event at local and national levels.

Allied Tower Co. **N615**

Altronic Research Inc. **N3908**
On display: 6600 series of convection-cooled dummy loads designed to be placed outside and need no VAC connection. In the booth will

© NAB

FCC Commissioners Kevin Martin and Kathleen Abernathy walk the exhibit floor with NAB's Lynn Claudy at last year's NAB show.

be 6 kW, 12 kW and 20 kW loads, also available with fan connected for additional power handling; 100kW MW air-cooled load.

American Radio Relay League **Lobby 9**

American Tower Corp. **N2837**
Intro: 14,000 tower sites offered to the broadcast industry. If your company needs to build out its full-power DTV or is a successful bidder in the recent FM auction, we can perform a cursory engineering review to see if an existing American Tower site will work. If speed to market is a priority and cost to build is a concern, American Tower may have an existing tower site that will meet your needs.

Anchor Audio **N3200**

Anixter **C6643**

Anthro Corp. **SL3631**
Intro: Elevate Electric Lift Table: With the touch of a keypad, the Elevate surface raises and lowers to provide an ergonomic height for multiple users.

Aphex Systems **N1815**
New: The Model 230 Master Voice Processor is a powerful yet easy-to-use combination of audiophile tube mic preamplifier, Easyrider Auto Compressor, Logic Assisted Gate, Split Band De-esser, Aural Exciter, Big Bottom, parametric EQ and digital outputs on AES, S/PDIF and optical. It makes voices larger, cleaner, more present and consistent. Suitable for production and on-air.
Also: 2020MkIII broadcast processor, 320D Compellor, Aural Exciter, 1788A Remote Controlled Preamplifier and audio interfaces.

APT- Audio Processing Technology **N811**
New: Worldnet Oslo, a modular, multiple-channel audio codec designed to transport high-quality audio and data over T1, E1, TCP/IP and ISDN networks; also, Worldnet Sapporo delivering interoperability with Japanese ISDN and the Worldnet Rio which now supports multiple coding algorithms and SNMP; the apt-X Plug-Ins for Adobe Audition, Pro Tools and ACM will be on show as well as new licensing formats such as ARM9.
Also: Digital audio compression solutions to the broadcast and professional audio industry.

Armstrong Transmitter **N1415**
New: FMX-150B exciter with optional stereo generator and optional FSK ID package allowing the exciter to be used as a translator; also, broadband FM portable antennas, suitable for emergency use.
Also: "Cool Stuff" Award-winning X1000B AM transmitter, FMX and FMXLCD exciters, solid-state FM transmitters to 20 kW and single-tube FM transmittes to 35 kW, XLink analog and digital STL systems and FMA line of FM antennas.

Arrakis Systems **N1122**
New: OnAir Consoles and Xtreme Automation products. Come see a new way to upgrade your old automation, risk free, with no up front cost, for a low monthly fee.
Also: Manufacturer of consoles, furniture and automation.

Asaca/Shibasoku Corp. of America **SL1426**

ASPA Vimensa Internacional S.L. **N4031**

Associated Press/ENPS **RT722**

ATA Audio **N4524**
Intro: Scoop E-Z POTS/ISDN/GSM codec with new Tri-Band Module. Now you can broadcast anywhere using new internal GSM module. The new Tri-band module auto senses your SIM card and adjusts the band automatically. In Europe or the USA, just insert GSM Sim card and dial the studio to establish a link.
Also: Scoop E-Z

ATCi/Antenna Technology **C9941**

ATI - Audio Technologies Inc. **N2523**
New: HD Radio Monitors from Day Sequerra, a subsidiary of ATI. Model M2 Modulation Monitor ($3,995 list) for the professional broadcast market offers modulation monitoring of HD Radio AM and FM broadcast signals. Low-noise RF front end with preselector and synthesized, pushbutton tuning, balanced analog audio and S/PDIF digital audio outputs, and bright bargraph metering of audio, pilot, sub-carrier and carrier modulation and AM noise; also Model M4 HD Radio Monitor from Day Sequerra ($1,299 list) provides playback of HD Radio AM and FM broadcast signals for confidence and plant distribution monitoring. Like the M2, it has both balanced analog and S/PDIF digital audio outputs.

ATS Communications **C10041**
Intro: Rock n Roller Multicarts with RAM Mounts. The new R12 All-Terrain Multicart with shelf kit is shipping. Large 8-inch front casters roll over rough and soft ground. No-flat tires are now available to replace all pneumatic sizes; Mount any equipment or accessory on any cart using the RAM-Mount system. From wireless receivers to a laptop computer to a drink cup holder, get it above the work surface and positioned for best

World Radio History

viewing angle; Ultrasone Headphones, guaranteed to be the best sounding, most comfortable headphones under $800, they cost way less; mic podium clamps and press conference mic holders including new Ultraclamp that replaces discontinued Rowi 76; Yeoman 17 Press Conference Mic Holder holds up to 17 mics with flags. No clips required. Mic holders for 3 and 7 mics are available; Zaxcom Digital ENG Wireless System.

Audemat-Aztec **N2235**
Intro: Goldeneagle HD is a monitoring unit dedicated to the permanent monitoring of the quality and continuity of HD and FM signals as well as PAD and RBDS data. An embedded spectrum analyzer is available as an option to monitor power of the sidebands and other parameters. Has an embedded web server and SMTP server for alarms notification as well as a touchpad screen on the front. Installed on the transmitting site, it can also be used as a remote control unit by adding up to 16 digital inputs, 16 metering channels and 16 relays outputs. Goldeneagle HD can monitor several stations on one market; also, NAVIBOC is a mobile metering unit dedicated to coverage analysis of HD and FM signals. It includes a GPS receiver for automatic mapping overlay; IP2 Choice is a modular system in a 19-inch rack form for transmitter remote control and facilities management. It can be configured to connect to all the equipment and provide with up to four serial ports, 128 digital inputs, 40 analog inputs and 64 relay outputs. The IP2 Choice has an embedded Web server and supports HTTP, TCP, FTP, SNMP protocols. Complex scripts and macro can be graphically configured using the innovative ScriptEasy software. PDA, DTMF and voice interfaces are available as an option.
Christophe Poulain, Vice President, Business Development
1021 Ives Dairy Rd.
Miami, FL 33179
305-249-3110; FAX: 305-249-3113
E-mail: ussales@audemat-aztec.com
Web site: www.audemat-aztec.com

Audio LTD./MacArthur Group **N4026**

Audio Precision **N1913**

AudioScience **N503**
New: ASI6416 CobraNet PCI sound card and ASI2416 Modular CobraNet Peripheral. The ASI6416 can stream 16 channels of audio to and from a CobraNet-enabled network while looking like a regular AudioScience sound card to applications running on the computer. The ASI2416 is a 1RU rackmount device that via various plug-in modules can provide up to 32 channels of analog I/O, 32 channels of AES/EBU I/O, 64 input triggers and 32 output relays to a CobraNet network.

Audio-Technica U.S. Inc. **N3322**
Intro: AT2020 cardioid side-address studio condenser. Quality and consistency standards set it apart from other mics in its class. Low-mass diaphragm provides extended frequency response and superior transient response. Rugged construction, wide dynamic range and handles high SPLs with ease. Includes a pivoting stand mount for precise placement; also, AT892 MicroSet is a microminiature omnidirectional condenser headworn mic with a capsule diameter of 2.5 mm, for low-profile, high-performance audio. It has an ergonomic under-ear design: flexible, lightweight contoured loop hooks behind either ear with or without glasses. Available in black and beige, wired and wireless models with terminations for Audio-Technica and other wireless transmitters, includes cable clip, moisture guard, two windscreens, two element covers, and protective case.
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.

AVT Audio Video Technologies **N606**
Intro: MAGIC TH2 is an ISDN and POTS digital telephone hybrid. In ISDN mode two independent hybrids are available, analog and AES/EBU audio interfaces, separate Pretalk interface, front keypad with display, PC Windows software, no fan; also, MAGIC DC7, a dual 7-kHz ISDN audio codec; MAGIC AC1 codec.
Also: MAGIC ISDN Telephone Hybrid System

AXEL Technology SRL **N3138**
Intro: Falcon 50 six-band digital audio processor for FM and DAB. New DSP architecture, stereo generator, stereo and bass enhancer, three-band EQ. Two independent MPX output. TCP/IP, USB and serial remote control; also, Macrotel Digital telephone hybrid, provides isolation between send and receive signal and consistent audio quality, with a selectable caller control (ducking) that fades the audio level automatically, AGC on receive signal, remote control and selectable mic/line input, automatic mix-minus, auto-answer/disconnect; DJ Pro is a modular system for automated radio broadcasting, and it integrates RAM COMM traffic billing software, OffLine Recorder, recorder/delay of programs from satellite and new facilities for SMS, e-mail fax and phone message management.

Axia, a Telos Co. **N3616**
Intro: Element Modular Control Surface for radio air and production studios. Works within the Axia IP-Audio routing environment and plugs into the network with a single Ethernet cable. Enhanced integrated features for phones and codecs, with auto-assigned mix-minus on each channel, easy talkback for remote talent cueing, one-button off-air phone record mode and optional integrated telco line switching. Save profiles for each user. Includes digital EQ, dynamic mic processing, other features. Broadcast control surface designed to work with Axia Studio Mix Engine. Allows sharing of audio resources across multiple studios; also, Axia Router Selector Node works like an "X-Y" switching controller. Scroll the list of available sources or use the eight programmable "radio buttons" for instant access to frequently-used sources; also, Axia Analog Line Node has eight balanced stereo inputs and eight balanced stereo outputs, presented on easy-to-install RJ-45connectors. The inputs are switchable for –10 dBv or +4 dBu. Create an Ethernet audio snake with Axia Analog Audio Nodes at each end (or mix and match digital, microphone and analog line terminals), a single 100Base-T link can be used to send and receive eight stereo audio channels, eliminating old-fashioned multi-pair cable; Studio Mix Engine; Axia GPIO Node has eight assignable logic ports. Each port contains five opto-isolated inputs and five opto-isolated outputs that can be associated with audio sources and/or destinations to provide machine start/stop pulses, lamp drives, and remote channel controls.

Azden Corp. **N4222**
Intro: SGM-1000 is a highly directional phantom-powered shotgun mic that offers wide frequency response and low noise. Features include a switchable low-cut filter, XLR output, shock mount microphone holder and windscreen. The mic can operate on 12-48V phantom or 1.5V AA battery. MSRP: $350; also, 100LT UHF Wireless Microphone System for DV cameras; APS 25 Wireless Powered Speaker System, available with VHF, UHF and Infra Red Wireless.
Also: 1000 and 500 Series UHF microphone systems and the SGM series shotgun microphones.

Belar Electronics Lab Inc. **N2414**
New: FMHD-1 HD IBOC Monitor with frequency agile antenna and high-level inputs, spectrum analysis, time-diversity measurements, multiple audio stream decoding, PAD data display, audio measurements/alarms and RJ-45 Ethernet interface-integrated with Belar's Wizard for Windows system for monitoring over WAN, LAN, VPN and the Internet.
Also: AM, FM & TV modulation monitors and related equipment.

Belden CDT Electronics Division **C2257**

Bext Inc. **N2111**

beyerdynamic **C10421**
Intro: MCE 86 II Shotgun condenser microphone with switch for battery or phantom power supply, it can be used for video recordings, lecterns or theater applications. Suitable for cameras or camcorders, fish pole booms or as handhelds. Excellent polar pattern with high sensitivity due to the electrostatic transducer element and the hypercardoid/lobe polar pattern, it is insensitive towards wind and vibrations caused by zoom motors, each sound source is reproduced clearly. Can be powered from balanced phantom source. Excellent off-axis rejection. Non-glare durable polymer coating.

Bias Inc. **SL3345**
Intro: Peak 4.1 Peak digital audio editing application for Macintosh sports a brushed metal interface, with customizable toolbar and icon sizes, and an expandable drawer on each audio document that holds a library of reference, region and loop markers. Peak is optimized for Mac OS X, offering multi-threaded/multi-processor support, and Red Book format CD burning from an audio document or playlist. Offers on-board DSP tools such as Repair Clicks, Change Pitch, Change Duration and ImpulseVerb, a convolution-based sampling reverb with real-time preview, which applies recorded room ambiance to any audio document; also, Deck 3.5 for music, film, multimedia development; SoundSoap 2, a new version of BIAS' "one-click" noise reduction solution; SoundSoap Pro 1.0 combines four noise reduction and audio restoration tools in one streamlined plug-in interface: broadband noise reduction, click & crackle removal, hum & rumble removal – plus a noise gate for final polish. Suitable for restoring audio projects such as archiving from vinyl, transferring studio and live analog recordings, or battling noisy recording environments.

Bird Electronic Corp. **N1116**

Broadcast Electronics **N1802**
Intro: 4MX 50 50kW AM transmitter. Designed for the demands of analog and digital transmission, the 4MX 50, based on BE's patent-pending 4M Modulation, provides unparalleled 89 percent typical efficiency into a small footprint with price to match; also, Total Radio BE is a low-cost, easy-to-implement transition to second-generation HD Radio. Total Radio was developed for the realities of radio including tight budgets, enabling you to buy without the risks of rapid obsolescence or unpredictable expenses. Analog broadcast, HD Radio and Internet streaming requirements are fulfilled with fewer, more powerful operational components; also, BE AudioVault is compatible with all matrixed and discrete surround sound methods being considered for HD Radio. In addition to being the most robust and reliable audio management and automation product in its class, AudioVault is ready for all HD Radio multi-program and rich-data services; also, The Radio Experience expands radio broadcasters' data options over RBDS, HD Radio and the Internet. It simplifies the use of PAD to feed your branding, program information and text messages, such as Now Playing screens. TRE is offered as a set of modules allowing stations to purchase and deploy new services; also, Big Pipe STL, with scalable, bidirectional capabilities up to 45 Mbps, it interchanges uncompressed analog and digital audio, HD Radio data, Ethernet, serial data and telephony via a wireless or wireline path.

Broadcast Software International **N2114**
Radio automation software. Simian automation has been installed in almost 2,000 radio stations. New SkimmerPlus application is suitable for radio logging and skimming. Test and try it before you buy.

Broadcast Tools **N1400**

Broadcast Warehouse **N422**
Intro: DSPeXtra. This new digital audio processor improves on the original popular DSPX by adding two extra bands of peak limiting for

Use Once a Day to Alleviate Traffic Congestion

Traffic and billing made easy with the affordable Traffic C.O.P. for Windows™

Take the headache out of controlling traffic. The Traffic C.O.P. for Windows can alleviate and automate all those troublesome tasks. Whether it's scheduling logs, printing invoices, or managing receivables, the Traffic C.O.P. will work for you. And, because it's Windows based traffic software, you get a modern, reliable and easy to use program—all backed by the superior customer support of Broadcast Data Consultants.

Call for your FREE CD demo today,.
For more information, please visit our web-site.

Isn't it time you got rid of congestion?

Toll Free: 800-275-6204
www.broadcastdata.com

TRAFFIC C.O.P.™ FOR WINDOWS

Broadcast Data Consultants, 51 South Main Ave., Suite 312, Clearwater, FL 33765

World Radio History

enhanced performance. For the DSPeXtra the original four-band RMS compressor has been replaced with a software version of the TransLanTech LLC Ariane RMS leveler. This "Ariane inside" technology is a first for any broadcast processor and needs to be heard to be believed. Visit the booth for a demonstration of the DSPeXtra, arguably the best broadcast processor on the market. The TransLanTech Digital Ariane RMS leveler replaces the award-winning analog Ariane and brings a ton of new features with it. TCP/IP and serial control, day-parting, remote triggers, presets and much more. The digital Ariane has a multitude of uses including digital radio, Net and TV broadcasting. Its unique windowed intelligent RMS leveling needs to be heard to be believed. Visit the booth for a demonstration; also, BW 600W FM transmitter claims to be the lightest, most efficient 600W FM transmitter in the world. Revolutionary gold-plated solderless MOSFET clamp technology combines with perhaps the world's most efficient 600W amplifier PA design to achieve a cool-running, ultra-reliable unit.
Also: DSPX audio processor, 5-600W FM transmitter range, RDS encoders

Scott Incz, Director
Broadcast Warehouse, Unit 4
Croydon Surrey CR04TQ
United Kingdom
+44 (208) 6836780
1 888 866 1671
FAX: +44 (208) 6836781
E-mail: info@broadcastwarehouse.com
Web site: www.broadcastwarehouse.com

Broadcasters General Store **N3304**

Brother International Corp. **SU11819**
Intro: The QL-500 PC Labeling System prints pre-sized labels and durable white paper or film tape, now has more speed, up to 50 labels per minute. Print beautiful labels from a PC. Print text or graphics on a variety of durable pre-sized labels including address, shipping, file folder and CD/DVD sizes, or use the wide, 2-3/7-inch durable paper or film tape for wide labels, signs and banners. Highlight text, click and print from Microsoft Word, Excel or Outlook applications, or use label design software to customize label to include logos, graphics or print from lists and databases; also, PT-1650 Portable Handheld Industrial Labeler for telecommunications and asset management uses new Flexible ID Tape and rotated print for cable wrapping and flagging, industrial-strength laminated tapes for patch-panel labeling and standard laminated tapes for faceplate labeling.

BTX **C2657**
Intro: BTX and Neutrik have partnered in developing a new screw-terminal panel mount XLR. The NC3FD-S-1-B (female) and NC3MD-S-1-B (male) are professional panel-mount, three-pin XLRs featuring three rear screw terminal connections in place of standard solder cups. This design dramatically reduces installation time and cost by eliminating the need for soldering or wire tinning. Manufactured by Neutrik for BTX, the connectors are ideal for professional audio applications using cable with 26 to 20 AWG conductors. The NC3FD-S-1-B and NC3MD-S-1-B feature a black chrome shell and gold contacts; they can mount from the front or rear into a standard "D-L-1" series hole. These connectors can be terminated in seconds simply by stripping the cable, inserting each conductor and shield into the terminals clearly labeled for pins 1, 2 and 3, then screwing each terminal down with a screwdriver.
Also: ADC, Belden, Brady, EDAC, Hirose, Kings, Kramer, LG, Middle Atlantic, Mogami, Neutrik, Paladin, Switchcraft, West Penn.

Burk Technology **N3602**
Intro: Remote control and facilities management products: G-Link G-Bus Expansion Series is new approach to remote control based on the established GSC3000 system. By adding G-Link products to a new or existing GSC3000 system, broadcasters can monitor new facility conditions with plug-and-play convenience; AutoPilot 3 introduces Custom Views, which provide broadcasters with a new level of flexibility in viewing and managing an unlimited number of ARC-16 sites; Lynx 5.1 incorporates a new Virtual Channels feature, allowing users to create new remote control channels that are derived from conditions on one or more existing channels. Virtual channels provide a quick reference for the broadcaster to verify conditions at multiple sites, or to check on critical processes that rely on several pieces of equipment working together. Virtual Channels integrate with the Custom Views utility in Burk Technology's Lynx 5 software.

Burli Software Inc. **N2433**
Intro: Updates to Burli's radio newsroom system include RSS feed capture. Turn RSS feeds from any Web site into additional news sources for your newsroom. Burli's Virtual Newsroom also creates RSS feeds from your newsroom data.

Calrec Audio Ltd. **N802**
Intro: The Alpha 100 is a digital audio console for live production and on-air use. Up to 96 faders and 226 equivalent channels (96 stereo, 34 mono), eight stereo or mono audio groups, 20 mono auxiliary busses configurable up to 10 stereo, 48 multi-track outputs, four main stereo or 5.1 surround outputs, simultaneous LCRS, stereo and mono outputs available from each 5.1 main output; also, Sigma 100, with up to 64 faders, 120 equivalent channels (60 stereo channels 8 stereo or mono audio groups), 12 mono auxiliary busses configurable up to six stereo, 24 multi-track outputs, all channels have four-band EQ, two-band filters, compressor and expander/gate; Zeta 100 is a digital console with broadcast features, up to 48 faders and 96 equivalent channels; Hydra audio system provides a network for sharing of I/O resources and control data between Calrec digital mixing consoles. Uses gigabit Ethernet fabric, the highest speed network fabric commonly available. Very high bandwidth and a scalable, flexible architecture.

Ci Design **SL4649**
Intro: RS1204 are 1U, three-bay rackmount server enclosures featuring support for P4, Dual Intel Xeon or Dual AMD Opteron Server Boards. Supports fixed or up to two devices hot swappable SATA backplanes available, 460W power supply (additional P/S options available), back panel options for the most popular 1U server boards, hot swappable serial ATA backplane supports up to two devices with 150 MBps data transfer rate; also, SR208 are 2U, eight-bay Rackmount Server/Storage Chassis; STS316 Ultra 320 SCSI to SATA RAID Enclosure and FTS316 Fibre Channel to SATA RAID Enclosure; SR316, 3RU, 16-bay Rackmount Server/Storage Chassis; SR524 5U, 24-bay Rackmount Server/Storage Chassis.

Clark Wire & Cable **C3331**
On Display: Digital audio snake cables, Neutrik and Switchcraft products

World Radio History

Clear Channel Satellite **C10049**
Intro: XtremeSat.
Also: Starguide, Comstream, Wegener.

Clear-Com **C7319A**
Intro: 1RU Digital Matrix E32 intercom system, which includes ECS software to configure stations and the entire matrix system. It is a 1RU frame with 32 Cat-5 station/audio ports with four extra ports for audio in and out. Can link two frames for a total of 64 ports using a high-speed link. Includes PSU redundancy; also, compact Digital Matrix Eclipse 208 Cat-5 port intercom system, which ECS software. It is a 6RU frame with redundant processors and power supplies with a total of 208 Cat-5 station/audio ports. Frames can be intelligently linked over Cat-5 or Fibre for a large networked intercom system; 4000 User Panels for Eclipse; Clear-Com 600-series Beltpacks.

Coaxial Dyanmics **N2526**
On Display: Digital Wattchman

Coffey Sound **N4313, N4517**

Colette Vacations **N2234**

Comet North America **N607**

Comlab Inc. **N1100**
Intro: Secure-IP multi-language Davicom MAC2 site monitoring and control unit. The multi-language feature, now with unicode support, allows the Davicom MAC2 to send voice messages in your own language. MAC2 provides 128-bit encryption, the highest level of protection available for Internet communications. Access and control remote site equipment via the Web. The Secure-IP Davicom MAC2 allows remote monitoring and control without increasing long-distance costs because alarms are sent to a local server via Internet; also, new user-customizable MacComm 4.20 software with which users can personalize their site view by re-arranging meters and panels, LEDs and other visual elements on the computer screen to obtain workspaces and view panels that reflect the exact setup of equipment at their site. MacComm now provides a virtual mimic-panel display, which updates in real-time during connection to the Davicom unit.
Also: Davicom MAC2, MacComm, MacNet

Communications Specialties Inc. **SL2268**
On Display: Pure Digital Fiberlink transmission systems

Comrex **N2118**
Intro: STAC puts you in control of your talk shows, request/contest lines, call-ins and phoners with great sound, ease of operation and scalable configuration. Incorporating a pair of Comrex high-performance digital hybrids, STAC provides the most natural-sounding telephone audio — even when conferencing up to four callers. Available in six- and 12-line versions. Connect up to four control surfaces using standard Cat-5 cable. Cool features: STAC IP allows call control from multiple networked computers; Busy All makes starting contests a breeze; Auto Attendant answers, plays your message and STACs callers on hold. Got callers? STAC 'em! Also, Matrix provides the most convenient way to deliver superior audio quality on any dialup telephone circuit. Out of the box, the Matrix is a POTS codec designed to accept optional modules (such as ISDN, GSM and TelCell) which turn its powerful coding engine into a completely flexible solution! A battery kit is available for the portable unit to complete the wireless package! Doing a remote? Grab your audience by their ears and give them the full experience — not just a story!
Also: POTS codecs, ISDN codecs, multi-format codecs, digital hybrids, MixMinus, roadcases.
Kelly Clark, Sales/Marketing Administrator
19 Pine Road
Devens, MA 01434
978-784-1776
800-237-1776
FAX: 978-784-1717
E-mail: kelly@comrex.com
Web site: www.comrex.com

CDM-TECH Srl RF Filters **N1834**

Continental Electronics/
DRS Broadcast Technology **N2302**
Intro: HD Radio and DRM; 815D5 FM 5 kW Solid-State Transmitter
Also: 816R Series, 802B Exciter

Continental Lensa S.A. **N1935**

Countryman Associates Inc. **N1118**

CPI **C2616**

Crown Broadcast **N722**

CTE International SRL **N2834**

Cummins Power Generation **C11343**

D&C Electronics **N2424**

John Linden Photography

The Las Vegas Monorail wasn't running as planned for last year's show. Now attendees can ride it to the Strip and several hotels.

Dalet Digital Media Systems **SL1953**
Intro: DaletPlus Radio Suite provides a set of production and workflow management tools for news production and music programming. Every step of the production and playout process can be programmed or automated: reviews and approvals, versioning, check in/out, searching, user permissions/views and broadcast. Modular in design, DaletPlus Radio Suite can be implemented according to functionality needs or as an end-to-end radio news production and music programming solution.

Dan Dugan Sound Design/
Cooper Sound Systems **N2532**

DASTO **N1526**
Intro: U-link type coaxial switches capable of high isolation and power handling, easy and reliable switching of coaxial transmission line systems and multiplying transmitters and antennas in matrices.

Dataworld Inc. **N2422**
Intro: FM Explorer is a graphical allocation tool that includes a multitude of features for creative FM allocation work. It shows permissible areas to locate and provides updated contours as you move the transmitter. It allows you to play "what if" with transmitter location, channel, and class, not only for the study station, but for the conflicts, as well.

Davicom – See Comlab

DAWNco **C8141**

Day-Sequerra — See ATI

DB Elettronica **N2138**
Intro: KF2.5C is a compact 2.5 kW FM solid-state amplifier/transmitter, smallest in the industry. New coupling architecture makes possible a dramatic reduction of dimensions, weight and cooling, thus simplifying transport, installation and maintenance operation; also, PM60000/T/WKD is a new watercooled 60 kW FM transmitter.

Decisionmark **SL4116**

DELEC Audio- und Videotechnik GmbH **N4208**
Intro: VoIP subscriber unit for ORATIS Intercom

Delta Meccanica s.r.l **N3233**

Denon & Marantz Professional **N313**
New: Marantz Professional PMD660 Compact Digital Recorder is a rugged, handheld unit with one-touch digital recording using Compact Flash media cards. Featuring solid-state design, the PMD660 has no moving parts and is more reliable than cassette, DAT or other tape/disc formats. The PMD660 has stereo condenser microphones with Automatic Level Control and is suitable for field-recording applications.
Also: PMD670 Compact Flash MP3/WAV recorder, featuring one-touch recording and computer I/O connection for easy file transfer; CDR420 MP3/ CD Recorder Workstation that allows easy CD burning without a computer.

DG Systems **C12441**
Intro: DGConnect is an improved online order entry and order management product for advertisers and ad agencies. The Web portal introduces new flexibility, reliability, transparency and convenience to the spot distribution process to support a range of ad campaigns and distribution challenges. Allows users to upload spots, choose or create destination paths, attach traffic instructions, distribute media electronically to thousands of destinations across DG's digital network, and confirm delivery at the station through a new media server, the DG Spot Box; also, a new service for advertisers and agencies will ensure spots are of the cleanest pristine quality when they arrive. It will allow spots to be sent in any format to DG's secure FTP site, where they will be digitally converted to the industry-standard distribution format; DG Online Web-Based Download Feature lets virtually every radio station in the nation have access to digitally transmitted audio spots. Stations can download spots through DG's Web-based audio spot download application. No more waiting for CDs, warehousing CDs or delays.
Also: DG Media Manager, DG Music.

Dialight Corp. **N3928**
Intro: Class 1, Div. 2 LED Obstruction Light for hazardous environments.
Also: L864 Series LED Red Beacon.

Dielectric **C7807**
Intro: 7C, 7P and 7S Series 700 MHz Antennas. This line includes slotted coaxial antennas as well as panel antennas. All can be horizontally, vertically or circularly polarized; also, HD Plus FM antenna achieves a level of analog and digital signal isolation necessary for IBOC broadcasts. It does so without the isolator required by the majority of separate antenna systems recently approved by the FCC for high-definition radio operation. The HD Plus antenna can be integrated alongside existing analog FM antennas, allowing the station to continue its analog broadcast while adding a digital broadcast of the same signal at the same frequency; also, HDR Dibrid Combiner facilitates IBOC radio broadcasts that combine analog and dual sideband digital signals. Because the Dibrid does not use switches, it permits "hot switching" that keeps broadcasters on the air as functions are changed while extending the operating life of transmitter components; also, Low-Power FM Constant Impedance Filter was designed as a low-power offering for multi-frequency master antenna applications. It is modular and utilizes band-pass technology. The unit is field tunable and compact.
Also: FMVee, DCR Ring-style antenna, Opto-SXFM.

Digigram Inc. **N2428**
Intro: UAX220 combines Digigram sound quality and the convenience of USB audio. It is the first professional audio interface for broadcast that connects to the computer via a USB port. 2/2 balanced analog I/Os, 24-bit/96 kHz record or play, 48 kHz full duplex. No driver installation. Use of standard drivers for Windows, Mac, Linux ALSA and ASIO; also, VX822v2 adds features to Digigram's popular VX822, including DirectSound and ASIO drivers for demanding audio applications like live-assist, production or logging. Two analog and digital inputs, eight analog and digital outputs.
Also: PCX range of sound cards, VX range of sound cards, miXart 8 range of sound cards, EtherSound range, eXaudi.

Digital Juice Inc. **SL447**
Intro: StackTraxx, innovative production music in a remixable format that allows individual

You can measure...
with the best monitor and the most accurate test set.

The FMM-2/FMS-2 series monitors provide an even greater degree of measurement than ever before...**You can measure** S/N below **90 dB**, **You can measure** crosstalk below **85 dB**, **You can measure** separations of better than **70 dB**, **You can measure** frequency response to better than **0.25 dB**, **You can measure** distortions to lower than **0.01%**, and much more... Our uncluttered panels and autoranging voltmeters make these measurements a dream.

BELAR
ELECTRONICS LABORATORY, INC.
119 LANCASTER AVENUE • P.O. BOX 76 • DEVON, PA 19333-0076 USA
(610) 687-5550 • FAX (610) 687-2986 • **WWW.BELAR.COM**
Call, write or FAX for more information on Belar AM, FM, Stereo, SCA and TV monitors

World Radio History

tracks to be separated into a custom multi-track mix. $99 per volume.
Also: BackTraxx

DK Audio America **C2757**

dMarc — See Scott Studios

Dorrough Electronics Inc. **C1833**
Intro: Audio Alignment Generator features a tone burst that makes it possible to confirm that a channel has sufficient headroom to pass the peak of the program material.

DPA Microphones Inc. **N506**
Intro: 4006-TL updates a classic, the DPA 4006 omnidirectional microphone. The 4006-TL has been equipped with a state-of-the-art transformerless preamplifier design, powered via standard 48 V phantom power. This design increases the sensitivity nearly threefold and provides an extra octave of low-frequency capability (10 Hz to 20 kHz ±2dB). Components have been selected to continue the heritage of optimal neutrality, accuracy, resolution and extremely low distortion in the original 4006.
Also: Standard, compact, miniature microphones.

DRS Broadcast Technology (see Continental) **N2302**

EBS srl **N500**
Intro: 6 kW FM solid-state transmitter, liquid cooled, single- or double-driver system.
Also: 500-watt DAB transmitter

Econco **N1811**
Intro: Medium- to high-power quality rebuilt and new power tubes for radio and TV transmitters.

Edirol Corp. **SL4926**
Intro: R-4 Four-Channel Portable Recorder and WAV Editor for multi-channel field recording. Records to an internal 40GB hard drive providing storage capacity for 58 hours of 16-bit/44.1 kHz stereo recording or over 17 hours at 24/96. The R-4 can record at audio resolutions up to 24-bit/96 kHz on all four channels. Built-in limiter and five dynamic processors; also, R-1 Portable WAV/MP3 Recorder/Player; also, CS-50 Stereo Shotgun Condenser Microphone.

Efron Computerized Studios LLC **N4508**

Electronica Quasar-Tech Ltda. **N3735**
Intro: Solid-state, digital-compatible AM transmitters from 30 W to 50 kW.
Also: Duplexers up to 100 kW, ATUs, monopole antennas.

Electrosys S.r.l. **C10244**
Intro: R372SE 400W BIII Quadriblock DAB Transmitter: Possibility to broadcast four DAB blocks with one transmitter.
Also: T732SE DAB L-Band Transmitter, T213S FM Transmitter

Electro-Voice **N3834**

Elenos **N2131**

Elettronika S.r.l. **N4218**

ELTI **N3731**

EMR Corp. **N1000**

ENCO Systems Inc. **N2826, C3607B**
New: DADpro32 running uncompressed 5.1surround audio aimed at HD Radio. Also showing will be a number of user interface improvements including interoperability with third-party devices and digital consoles; also, ContentDepotMonitor for NPR stations, SQL database support, multiple audio library support and enhanced tools for webcasting and HD Radio. Also see us in the Surround Pavilion at C3607B.

Encoda Systems **SU10048**

Energy-Onix **N2527**
Intro: Documentor multi-channel audio logger can be used with LAN systems to drive 10 computers simultaneously. Automatically deletes recording after 90 days. Available in two to 24 channels, with optional 180- and 300-day capacity; also, Roadcaster portable VHF & UHF remote pick-up equipment, stores 16 pre-set frequencies, with 40 watts continuous output and distortion less than 1%; SST-30FS is a 30-watt FM exciter with built-in stereo generator and limiter, frequency agile from the front and with distortion less than 0.2% and noise less than 80 dB; Pulsar 20,000 is a 20 kW PDM solid-state AM transmitter with distortion less than 1%, contains 12 hot-pluggable, 2 kW drawers; ECO-15 MKII is an economically priced 15 kW FM broadcast transmitter. Includes 100 watt Stealth Exciter, 1 kW IPA and 3CX15,000A7 PA.
Also: Tele-Link Internet STL, low-power FM 500-watt/1 kW transmitters, medium-power 1 kW AM transmitters.

Engstler Electronik Entwicklung GmbH [E³] **C7614**
Intro: RGB-backlit, programmable LCD pushbutton switches; SA series features graphical LCDs in 32 x 16, 36 x 24 and 64 x 32 pixel resolutions integrated into a pushbutton key, graphic display and RGB background lighting in 64 colors, under software control via SPI interface, colors calibrated to ensure consistency across large panels; DA series of displays use the RGB-backlit, programmable LCD module for applications where a switch function is not required, feature the pixel resolutions and RGB-backlighting of SA series.

ERI-Electronics Research **N1306**
New: The production version of the ERI DI Series Dual Input FM Antenna provides a low-loss method to combine and transmit simulcast analog and IBOC FM signals; also, directional filter channel combiner for digital or analog UHF television applications; also, standoff mounting poles for both omni directional and directional FM and TV antennas.
Also: Antenna, RF components, filter systems and structural products for radio and television broadcast applications.

ESE **C2639**
Intro: ES-185U enhanced receiver, higher accuracy, more time codes, NTP ready; GPS Master Clock/Time Code Generator receives accurate time and date information from Global Positioning System satellites and supplies this data to the user in a variety of forms; ES-461U SMPTE Time Code Generator with Jam Sync, a microprocessor-based presettable SMPTE generator that features Jam Sync operation in both Drop Frame and Non-Drop Frame modes; ES-462U ESE to SMPTE Time Code Converter, generates SMPTE time code synchronized from an external source of ESE time code; PC-471PCI Time Code Interface Card synchronizes PC clock to master clock or other time source. Reads ESE or SMPTE or EBU time code; ES-210 10 MHz Frequency Distribution Amplifier.
Also: Master clock systems, audio and video distribution amplifiers, SMPTE/EBU time code products, audio level indicsators and interfaces.
Fernando Vallin, Sales Manager
142 Sierra Street

See us at NAB Stand N811

have you got the equipment necessary to appreciate apt-X™?

apt-X™ - available to license

The apt-X™ algorithm is the first choice for many of the world's leading professional audio equipment manufacturers.

Its groundbreaking performance ensures a low delay of less than 2 milliseconds and a loss-less technique for digital audio data compression.

But don't take our word for it. Call now for a demo and discover why apt-X™ is the algorithm your ears have been waiting for.

Find out why apt-X™ is the market leaders' choice; contact us today.

APT - Audio Processing Technology
Tel. 1 323 463 2963

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

APT AUDIO PROCESSING TECHNOLOGY

World Radio History

El Segundo, CA 90245
310-322-2136
FAX: 310-322-8127
E-mail: ese@ese-web.com
Web site: www.ese-web.com

Euphonix N3616
Intro: System 5-MC is an integrated DAW Digital Audio Mixing System that combines the System 5 control surface with EuCon-aware applications such as Steinberg Nuendo and Merging Pyramix; MC - Intelligent Application Controller is a workstation control device with keyboard, trackballs, touchscreen, SmartSwitches, faders and knobs designed for the professional who requires a control surface that speeds operation and enhances creativity; System 5-B & System 5-BP digital mixing system can handle a large number of digital and analog sources with a high-end control surface that can be configured to meet the size of the control room; Max Air 96-channel digital mixing system for on-air, live-to-tape and outside broadcast applications; MADI Routers.

EV Microphones N3834

Eventide N502
On Display: BD500, BD960, H8000, DSP4000B+, Eclipse, Reverb 2016, Eventide Anthology bundle of TDM plug-ins

Exanet SL3957
Intro: ExaStore 2.0 features no single point of failure in a high-availability failover environment, while its linear scalability allows any level of capacity and performance desired in a system. The ExaStore system consolidates data into a pool that can be accessed by all workstation clients and workflow servers, regardless of operating system (Unix, Linux, Windows, Mac, etc.), simplifying storage and human and technical resource management.

Federal Comm. Commission (FCC) N3226
Info: The Federal Communications Commission is an independent United States government agency, directly responsible to Congress. The FCC was established by the Communications Act of 1934 and is charged with regulating interstate and international communications by radio, television, wire, satellite and cable. The FCC's jurisdiction covers the 50 states, the District of Columbia and U.S. possessions.

FirstCom Music C3024
Intro: The updated FirstCom.com site helps users spend more time producing and less time looking for the right music. Audition quick as a click. Download AIF, MP3 or WAV from anywhere on the site. New organization tools let you view disc and cover graphics by library. Enhanced Virtual Library allows you to search only the discs you have in your library. Save and share projects. Improved MusiQuick gives more styles, moods and instruments/groups to search by. Professional Music Director helps you find the right music; also, PowerPlay Series volumes include music that exemplifies the best and hottest of any genre. PowerPlay V1: Sports Rock features sports highlights, promos, gaming, extreme events and action from the guitars of Mark Matthews, Brian White, Blues Saraceno, Ray Russell and others.

Fischer Connectors Inc. SU11812
On Display: Coaxial and Multipole (environmental sealing available)

Fluke Corp. C11814

Forecast Consoles Inc. SU7131
Intro: MASTERail Console System adds flexibility and expandability; GC1 edit console is re-engineered and more affordable.

Genelec Inc. N1726, SL1143

Gepco International Inc. C9341
Intro: VDM260, a miniature High Definition coax cable; CT504HD heavy-duty tactical Category 5e cable; DS series of 110-ohm digital audio twisted-pair cables is available in 24 and 26 gage types and in multi-pair and single-pair configurations.

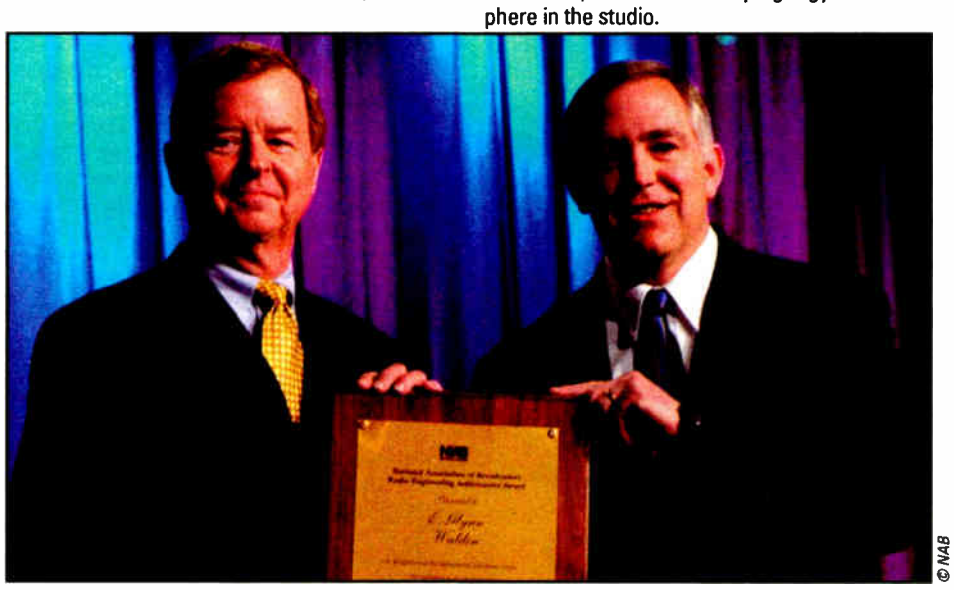
GMPCS Personal Communications C2944
Intro: High-speed circuit-switched and packet data services, plus voice telephony, via a portfolio of small, lightweight user terminals.
Also: Inmarsat, Thuraya, Globalstar and Iridium satellite services

Groove Addicts/ Who Did That Music? C3053

Hannay Reels C11714

Harris Networking and Government Solutions C1907, C3612A

Heil Sound N3304
On display: Heil will sponsor the Wednesday amateur radio reception at the Hilton with prizes and food; also, see Heil in the BGS booth. Stations and studios are replacing 30-year-old technologies with new PR 30 and PR 40 dynamic mics. PR 30 mic has a 1-1/2-inch diameter dynamic element for smooth and articulate response, retail $199; PR 40 gets down to 28 Hz and is natural and beautiful to 18,000 Hz, retail $209; both fit EV 309 shock mount. Also microphone management systems including PL2T topless boom; SB-2 removes "jungle gym" atmosphere in the studio.


© NAB

Last year's recipient of the NAB Radio Engineering Achievement Award was Glynn Walden, here with Lynn Claudy of NAB. This year the honor goes to Milford Smith.

Harris Radio C1907, C3612A
Intro: The VDSM-II Digital On-Air Console, the latest addition to the VistaMax family, is smaller than the RMXdigital on-air console introduced at NAB Radio in October. The console will focus on small-market radio stations and smaller studio applications for larger markets. It features a digital mixing architecture and supports analog and digital inputs and outputs to allow stations to transition to digital on their timeframe; also, Harris Flexstar Family of HD Radio products will be spread across several demos. The Flexstar HDI-100 Importer and HDE-100 Exporter enable secondary services for radio stations by multiplexing HD audio and data services and sending it to the transmitter in a single compact bitstream. The HDI-100 and HDE-100 will be part of a Tomorrow Radio demonstration with Harris' Mini-HD series of separate amplification transmitters and Dexstar exciters; a demo of Z8CD solid-state FM transmitter will include the Flexstar products and provide a peek at the forthcoming Flextsar exciter; also, Harris will show its first presentation of its DRM exciter package in the United States, featuring a content server and modulator, demonstrated within a Harris low-power DAX AM transmitter; and Harris will debut the 3DX50 AM transmitter, a building block to other high-power transmitters in the DX family, from 100 kW up to 1 Megawatt.
Also: Mini-HD Transmitter Series; Z8CD FM Transmitter; Split-Level Combining Method; NeuStar Pre-Codec Processors; Dexstar Exciter; RMXdigital On-Air Console; BMXdigital On-Air Console; Intraplex STL HD Plus; SmoothLine Furniture Range

Harrison Audio Consoles N2418
Intro: Trion is a flexible console system featuring a traditional surface architecture eliminating the need for a central, shared-knobs control panel. Controls and assignments for each channel are accessible as traditional, vertically arranged strips or in an enhanced version expanded across eight channels for an intuitive, knob-per-function control, anywhere on the console. This together with dynamic profiling (calling any channel or set of channels to any fader strip or set of fader strips) allows a Trion to share and support remote control panels in applications where distributed control is desired. Available in dedicated versions and sizes for broadcast, post-production, live performance and music.

Henry Engineering N1300
Intro: "MultiPhones" Distributed Headphones System: Provides headphone listening facilities for multiple users. Ideal for broadcast studios. MultiPhones consists of a "Master" unit that feeds audio and power to up to 12 "Guest Pods." Each Guest Pod has its own headphone amp, volume control, jacks, cough button. Perfect for multiple DJs and their in-studio guests. "AutoSwitch," an automatic stereo audio switcher that solves the problem of "digital echo" in DJ headphones. Also features a silence sensor that can switch to a backup audio source if the main source fails or loses a channel. "USB-Matchbox": The USB-to-XLR audio codec for professional audio users. Provides XLR input and outputs to USB PC interface. Based on latest A/D and D/A technology, superb audio performance.
Also: Matchbox-HD, DigiMatch, StudioDrive, Superelay, TwinMatch, USDA, DigiStor-MP, StereoSwitch, StereoMixer, MicroMixer
Hank Landsberg, Pres.
503 Key Vista Drive
Sierra Madre, Calif. 91024
626-355-3656; FAX: 626-355-0077
E-mail: henryeng@aol.com
Web site: www.henryeng.com

HHB Communications Ltd. N2822A
On display: Software release for PortaDrive PDR2000 Location Sound Recorder.
Also: Professional audio technology, digital recording products and recording media. HHB products distributed in the USA by Sennheiser Electronic Corp.

Honeywell Obstruction Lighting N3318

International Association of Broadcasting Manufacturers/IABM C1405
Intro: IABM will exhibit and host a private meeting room for member companies. To book the room in advance, contact Elaine Bukiej at *info@theiabm.org* or visit the booth. IABM's aim is to meet with and assist members, offering advice on exhibition-related issues, recruitment, training, legal and technical information, and to meet potential members.

iBiquity Digital Corp. N2437

IEEE Broadcast Technology Society Lobby 16

Illbruck/SONEX N1600
On Display: SONEX acoustical wall panels, FABRITEC fabric-wrapped wall panels, PROSPEC barrier

IMAS Publishing – See Radio World

IMAS Publishing China SU9713

IMT RF Products N429

Independent Audio N4522
Intro: E.A.R. 660 Fairchild-type valve limiter-compressor designed to limit or compress the signal with the barest minimum of interference below threshold, and give the most subjectively satisfying operation on high-level signals; Phoenix Audio (UK) DRS-2 Mic-Pre/DI uses Phoenix Audio's Class A output stage and incorporates transformerless Class A, discrete mic input technology for a "valve-like" sound; Signex CPJ48D25 rear D-sub patchbay with standard contacts and Signex CPJ48D25G rear D-sub patchbay with gold contacts.
Also: Coles Ribbon Mics, DACS, CEDAR Audio, dCS converters, Pearl Lab Mics, Sonifex Ltd. Redbox and telephone hybrids.

Industrial Acoustics Co. N2524

Inovonics Inc. N1818
Intro: Model 631 FM Rebroadcast (Translator) Receiver; Model 702 RDS/RBDS "Mini Encoder" for Windows/USB; Model 713 RDS/RBDS Full-Function Encoder with TCP/IP; scrolling and static text
Also: Omega_FM Digital On-Air Processor, "DAVID-III" FM Processor, Other Processors for AM/FM/Webcasting, AM and FM Modulation Monitors, RDS/RBDS Encoders and Decoders, "PBX" Telephone Line Eliminator
Jeremiah Breeden, Gen. Mgr.
1305 Fair Avenue
Santa Cruz, CA 95060-5839
831-458-0552
800-733-0552
FAX: 831-458-0554
E-mail: info@inovon.com
Web Site: www.inovon.com

Jampro Antennas/RF Systems Inc. C2316

Jennings Technology LLC N400

JK Audio Inc. N3926
Intro: PBXport rackmount digital hybrid is capable of providing talk show-quality caller audio from your PBX phone system. PBXport allows you to send mic- or line-level signals into your PBX telephone system while maintaining separation between your voice and the caller. Radio: Turns your multi-line phone into a talk show controller. TV: Connects PBX telephone set to studio PA, letting you take live callers without echo or feedback.
Also: RemoteMix Sport, RemoteMix C+, ComPack, Innkeeper series, Broadcast Host, AutoHybrid, Inline Patch, THAT-2, Daptor 2,QuickTap

JL Cooper Electronics SU9650
Intro: ES-SloMo is a compact new controller for news, sports, scoreboard and other editing operations. It controls professional VTRs, DDRs or servers and features a four-machine editor and universal jog/shuttle remote.

Junger Audio Studiotechnik GmbH N919
Intro: The d06 2ch audio level processor features Level Magic algorithm for automated audio leveling, plus analog and digital inputs and outputs; b46 4ch audio level processor features Level Magic algorithm for automated audio leveling, digital inputs and outputs and a optional SDI interface; MIX8 is a small digital desktop mixer with eight-fader remote panel, 1RU audio processor box, two mic inputs, optional SDI interface.

Kathrein Inc., Scala Division C8538
Intro: FM circular/elliptical sidemount broadband antenna type 75010022; FM 2-element broadband yagi antenna type 75010034.
Also: FM, TV, DAB, DVB-T, MMDS broadcast antenna systems, filters, combiners, accessories, engineering, satellite and terrestrial reception systems, cable TV networks, test equipment.

World Radio History

Kay Industries Inc N1700

KD Kanopy Inc. N2426

Killer Tracks C2553
On Display: 15 Music Libraries, over 1,000 CDs, every style of music

Kintronic Labs Inc. N1707
Intro: In-house-developed software tools to produce optimized network designs to enable stations to make the transition from analog to digital for either HD Radio or Digital Radio Mondiale (DRM) with minimal cost and effort; also, directional antenna phasor cabinet, wideband antenna tuning unit, display of RF contactors rated from 40A/20kV to 200A/30kV, convection cooled AM dummy load rated for carrier + 140% continuous modulation, isocouplers for 1.9GHz PCS and 2.4 GHz spread spectrum applications and a scale model of our KinStar AM/MW low profile antenna.
Also: Design and manufacture of radio broadcast antenna systems for fixed and mobile operation in the AM/Medium-Wave band.

Klotz Digital Audio Systems Inc. N2807
New: AEON radio console is a cost-effective, high-performance mixing solution that comes with an integrated router designed to meet the requirements of small to medium radio stations.
Also: The range of functionalities of the VADIS audio- and control-networking systems and VADIS D.C.II consoles; Klotz Digital and Smart AV will demonstrate how the companies have integrated the Smart AV's family of production consoles with the VADIS audio/media platform as well as update the strategic joint sales and marketing agreement with Smart AV.

KLZ Innovations Ltd. N317
Intro: PhoneBOX: Manage telephone lines from listener call-ins, internal communications, and talk show-styled conference calls. Touch screen or mouse driven, this system can be run as a stand-alone or handle hundreds of lines. Main PhoneBOX features: caller ID, silent transfers, call timers on all lines, call queuing and automatic hang-up, talkback to callers without losing control of other lines.
Also: NewsRoom 4, NR4 Remote Reporter, Remote Access Server

LARCAN USA C5620
On Display: FM Series of Translators/Transmitters

Lawo AG N816
Intro: The mc²66 compact broadcast and production console; zirkon surface for applications from small DJ self-op studios to editing workstations to OB vans and larger production consoles with up to 36 faders; z4 Digital Mini Mixer Simple is flexible and adaptable, robust and reliable, meets demands for which a "regular mixing console" is too complicated or expensive.
Also: mc²82 HD, zirkonXL, DALLIS

LEA International C1563

Lectrosonics Inc. N3611
Intro: SM Wireless Mic Transmitter has small size (1.8 x 2.3 x .6 inches); 100 mW RF power digital hybrid wireless audio transmission of 256 frequencies in each of 9 groups. Compatibility emulation modes for operating with existing analog receivers.
Also: R400 Receiver, Venue receiver

Liberty Wire & Cable SL3362
Intro: EZLINX Termination System: Bulk cable made up of 26 AWG coaxes and 22 AWG shielded-twisted pairs, with a threaded 13-pin female connector on each end. Fourteen molded assembly termination options with 13-pin male connector on one end and a selection of VGA, BNC, RCA, S-Video, Analog DVI options on the other.

Lightning Eliminators & Consultants C7834

Linear srl N302

Location Sound Corp. N3917

Logitek Electronic Systems Inc. N2022
Intro: Mosaic digital console, a modular, flexible control surface for the Logitek Audio Engine. Incorporates drop-in modules for flexibility in configuration.
Also: Console routing systems including Audio Engine digital audio router, Remora digital console, router controllers

Lynda.com SL4637
Intro: Learning Adobe Premiere Pro 1.5; Learning Apple DVD Studio Pro 3; Learning 3ds max 6 training bundle

Mackay Communications Inc. C7148
Intro: Secure, wireless, portable satellite communications equipment and airtime that can be operative in minutes to ensure timely reporting. Mackay offers Inmarsat, Iridium, Globalstar and VSAT equipment and services.

Mackie SL254
On display: Flagship Onyx series of small-format mixers brings premium analog sound, expanded features and streaming FireWire connectivity to recording and live sound environments. Onyx 1220, 1620 and 1640 incorporate advances like low-noise microphone preamps and circuitry, tremendous durability and plenty of direct instrument inputs, and combines them into a modern footprint that includes a FireWire option for integration into any computer-based system.

Mager Systems Inc. N1231
Intro: Pullout rack that swivels

Magnum Towers Inc. N1911

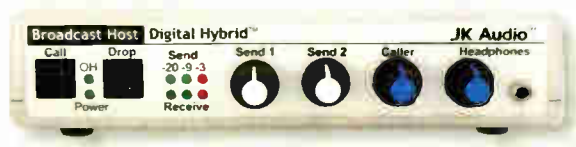
Manhattan Production Music C2641
Intro: Live Trax music collection is music recorded by live musicians, never synthesizers or samples. Apple Trax music library has reached 100 discs with the release of Dark Orchestra Vol. II: a disc of Orchestral and Choral music for disaster-themed trailers, promos and features
Also: MPM, Audiophile Sound Effects Series, Chesky Records Classical Series

Marantz Professional —
See Denon and Marantz

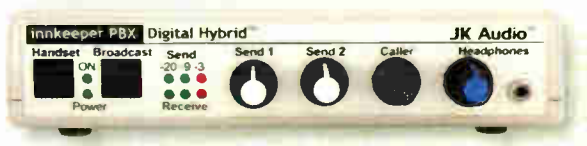
Medialocate USA C11136
On Display: Translation services of more than 73 languages including voiceovers, subtitling and dubbing.

Media Monitors N1411
New: Media Monitors identifies spots and ads on radio and in newspapers, and provides same-day, online reports. The standard for radio analysts on Wall Street; AirCheck broadcast monitoring tracks radio spots and songs in top U.S. markets; PaperVue newspaper ad tracking shows print ad sizes and page numbers. More than 300 radio stations use Media Monitors including ABC Radio Group, Bonneville, Buckley, Clear Channel, Cox, Emmis,

PBXport New in 2005, this professional digital hybrid provides talk show quality caller audio from any PBX phone system. PBXport allows you to send mic or line level signals through the handset cord of any telephone system and return only the caller's voice, ready for broadcast.



BroadcastHost The lowest priced digital hybrid anywhere. Designed for desktop applications where the phone line / audio interface must remain user-friendly.



innkeeperPBX Connect this digital hybrid between the base and handset of any telephone system. Turns every news/sports desk into a live interview studio.

AutoHybrid Simultaneous send and receive audio through analog telephone lines. Not just another half duplex auto-coupler, this is a full duplex AutoHybrid.

THAT-2 Simple, convenient, professional. All JK Audio handset interfaces adapt to electret, dynamic, and carbon telephone handsets.

innkeeper 1rx Full featured phone line interface uses a proprietary dual-convergence echo canceller algorithm. Designed to achieve excellent separation without any setup, and without sending a noise burst down the line. A mix of features and common sense create a product that engineers can appreciate, but anyone can use.

RJ11 Interfaces (no phone needed)

PBX OR POTS, WE MAKE SURE YOUR PHONES GET ON THE AIR

JK Audio has solid solutions for every situation

You want no-nonsense tools that do the job. Tools built to last. Tools even your talent can operate. JK Audio is your answer. Our solutions provide broadcast-quality audio to and from your telephone equipment, whether standard POTS or PBX. And, because we know your reputation is on the line with every call, our rugged construction ensures that our hybrids remain bulletproof long after you've set them up. Our tools are surprisingly affordable, so give us a call or visit us on the web to make JK Audio part of your broadcast team.

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

World Radio History

Greater Media, Infinity, Inner City, Radio One, SBS, Susquehanna, Univision, others.

Medical Coaches **MM229**
Intro: Aluminum custom-built TV production, audio and entertainment support vehicles.

Megatrax Production Music **C2957, N1500**
Intro: Top of the World weekly radio programming; News/Talk Radio ID package; Megasonics sound design production elements package
Also: Music Libraries: Megatrax, Sensacion, Amusicom, Intervox, Arts

MemoryLink **SU10038**
Intro: The MemoryLink Strongbow video transport system provides a broadcast quality, low latency solution for video compression and transport across wired and wireless Ethernet devices.

MGE UPS Systems **C10521**

Micro Communications Inc. (MCI) **C7736**
Intro: FM antenna and combiners

Microboards Technology LLC **SL2753**
Intro: DX-2 is Microboard's first fully-automated disc publisher that features the Print Factory print engine, dual high-speed CD or DVD recorders and a FireWire 800 connection for 16X DVD recording. The Microboards PF-2 disc printer is an update on the Print Factory. The PF-2 now sports a 100-disc input hopper and a spindled output.
Also: Orbit II, QD Series, CopyWriter Towers, DSR DVD Towers

Middle Atlantic Products **SL3606**

Modular Components National **N2533**
Intro: Manufacture, assembly and testing of high-frequency interconnect designs. Machining capability for multilayers and pre- or posted bonded machining of circuits with metal heat sink carriers. Multiple strategies for thermal management dissipation.

Modulation Sciences Inc. **C1223**
Intro: A new use for a proven technology. Modulation Sciences' SCA generator finds its way back into the digital marketplace as a tool for live remotes. With the introduction of IBOC technology, the on-air signal gains a whopping 8-second delay, making communication and cueing during live remotes almost impossible. By implementing an SCA-186 Audio Subcarrier Generator at the transmitter for carrying undelayed program audio, the field can receive undelayed air in real time. Making this undelayed SCA signal even more useful would be the ability to "voice over" it with cue information that would not go on the air. Since most stations do not have an extra audio channel to the transmitter, MSI offers an interface that allows code protected dial-in connection to the SCA generator. Thus, any telephone anywhere can be a source of cue.

Moseley Associates **N2306**
Intro: SL5800 - Starlink Studio to Transmitter Link at 5.8 GHz.
Also: Starlink 9003Q, StarlinkT1, Lanlink

Multidyne Video & Fiber Optic Systems C2850
Intro: DTM-2200 8 Two-wire, Digital Telephone Fiber Optic Multiplexer. The DTM-2200 sends up to 8 telephone lines over fiber optic cable. The system supports ringing subscriber line interface circuits (RSLIC). The DTM-2200 also supports analog Plain Old Telephone Service.
Also: AAGC200, ADA7, ADAS200, ADAM200, DAM2000, DAM4000, AIA880, AIA8550

Musicam USA **N3914**
Intro: The new RoadStar has the benefits of NetStar in a rugged, road-tough case with a 4-channel mixer, 48 VDC phantom power, analog and AES/EBU inputs and outputs and a flexible headphone monitoring system. It also includes a 4-channel mixer with selectable input level, 48 VDC phantom power, level and pan controls for each input. NetStar can send and receive full-fidelity, real-time stereo audio, contact closures and ancillary data not only via ISDN and dedicated data lines, but also via IP. NetStar contains not only standard coding algorithms like G.711, G.722, MPEG 1 & 2 Layer 2 and MPEG 1 & 2 Layer 3, but also the latest MPEG 2 Advanced Audio Coding and MPEG 4 AAC-Low Delay. NetStar can connect bi-directionally via IP with uncompressed linear audio and near-zero delay.

Myat Inc. **C1407**
Intro: FM Combiners, IBOC couplers, motorized coaxial switches, patch panels with 3 dB splitters, and rigid coaxial transmission lines, components and accessories.
Dennis Heymans, Sales
380 Chestnut Street
Norwood N.J. 07648
201-767-5380, Ext:220
FAX: 201-767-4147
E-mail: dheymans@myat.com
Web site: www.myat.com

National Association of Tower Erectors C3527

National Religious Broadcasters **N425**

National Weather Service **N311**

Nautel **N2811**
Intro: XR12: As the fourth generation of Nautel 12 kW AM transmitters, this modular HD Radio/DRM digital transmitter offers unparalleled performance and reliability. The XR12 has reserve power for aggressive signal processing and up to 155% positive peak program modulation at 10 kW to produce more sideband energy and a stronger signal. Extra power also makes the XR12 ideal for simultaneous digital transmission while maintaining full-power AM analog service. With two power modules and one standby module, full power will automatically be maintained even under fault conditions — bonus power without price premium. Power modules are hot-pluggable and can be replaced without a moment's interruption in transmission. For even greater redundancy, the XR12 comes with a complete standby DDS exciter section including a modulation encoder with automatic changeover. Operation, diagnostics and status are performed on a 240 x 60 LCD graphical user interface with an on-board real time clock and 128 time-stamped event log; also, XR50, the fourth generation of Nautel 50 kW AM transmitters, a modular HD Radio/DRM digital transmitter with field-proven reliability at an affordable price. Power modules are hot-pluggable and can be removed and replaced without interruption in transmission. Includes standby DDS exciter section, and was designed to stay on the air without reliance on a human operator. It requires no manual tuning or adjustment, even with antenna mismatch corresponding to 1.5:1 VSWR at 50 kW with 100 percent modulation. The XR50's compact rack (72"H x 52"W x 40.5"D) is ideal for tight site spaces.
Also: J1000 - 1 kW AM HD Radio/DRM Transmitter; V10 - FM HD Radio Transmitter with live digital adaptive pre-correction demo, M50 Direct-to-Channel FM Digital Exciter; Q20 - 20 kW FM Transmitter
Gary Manteuffel, Manager, Broadcast Sales
207 Target Industrial Circle
Bangor, ME 04401
207-947-8200
FAX: 207-947-3693
E-mail: info@nautel.com
Web Site: www.nautel.com

Netia Inc. **N3622**
Intro: The Radio-Assist 7.5 solution for radio broadcasting supports multisite data distribution using point-to-point or star topology for sharing multimedia content, including metadata and files, modules include Autofill for automatic importing from multiple sources, Dispatcher for automatic export to multiple targets and Media Management for control among shared content domains; VA-IP video and audio via IP project designed to create an audio/video switching system based solely on IP v6 networking.

Neural Audio Corp. **C1907**
Intro: NeuStar UltraLink digital audio preprocessor transparently improves the performance of any audio codec by correcting anomalies in audio content before entering the codec, improving efficiency by up to 30

Las Vegas News Bureau

Las Vegas celebrates 100 years this spring. Here, a floating craps game at the Sands in 1953.

percent and achieving higher audio quality, fewer artifacts and increased bandwidth.

Neutrik USA Inc. **C5137**
Intro: NC**XX Series XLR cable connectors available in 3- to 7-pole configurations with a compact die-cast shell with internal threads that mate with the external threads on the boot to eliminate damage sometimes found on exposed threads, incorporates Neutrik chuck-type strain relief and available color-coding on the boot; NP*X Series offers the thinnest available 1/4-inch plug with Neutrik chuck-type strain relief.

Nicom USA Inc. **N425**

NKK Switches **SL 2454**
Intro: The IS Series Smartswitch produces tactile feedback and expands LED-backlighting options. Dedicated to the Smartswitch, *nkksmart switch.com* allows engineers to program the software-controlled pushbutton switch online. Engineers can visualize ideas, experiment with layout designs, validate and test programs, and save projects in a file created for them by NKK Switches. Programmable, the IS Series Smartswitch displays an infinite variety of text, graphics or moving objects. Enhancements include faster clock speeds and additional LED options.
Also: Illuminated, process sealed, miniature, specialty, surface mount and LCD programmable switches.

Nokia Visual Radio **N1522**

NPR Satellite Services **C5944**

Octopus Newsroom **C8233**

OMB Sistemas Electronicos **N3433**

Omnia, a Telos Company **N2816**
Intro: Omnia-3FM Turbo turbocharged small-chassis audio processor adds three bands of AGC/compression to the three existing bands of limiting and the wideband AGC of the Omnia-3 FM, integrated digital stereo generator with advanced peak control, 48 kHz sampling, 24-bit resolution, digital and analog I/O, dual composite MPX outputs, serial port, dual PC card slots for memory and optional modem; Omnia-3DRM precision digital audio processor designed for Digital Radio Mondiale, 48 kHz sampling rate, 24-bit processing, analog I/O uses 24-bit A/D-D/A converters, three-band limiter with wideband AGC, includes look-ahead limiting, selectable low-pass filters, spectral balance and loudness controls optimized for streaming, multimedia and bitrate-reduced audio, digital and analog inputs, PC card slot for included Flash RAM or optional modem card.
Also: Omnia audio processors for FM, AM, Internet and TV

Omnirax **N1800**
Intro: Innova broadcast furniture combines modular components with custom shapes to fit requirements of on-air, production and imaging studios to create an inviting work environment.
Also: Custom Line broadcast furniture

OMT Technologies **N3911**
Intro: iMediaTouch Remote VoiceTracking; iMediaImport automatic content importer; iMediaPix cartwall replacement; iMediaLogger 2.5; iMediaDataCast RDS and HD Radio PAD interface.
Also: iMediaTouch and iMediaLogger

Onan Corp./Cummins PowerRent & Power Generation **C11343**
Intro: Onan generator sets from 2 kW to 40 kW, including inverters, hydraulic- and PTO-powered and diesel, LP and gasoline fuel-powered models for rugged mobile applications; Cummins PowerRent rental power solutions for scheduled maintenance, mobile power, special events, utility peaking, peak shaving or standby emergency needs, offering trailerized and containerized generator sets from 35 kW to 2 MW, as well as turnkey temporary power installations from 5 MW to 100 MW, PowerCommand models and digital master control facilitate paralleling with other generators or the power grid.

Opvision Technology Co. Ltd. **SU11017**

Orban/CRL **N813**
Intro: Orban Optimod-FM 8500 builds on the sound of 8400 version 3 while adding features that make it a choice for FM stations simultaneously transmitting Ibiquity's HD Radio, Eureka-147 or a netcast (where it works with Orban's aacPlus Opticodec-PC LE). Orban engineers redesigned the circuitry. DSP supports the new features and provides headroom for future DSP improvements. Featuring five-band and two-band processing for analog FM transmission and digital radio, the Orban Optimod-FM 8500 provides consistent sound, track-to-track and source-to-source. This consistency allows stations to create a sonic signature with the assurance that it will stay locked in, branding the station sound. The Optimod-FM 8500 provides stereo enhancement, equalization, AGC, multiband compression, low-IM peak limiting, stereo encoding and composite limiting; also, the Optimod-FM 8400 Signature Series features 10 new European presets and a newly designed front panel.

Otari Inc. **N4511**

World Radio History

Patriot Antenna Systems **C5843, MM219**

PESA Switching Systems Inc. **SU7852**
Intro: The Cheetah V5 — RGBHV Over Single Coax Cable is the latest product in the family of video transmitter and receiver modules used to distribute high-resolution computer video and audio signals over a single coax cable. The Cheetah V5 paired with the Cheetah HD Multi-Rate Routing Switcher creates a RGBHV + Stereo Audio system. In large systems where five coax cables were used, the Cheetah now requires only one.
Also: TDM3000 Audio Router, Bobcat Audio/Video Router, Jaguar Family of Routing Switchers, Tiger Family

Phasetek Inc. **N602**

Pineapple Technology, Inc. **N315**

PIN-MIC **N4517**

Potomac Instruments Inc. **N2511**
On Display: 1900 antenna monitor, FIM-41 MW field-strength meter, AA-51A audio analyzer and AG-51 audio generator

PrimeLED Inc. **N604**

Primera Technology **SL4267**
Intro: BravoPro and Bravo II Disc Publisher automated CD/DVD duplication and printing systems can automatically burn a disc and print full-color, photo-quality images to the surface of the disc, BravoPro has two 52x CD drives or two DVD/CD drives that record CDs at 32x and DVDs at 16x and 100-disc capacity, Bravo II has one CD drive or DVD/CD drive and 50-disc capacity, both are Mac and Windows compatible; also, Signature Z1 CD/DVD Printer prints text, logos and line-art on up to four areas onto the surface of standard lacquer CDs or DVDs, ink ribbons available in black, red, blue or green, printed discs are water-resistant, label design software included; DS360 Disc Shredder destroys CDs, DVDs, photos, credit cards and folded paper to preserve confidential information.

Prism Media Products **N1813, N2412**

Pristine Systems Inc. **N1111**

Propagation Systems Inc. **C9229**
Intro: FM antennas and FM antenna/combiner combinations for IBOC FM broadcasting, including consulting services and RF packages that can be installed on a turnkey basis; systems available for separate amplification, separate antenna and dual-input/single-antenna approach, using DoubleV, Power-Tiller or multiple varieties of panel antennas and ancillary equipment to suit specific needs; systems checked at PSI test range before shipping; turnkey packages receive PSI extended warranty; also, PSI-FL new omnidirectional circularly polarized FM antenna for low-power broadcasting and separate-antenna approach for FM IBOC, available with inputs from 500 W to 2 kW at full- or half-wave spacing; radomes available for antennas that experience icing.
Also: IBOC interleaved antenna, ring stub, Power-Tiller, DoubleV, FM panel.

Prophet Systems Innovations **N1402**
Intro: NexGen101 products, based on Prophet technology, are designed to run a single radio station, either with the core or features that can be added bit by bit; also, DigiLogger is an advanced audio logging and digital archiving program that allows a station to retain as much audio as needed using compressed or noncompressed audio formats. DigiLogger can record airchecks, recycle promotions and save entire shows. DigiLogger can be configured to work with most analog or digital audio sources, including automation systems, satellite receivers and switchers; also, NewsGen, standalone newsroom software, enables reporters to write newscasts, receive and manipulate wire copy and digitally record, edit and play back audio.
Also: NexGen Digital; MusicGen

QEI Corp. **N2831**

Quartz Electronics Ltd. **SU9652**

Radiant Communications **SL3719**
Intro: Streaming video MPEG2 to IP; Fiber Optic Baseband Video/Audio plus DVB/ASI transport systems over 1 fiber 50+KM; Fiber Optic L band transmitters & receivers; Fiber Optic 80 channel broadband transmitters & receivers

Radio Frequency Systems **C3031**
Intro: CPF-series side-mounted single-channel FM antenna for low- to medium-power applications features stainless steel construction, available with a power rating of 500 W (CPF500) or 2.5 kW (CPF2500), circularly-polarized, omni-directional; expands upon ECFM antenna with extended power range, radiation pattern and axial ratio enhanced to minimize tower effects and downward radiation; also, CPF-series available as multi-element arrays in a range of gains, using RFS power dividers and distribution cables; spherical radome optional; CPF-series compliments 828-series FM broadband panel arrays.
Also: Heliflex flexible coaxial transmission line.

Radio Music License Committee **N3133**

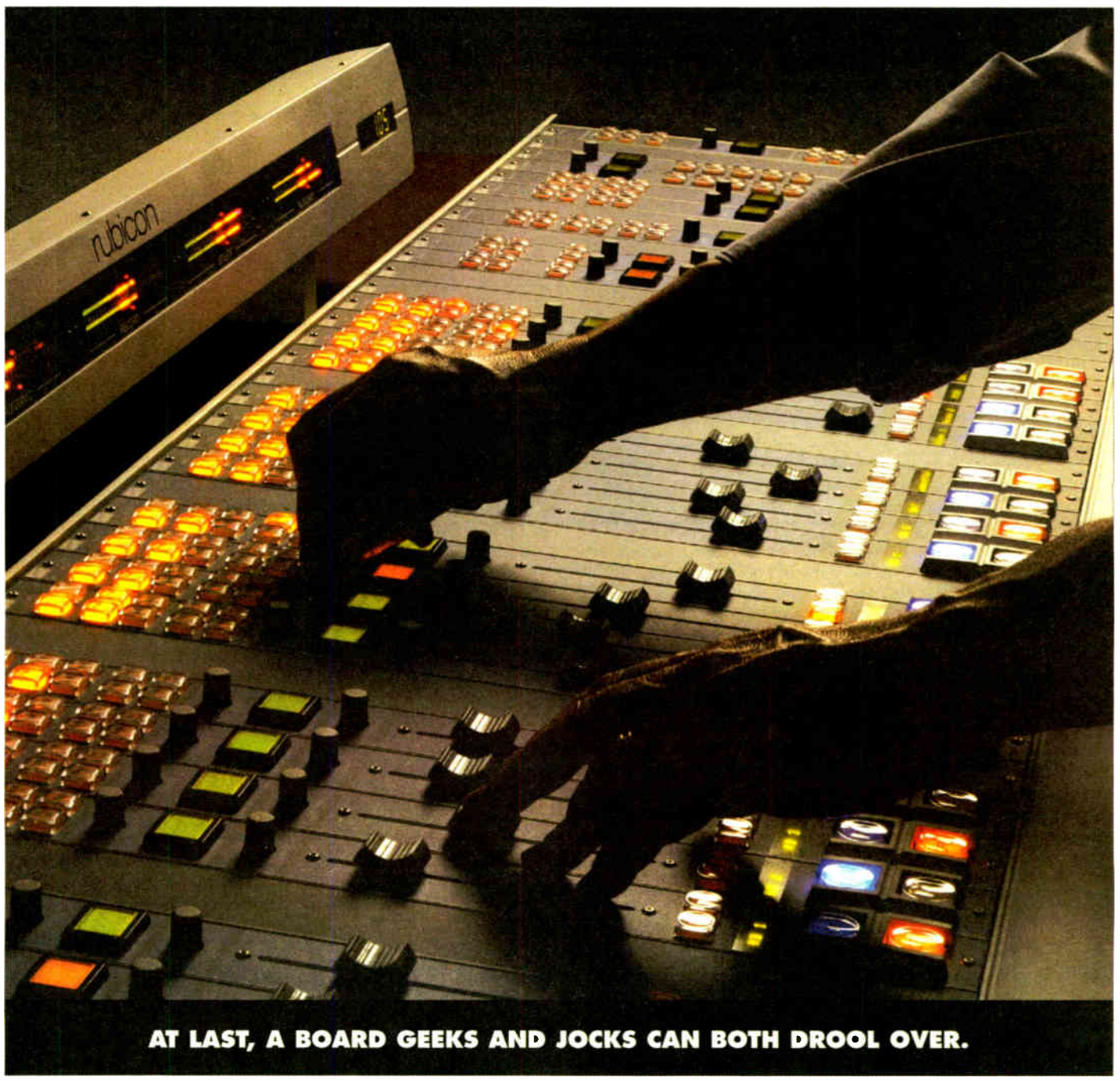
Radio Systems **N3315**
Intro: Newly styled and improved StudioHub+ tie line and harness kits featuring high-density, space-efficient packaging; expanded digital engine connectivity, including end-to-end solutions for Axia, Harris, Klotz Digital, Logitek and SAS platforms.

Radio Waves Inc. **C1435**

Radio World/IMAS Publishing **N1634**
Intro: Radio World Engineering Extra, providing in-depth white papers, interviews and other technical papers just for engineers, under Editor in Chief Paul McLane and Technical Editor Michael LeClair; also, Radio World's HD Radio Scoreboard, providing a monthly update on the state of the digital radio rollout at a glance and an in-depth look at markets and niches; the 2006 Radio World Sourcebook & Directory, now in planning stages with supplier information due in the fall.
Also: IMAS Publishing is the industry's premier publisher of specialized magazines and newspapers for radio, audio and video professionals, with a leading presence internationally as well as in the United States; IMAS also produces the NAB Daily News, the only official daily newspaper at the convention.

Simone Fewell, Sales
PO Box 1214
Falls Church, VA 22041
703-998-7600, EXT. 154
E-mail: sfewell@imaspub.com
Web site: www.imaspub.com

Radyne ComStream **SU9929**
Intro: HE4000 HD and SD encoder upgraded to



AT LAST, A BOARD GEEKS AND JOCKS CAN BOTH DROOL OVER.

Fact is, SAS packs so much sophistication and capability into the depths of the new **Rubicon**™ control surface that even the most intensive major market programmer or board operator will swoon. Yet Rubicon is so intuitive, so comfortable, so easy to use, the weekend intern is sure to sound like a pro.

SAS Connected Digital Network™
Rubicon Control Surface
32KD Digital Audio Router
RIOLink™ Remote I/O

Here's why:

Frequently used controls are always right at the operator's fingertips. And for the power-user, the multi-function "dynamic control matrix" provides quick access to deeper capabilities. In other words, Rubicon has a bucket load of features for the simplest or most complex of broadcast-related tasks.

And should you think form to precede function, you'll find Rubicon's clean, easy-to-understand interface wrapped up within a custom-configured, drop-dead gorgeous frame.

Best of all, Rubicon is engineered by the brand synonymous with the finest in digital audio routing and network design. When it comes to quality and reliability, our name is all over it.

rubicon™

Come see for yourself Rubicon's brains and beauty, power and performance.

It'll be love at first sight.

Engineering great radio.™

SAS
SIERRA AUTOMATED SYSTEMS

For more information call 1.818.840.6749, email sales@sasaudio.com or visit www.sasaudio.com.

World Radio History

accommodate all applications; HD4000 HD/SD/IRD provides bandwidth savings, lower bitrates, more efficient date and motion estimation; SE4000 Encoder upgraded with new features.

Raidon Technology Inc. **SL4033**
Intro: RAID storage solutions by RAID Level 0, 1, 3, 5 and spare.

RCS **N1411**
Featured: Selector music scheduling, the most widely used system at music stations worldwide; also, Linker promo scheduling tracks promos, jingles, liners, PSAs and hundreds of non-music, non-traffic elements on stations every day, includes affidavits for sponsored promos, script manager; also, Master Control on-air system is "Selector-smart," built around creating an intuitive studio environment for Selector users. Includes Hot Keys, Living Log, emergency auto-scheduling.

Las Vegas News Bureau

Welcome sign, Feb. 22, 1960. Information about the Las Vegas Centennial is at *www.lasvegas2005.org.*

RDL Radio Design Labs **N2534**
New: Two ultra-compact 20-watt RMS audio power amplifiers. The FP-PA20 features an 8-ohm output. The FP-PA20A provides a 70V (or 100V) output for distributed sound in office areas. Both contain a unique compressor circuit to prevent clipping or amplifier saturation; also, two RS-232 controllers. The SYS-CS1 controls an RDL System 84 Audio Mixing Matrix. The RU2-CS1 provides eight general-purpose open-collector outputs. Both have eight status inputs plus eight zero-to-10 volt outputs to control VCAs. These products are suitable for computer control of automation, patching or any function provided by the array of RDL modules; also, DIN rail adapters are now available to mount RDL modules.

RF Parts **N619**

Richardson Electronics **C1824**
On Display: Power grid tubes, transmitters, amplifiers.

Riedel Communications US **C11107**

RIZ - Transmitters **N304**

Rohde & Schwarz Inc. **C2633**
Intro: R&S UPV compact audio analyzer is suitable for all interfaces — analog, digital and combined — with dual-channel signal processing and generation, recording and replaying of audio signals, sampling rate up to 192 kHz, comprehensive FFT analysis, user-programmable filters for analyzers and generators, jitter analysis and interface tester, and expansion slots for future options; also, NR8200 FM transmitter, new line of FM transmitters.

RTI - Research Technology International **C3951**
Intro: DiscChek optical disc inspectors and restorers

RTW GmbH & Co. KG **N819**
Intro: SurroundControl 30900 single unit for surround sound metering, analyzing and monitoring control, includes surround sound test generator and SPL meter to calibrate monitoring systems, as well as compact remote control with many functions, such as rear-to-front, mono, phase, center-to-LR, etc.; also, SurroundMonitor 10900 surround sound metering and analyzing device supports 5.1, 6.1 and 7.1 surround with RTW surround sound analyzer, downmix matrix, dialnorm meter, 1/3 and 1/6 octave real-time analyzers; PortaMonitor 10641VID rackmountable four-channel stereo display with multistandard PPM, analog and digital inputs, audio vectorscope, phase meter and 1/3 octave real-time analyzer.
Also: SurroundMonitor 10800X, PPM 1204 and 1205 desktop peak meters, plasma bargraph peak meters

Russ Bassett Corp. **SU9708**
Intro: Multimedia cabinets for mini DV, 4 mm, 8 mm, audiocassette, VHS, DV, DLT, small and large DVC pro, mini and large DVCam, LTO Ultrium, small Beta, CD/DVD in jewelcase, DVD in album, 3480/90/90E/3590, 3570 magstar, 3.5- and 5.25-inch MO, top-tab manila file folders, pendaflex-type files; ProMedia Gemtrac, cases are 81- or 90-inch high, with 8, 10 or 12 drawers, adjustable shelves, bookends and backstops, drawers offered in 5-, 6-, 7- and 8-inch depth; ProMedia Slidetrac, rolling media cases are 81- or 90-inch high.

RVR Elettronica **N1102**

Rycote Microphone Windshield Ltd. **N3232**
On Display: modular microphone and softie windshields

RYMSA **C7736**
On Display: Antennas, combiners and passive components

S.W.R. Inc. **C1820**
Intro: FM and TV antennas, and accessories to support the broadcast industry.

Sabre Towers **N308**
Intro: Third edition of the Sabre Site Solutions product catalog, which includes everything from pre-engineered lightweight towers to tower components and accessories. Designed with the customer in mind, the tower section of the catalog includes detailed charts that provide wind speeds, foundation designs and member sizes for each size and type of tower offered. All made easy to order with a single part number.
Also: Towers
Brian Newberg, National Sales Manager
2101 Murray Street
Sioux City IA 51111
712-258-6690, Ext: 219; FAX: 712-279-0814
E-mail: sales@sabrecom.com
Web site: www.sabrecom.com

Salzbrenner Stagetec Mediagroup **N4208**
Intro: Eight-channel analog output board for NEXUS audio routing system, 132 dB(a) dynamic range maximum output level, 24 dBu power dissipation loss, 5 Watt 8 x XLR connectors as standard, RJ45/D-Sub optional; embedder/de-embedder board for NEXUS, sample rate converters enable asynchronous treatment of signals with different clock sources, different clocks for SDI video and audio signals can be kept; socketed and changeable interface connector modules enable changing connectors from BNC (Standard) to optical (option) without removing board.
Also: AURUS digital console, DELEC digital intercom system.

Sanken Microphones **N617**
Intro: COS-22 dual-capsule lavalier microphone, measures 1.25 inches in length, full frequency response up to 20,000 Hz, two-channel, dual-omnidirectional, for stereo applications, redundant lavalier live broadcast usage and boundary-style miking; CO-100K wide-band omni condenser mic, 100 kHz mic for professional recording, full spectrum high-frequency response in recording for SACD, DVD-A and future hi-resolution formats; CUW-180 Double 180 degree cardioid condenser microphone, two cardioid condenser mics in one unit; each capsule is adjustable.
Also: COS-11s CS3, CSS-5, CU-41 and CU44x.

sbs/Eddystone Broadcast **N1113**
Intro: The sbs FM250 full-featured broadcast FM exciter is also suited for use as a low-power standalone transmitter, frequency setting is achieved by internally set, direct-reading dial switches, quick-view LEDs show status information and PA outputs, and "fresh-air-tunnel" low maintenance, heat dissipating concept; also, Eddystone Broadcast XE50 50 W full-featured broadcast FM exciter is suited for use as a low-power standalone transmitter, quick-view LEDs show status information, updated, linear modulator for superb sound reproduction with freedom from overshoots and artifacts, conservatively rated components for high reliability and efficiency; sbs TX2000-2 2 kW transmitter consists of two 1 kW amplifiers, two exciters, a combiner and an automatic changeover unit making for a fully redundant system, amplifier is a frequency-agile wideband design that requires no tuning, FM exciter provides simple frequency selection and comprehensive status monitoring, changeover unit is capable of automatic and manual operation with local and remote control facilities, combiner combines the functions of drive splitter and output combiner in a single box with a single power control.
Also: sbs PA1000 amplifier, sbs CU2000 combiner, sbs FM50 exciter, sbs ACU4 changeover unit, Eddystone Broadcast 2 kW transmitter and Eddystone Broadcast 10 kW transmitter
Les Crompton, Sales Manager
16 Tything Road
Alcester, Warwickshire B49 6EP
United Kingdom
011-44-1789-768870; 011-44-1789-768878;
FAX: 011-44-1789-400630
E-mail: sales@sbsfm.com
Web site: www.sbsfm.com

ScheduALL Software **SL 767**
Intro: ScheduALL for .NET enhances the reach of ScheduALL, redefining teleproduction workflow management by allowing users to schedule production events for personnel and resources, display project management summaries, access asset libraries and share production schedules with workgroups worldwide; ScheduLINK software designed to manage broadcast satellite and terrestrial networks, including bandwidth-capacity management of events, as well as automated billing, equipment-conflict checking and availability and task notifications.

Schoeps Microphones **N3231**
On Display: CMC641, CMC641C

Scott Studios Corp. **N3902**
New: RevenueSuite, Smart Barter, Data Services, Diagnostics and Sarbanes-Oxley enhancements. Features can be added to existing SS32 Version 5 and Maestro 3.3. systems.
Also: Digital audio and revenue systems and solutions for radio stations.

Screen Service Italia **N3922**

Sennheiser Electronic Corp. **N2822A**
Intro: Rosendahl bonsaiDRIVE standalone hard-disk recorder records to a standard IDE drive, permits uncompressed 4:2:2 PAL or NTSC video with Huffman lossless encoding together with stereo analog audio and eight channels of ADAT at 24-bit, 48 kHz resolution with a variety of sync options.
Also: HHB PortaDRIVE PDR2000, HHB PortaDISC MDP-500

Seratel Technology **N1831**

Shively Labs **N2007**
Intro: Model 2600 interdigital bandpass filters offering virtually the same performance as 2500 Series resonant cavity designs, but at a fraction of the size; Model 2630 interdigital branched combiners provide the performance of equivalent resonant cavity-style combines, but taking up less than one-third the space; Model 2640 interdigital balanced modules provide performance in the smallest possible package, compatible with all HD Radio combining techniques and ideal for broadcasters with low-power requirements and space limitations, new hybrid designs enhance compactness while providing improved VSWR specifications; Model 5600 digital injectors combine digital and analog streams for HD Radio high- and mid-level combining strategies, injectors available for 6, 7, 8, 9 and 10 dB coupling, each injector covers the entire FM band.
Also: FM broadcast antennas and combining equipment

Shure Inc. **N3206**

Siemens **SU8541**
On Display: Colledia

Sierra Automated Systems **N806**
Intro: Rubicon SL broadcast console control surface for smaller-market stations or less demanding studios; like Rubicon, SL offers integration with SAS 32KD digital audio router/mixer and SAS Connected Digital Network, stand-alone operation with upgraded RIOLink mixer/router. Features of Rubicon include microphone and effects processing, EQ, leveling and compression and de-essing, optional LCD display for metering, clock and timer. Intercom and talkback integrate with SAS' intercom system; also, RIOLink remote I/O mixer/router operates stand-alone as a 32 x 32 router, and with Rubicon SL as a stand-alone router and mixer; ANI-750 Audio Network Interface for the 32KD links multiple 32KD frames via fiber, uses dual counter rotating ring, provides static and dynamic sharing of up to 750 channels.
Also: SAS Connected Digital Network, 32KD Digital Audio Router/Mixer, SAS Intercom.
Mike Uhl, Director of Sales
2625 N. San Fernando Blvd.
Burbank, CA 91504-3220
818-840-6749
FAX: 818-840-6751
E-mail: radio@sasaudio.com
Web Site: www.sasaudio.com

SKB/Cases by Source **SL2868**
Intro: Shipping cases, protection for equipment during transit and storage in foam-lined transit cases, water- and dust-tight, IP67 rated; SKB rotationally molded waterproof Elastomeric shockmount cases, stainless steel locking latches, four-inch brake type casters, seven sizes 904U-916U, also water- and dust- tight.
Also: SKB rackmount system cases.

SmartDisk Corp. **SL5828**
Intro: FlashTrax compact multimedia player/recorder, MP3 player and FM tuner, records video, transfers photos from Flash cards, plays back on color LCD, outputs to TV or projector, high-speed USB connection;

World Radio History

FotoChute copies photos directly from a camera, connects via USB 2.0 On-The-Go, holds 20,000 photos (based on 800Kb file size) and stores more than 20GB of images or data files; NetDisk, combine Ethernet and USB 2.0 to share secure storage with no IP configuration or server; FireLite portable external hard drives offer secure storage for data in either FireWire or USB 2.0 connectivity; CrossFire high-capacity external desktop drives.

SMPTE **South Lobby 29**

Society of Broadcast Engineers **Lobby 17**
New: SBE will launch the second edition of its Radio Chief Operator's Handbook, a guide designed for the non-technical radio station chief operator, and will offer the first exam for the Certified AM Directional Specialist.
Also: The Society of Broadcast Engineers is the professional organization for radio and television engineers and those in related fields. SBE has more than 5,700 members in 109 chapters across the United States and in 30 other countries. SBE offers certification, educational programs, technical publications and frequency coordination services.

Solid State Logic **N3211**

Sonic Solutions **SL760**

Sonifex Ltd. **C3526**
Intro: Talkback intercoms including desktop or rackmount units for general interstudio talkback that interface with the S2 mixer and the Sonifex Station Master studio switcher; S2 small format, modular digital I/O analog radio broadcast mixer with digital and analog input channels and simultaneous analog and digital outputs, stylish, flush-mounting chassis, range of I/O channels, including PFL/cue, fader-start operation of equipment, automatic monitor muting on mic-live, light switching remote outputs, optional EQ on input modules, two main audio busses; also, CD-ripper and recording package for D:Scribe transcription software allows recordings to be taken from any PC soundcard input, CD-ripper can create linear WAV files from an audio CD and can rip directly to MP3; D:Scribe Standalone version now available without foot pedal; Net-Log 4 channel audio logger now fitted with a 200 GB hard drive as a minimum spec and larger drives can be fitted as required, option for G.729 recording; New Redboxes include two new audio distribution amplifiers.
Also: Redbox range of audio interfaces, HY-03 telephone hybrids and Courier Flash-card portable recorder

Sony Electronics Inc. **SU6406**

Sound Devices LLC **N4212**
Intro: 722 portable high-resolution digital audio recorder records to internal hard drive and/or CompactFlash as uncompressed audio up to 24-bit, 192 kHz, high-performance mic preamps and analog and digital I/O; 744T portable four-channel digital audio recorder with time code records to internal hard drive and/or CompactFlash as uncompressed audio up to 24-bit, 192 kHz, mic preamps and analog and digital I/O.
Also: MixPre, 302, 442

Sound Ideas **C1451**
Intro: Series 6000 Extension V addition to award-winning "The General" Series with 10 new audio CDs and more than 1,200 new effects, including drag racing, paintball, NASCAR and freestyle motocross effects; Twisted Tiger Music 100 full version themes on four CDs, providing rock, nostalgic rock, dance, trance, chill, soul, sports, corporate, romantic production music; Latin Elements, more than 530 sensational Latin themes, grooves, accents and tags on two audio CDs; and Elements Café 9 and 10 imaging elements.
Also: Sound Ideas sound effects libraries, Mix broadcast music libraries, imaging elements

Soundcraft **N3626**
On Display: RM1d and RM1ds digital broadcast desks; B800 and BB100 analog on-air/production consoles; and Compact 4 and 10 multipurpose mixers

Soundminer Inc. **3347**
Intro: Soundminer 3.1.3 asset manager, functions include database, search, audition, process, edit and batch transfer into DAWs and NLEs, supports OS9 and OSX Macintosh; Soundminer Ripper 3.1.3, digitize commercial sound effect or music library CDs into SD2, AIFF, BWAV or AAC formats, metadata embedded in the resulting files, new version supports extended metadata for music libraries and can self-author support scripts, Macintosh OSX only; Soundminer HT – Webminer allows the sharing, searching and downloading of centralized assets via Web browser, Soundminer HT works on PC and Macintosh platforms.
Also: Soundminer LE, Soundminer ServerX.

SRS Labs Inc. **N2026**

Staco Energy Products Co. **C1207**

Stainless LLC **C1411**
Intro: Stainless Express analysis service of tall towers, providing in 15 business days a written report that features detailed listing of the equipment used for each loading condition investigated, full disclosure of the design standard used, overview of the proprietary software used during the analysis, listing of overstressed structural members and the magnitude, detailed conclusions and recommendations, detailed review of tower history and detailed elevation and cross-section review.
Also: Inspection, analysis, engineering, design, maintenance, modification and manufacturing for tall towers.

Statmon Technologies Corp. **C11404**
Intro: The EIF-32 enables a system operator/engineer to remotely connect to equipment in the field at a transmission location to retrieve critical data without visiting the site, 192-channel capacity with on-board temperature, humidity and voltage sensors, ideal for low-power transmitters, repeaters, translators or other applications that do not need a full RCFM solution.
Also: Axess remote control and monitoring system

Studer **N3626**
Intro: Vista 8 digital live production console combines a Vistonics user interface with output metering and control for a sophisticated, flexible multipurpose live broadcast desk, redesigned central control bay has 12 motorized faders and a Vistonics TFT screen with 40 rotary controls for access for up to 52 audio paths, extended metering facilities with 48 assignable meters and advanced matrix functionality; OnAir 500 Modulo compact digital broadcast mixing console integrated with custom furniture based on the same platform as the fixed-frame OnAir 500, one- or two-fader modules, one master module, meter bridge and a 19-inch electronics rack to create either a 6- or 12-fader mixing desk.

World Radio History

Also: OnAir 3000 digital mixing console

Studio Network Solutions SL3331
Intro: globalSAN multiplatform Ethernet-based storage area network (IP SAN) built on the iSCSI protocol acts as an alternative for facilities that do not have the budget for a Fibre Channel SAN, available as an eight-bay, four-user globalSAN X- 8 package with 2 TB of SATA storage or a 16-bay, six-user globalSAN X-16 package with 4 TB of SATA storage, both systems include iSANmp volume sharing software and can be upgraded to support additional users and/or storage.

Superior Broadcast Products Inc. C1218

Navigating the floor.

Intro: Solid-state FM transmitters, modular, from 2,000 watts to 20,000 watts; FM antennas; combiners for television and FM, to combine two or more transmitters into one antenna.

Superior Electric N608
Intro: DIN rail transient voltage surge suppressors can be connected in series of parallel, available in single-phase 24, 48, 120 and 250 V AC and DC models.
Also: Stabiline automatic voltage regulators, uninterruptible power supplies and transient voltage surge suppressors

Sure Shot Transmissions Inc. C5841

Swe-Dish Satellite Systems AB MM116
Intro: Swe-Dish IPT Suitcase satellite system, allows live, 4 Mbps broadband transmission of IP standard data, voice and video; Swe-Dish FA150K Fly-Away system, satellite earth terminal, lightweight antenna design; Swe-Dish DA90K Drive-Away antenna system, for worldwide Ku-Band uplink operation; SWE DISH DA150K Drive-Away vehicle mount antenna system, automatically points toward selected satellite.

Switchcraft Inc. C2339
Intro: EH Series connector line extended to include USB, FireWire, 3.5 mm stereo jacks and S-Video, all in the same XLR panel cut-out; also, audio patchbay incorporating EZ Norm technology customized for digital audio workstations.

Symetrix Inc. N4006
On display: Symetrix, SymNet, Lucid and AirTools products. Symetrix products include microphone processors, preamps, headphone amps, AGC, analog distribution, and DSP. SymNet is a line of modular, networked audio DSP for the installation sound market. Lucid covers digital audio conversion, digital distribution and digital audio sync. AirTools provides profanity delays, digital microphone processing, and the Studio Matrix series of networked DSP.

Systems Wireless C7319D
On Display: Lectrosonics, HME, Clear-Com, Sennheiser.

TASCAM SL1516
Intro: DM-3200 digital console, 48-channel mixing, DSP and integration with DAW recording systems, expands on DM-24 with more busses, effects and auxes, USB connectivity, user interface has16 rotary encoders, LED indicators display mixer settings, 6.1 surround panning available, optional IF-SM/DM Surround Monitoring interface card adds multichannel monitor and downmix capabilities, meter bridge also available; DV-RA1000 audio/DSD master recorder for recording high-resolution stereo audio to DVD media, 192kHz/24-bit audio recording, can also operate as professional CD recorder; MD-CD1 combines CD playback and MiniDisc recording, 1 RU; VL-X5 home studio monitor system, speakers have 5-1/4-inch woofers, silk-dome tweeters and a 60+30-watt bi-amplified active power amp, low- and high-frequency controls, shielded; FW-1082 and FW-1804 computer interface solutions; DP-01/DP-01 FX 8-Track Digital Portastudios offer 8 tracks of portable digital recording at uncompressed CD quality.
Also: VL-S21, CC-222mkII, CD-RW750, CD-RW2000, CD-RW402, 2488 Digital Portastudio, US-2400, FW-1884.

TC Electronics C3612G

Techni-Tool C9530
Intro: Fluke instruments, Cooper tools, chairs, cleaner/degreaser, benches.
Also: Fluke meters.

Tektronix Inc. C6231

Telecast Fiber Systems SU8375
Intro: Adder II line of networked multiplexers equipped with the Natrix high-speed digital bus supports hundreds of analog and/or digital AES audio channels on a single fiber, in bidirectional applications, Adder II can carry intercom and data communications; also, Teleport wavelength-management CWDM multiplexer provides high-bandwidth optical signal multiplexing, simplifying and multiplying the effectiveness of fiber optic cables, each single-mode fiber can support up to 20 Gbps; Mamba ISS Series integrated optical infrastructure approach for HD/SDI and audio distribution built around Telecast Mamba active patchbays.

Telefunken SenderSysteme Berlin AG N434

Telex Communications Inc. C6821

Telos Systems N2816, N3612D
Intro: ProFiler logging system allows radio stations to make MP3 audio logs of daily programs, includes a Telos balanced input PCI audio card bundled with software to record, manage and play back archived audio files, software runs under Windows 2000 or NT 4.0 with playback under Windows NT, Windows 98 or newer, record mode can be set for logging, skimming or a combination of both, logged audio may be auditioned remotely via LAN, WAN or Internet; also, Call Controller is a cost-effective, compact control option for line selection of the TWO x 12 or 2101 talkshow systems provides call screening and line status for control of up to 12 lines and two hybrids.

Also: Zephyr Xstream, Zephyr Xport, 2101 Talkshow System, TWO x 12 Talkshow System, Assistant Producer Call Screener and digital hybrids

Tentel C4143
Intro: EDS-88A in-circuit capacitor checker
Also: Tentelometer tape tension gauges

Teracom Components C3333

TFT Inc. N3302
Intro: Six-channel frequency-agile uncompressed digital STL with AES/EBU or analog input, AES/EBU or analog output, PC configurable and support for 32, 44.1 and 48 kHz sampling.
Also: STLs, modulation monitors and EAS products.

Thales Broadcast & Multimedia C4508

Thermo Bond Buildings N2136
Intro: Pre-fabricated transmitter buildings come with lights, panels, air conditioning, grounding and ventilation, pre-wired, layout drawings provided with shelter, aggregate exterior.

Tieline Technology N517
New: G3 codecs incorporate your choice of POTS, ISDN and GSM codecs with a built-in cross point audio matrix router and a digital Mixer. Suitable for live remote radio and reporter broadcasts, and as a program and off-air communications tool for sports television applications; also, PFA300 TV/Stereo changeover switcher for STL or terrestrial feed redundancy.
Also: Forty professional audio/video switchers, distribution amplifiers, level meters, signal converters and silence detectors.

Torpey Time SU9811
Intro: Large digital clock displays operating from ESE, Evertz, Leitch or NMEA codes.
Also: Digital timers with remote displays.

Tower Engineering N3436

Towerline Software LLC N516

TrafNet N1527
Intro: Traffic and billing on the Internet, the first new traffic system in 10 to 15 years.
Dave Scott, President
307 Brown Street
Waxahachie, TX 75165
877-TRAF-NET

Triangle Software C1225
On Display: BeatTheTraffic@Radio, TrafficRadioHotline

TV Technology/IMAS Publishing SU9812

TWR Lighting Inc. N2431
Intro: High Intensity Lighting System (HILS) utilizes STIX technology to ensure long lamp life, very low UV and ozone generation and low power consumption, installation simplified by use of a single Strobecable for power and control wiring, computerized controller is in constant communication with the flash heads ensuring optimum performance, system status displayed via LCD display or remotely via modem; LED Beacon Direct replacement for 300MM Incandescent beacons, LED technology reduces power consumption from 1.24 kW to 122 W.
Also: Aviation obstruction lighting

UK/US Partners Pavilion N811, SL4531, SU10354

UNIMAR Inc. N2512

United Ad Label Brand C2744
Intro: Discus labeling software that supports UAL and other label templates, import and crop photos or use one of 1,000 background images for designing.
Also: Labels and/or packaging for CD, jewel cases, color coding, tape management, unishield label protectors and more.

Utility Tower Co. N2522

Valcom Limited N319
Info: Freestanding 49- to 95-foot fibreglass AM broadcasting antennas. Our unique filament fibreglass winding process enables Valcom to inbed the antenna radiators within the fibreglass, preventing degradation by the elements, at the same time maintaining the mechanical strength to withstand hurricane winds. In frequency ranges above 900 kHz the antenna, depending on its length, meets FCC requirements. These broadcast antennas are in operation in the United States, Canada, France, South Africa and Australia.

Venacá Inc. SL3636
Intro: AirCom I and AirCom II aircheck systems automatically capture audio and/or video in multiple formats and bitrates as defined by the operator, integrate with the S3 platform for Web or local playback, additional features allow for assigning metadata, creating time-based annotations for frame-accurate search and retrieve and import XML data from external sources, traffic and automation systems.

VFGadgets.com C2163
Intro: H2-PRO Holophone surround sound microphone for capturing discrete 5.1, 6.1 and 7.1 channels of surround sound for professional recording or broadcast without requiring mixing, signal manipulation or processing is required, direct and discrete signal paths from the mic to the monitor.

VideoHelper Inc. C2851, SL557
On Display: VideoHelper production music library, Noise Generator sound design libraries.

Videoquip Research Limited C1535

ViewCast Corp. SL4572
Intro: Niagara SchedulStream automation software for scheduling and managing Windows Media and RealNetworks RealVideo encoding sessions, an upgrade to Niagara SCX software, which provides an encoder management interface for Niagara streaming systems.

V-Soft Communications N508
New: Probe 3 package for predicting radio propagation anywhere in the world in the 20 Hz to 20,000 MHz frequency range; aos, FMCommander, V-Soft's newest program, provides quick, accurate information for minimum spacings studies and contour-to-contour studies. The program can be used to search for full-service stations, translators and LPFM and uses high-quality, "atlas-like" mapping.
Also: Broadcast engineering software and custom mapping and engineering consulting services; software for AM, FM, TV and DTV.

Vyvx LLC C11719
Intro: Post-production services including tagging, encoding, closed-captioning performed in English or Spanish; Vyvx Advertising Media Solutions for content distribution and delivery.

Walters-Storyk Design Group SL456

Ward-Beck Systems C1924
Intro: AMS8-1 and AMS8-2 multichannel audio monitors, four selectable inputs may be PCM, Dolby E or Dolby AC-3, optional HD/SD disembedder, eight LED audio meters, proportional mixing, volume control, four user-defined mixdown presets, Dolby E voiceover capability; also, RLM-24 24-channel stereo loudness meter, 24 stereo LED bargraph meters, 2 RU, each pair has silence sensor with audible alarm and GPI output, dual redundant power supply.
Also: R2K radio consoles, PODS.

Wegener C2624
Intro: The Audio iPump media server integrated digital receiver, IP router and multimedia server for distributing national and regional program content from a central facility is part of an integrated content management system that offers an end-to-end solution utilizing a single downlink device to receive live audio broadcasts, store audio programs and seamlessly combine them to play-out custom broadcasts; also, MediaPlan network control system puts every Wegener receiver and uplink under an operator's control with unparalleled flexibility, receivers are controlled as individual sites or as a member of up to 6,400 groups, extends functionality to individual digital asset files and affords an operator total digital asset management in an end-to-end environment, supporting

World Radio History

ingest of analog and digital assets, management of archived digital assets, remote tracking of individual assets on deployed iPump servers, remote updating or deleting of assets on deployed iPump servers, targeting Wegener receiver groups, regions or individual sites with specific asset files, playlists, schedules and metadata information.
Also: Digital audio broadcast receivers

Jay Batista, VP, Business Development
11350 Technology Circle
Duluth, GA 30097
770-814-4000; 800-848-9467; FAX: 770-623-0698
E-mail: info@wegener.com
Web site: www.wegener.com

Wheatstone Corp. **N2802**
Intro: The Generation 6 console puts the features of larger Wheatstone surfaces into a compact footprint, seamless integration with the Bridge digital audio router for system-wide access to a stations on-/off-air audio resources via interlinked Cat-5 or fiber-optic cable, Ethernet protocol, VDIP configuration, X-Y controllers and eight-character controller displays, an expanded number of Aux sends and increased preset options; also, a new line of single-rack space audio processors, including a two-channel/stereo audio processor with an array of analog/digital I/O, a four-band parametric EQ, three-band compressor and tunable filters along with overall AGC, settings can be stored and replayed as password-protected presets, front-panel display includes I/O meters for gain reduction and expansion observation, remote monitoring and operational control via Ethernet-enabled GUI software; also, enhanced R 55e analog radio on-air console tailored for mid to small markets with audio production capacity suitable for all markets, expanded feature set, illuminated LED switches, flip-up meter bridge for direct access to I/O connectors and logic programming DIP switches; new D-75 digital radio broadcast console for small to mid markets features four stereo busses, dual-domain outputs, sample rate conversion on all digital inputs, interchangeable input module daughter cards for easy analog-to-digital field switches, hinged meter bridge for easy access to console DIP switches, and new LED meter displays.
Also: Generation Series, A-7000, D-4000, D-8000, Bridge router, satellite router cage, ADR 32 router, D-75, D-16, R-55e and SDA 8400

Whirlwind **C7841**

WhisperRoom Inc. **SL3712**
Intro: Sound rooms with wide access doors.

White Sands Engineering/TVC **N3536**

Will-Burt Co. **C7141**
Intro: D-TEC II redesigned AC current and object detector with enhanced features.
Also: Pneumatic telescoping masts and accessories

WinRadio Software Inc. **N4211**
Intro: The New WinRadio Cartridger innovative approach to on-air program management; updated music scheduling; updated ads and traffic.
Also: WinRadio, WinLogger, WinScan, WinMix and WinStream

Winsted Corp. **SU7455**

WireReady NSI **N700**
Intro: CallTaker fully automated Windows-based storm-closing system answers phones, generates reports and updates Web sites and SQL servers, runs under Windows 2000, XP or Server 2003, MS Access and Intel Dialogic card compatible; SalesReady/AE Sales Management and Tickler database system manages InfoUSA business record data for a market in a easy-to-use contact-management and list-generation tool, single-user and site-license software is royalty-free, buy-out prices start at $495; ControlReady/XP Automation and 8 track Live-Assist system features WAV based recording storage and playback and works with new line of Broadcast Tools "SS" switcher/controllers, autofills, autoreconciles, triple overlaps, voice tracks and offers a new live-assist screen with instant replay and audition channels; WebReady automated Web publishing system reads traffic and program logs and manages real-time updates to a Web site to coincide with over-the-air broadcasts, also interfaces third-party electronic newsroom systems to an existing Web site.
Also: NewsReady electronic newsroom, SalesReady/Telesales, CartReady, StormReady and WebReady

David Gerstmann, President
56 Hudson St.
Northborough, MA 01532-1922
508-393-0200; 800-833-4459; FAX: 508-393-0255
E-mail: sales@wireready.com
Web site: www.wireready.com

Wohler Technologies Inc. **C6221**

Yamaha Corp. of America **N2531**
Intro: Version 2 of the PM1D adds 20 features based on user feedback, including improvements for sound reinforcement, broadcast and theater applications; also, MY8-ADDA96 interface card eight-channel analog I/O card for DME24N/64N, PM1D, PM5D, DM2000, DM1000 and more operates at up to 24-bit, 96 kHz; XM4080/XM4180 lightweight multichannel power amplifiers offers four channels of independent amplification at 180 or 80 W per channel; DME24N/64N version 1.1 software upgrade adds almost 30 new features to the DME programmable DSP platform, including an special effects component, WAV player, crossover processor and event scheduler; AE-041 Surround Post and AE-051 Vintage Stomp add-on effects plug-in packages can be used on DM2000V2, DM1000V2, PM5D, 02R96V2 and 01V96V2, Surround Post package adds room ER, auto Doppler and field rotation, vintage stomp package adds popular '70s effects.
Also: PM1D digital audio mixing system, PM5000 professional mixer, PM5D/RH, DM2000 and DM1000 digital mixers

Z Technology **C3139**
Intro: FSMeterMate Windows-based software for the control and recording of analog television and radio signal data, available to R-506 and R-507 field-strength meter owners at no charge via the Z Technology Web site.
Also: R-506 programmable field-strength meter and AM broadcast block converter

Zaxcom **N4215**
Intro: TRX900 wireless microphone transceiver with IFB; Deva Mix-12 mixing panel controls internal mixing features of Deva IV and V hard disk recorders, contains keyboard for entering meta-data; Deva V hard disk recorder, 10-track, 192 kHz hard disk-based audio recorder for television and film.

Zero Manufacturing Inc. **C2663**
Intro: Offers aluminum and plastic protective solutions, including cases for equipment, field instruments or sensitive electronics with standard options and custom-design capabilities.

World Radio History

The routing switcher gets a new twist.

(About five twists per inch, actually.)

Everybody needs to share audio. Sometimes just a few signals — sometimes a few hundred. Across the hall, between floors, now and then across campus. Routing switchers are a convenient way to manage and share your audio, but will your GM really let you buy a router that costs more than his dream car? Unlikely.

If you need a routing switcher but aren't made of money, consider Axia, the Ethernet-based audio network. Yes, Ethernet. Axia is a *true network*. Place our audio adapter nodes next to your sources and destinations, then connect using standard Ethernet switches and Cat-6. Imagine the simplicity and power of Ethernet connecting any studio device to any other, any room to any other, any building to any other... you get the idea.

Routers are OK... but a network is so much more modern. With Axia, your ins and outs are next to the audio, where they belong. No frame, no cards, no sweat.

Scalable, flexible, reliable... pick any three.

An expensive proprietary router isn't practical for smaller facilities. In fact, it doesn't scale all that well for larger ones. Here's where an expandable network really shines. Connect eight Axia 8x8 Audio Nodes using Cat-6 cable and an Ethernet switch, and you've got a 64x64 routing switcher. And you can easily add more I/O whenever and wherever you need it. Build a 128x128 system... or 1024x1024... use a Gigabit fiber backbone and the sky's the limit.

Are you still using PC sound cards?

Even the best sound cards are compromised by PC noise, inconvenient output connectors, poor headroom, and other gremlins. Instead, load the Axia IP-Audio Driver for Windows® on your workstations and connect *directly* to the Axia audio network using their Ethernet ports. Not only will your PC productions sound fantastic, you'll eliminate sound cards and the hardware they usually feed (like router or console input modules). Just think of all the cash you'll save.

Livewire

< · · · > 100/1000

There's a better way to get audio out of your PC. No more consumer grade ⅛" connectors – with Axia your digital audio stays clean and pristine.

Put an Axia Microphone Node next to your mics and send preamplified audio anywhere you need it, over Ethernet — with no line loss or signal degradation.

Put your preamps where your mics are.

Most mainframe routers have no mic inputs, so you need to buy preamps. With Axia you get ultra-low-noise preamps with Phantom power. Put a node in each studio, right next to the mics, to keep mic cables nice and tight, then send multiple mic channels to the network on a single Cat-6 cable. And did we mention that each Mic Node has eight stereo line outputs for headphones? Nice bonus.

Put your snake on a diet.

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

An Axia digital audio snake can carry hundreds of channels of digital audio on one skinny CAT-6 cable. We know you're not going to miss soldering all that multi-pair...

ENCO SYSTEMS INC

PSi

radio

Scott Studios

BALSYS

Axia is already working with some great companies. Like Enco Systems, Prophet Systems, Scott Studios, Radio Systems, Balsys Technology Group, and of course Telos and Omnia. Check AxiaAudio.com/partners/ to find out who's next.

With a little help from our friends.

A networked audio system doesn't just replace a traditional router — it *improves* upon it. Already, companies in our industry are realizing the advantages of tightly integrated systems, and are making new products that reap those benefits. Working with our partners, Axia Audio is bringing new thinking and ideas to audio distribution, machine control, Program Associated Data (PAD), and even wiring convenience.

Would you like some control with that?

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

Control freaks of the world, rejoice: intelligent Axia mixing surfaces give talent complete control of their working environment. Reconfigure studios instantly and assign often-used sources just where they're most useful.

"This sounds expensive." Just the opposite, really. Axia saves money by eliminating distribution amps, line selectors, sound cards, patch bays, multi-pair cables, and tons of discrete wiring — not to mention the installation and maintenance time you'll recover. And those are just side benefits: our hardware is about half the cost of those big mainframe routers. That's right... *half*. Once you experience the benefits of networked audio, you will never want to go back. AxiaAudio.com for details.

AXIA

A TELOS COMPANY

Broadcasters General Store BGW

Axia products are available in the USA from Broadcasters General Store and Broadcast Supply Worldwide. See www.AxiaAudio.com/buy/ for more information.
© 2004 TLS Corp. All rights reserved. Axia is a trademark of TLS Corp. All other trademarks and likenesses are property of their respective owners.

World Radio History

GM Journal

Radio World | Resource for Business, Programming & Sales | March 30, 2005

People News

Page 65

Fries Sees Healthy Future

The following are excerpts of a summary from the Radio Advertising Bureau of comments by President/CEO Gary Fries about the outlook for U.S. radio sales. He spoke at RAB2005. Fries cited growth in several emerging categories as an indication of radio's growth and "strong future."

Fries began by laying out the drastic changes in today's marketing landscape, including the shift in the metrics of marketing and the evaluation of media, plus the emergence of new media.

"There is a quest on behalf of the manufacturers, retailers and advertisers to connect with the consumer and to figure out a new way to use media. The Customer is becoming King," he said. "We are moving from a measurement consumer media, to a Return on Investment (ROI) media, to an environment in which the advertiser is trying to connect at the store and at the shelf with the consumer. ROI is becoming the metric of measurement. No longer is it body counts only or demographics only."

Connections

Alluding to the plethora of emerging media including iPods, satellite radio, electronic billboards and more, Fries observed that it is going to be about the media that connects with the consumer.

"Radio has had an unparalleled relationship with the consumer. We need to exploit that and learn how to present that," he counseled. "We have been presenting ourselves as a commodity with just numbers of

See RADIO SALES, page 63 ▶

'Seeker' Looks for Broader Reach

Florida Radio Host Brings Together Long-Lost Family, Friends

by James Careless

"If you can't find your missing friends and relatives through The Seeker, they have left the planet!"

This bold statement is the slogan for "The Seeker," airing every Friday 11 a.m. to noon on Metropolitan Radio Group station WTMY(AM) 1280 in Sarasota, Fla.

Photo: Michael Eng, The East County Observer

Former private investigator Linda Hammer hosts 'The Seeker.'

This slogan also applies to *www.the-seeker.com*, an extensive Web site that backs up the radio show, a global simulcast over the Web and its Florida newspaper columns.

Despite its audacity, the slogan would appear to be justified if testimonials on the site's "Sought & Found" page can be believed:

"Thanks To You All ... I Got To Talk To My Dad For The First Time In 31 Years On 7/25/04 And My Grandmother 7/24/04 For The First Time," wrote Trish Bradberry.

"I recently located my birth son, Ryan. I had only been searching for him for about five months if that, and he was found," said Michaeleen Wilson. "He didn't know he was adopted until he was 18, he is 20 now but said he wanted me in his life as soon as he knew."

So what's the cost of The Seeker's services? Nothing: they are completely free.

"Everything we do is paid for by sponsors on our Web site, radio show and monthly magazine," said Linda Hammer, host of "The Seeker," publisher of its site and writer of its newspaper articles.

"We don't charge people to find people; we do what we do because we know how many people are desperately searching for their missing friends and relatives, and they don't know where to turn. There are millions of people searching for one another, including over 100 million genealogists, over 80 million adoptees and birth parents searching for one another, and a zillion classmates.

"Practically everyone I talk to is searching for someone."

She's the seeker

A Navy veteran, former private investigator and "the first female process server in the state of Florida," Hammer began helping people find each other in 1976.

"As a former P.I. and process server, finding people is second nature to me," she said. However, it wasn't until Hammer was listening to a long-distance dedication on "American Top 40," hosted at the time by Casey Kasem, that she decided to apply her talents to radio.

"Casey's show made me think that I could do something like that to help me find my friend, John Duffy, whom I hadn't seen in over 20 years," Hammer said. She eventually did find him.

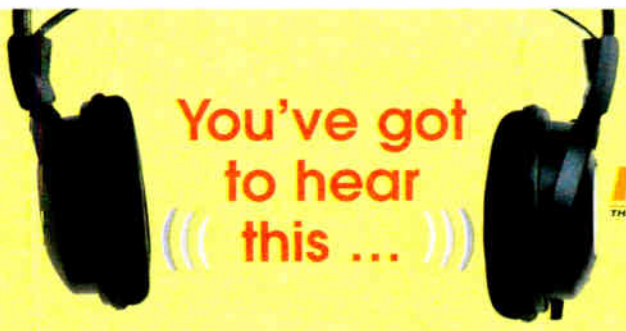
That inspiration convinced Hammer to launch a radio show on WSPB(AM) in Sarasota in 1999. She subsequently syndicated "The Seeker" herself on five Florida radio stations and satellite, a cost Hammer bore alone, as she didn't have any sponsors at the time.

Next, Hammer syndicated the show through the now-defunct Talk America and People Radio Network satellite services. However, she says, the hassles of dealing with third-party syndicators, plus the success of her Web site, convinced her that the struggle wasn't worth it.

"I would like to go national again," she said. "All I want is to work with broadcasters who don't expect me to pay for airtime, when I'm giving them worthwhile programming."

Hammer said PDs looking for something different can hear sound files of broadcasts at the site or e-mail her at

See THE SEEKER, page 62 ▶



Visit us in THE NAB ZONE at NAB2005 THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW April 16th-21st!

Compare your current coverage. Call **1-800-432-7465** and ask for Maria Moreno at ext. 553 or Amy Doherty at ext. 571. Or visit us online at **www.nab-aon.com** to learn more.

There's a buzz in the broadcasting community. People are talking about **NAB's Property & Casualty Insurance Program**. It offers:

- A wide range of coverages – General Liability, Workers Compensation, Auto, Inland Marine, Umbrella Liability, Directors' & Officers' Liability, and more.
- Coverage limits tailored to radio, television and cable broadcasters *of all sizes*.
- Competitive rates.
- What makes it really different: *In certain circumstances, the program pays a* ***dividend** to program insureds.*

* Umbrella Liability is NOT eligible for this dividend, whether part of the package policy or written separately. In accordance with state law, dividends may not be guaranteed in advance and can be paid only from distributable surplus following resolution adopted by the Board of Directors of The Hartford Compnay(ies) declaring the dividend. Nothing contained herein or communicated either in writing or verbally shall in any way change or modify this understanding. This illustration does not represent or imply in any way a guarantee of the payment of dividends. The parameters of this plan are subject to all of the laws and regulatory requirements for jurisdictions of the United States of America. Workers Compensation premiums in CA and FL are not factored into the dividend calculation. Dividend is not available in AK, HI, CO and NY.

Aon Association Services, a Division of Affinity Insurance Services, Inc. in CA, MN & OK a Division of AIS Affinity Insurance Agency, Inc. and in NY & NH a Division of AIS Affinity Insurance Agency. CA License #0795465. Please note that the precise coverage afforded is subject to state approval and the terms, conditions, and exclusions of the policies as issued.

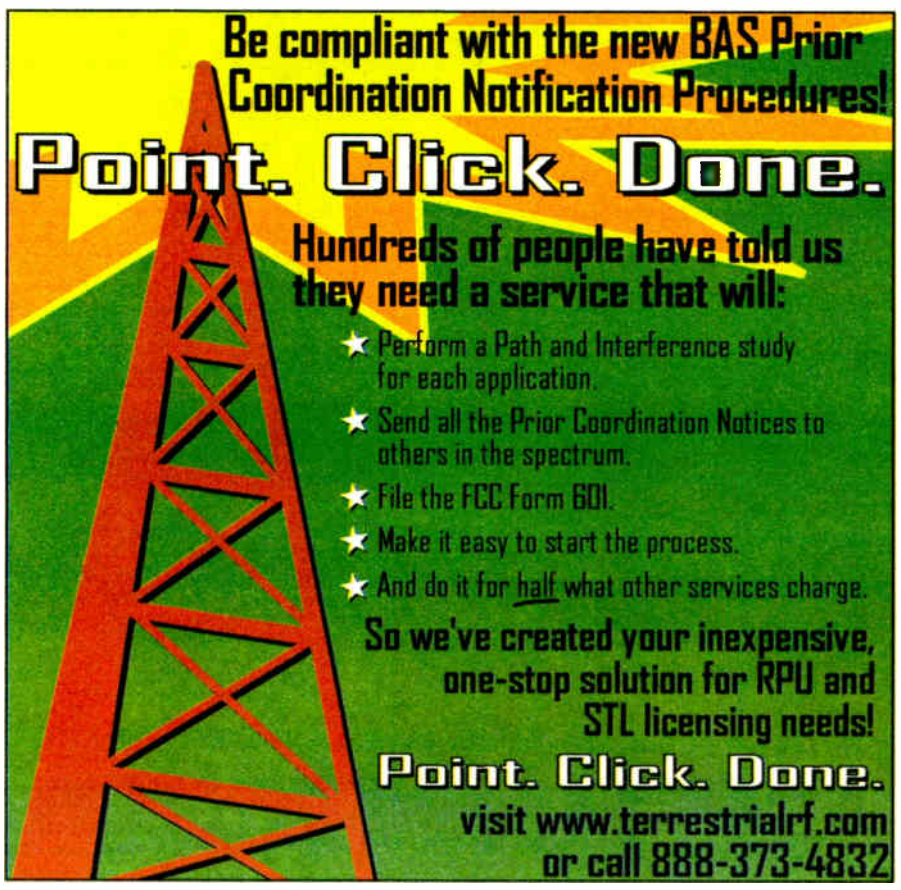
© 2005 Aon Association Services

The Hartford | National Association of NAB Broadcasters | Aon

NAB9105-show

World Radio History

STATION/STUDIO SERVICES



The Seeker

▶ Continued from page 61

linda@theseeker.com.

The power of "The Seeker" is rooted in its "Search Angels," volunteers with Web access who listen into the show from all over the world, then take it upon themselves to search the Web for clues.

The Search Angels also scan through free ads posted on the site. These are organized in four categories: *Generally Seeking*, *Relatively Seeking*, *Militarily Seeking* and *Seeking Beneficiaries*. These ads can also be scanned by the general public.

Generally Seeking features ads looking for lost friends, ex-co-workers and ex-lovers.

"It is for anybody looking for someone who is not a family member, military pal or beneficiary," said Hammer.

Relatively Seeking is for those seeking long-lost family members, including birth parents, adoptees and missing siblings. Although not adopted herself, Hammer is dedicated to helping adoptees and birth parents find each other.

"At *www.the-seeker.com*, a birth parent can log in the day, month and year that their child was born," she said. "Should this adult adoptee log onto the site afterwards and enter this date, they will hopefully find a match from someone who has posted looking for them — or the Search Angels will help them.

"It is important to note that 'The Seeker' does not help minor children in their searches, nor birth parents in locating minor children."

In an effort to help adoptees and birth parents one step further, Hammer has launched a service called Touched By Adoption. Online at *www.touchedbyadoption.org*, it is a free DNA databank.

"Basically, we ask birth parents and adoptees seeking each other — and their siblings — to provide DNA samples," she said. These are obtained through Q-tip cheek swabs; not blood samples.

"As new samples are added, we cross-reference them, to see if any of them match."

Like The Seeker, the service is free to users, with costs being covered by sponsors, local and federal grants and various fund raising functions.

Hammer's co-founder in that venture, Gale Sipple, is an adoptee herself who had used the services of the DNA lab to find her sister. Sipple is based in Kentucky and runs the day-to-day operations of Touched by Adoption.

Militarily Seeking helps members and ex-members of the military find each other, while *Seeking Beneficiaries* alerts people to various government payments, insurance benefits and even old bank accounts to which they are entitled.

"Anyone can be a beneficiary without even knowing it," said Hammer. "The State Treasury Department of Florida, for example, looks for millions of people on any given day who are entitled to about billions of dollars being held on their behalf."

While the services are free to the searchers, convincing sponsors to pay the freight has required Hammer to promote The Seeker aggressively. For instance, "My Web site grew from 25,000 visitors a month to 1 million in 41 days, because a sponsor required a minimum of 1 million visitors," she said.

Hammer most enjoys the live, in-person nature of her work. "My live-in-person audiences have ranged from as few as 15 to as many as 85, while at the same time, on air audiences range from 75 to 450 per show." She takes the gig on the road and hopes to tour beyond Florida eventually.

"I'm far more interested in building up the in-person audiences and reuniting people live. And I will be reuniting people with money they didn't know they had coming to them. I'll be the Ed McMahon of reuniting people," she said with a laugh.

World Radio History

Radio Sales

▶ Continued from page 61

listeners. We cannot do that anymore. We need to present our value."

Fries relayed a recent discussion where it was said to grow our business we need to drive pricing. "I don't agree," Fries stated. "We need to drive our value. If we drive our value, pricing will follow. We have so many values that are on the table and not taken to the marketer or the advertiser."

Fries also discussed the Advertiser Perception Study scheduled for release later in the day, noting that radio is still not perceived as the most accountable medium by advertisers.

Gary Fries

"Radio people think we are," he said, but went on to clarify that in today's environment, advertisers are obligated to show their stockholders or owners that they are getting what they purchased. "But the needle is moving," according to Fries, "and radio is in front on many issues. But we haven't had the ratings systems to tell the advertiser what is going on."

Indicating that a three-book average consisting of data that could be as much as a year old is no longer acceptable. "We have to become more relevant. We have to deliver more information, real-time information, and accurate information. We are moving in that direction, but we're not there yet. We need to be the most accountable medium out there."

'Shoulder to shoulder'

Fries trumpeted the radio industry for coming together "shoulder to shoulder" in an unprecedented fashion to fund several initiatives to propel the industry forward. Fries mentioned that in 2004, over 30 radio companies banded together and committed significant amounts of money to fund research that establishes credible evidence on how radio works. In particular, he referenced the Wirthlin and Synergy Studies from the radio Ad Effectiveness Lab (RAEL).

"The Wirthlin Study documents in cold, hard research the relationship the listener has to commercials on radio," he explained. "We've known this, but we never had the evidence that radio advertising has a distinct one-on-one relationship with the consumer. It documents how the consumer 'feels' about a radio commercial, compared to how they 'feel' about a TV commercial."

Fries also pointed to the significance of the composition of the RAEL Research Committee, a body that includes advertisers and marketers, giving the findings instant credibility and penetration. He strongly suggested that radio station management get involved and present the study to clients.

"This is a chance for management to re-engage with advertisers," he said. Fries also revealed that success stories had already poured into the RAB. One cluster attributed closing a $900,000 new business order to the Wirthlin Study.

He also encouraged the industry to utilize the results of the Synergy Study that shows the impact of adding radio to the media mix with newspapers or TV. The study, said Fries, reveals an almost 300 percent increase in recall when radio is added to a newspaper buy.

"We have always known that radio is an essential part of the mix. This is evidence to take money out of newspaper."

Fries also suggested that the challenging economy of 2004 had a direct impact on the radio business because radio is linked so closely to the emotions of consumers. In spite of that, radio still ended the year with an increase in revenue.

"I have heard positive things about 2005," he said, "but it is not going to be easy. It will take work," he cautioned. Fries countered the doom and gloom prophecies of radio naysayers with 2004 statistics from the accounting firm, Miller, Kaplan, Arase, & Co., on the significant increases in several emerging categories that were not leaders several years ago:

Professional Services (7th largest radio category)	*+19%*
Internet	*+15%*
Health Care (6th largest radio category)	*+7%*
Financial Services	*+6%*
Insurance (non-medical)	*+32%*

"If we have emerging categories, we have a future," he declared. He urged the industry "to be farmers vs. hunters," suggesting that radio will have a stronger future by growing and nurturing its business for tomorrow rather than hunting it down and shooting it for today. "If we are farmers, we will be successful."

Fries closed his comments with sobering statistics on satellite radio subscriber goals compared to radio listening levels. Quoting radio listening for total persons 12+, RADAR 03 vs. RADAR 04, Fries said, "In one year, without any great promotion, we gained 3.5 million new listeners to radio. This is a great business. Whenever there is change, there is opportunity. I challenge you to seize that opportunity."

World Radio History

Pay Radio in Your Hand

AudioFeast Uses the Web to Sell 'Commercial-Free Digital Quality Radio for Your MP3 Player'

by James Careless

You've read here about podcasting, transferring Web radio programs from the Web to Internet-connected iPods for playback on the go. Now we hear of commercial-free audio channels that are being transmitted to a range of portable MP3 players via the Web site *www.audiofeast.com.*

Strategically, AudioFeast is following the satellite subscription model, except that its transmission medium is the Web.

"Our goal is to leverage the ubiquity of MP3 players, plus the fact that people don't want to carry a multitude or portable devices with them," said Jennifer Doyle, AudioFeast's vice president of marketing and programming.

"With AudioFeast, they can have the commercial-free radio channels they want with them, without having to carry a satellite radio receiver."

How it works

AudioFeast allows subscribers to listen to talk and music programs whenever they want. The subscriber downloads the software, then surfs through a menu of programs and selects the ones he or she likes.

Once the programs are downloaded to the computer, a subscriber automatically can sync to compatible MP3 players. As long as the subscriber's computer is connected to the Internet, the content automatically refreshes the moment it becomes available.

In order to entice casual surfers to try AudioFeast, the service offers eight channels for free, covering pop, urban, smooth jazz, club mixes, sports and business, including American Public Radio's "Marketplace PM" program.

"We try to give newcomers a taste of what we have to offer," said Doyle. "When they move up into the subscription service, they get access to a hundred different music channels, plus talk shows from Bloomberg, NPR and A&E, among others."

The full AudioFeast service costs $7.99 a month, or $3.99 a month if the person pays for a year in advance. Or you can order 100 channels of music for $5.99 a month ($2.99 for annual payers), or a news, sports and entertainment package for $5.99/$3.99 respectively.

Musically, AudioFeast covers the spectrum, with dozens of non-stop, commercial-free music sets including classical, country, jazz, rock, rap and pop. It also offers familiar syndicated programs, including music shows from varied public radio outlets and commercial radio stations. All of the music content is licensed; royalty payments are made based on the number of subscribers who listen to the content.

In the talk section, AudioFeast has programming from AP, Bloomberg, BBC, C-SPAN, NPR and international broadcasts (in various languages) from China Radio International, Deutsche Welle (Germany), Radio Polania (Poland), Radio Romania and Radio Sweden.

The site also offers hobby-themed programs such as Discovery Channel's "American Chopper," plus sports, weather, entertainment and religious shows. The shows are updated as their regular broadcast schedule demands, daily or weekly.

Business case

As it only launched in late 2004, it is probably too early to judge AudioFeast's fortunes. The company isn't releasing any subscriber numbers. The real proof of its success, or lack thereof, will likely be whether AudioFeast is still in business five years from now.

This said, it is possible to assess AudioFeast's strategy, which is based on replicating satellite radio's inroads into consumers' wallets.

As outlandish as the notion of pay audio programming may seem, the same approach is making inroads to consumer habits via satellite radio. Moreover, before XM and Sirius came along, few people believed that the public would pay to hear what they could get for free off-air. Now that satellite has more than 4 million subscribers, it is clear that at least some people will pay for content they want, especially if it is commercial-free.

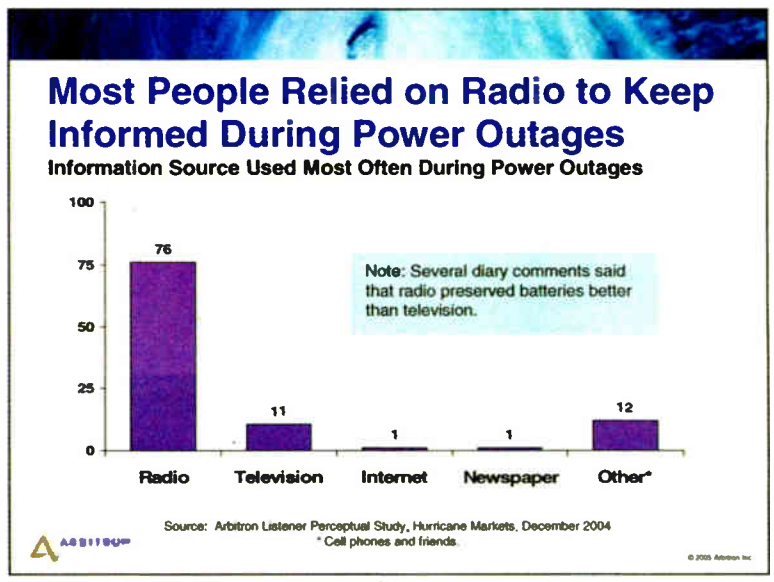
As a result, AudioFeast's gamble isn't really based on the viability of pay radio per se; XM and Sirius have already proven this model's worth. AudioFeast's real risk lies in the assumption that consumers will regard MP3 program downloads in the same favorable light as satellite radio, and thus pay their monthly fees accordingly.

Convenience is a factor that Doyle hopes will play to AudioFeast's advantage.

"While consumers love their MP3 players, they are frustrated by the time, effort and sometimes the extra money required to load their players with interesting content," she said. "Our service lets you keep your MP3 player refreshed with great radio programming that is easy to sync and use."

AudioFeast's full service is compatible with MP3 players made by iRiver and it has announced partnerships with MobiBlue and MPIO.

Radio in the Midst of the Storm



Three-quarters of those surveyed in a recent Arbitron study relied on radio to stay informed during power outages resulting from hurricanes of 2004. But more respondents thought TV had the most current information. One finding, as shown above, was that most people relied on radio to keep them informed during the related power outages. 'Listeners repeatedly commented that radio was dependable, used fewer batteries and had better signals than television, and it was portable.' The report is at www.arbitron.com.

World Radio History

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

Don Benson

Jefferson-Pilot named **Don Benson** president of the radio division of its broadcasting subsidiary, Jefferson-Pilot Communications. Benson succeeds Clarke R. Brown Jr. who will assist in the transition until his retirement in June. Benson has served as senior vice president of operations/programming for the radio division for 10 years. ... Also, JPCC's San Diego cluster named **Eric Schecter** director of engineering, overseeing the technical operations of KSON(AM-FM), KSOQ(FM), KIFM(FM) and KBZT(FM). He has held previous Phoenix engineering manager positions for AM/FM Inc. and Infinity Broadcasting's KMLE(FM), KOOL(FM) and KZON(FM).

Tyrone Noble left **Audion Labs** after four years. She had been president of the supplier, based in Washington state, under a contract agreement. Noble said she's leaving for family reasons and said the company would continue to be run, as it has in the past, by Kimberley and Charlie Brown. "The Browns are committed to the radio industry," said Noble.

American Country Countdown promoted chief engineer **Ken Halford** to producer. He retains his chief engineering duties and works with "American Country Countdown" host and Executive Producer Bob Kingsley on the weekly show, as well as Kingsley's daily "America's MusicMakers" and annual "Bob Kingsley Presents" holiday specials.

Ken Halford

Ed Bukont, a principal in CommStruction, a technical projects firm, completed the RF and Telecommunications Site Safety Awareness programs required to obtain the OSHA 10-hour training certification provided by RF Safety International.

Wohler Technologies hired **David Johnson** as chief operating officer. He has held senior management positions with companies including Maxtor, Iomega and Amdahl.

The FCC Enforcement Bureau named **Sharon Agee** assistant bureau chief for management. She had been the Enforcement Bureau's deputy ABC for management.

ABC Radio promoted **Jeffrey Boden** to president and general manager of WRQX(FM) and WJZW(FM) in Washington. He most recently served as director of sales at WRQX and WJZW.

Broadcasting communications exec **Andi Sporkin** was named vice president of communications at **NPR**.

Ric Goldstein

Ric Goldstein joined **SCMS Inc.** as an account executive. He will be based in Raleigh, N.C., and will develop the pro audio and commercial sound markets for the SCMS Broadcast and Computer Group. Goldstein has held various positions in the pro audio and broadcast supply industry for 30 years, recently with Bradley Broadcast Sales and Pro Audio.

OMT added **Obie Dixon** to its iMediaTouch sales team as senior account manager. He had spent the last 15 years in various roles including sales positions for traffic and billing systems, radio consultant to stations and a 13-year stint as a sales rep for broadcast automation vendor Computer Concepts.

David Goodman was named president of marketing for **Infinity Broadcasting**. He has served as executive vice president of marketing since joining the company in 2002. He had previously been CEO for LockStream Corp.

Greater Media Philadelphia promoted **Bob Deblois** to station manager of Oldies 950 WPEN(AM).

Departures

Jerry N. Weddle, recently retired from a sales position with **Harris Corp.** after nearly 20 years, died at Reid Hospital in Richmond, Ind. Colleagues say he was best known for his knowledge of satellite. He was with the satellite division of Harris until a consolidation of the Richmond, Ind. and Florence, Ky., facilities in late 1999 when the Mason, Ohio office opened.

Karl Haas

WCLV(FM) in Cleveland said longtime classical music radio personality **Karl Haas**, host of "Adventures in Good Music," died in Detroit. He was 91. His program was carried by stations in the United States, Australia, Mexico, Panama, and worldwide by Armed Forces Radio.

We're changing the face of RADIO ENGINEERING...

Imagine an incredibly intelligent diagnostics solution that monitors your station 24 hours a day, so if an unexpected problem arises, you already know about it. Even if you're not at work. Our one-of-a-kind Diagnostics Solution alerts you in advance (using activity thresholds defined by you) should your on-air system exhibit a potential problem. It's the ideal add-on to your new or existing Scott Studios or Maestro digital automation system.

dMarc's Diagnostics knows which activities are normal and which are not, and it knows when and how to send alerts to just the right people. Prevent serious malfunctions, partial shutdowns or even dead air. All this from a single, easy-to-use Management Console so flexible it can monitor a single station or an entire network.

The price is right, too. (Free!) Call or email us for details on how this critical diagnostics solution can be yours without investing a single dime. Our Quick Response Email Hotline is diagnostics@dmarc.net or call Toll Free 888-438-7268.

...ONE STICK at a time.

Ph. Toll Free 888-438-7268
www.dmarc.net
Email: diagnostics@dMarc.net

Visit us at NAB Booth N3902!

Scott Studios Maestro

dMARC BROADCASTING

DIAGNOSTICS | DATASERVICES | SARBANES-OXLEY | REVENUESUITE

Scott Studios and Maestro are product lines of dMarc.

World Radio History

Your Station: Does It Print?

by Mark Lapidus

I've been thinking a lot lately about "printing."

No, I'm not daydreaming about printing presses. I've been turning my thoughts toward the process of getting something to "print" in a listener's mind and heart.

Why? Because the methodology used by Arbitron doesn't work for me. I get nauseous when I review diaries and see the crazy way listeners fill them out. I'm also tired of hearing about how hard it is to reach certain target demos because they just don't answer the telephone.

So this is how I've been coping with my Arbitron anxiety lately. I figure if we "print" with impact in listeners' minds, we have a much better chance of them remembering our radio station(s) when they try to recall what they've listened to for the last week.

Now that you know how I got on this train of thought, if you'd like to take a ride with me, stick around for a few paragraphs and let's see if the approach I'm laying out makes sense.

Personal

Beyond health, well-being and money, what are the most important things for people who live fairly normal, socialized lives?

Part of the answer lies in personal events. We learn as little kids to look forward to things that lay in store for us both in the short and long terms. This gives us the strength to get through difficult times in our lives.

Since she was old enough to talk, our daughter has looked forward to her birthday. Now age 11, she still begins talking about what she wants to do for her birthday six months before the actual date. It drives my wife and I crazy, but we tolerate it because we know just how much it means to her. We're not sure why this has happened; we've never made a big deal out of her birthday nor given conscious cues that would lead her in this direction.

Her birthday is important to her, well, just because it is.

NEW Digilink Satellite Automation...

ONLY $100 PER MONTH

now shipping !!!

Xtreme 'SOFTWARE' powerful Windows PC software for live air, automation, scheduling, and production

The 'Bridge' hardware ... supplied by Arrakis contains the audio sound cards, routing switchers, and control logic so that the PC requires NO special hardware or setup. This means that the PC can be off-the-shelf, and unmodified so that it is easily serviced locally. The Xtreme 'Solutions' program is per workstation for complete redundancy and backup. Imagine an AM/FM combo with production room for only $300 per month. With more than 15 years of automation experience and thousands of Arrakis automation systems in the field around the world, Arrakis can provide you with the solution that meets BOTH your business AND technology needs.

Xtreme 'HARDWARE' a 16 x 3 stereo routing switcher, dual PC sound cards, & control logic

No down payment
Return at any time
Free Factory training
Free Hardware support
Free Telephone support
Free Software upgrades
Free Hardware upgrades
Free PC and Network setup

the XTREME 'Solutions' program

Xtreme is a complete solution for live & automated On Air Radio systems. Pay one very low monthly fee, and we do the rest. We supply the audio hardware, software, and support, while all that you supply is the PC. Without a large initial equipment investment there is no financial risk or capital expense; the old automation system can be upgraded out of current operating costs. With free system configuration and training you receive the help you need to make a smooth transition to the new system. With free hardware replacement, ongoing repairs are worry free. Free telephone support helps train new staff, and free software upgrades means you have the latest product features at no cost. The only hardware that is not included is the PC computer and we can help you with that too... also for free.

...the risk free automation system
XTREME~digilink

970-461-0730 www.arrakis-systems.com now shipping !!! Arrakis

Promo Power

by Mark Lapidus

Okay, birthdays are important to a lot of people. What else? Here's a short list of events that many people feel are important to them, in no particular order:

- ✓ Wedding
- ✓ Honeymoon
- ✓ Birth of a child
- ✓ A large purchase, such as a home or car
- ✓ A death
- ✓ Vacation
- ✓ Going to a summer camp
- ✓ Being admitted to an institution of higher learning, a university or trade school
- ✓ Getting a driver's license
- ✓ A fishing or hunting trip (you may not buy that one — unless you do either)
- ✓ Retirement
- ✓ Competing in a sports activity or playing in a league sport
- ✓ Graduation
- ✓ Prom
- ✓ Receiving an award for an accomplishment
- ✓ A religious activity like a baptism or a bar mitzvah

I'm sure you can dream up many more, and you should. When you start your list, tilt your thinking toward the personal, rather than group experiences. For example, the Super Bowl is important to a lot of people; but unless you're playing in it, it's not really personal.

Recall

Now that we have our list of events that "print" in people's lives, what are we to do with it? The first focus is on-air.

Does our morning show touch on these events in a way that hits memories or involves listeners in a way that reminds them of their own experiences?

When talent does this in the right way and with frequency, they are likely to create a memorable bond.

Will listeners remember your morning guy for being great at delivering the time and temperature? Or that he talked about his recent honeymoon and things that went wrong, then took calls from listeners who had funny stories to tell of their own honeymoons?

Our second focus deals with the events. When we tie a young, female-based radio station to a bridal show, we touch people who are making one of the most dramatic commitments of their lives. If we help them in the right way, they are likely to remember it.

If you, as a listener, were to enter a station fishing contest and you had a great time — because you love to fish and hang with other people who like to do the same

See PRINT, page 67 ▶

World Radio History

FIRST PERSON

Yee, Ha! The Grand Ole Opry

by Ken R.

In December 1968, a high-school friend and I decided we wanted to drive from Ohio to Nashville, Tenn., to visit the Grand Ole Opry. I have no idea why; neither of us was a big fan of country music. But we fancied ourselves a couple of zany kids; it seemed like it would be fun.

I called and made arrangements with the public-relations people in Nashville so that we could get backstage, and we took off.

Nashville certainly offered a glimpse of a different culture. We had never seen a fast-food establishment where one might obtain a "Tex Ritterburger." The radio stations all seemed to be thumping out a more vibrant form of country music than we had in the Midwest.

We pulled into Music City at dusk on an unseasonably frigid evening, in the middle of a snowstorm. Following our guide map (25 cents at any local drugstore), we located the glorified barn known as Ryman Auditorium, home of the Opry since 1943.

In the land of Nudie's suits

The structure itself had been built in 1892; but judging by the construction, it went back to Noah and the Flood.

We found a parking spot in an alley by the back door, climbed the rickety metal steps to this famous landmark and knocked loudly. An elderly gentleman with an accent you could hang a hat on opened the door and I introduced myself. He had no clipboard, no list of names to check. He just grinned and said, "Why, sure! C'mon in!" The big door swung open, and there we were.

Ryman Auditorium was not glamorous. In fact, it wasn't even what I would call clean. But it was alive. People ran down the halls with guitars, microphones, pieces of scenery and junk food of all types. (No quiche within miles of this place.)

The building was a firetrap, but no one thought it odd that the audience was allowed to smoke back then. As we wandered freely behind the stage, we were never asked who we were. Everyone we met nodded or said a big howdy. It was the friendliest place we had ever visited.

We came to a large room that served as a kitchen and waiting area for the singers and players. Sitting at a table by herself was Dolly Parton. At that time she was partners with Porter Wagoner, he of the greasy hair, horse face, spangled suits and pointy shoes.

Parton looked lonely, so we sat down

See OPRY, page 68 ▶

Photo: Les Leverett, Grand Ole Opry Archives

Dolly Parton and Porter Wagoner on the Opry stage

Print

▶ Continued from page 66

— you will recall it easily.

The third thing we can do to make an impression on people is to use our Web sites more effectively so that they reflect the listener a bit more and the station a little bit less.

How? Instead of photos taken by station personnel at station events, how about photos taken by listeners of personal events in their lives?

Would your listeners e-mail you pictures of their newborns? You bet they will, and they'll tell all their friends that their new baby boy's picture is on your Web site.

How about a section on your site for summer camps? If you point my family toward a summer camp that my kid will love, you'll make an impression.

Could you put up a section remembering fallen veterans in Iraq from your area? Could you be more like a local newspaper and recognize people who have received awards for certain things in your community? Could you put up the scores of local Little League games? Are you e-mailing listeners on their birthdays with a greeting and special present like a coupon for something free?

The answer to all the above questions can be yes. It takes effort and a certain filter. That filter should be "personal."

When it's personal, it's meaningful. It has impact. It "prints." And if it "prints," you've got a much better shot of a listener printing your station's call letters down in a diary.

Mark Lapidus is president of Lapidus Media. Contact: marklapidus@yahoo.com.

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.

Moseley

Dave Chancey 805 968 9621
Bill Gould 978 373 6303
www.moseleysb.com

World Radio History

BOOK REVIEW

Radio and the American Imagination

by Maureen Anderson

I'm not one to read history books of any kind, let alone radio. And "Listening In: Radio and the American Imagination" is certainly an exhaustive history of how radio has formed us as a culture.

So I was surprised to find myself eventually sucked into "Listening In" and almost disappointed when it was over.

Author Susan Douglas is the Catherine Neafie Kellogg Professor of communication studies at the University of Michigan. She won the Hacker Prize in 2000 for writing "Listening In," an award given to the best popular book about technology and culture. It was first published in 1999 by Random House and re-released last year by the University of Minnesota Press. (Full disclosure: The latter organization is also publishing my second book.)

Zen approach

Douglas says that in the early days of the medium, radio provided a common experience that helped build a national community. She portrays radio as a heavily male-dominated phenomenon, both in terms of station ownership and programming. She thinks radio brought music and music appreciation to the masses, though she adds that of late it has become too controlled by corporations.

I found a kindred spirit in Douglas when she talked about a psychology of listening, and explained how radio uses sound to stimulate visual imagery. I went into radio as opposed to television because it leaves something to the imagination. Douglas thinks listening is a skill that is being eradicated in our culture, but radio is staving that off. With radio, you still have one-to-one communication: the musician or storyteller with a captive audience of a single driver stuck in traffic or wiling away the hours in a garage or workshop.

Douglas says that in the early 1920s, few women's voices were heard on radio, and African Americans were absent altogether. As jazz music became more popular, so did black musicians. The industry was still run by whites, however, so acceptance of the black culture and its music was slow.

Radio provided a much-needed escape from troubles during the Great Depression of the 1930s, when comedians like Fred Allen and Jack Benny became stars. They drew huge audiences, numbers that as of 1929 could be measured because the what, why and how of listening became a science.

The author deals with topics familiar to radio professionals, and others less so.

As a former radio news reporter, I found it fascinating that radio news coverage initially was considered such a threat to newspapers, even though many stations were owned by newspaper companies. Those

See LISTENING IN, page 69 ▶

Opry

▶ Continued from page 67

and had a Coke with her. She was friendly and open with us, two strangers from Ohio. There was no entourage. In fact, we were the only people in the room.

And yes, whatever you've heard about her figure was true. The only thing I hadn't realized was how tiny she was. I towered over her when she stood, and I am only about five-foot-six.

She excused herself gracefully from our tête-à-tête when she was called to the stage. Grandpa Jones wandered in and poured himself some coffee. He, of course, now picks his banjo with that big chorus in the sky.

Hi Buck

We walked around until we found the massive stage. The area was brightly lit and enormous, but casually managed. Musicians walked on and off, sometimes in the middle of songs. Singers spontaneously wandered out and ad-libbed with their friends on stage.

And always that sound. That wondrously alive sound of the best players and singers, having fun. It was a thrill to watch these pros from just feet away. Buck Owens said "Excuse me," carrying his guitar right past us as we watched the proceedings from the wings.

The audience was involved with the show, even when the action paused while an announcer, stage right, read commercials for flea traps and soft drinks you'll never find north of the Mason-Dixon Line. The show was broadcast live on WSM(AM), and some of the advertisers had the stars sing their commercials.

"Informal" doesn't even begin to describe the atmosphere. My friend and I felt like we were guests at a big family party.

In 1974, Ryman Auditorium ceased to be the home of the Opry, although 20 years later the building was restored as a tourist attraction. A spotless new amusement park called Gaylord Opryland Resort & Convention Center was built, and the live show moved in.

The new home of country music has ample parking and a well-stocked gift shop. It definitely is fireproof. Guys with hats still sing there. Guitars still twang. But there are lots of security guards around, and computers control the stage lights. The older stars have moved on or passed away, but the show must go on.

It's a big business now.

World Radio History

Listening In

▶ Continued from page 68

publishers voted in 1933 to stop printing radio schedules unless they were paid ads. They also stopped supplying news to the radio networks.

Broadcasters feared newspapers would support the efforts of some educators and others to restrict or eliminate advertising on radio. That fear led them to sign the Biltmore agreement, which meant no spot news coverage on the radio. It also meant no news items could be less than 24 hours old, and there were only two newscasts per day, timed to air after the morning and evening papers were already out.

Broadcaster worries dissipated with congressional passage of the Communications Act of 1934, and radio news took off from there.

World War II was the first major conflict covered by radio correspondents, some of whom reported live from battle zones. This meant listeners no longer had to wait for the next day's newspaper to get the latest war news.

Two of the most popular program offerings on early radio were baseball and boxing. Many people today say their earliest memories of radio are the ballgames.

Some people thought television would kill radio off, especially considering that by 1954 more than half the homes in America had television sets. Instead, radio continued to evolve and expand.

Stations featured more local programs than national; instead of the entire family listening to one console, everyone had their own radio and listening became more personalized. Stations began to segment markets, and many opted to cater to young people.

The eras of the DJ, top 40 and rock and roll had begun. Many FM stations developed a counterculture form of programming by the late 1960s, designed for listeners who wanted to hear their music in high fidelity. By the 1980s, FM listenership had eclipsed AM, though talk radio, which saw big gains during the 1980s, revitalized AM during that time as well.

Her chapter titles include "The Zen of Listening," "Exploratory Listening in the 1920s," "The Invention of the Audience" and "The Kids Take Over: Transistors, DJs, and Rock 'n' Roll." Unusual in a book about broadcasting, Douglas also gives ham operators get their own chapter.

I found a kindred spirit in Douglas when she talked about a psychology of listening, and explained how radio uses sound to stimulate visual imagery.

And she closes the book wistfully, saying formats are so tight these days they don't encourage listeners to sample new types of music. She says a bottom-line mentality has taken over the medium, and thinks most programming is predictable. "There are no surprises," she says, "with the exception of some talk shows."

If you're in radio and enjoy history, you will probably love this book. Otherwise it may get a bit long. It also suffers in its reflections about the state of radio today, from not being updated to reflect trends in satellite radio, Internet radio, low-power FM, "Less Is More" and other recent industry issues. But "Listening In" lives up to its title in that it was written by an outsider, one who has done her homework.

The book's ISBN is 0816644233; paperback, 415 pages; retail price is $19.95. You can learn more at www.upress.umn.edu.

Maureen Anderson is host of "The Career Clinic" radio program and author, with Dick Beardsley, of "Staying the Course: A Runner's Toughest Race." Her second, pending book is the memoir of a Vietnam veteran.

Good Cause, Smart Money?

Noted in passing, the following excerpt from the Radio Newsletter of the Intercollegiate Broadcasting System:

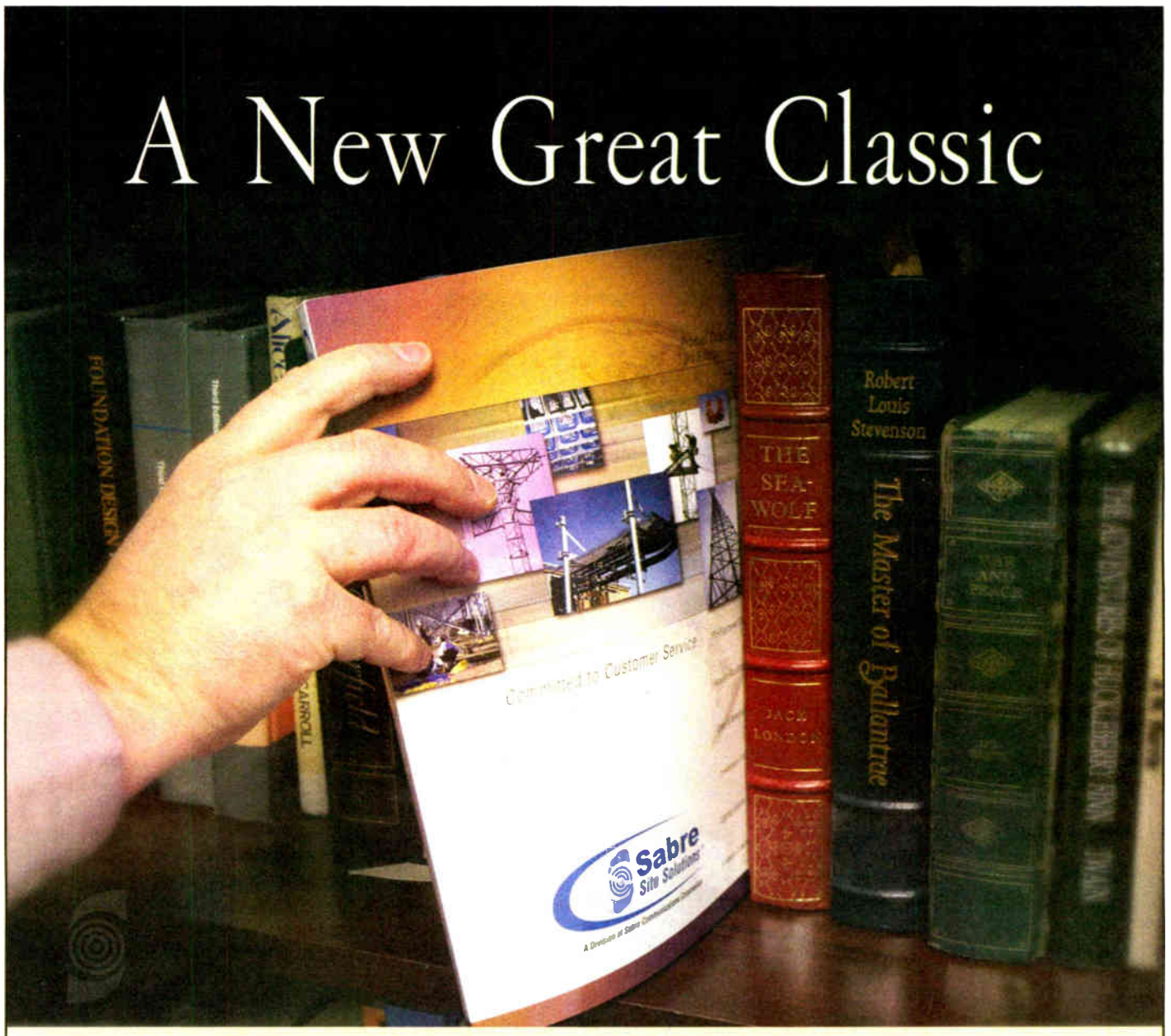
"In Minneapolis/St. Paul, a fiscal crisis has created some strange bedfellows. Financially ailing IBS member and convention attendee KBEM/Jazz 88 will get major support from one of the world's largest radio conglomerates. Clear Channel, owner of Jazz 88's closest competition, 'Smooth Jazz' KJZI(FM), has reportedly delivered a $25,000 check to KBEM, executives at both stations told the Star Tribune.

"That a corporation often tarnished with an engulf-and-devour reputation when it comes to radio stations would reach out to a tiny competitor is hardly the norm. Clear Channel will also broadcast messages on several of its Twin Cities stations asking listeners to support KBEM. ...

"A Clear Channel spokesman said its attraction to the station had a lot to do with its educational component. In addition to its jazz programming, KBEM also serves as a training ground for 150 students who go through North's broadcast communication programs each year. ...

"Clear Channel's seven Twin Cities stations helped more than 100 local charities raise about $10 million in 2004, he said.

"'I know our help seems ironic,' said Clear Channel's MacLeash. 'We've gotten this big evil empire reputation, but our stations are all locally controlled. We decide what we're going to do. And (helping KBEM) is what we want to do."



EVERY SO OFTEN A BOOK COMES ALONG that is better than all the rest. One that stands out among the crowd, and is used over and over again. Sabre Site Solutions' new Product Catalog is a classic components catalog. The most comprehensive catalog in the tower industry, it offers everything from pre-engineered structures to tower components and accessories. With kitted product offerings, an expanded antenna mounting section and product information to make your purchasing decision easier, Sabre Site Solutions' catalog is a masterpiece among component catalogs.

Request your copy of this great classic today.

Sabre Site Solutions™
A Division of Sabre Communications Corporation

Call toll free 1-866-4-A-TOWER (866-428-6937)

World Radio History

Clear Channel New Orleans Seeks to Motivate Reading

Advocating reading, Clear Channel radio stations Q93 and WYLD(AM/FM) in New Orleans have launched a monthly series called Monica's Book Club. It features Monica Pierre, the news director for Clear Channel Radio New Orleans and co-host of the morning show on WQUE(FM).

She appears monthly at various venues such as bookstores, art galleries and local restaurants holding book discussions. The radio talent is also an author, and started the series with a reading of her "No Permanent Scars: It's Never Too Late to Have the Life You Really Want."

Subsequent meetings highlighted the poems of Langston Hughes; "The Bad Beginning," the first in the Lemony Snicket books; and "Skinny Girls are Evil" by Mo'Nique.

"It is Clear Channel Radio's mission to motivate the city of New Orleans to read," the station group said in a statement. "In April 2004, Clear Channel partnered with the Young Leadership Council in 'One Book, One New Orleans,' where the city was encouraged to read 'A Lesson Before Dying' written by Louisiana native, Ernest Gaines. It was from this campaign that Monica Pierre was inspired to promote literacy."

Changes in Perception Can Help Radio's National Business, RAB Finds

The Radio Advertising Bureau this winter released the second phase of an Advertiser Perception Study, funded by Arbitron and conducted by Padin & Estabrook and TargetCast TCM.

"The most striking findings in the survey reveal that by improving its accountability with advertisers and agencies, radio has a great opportunity to increase its revenues, particularly in national dollars," the organization said in its announcement.

"The term 'accountability' turned out to have several meanings, from volumetrics, audience delivery and scheduled integrity, to accurate reporting, price/value perception and Return on Investment (ROI)."

The group has scrutinized perceptions among media buyers and this time looked to planners, the source for new radio dollars within agencies.

"This year's study includes more larger, national agencies, concentrating on those that place radio buys, but spend only a small share of their budgets in the medium," it stated. "The study focuses on radio's top 15 advertising spending categories. The overall survey size was also increased."

According to RAB, it has identified what it called a "disconnect between what the buy-side perceives of radio's accountability practices, and how the industry perceives itself."

Advertisers and agencies grapple with accountability in all media, it continued, and do perceive that radio has taken steps to improve.

Details are available online at *www.rab.com.*

PORTADISC

THE POWER PORTABLE

Only PORTADISC has the strength, sound quality and features necessary for the most demanding portable recording applications.

USB Connectivity

PORTADISC is the only MD portable with a USB interface for transferring audio to and from computers. So a PORTADISC and a laptop with the appropriate software is all you need to record and edit finished pieces in the field.

USB

Flexible Powering Options

Three separate powering options are all supplied as standard: Rechargeable Nickel Metal Hydride batteries, an AC mains adaptor/charger (that connects to the 12-15V DC input) and a spare caddy for 8 standard AA alkaline batteries.

PORTADISC Reporter's Kit

This unbeatable package includes a PORTADISC, a Sennheiser MD46 interviewers mic and a full range of accessories in a rugged, waterproof Pelican case.

MiniDisc

The PORTADISC portable MiniDisc recorder combines exceptional sound quality, a rugged, dependable MD drive and a full complement of professional features including a 6 second pre-record buffer, 40 second memory buffer and lockable controls. Comprehensive connectivity includes balanced

XLR Mic/Line inputs, RCA/phono line outputs and coaxial and optical digital I/Os. An On-board sample rate converter is included and Mic inputs feature switchable attenuation, bass

Comprehensive Connectivity

An intuitive menu structure makes it easy to configure the PORTADISC for your precise requirements. There are five user programmable set ups so you can switch quickly for different recording applications. The large illuminated display also provides clear metering, margin indication and track, time and battery information while working in the field.

5 User Set-Ups

For further information, visit www.hhbusa.com

Exclusively distributed in the USA and Latin America by:
Sennheiser Electronic Corporation T: 860 434 9190 E: HHB-Sales@sennheiserusa com
In Canada: HHB Communications Canada Ltd T: 416 867 9000 E: sales@hhbcanada.com
In other territories: HHB Communications Ltd T: +44 (0)20 8962 5000 E: sales@hhb.co.uk

HHB

FIRST WE LISTEN

'Record High Shares' for Spanish and News/Talk

Releasing its Radio Format Share Analysis of Arbitron data from the fall of 2004, Interep said News/Talk and Spanish categories continued to grow.

"A closely fought presidential race helped News/Talk grow continuously throughout 2004, with the format reaching an all-time high in the fall survey," the ad sales and marketing company stated.

"After peaking during the winter, shares for the Spanish formats also reached a new high during the summer; and, then rose even further in the latest fall report."

The company continued:

"Much has been written about the positive impact that Christmas music had on boosting station performances toward the end of the Fall Book; and, we did see a rebound in the fortunes of AC in the latest survey. Following a period of erosion, both AC and Soft AC were up half a point in the fall; and, listening totals for the broad category are nearly back to the levels of a year ago.

"While its shares are off a bit from their summer peak, Urban is the third most-listened to format category, followed closely by CHR. On a year-to-year basis, Mainstream CHR is flat, while the Dance segment has declined by half a share point," Interep stated.

"Rock formats generally did not produce headlines in Fall 2004, with Classic Rock, AOR/Rock and New Rock each slightly down in the latest survey. There was similar slippage for Oldies, which had been virtually unchanged for the past year. Hot AC continued its up and down pattern, giving back a couple of tenths in the Fall report. Country also fell back a bit; though, the format remained stable compared to its levels of a year ago.

"The star performers of Arbitron's Fall 2004 survey were AC, News/Talk and Spanish, the only formats to gain more than a tenth of a share in the latest report."

World Radio History

PRODUCT EVALUATION

AT2020 a 'Contender' for On-Air

Audio-Technica Has a Cardioid Condenser, Suitable for Production, Priced Lower than Studio Series

by Ty Ford

Audio Technica's AT2020 electret condenser microphone is the first offering from its 20 Series, and represents a shift in manufacturing and market awareness to attempt to deliver professional technical quality at an even lower price than AT's regular studio series. The AT2020 is suitable for on-air or production studio work, and at a list price of $169, it deserves a second and even third look — or rather, listen.

Technically speaking

The AT2020 is a cardioid-patterned, side-address, medium-sized diaphragm (.64 inch), electret condenser mic with a fixed charge back plate. It requires 48V DC phantom power, at 2 mA.

Further, it is pin two hot, has an impedance of 100 ohms and an open-circuit sensitivity of -37dB (14.1 mV) re 1V at 1 Pa. Maximum sound input is 144 dB SPL for 1 percent THD at 1 kHz. The mic weighs just over 3/4 of a pound and comes with a sturdy metal pivoting stand mount and zippered storage bag.

The AT2020 won't be the first condenser mic to attempt a landing on the shores of radio broadcasting. This beach is littered with the carcasses of previous units that didn't quite make it, and there are a number of reasons: cost, sensitivity, shape of pattern and response to close proximity speech. Oh, right — and quality of sound.

At $99 on the street, the price of this unit is right. Sensitivity is in the ballpark, but requires a qualification. Condenser mics frequently are over 15 dB more sensitive than dynamics.

I have consulted with radio engineers and production people in the past about this. They "get it" that condenser mics are more sensitive, but they sometimes balk at reducing the preamp input trim. Instead they plug the more sensitive mic in and are instantly unhappy with the way it sounds because the preamp and/or downstream audio compressor are being way overdriven. Please don't let this happen to you. The AT2020 is about 15 dB more sensitive than the EV RE 27 N/D.

Air and production studios with lots of glass or other hard, reflective surfaces can make cardioid condenser mics a bad choice if the cardioid pattern is too wide. The mic picks up too much room. The louder the voice, the more the room is excited and the worse it sounds.

I compared the AT2020 with an RE 27 N/D (with HF tilt switch on). To my surprise, when the mics were trimmed for equal loudness, they had similar patterns. The main difference was that, even from 180 degrees, the AT2020 heard more high frequencies and they were clearer. It also heard more low frequencies. The RE27 N/D obviously was not hearing the highs. It made me sound sort of like I had a head cold.

When I switched off the RE 27 N/D's HF tilt, the "head cold effect" went away, but the RE27 N/D sounded a bit edgy. Some folks at stations use edgy edge to cut through the considerable amount of compression and limiting used to create the station's sound. While the AT2020 has its own edge, the extra top and bottom give it a more natural sound.

The extra top end can also cause problems because the mic will hear the slappy high frequencies in a live room. As an audio consultant, one of my fixes for this is to reduce the amount of reflective glass in a studio. Covering some of the bottom and/or top of the glass with foam can help a lot, especially when you have more than one mic open.

Radio talent often work a mic as closely as possible. That means the mic pops unless it has a really good pop filter. Foam pop filters usually knock off a few high frequencies. At a little over 1/2-inch thick, the AT8137 foam pop filter knocked down the highs, tucked in the lows and made the mic difficult to pop.

Proximity effect usually determines how close you can get to a mic. The AT2020 low end appears to have been engineered with close mic work in mind. Even without the pop filter and without any EQ, I was able to get an inch to 1-1/2 inches away without the low end blooming excessively. At that distance, the sound of the AT2020 was clearer and sounded more natural than my RE 27 N/D.

I used the AT2020 to cut some of my own voice tracks and for a V/O demo session I am producing for one of my students. I didn't have to use any EQ and even after compression and limiting, the tracks sounded quite good — not boomy, not edgy, not too bright. My student's voice lacked that hallmark proximity boost so many on-air people want, but that was because I had him backed off to about 4 inches from the mic.

At a price below that of most studio dynamics, the AT2020 is a contender for on-air and production. It has no EQ or pad controls, but most stations have their own secret sauce for mic processing. I have short voice clips on my Web site at *www.tyford.com*. Click on Audio Files under Downloads. In the Audio folder, there is a folder called AT2020. In it lie two WAV files — one with the pop filter and one without. Listen and decide for yourself.

Ty Ford is a frequent contributor to Radio World.

Product Capsule:
Audio Technica AT2020 Condenser Mic

Thumbs Up
- ✓ Affordable
- ✓ Natural sound
- ✓ Hears high and low frequencies well
- ✓ Good foam pop filter

Thumbs Down
- ✓ No pad
- ✓ No EQ

Price: $169

CONTACT: Audio-Technica U.S. in Ohio at (330) 686-2600 or visit www.audio-technica.com.

Processing, Monitoring, RadioData

FOR MORE THAN 30 YEARS, Inovonics has brought quality and value to broadcasters the world over.

PROCESSING – The all-digital Omega_FM for FM and IBOC, plus several FM and AM analog alternative for all markets.

MONITORING – Off-air Mod-Monitors for AM and FM, subcarrier monitors and rebroadcast receivers.

RADIODATA SYSTEMS – RDS encoders for scrolling song titles, promos and advertising.

Inovonics
1305 Fair Ave. • Santa Cruz, CA 95060
TEL: (831) 458-0552 • FAX: (831) 458-0554
www.inovon.com • e-mail: info@inovon.com

Visit Us At Booth # N1818 In The Radio/Audio Hall

World Radio History

PRODUCT GUIDE

Opticodec-PC Adds HTTP/ICY to Encoder

Orban/CRL said its Opticodec-PC software supports SHOUTcast and Icecast2 streaming servers, and includes aacPlus v2 audio.

aacPlus v2 is AAC coupled with Coding Technolgies' Spectral Band Replication and Parametric Stereo technologies. SBR is a bandwidth extension technique that enables a given audio codec to deliver the same quality at half the bit rate. Parametric Stereo enhances the codec efficiency a second time for low-bit-rate stereo signals.

The addition of the HTTP/ICY protocol to the AAC/HE AAC/aacPlus streaming audio encoder extends the software's support to the Nullsoft Winamp player client (version 5.05 and higher), and implements artist and title metadata. This feature works with Opticodec-PC's existing support for the RealPlayer 10 player client via RTSP/RTP.

"The addition of aacPlus v2 and HTTP/ICY support to Opticodec-PC makes it even more attractive to any netcaster seeking the widest potential audience. Opticodec-PC allows netcasters to replace expensive, high-quality 128 kbps MP3 streams with equivalent quality Opticodec-PC streams at one-third the bit rate," said Orban's vice president of product development.

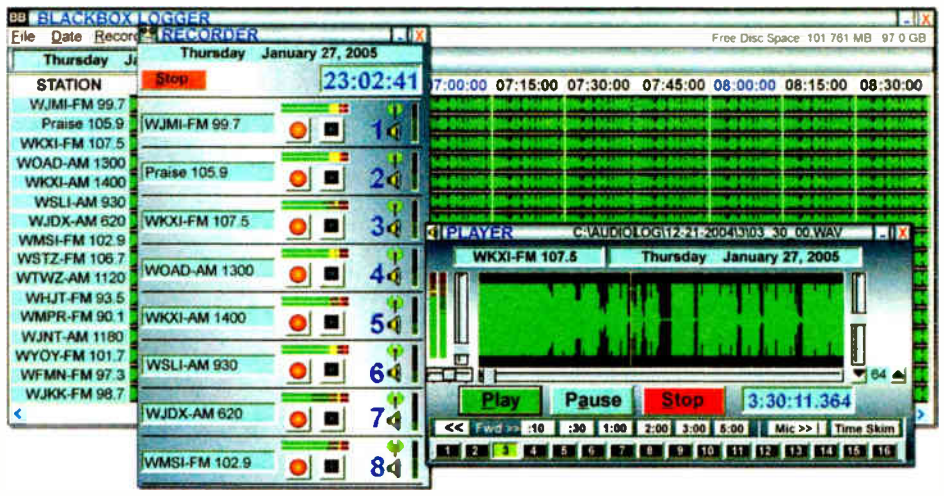
For more information, including pricing, contact Orban in California at (510) 351-3500 or visit www.orban.com.

Pristine Blackbox Offers Alert Systems for Dead Air

Pristine Systems' Blackbox digital audio logger, monitor and alert system provides a "loss of modulation and RF signal strength" alerting system, and a Virtual Radio playback environment.

Up to 16 stereo or 32 virtual mono channels of logging are available. Users can choose from various WAV audio devices, and AM and FM tuner boards. The company says most popular audio storage formats are supported.

A "Virtual Radio"-style player allows switching between multiple stations during playback. Real-time monitoring of audio level and RF signal strength — when equipped with ASI tuner boards — with an alarm system enables alerts to help avoid lost air time. The company says when Blackbox is used with the 87xx series ASI tuner boards, RF signal strength



monitoring and alarm functions are available to alert the user and respond to off-air conditions.

Off-air alert and response functions include the ability to play WAV file through the station PA system; send a serial command to a switcher or modem; dial a pager or phone; send an e-mail message; issue a DOS command to run your own program; or use TTL to control lamps or warning devices.

Blackbox also monitors audio level on selected channels and responds automatically in the event of dead air.

A Podcast recorder enables the recording of files for your station's Podcast. The time shift recorder enables the recording of programs for later playback. Also featured are recorders for repeat broadcast, best of and promos.

Other highlights include proof of program and commercial content; nonstop recording; a talent monitor that monitors the stations' performance; and market analysis to monitor the competition's performance. Time-based and microphone Skimmer modes are included.

For more information, including pricing, contact Pristine Systems in California at (800) 795-7234 or visit www.pristinesys.com.

Lectrosonics Features TH4 Interface

Lectrosonics debuted the TH4 digital hybrid telephone interface at the NCSA Systems Integration Expo in Orlando.

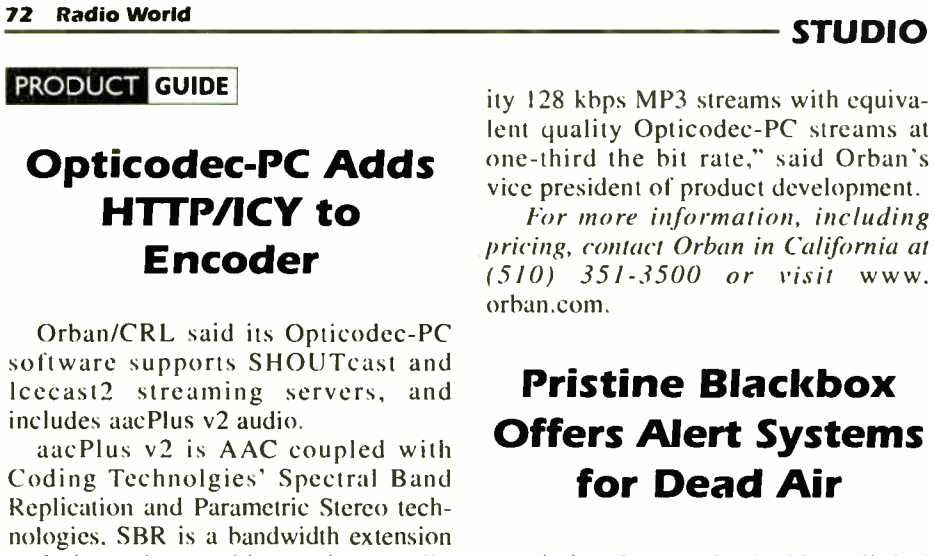
The company says it is a companion to its DM series DSP matrix processors, and integrates the telephone line signals into the mixing and routing matrix.

The TH4 interconnects with the DM series of processors through the digital bus, so phone line signals can be routed to any number of output channels in the sound system. The DTMF dialer also is provided as a virtual signal source, and it can be routed to outputs when dialing confirmation is needed, or delivered to only the phone line. Six DSP filters and a compressor are provided for the line input and phone line signals, and six filters plus compressor and limiter are provided on the output.

Features include acoustic and line echo cancellers, with both available on the POTS and codec. Also included is a DTMF dialer, a two-wire/four-wire bridging and far-end AGC. The echo-canceling window extends up to 200 mS delay time.

For more information, including pricing, contact Lectrosonics in New Mexico at (800) 821-1121 or visit www.lectrosonics.com.

Today's top engineers need a reliable source of deep tech info.



Now they have it.
Introducing
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.

Product Showcase

Model RFC-1 emote Facilites Controller
- control transmiter from any telephone
- 8-64 channels of telemetry and control
- programmable control by date and time
- optional printer and modem adapters
- programmable telemetry alarms
- integrated rack panel

Sine Systems, INC
615.228.3500
more information: www.sinesystems.com

World Radio History

PRODUCT GUIDE

AudioVault 9.0 Implements Text Data Interface

Broadcast Electronics says it has added failsafe features to version 9.0 of its AudioVault digital audio system for live-assist or satellite operation, including a text data interface and dual network support.

Existing features include scheduling and production modules for multi-track editing, music rotation and ad insertion.

Dual-network support enables AudioVault to communicate continually over two separate networks as a redundancy measure, should one network go down. Version 9.0 allows one server to default to the other without interruption to on-air delivery of programming.

The text data interface formats "now playing" text. Title and artist text is parsed from AVAir and formatted for display on RBDS or HD Radio radios, or streamed on the Internet. The data interface can hand off the information direct for on-air presentation or for scheduling through The Radio Experience, BE's suite of broadcast data products and services.

The company says Version 9.0 enhances AudioVault's simultaneous recording and playback feature, allowing users more easily to start recording a news event and play back the newscast for insertion at the top-of-the-hour while continuing to record. Network features enable recording and playback to take place from various locations within the studio environment.

BE updated AudioVault with a Livewire IP-audio driver to send real-time uncompressed audio over the network without using PC soundcards.

"With this new version, we were able to provide more single points of control over a large-scale system and allow more functionality throughout the studio facility as a whole," said Ray Miklius, BE vice president of studio systems.

BE also says it has developed an interface for AudioVault in supporting ContentDepot, which streamlines how public radio stations and producers select, send, acquire and automate programming.

AudioVault will ingest audio files from the storage receiver to enable scheduling and recognition with files are viewed within the stored directory.

For more information, including pricing, contact Broadcast Electronics in Illinois at (217) 224-9600 or visit www.bdcast.com.

Belden Has Plenum-Rated 9451, 9451D Cables

Belden CDT Electronics Division offers plenum-rated Brilliance analog audio cables, plenum versions of the company's 9451 and 9451D analog audio cables suitable for line-level audio connections, audio distribution equipment and studio wiring with plenum.

Brilliance 9451P is a single-pair construction and 9451DP is a Siamese construction.

Belden says these cables ease installation because the Beldfoil bonded-foil shield is bonded to the cable jacket and can be stripped for termination by using

conventional cable stripping tools. Additionally, the cables' Flamarrest jacket is described as flexible, and its color-coding provides channel identification for stereo applications. Brilliance 9451P is available in 10 colors.

Brilliance 9451P and 9451DP cables feature twisted pairs with 22AWG tinned copper conductors and FEP insulation. Conductors are color-coded and a 22AWG drain wire is inside the foil shield. Both cables are NEC and CEC CMP rated. The plenum-rated cables have the same electrical properties as 9451 and 9451D Brilliance riser-rated audio cables.

The company says by sharing the same electrical properties, the plenum-rated cables can be deployed in the same installation as their riser-rated counterparts.

For more information, including pricing, contact Belden CDT Electronics in Indiana at (800) BELDEN-4 (235-3364) or visit www.belden.com.

OMNIRAX

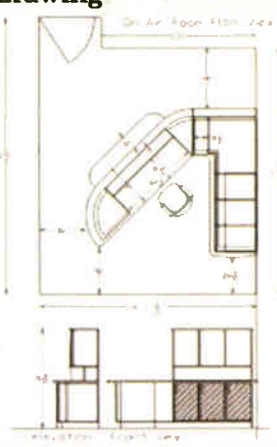
BROADCAST FURNITURE
The Engineer's Choice

Omnirax from Design to Production

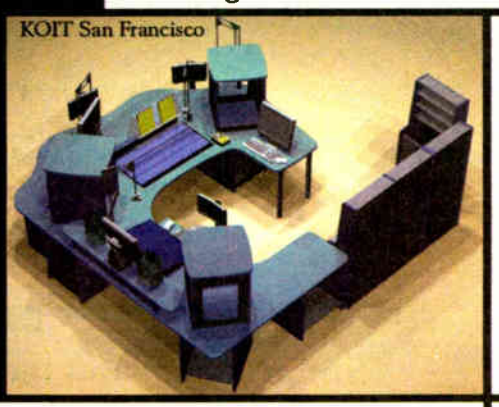
- At Omnirax we work together with you from initial design concept all the way through finished product, ensuring that your furniture will provide you with years of satisfied use.
- Our strength is forging partnership relations where we can use our expertise to turn your ideas into reality. We are able 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.

Entravision Showcase Studio
Los Angeles, California

CAD drawing



CAD renderings


KOIT San Francisco

KOIT San Francisco

KFRC San Francisco

P. O. Box 1792 Sausalito, CA 94966
800.332.3393 415.332.3392 FAX 415.332.2607
www.omnirax.com info@omnirax.com

See us at NAB 2005 Booth N1800
April 18 - 21, Las Vegas

World Radio History

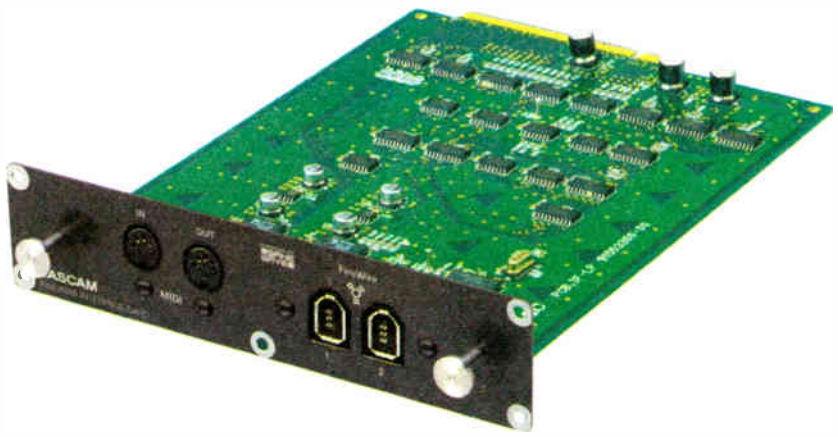
PRODUCT GUIDE

Tascam Has DM-3200 Console, FireWire Interfaces

Tascam says its DM-3200 digital console is based on its DM-24 in operation, but adds more busses, effects and auxes, in addition to USB connectivity.

Its user interface has 16 rotary encoders with LED indicators to display mixer settings. Up to 6.1 surround panning is available, and the optional IF-SM/DM Surround Monitoring interface card adds multichannel monitor and downmix capabilities.

The company says when the IF-FW/DM 24-channel FireWire interface card is added, the DM-3200 becomes a combination computer interface, control surface and mixing console.



The IF-FW/DM 24-channel FireWire card turns the DM-3200 into a combination computer interface, control surface and mixing console.

The FW-1082 FireWire audio/MIDI interface and control surface provides audio and MIDI I/O to small studios and offers a control surface with moving faders. Ten inputs are featured, including four balanced XLR mic inputs with phantom power. Two MIDI inputs and outputs are included, plus S/PDIF digital I/O. Eight channel strips each feature a 60 mm touch-sensitive moving fader and select/solo/mute buttons; and a moving master fader is provided.

FW-1082 includes Tascam's most recent software bundle, with Cubasis LE 96 kHz/48-track recording software, GigaStudio 3 LE streaming sampler and Nomad Factory plug-in demos.

The FW-1804 FireWire audio/MIDI interface puts features of the FW-1884 in a rackmountable format. It offers four XLR mic inputs with analog inserts and phantom power for professional condenser mics. An additional four line inputs are provided, plus ADAT and S/PDIF digital connection, totaling 18 inputs and 12 outputs. Other highlights include two MIDI inputs and four MIDI outputs. FW-1804 also features the software bundle.

For more information, including pricing, contact Tascam in California at (323) 726-0303 or visit www.tascam.com.

BW to Introduce DSPeXtra at NAB 2005

U.K.-based BW Broadcast says it plans to debut a full-featured audio processor at the NAB show.

It said DSPeXtra expands upon the DSPX, which offers TCP/IP and serial control, factory and user-defined presets and a front-panel metering and control system.

DSPeXtra incorporates a six-band limiter with distortion control; multiband AGC adopted from TransLanTech Sound's "Ariane" digital audio leveler; and split processing architecture that makes it suitable for simultaneous FM and digital radio services like IBOC and Internet streaming.

The DSPeXtra is the second result of a collaboration between BW Broadcast and TransLanTech Sound. TLT's "Ariane Sequel" digital audio leveler will debut at NAB. In January, the companies created a technical and marketing support base for BW's American customers at TLT's New York headquarters, and now share technical resources.

For more information, including pricing, contact Broadcasters General Store in Florida at (352) 368-5092 or visit www.bgs.cc.

Staco Revamps Web Site for Direct Purchase

Staco Energy Products Co. debuted an online store, where customers can purchase the company's UniStar Sx UPS from the factory. The site also offers Staco's single-phase UPS, variable transformers and replacement parts.

The company touts the new design of its Web page, which it says enables easier, logical navigation, application information, technical information and improved customer interaction.

Users can find product information pertaining to their industry. Product guide specifications, engineering drawings, users' manuals and UPS-specific monitoring software are available via download.

For more information, visit www.stacoenergy.com.

World Radio History

PRODUCT GUIDE

Wheatstone Adds to Generation Line

Wheatstone added the Generation Six to its line of router-based control surfaces. The Gen 6 enables integration with the Bridge digital audio router and system-wide access to a station's audio resources via interlinked CAT-5 or fiber optic cable.

Features include series standards such as Ethernet protocol, VDIP configuration, X-Y controllers and eight-character controller displays, in addition to an expanded number of aux sends and increased preset options.

Wheatstone also debuted a line of 1 RU audio processors. The two channel/stereo audio processor offers analog/digital inputs and outputs, a four-band parametric EQ, three-band compressor and tunable filters, along with overall AGC, limiting and expansion. Settings can be stored and replayed as password-protected presets. The front-panel display includes input, output and gain reduction meters. Ethernet-enabled GUI software enables remote monitoring and operational control.

For more information, contact Wheatstone in North Carolina at (252) 638-7000 or visit www.wheatstone.com.

Hush Features Fanless Computer For On-Air

Hush Technologies says its ATX computer system for on-air and audio production rooms is fanless, which makes it suitable for broadcasting environments. Heat dissipation technology cools the CPU, Northbridge and graphics processor.

Features include an aluminum ATX case, 240-watt internal fanless power supply, 7.1 channel audio, four USB 2.0 ports, two optional IEEE1394 Firewire ports and Gigabit Ethernet LAN.

"In the last 20 years, as the PC has moved into the broadcasting environment, engineers have struggled with the challenge of giving this machine space while maintaining the silence radio microphones demand," said a spokesperson for Logic Supply, U.S. dealer for Hush.

"Keyboard extenders, central rack rooms and padded compartments are all efforts to keep the computer away from the microphone."

The company says Hush ATX is a suitable computer for the radio broadcasting environment.

"The advanced cooling technology allows for near-silent performance, making these systems suitable for on-air rooms and sound production applications.

"Radio is an important market for Hush and we're excited to see more and more broadcasters adopting the technology," said Markus Kremer, CEO, Hush Technologies.

For more information, including pricing, contact Logic Supply in Vermont at (802) 244-8302 or visit www.logicsupply.com.

PBXport Sends Mic Signals Into Phone

JK Audio has debuted PBXport, a digital hybrid that provides caller audio from the user's PBX phone system. PBXport enables the sending of mic- or line-level signals into the PBX phone system while maintaining separation between the user's voice and the caller. The balanced XLR output jack contains only the caller's voice, allowing full-duplex voice conferencing through the existing PBX phone system without echo or feedback.

PBXport offers connections for a microphone, headphones, mixer, telephone handset and the telephone set. The user disconnects the handset cord from the base of the telephone, and connects the handset cord to the front- or rear-panel jacks on PBXport. The supplied cord is connected from PBXport to the telephone base. The handset is disconnected when the Online button is pressed, and reconnected when the Handset button is pressed.

The digital hybrid sends the audio signal into the PBX telephone system through the telephone handset cord. The DSP continually monitors transmit and receive audio signals to deliver separation. The dual-convergence echo canceller algorithm can achieve separation without any setup, and without sending a noise burst down the line.

The Handset Type switch allows PBXport to emulate the type of microphone found in any PBX phone system — electret, dynamic or carbon handset mics.

For more information, contact JK Audio in Illinois at (815) 786-2929 or visit www.jkaudio.com.

DSPX V2 now available

broadcast warehouse

V2 software of the ground breaking FM - DAB - NET digital audio broadcast processor is now available

- 18 24-bit DSP's provide over 1 GIGA-MIPS of processing power
- Comprehensive BLUE LED audio metering and screen
- Digital and analogue IO
- Wide and multi-band AGC's with intelligent gating
- Multi-band programme dependent limiting
- Multi-band look ahead limiting and distortion cancelled clipping
- High performance DSP stereo encoder with composite clipping control
- Back panel and rackroom (front-panel) RS232 control
- LAN (TCP/IP) port for remote monitoring and control
- Real time clock for preset scheduling
- Remote trigger port
- Silence/fallback switching
- Password access and control
- Full Range of user presets with A/B switching
- Software upgradeable

Remote control a DSPX over the internet at www.dsp-x.com

Call our DSPX NYC office 1-888-8661672

SEE THE DSPX AT BOOTH N322 NAB THE WORLD'S LARGEST ELECTRONIC MEDIA SHOW April 16-21, 2005 - Las Vegas, NV

Checkout the DSPX and other new BW audio processors at NAB stand N322

World Radio History

PRODUCT EVALUATION

Tascam Offers Kamesan KS-342 Mixer

The Four-Channel Unit Is Suitable for Recording Live Music, Handles Rough Treatment on Remotes

by Tom Vernon

Ever since Shure Bros. introduced the classic M-67 in the early 1970s, the challenge for designers of field production mixers has been to build smaller boxes with more functionality without sacrificing ruggedness and reliability. Kamesan continues this tradition with its KS-342 four-channel field mixer, a device with a lot of features packed in a small footprint.

Kamesan is a relative newcomer to the American broadcast market, but its products have been available in Japan for over 30 years. The fact that Kamesan commands over 90 percent of the Japanese ENG/EFP mixer market suggests it must be doing something right. Tascam is now the exclusive distributor for Kamesan in the United States.

I/O

On the left side of the KS-342 are the inputs: four XLR mic/line connectors, a five-pin XLR plug for X-Y or M-S (Middle-Side) mics for channels 1 and 2, as well as a five-pin mini DIN connector for an assignable auxiliary input. There also are jacks for DC power in and 12 Volt output.

The right side contains the outputs: XLR left and right line/mic out. There also is an unbalanced 3.5mm stereo output. An XLR-5 connector provides the main output busses and balanced sub-outputs. The AES/EBU output is switch selectable between 44.1, 48 and 96 kHz.

There also are controls for the KS-342's compressor. The triggering of the compressor can be selected between the left or right bus, either bus or both. The triggering level can be selected between +3, +6, +9 or +12 dB.

Each of the four channels can be individually set via a front-panel switch for: mic with 48-volt phantom power, dynamic mic, A-B power mic and line-level input. For M-S operation, channels 1-2 have a matrix option, where Fader 2 controls the level, and Fader 1 controls the width.

Vernon likes the 'clever ergonomic design' of the front-panel controls. Set-up controls are flush-mounted and readily available.

Each channel also features a variable low-cut filter, which is continuously variable from 20 Hz to 200 Hz, along with a variable gain control and an assign switch for left, right or center channels. Momentary PFL is available for each channel by pressing in the low-cut filter control.

The mixer's front panel also contains three options for the meters, VU, BBC or Nordic scale. The headphone amp is switch-selectable between L, R, AUX, stereo and mono. Master gain controls, battery check, built-in oscillator and meter lights are included. A slate microphone allows comments to be added to the main mix, a feature more likely to be used in film or television applications.

Having all these controls on the front could result in clutter and confusion, but Kamesan has used clever ergonomic design to simplify operation. While the primary mixer and headphone control knobs are conventional, the rest of the "set-up" controls are flush-mounted, or nearly so, making them readily available, while rendering accidental adjustments unlikely.

Power for the KS-342 can come from an external 10-15 Volt supply, or from the internal battery pack. Eight AA batteries are required, and a NiCad pack is available as an option. Batteries fit into a special holder that can be quickly swapped in the field.

An annoyance is this holder can be put in the mixer upside-down. The contacts are positioned so this won't cause any damage, but it could lead to some anxious moments if the pack is changed in the dark, or by inexperienced users. A better scheme might be to have a holder that only fits in the mixer when inserted properly.

For those occasions when four channels isn't enough, Kamesan makes the companion KS-6001 sub-mixer, whose four channels are functionally identical to those on the KS-342, except for the M-S matrix.

The KS-6002 two-band EQ and compressor unit is available as an option. Both accessory units latch on to the top of the KS-342. Power and audio connections to/from the mixer are via a multipin connector that pops out of the top or bottom of the units, eliminating the hassle of additional batteries and adapter cables.

Solid

As we have come to expect from Japanese manufacturers, the mechanical engineering, paint finish and overall quality of construction for this mixer are superb. Switches and pots have a positive feel, and the rubberized knobs provide a solid grip. Removing the top and bottom covers of the KS-342 reveals two surface-mount, double-sided PC boards.

Quality of construction on the inside is as durable as on the outside. While the KS-342 doesn't have much of a track record in the United States, it looks like it could stand up to the punishment and abuse to which most remote gear is subjected.

The bad news about circuit boards

See KAMESAN, page 77 ▶

Product Capsule:
Kamesan KS-342 Four-Channel Field Mixer

Thumbs Up

- ✓ Superb mechanical engineering
- ✓ Excellent ergonomic design
- ✓ Easily integrates sub-mix and limiter
- ✓ Many advanced features in a small footprint

Thumbs Down

- ✓ Flimsy carrying case
- ✓ Not repairable in field
- ✓ Too much mixer for simple applications

Price: MSRP $3,850

For information contact Tascam in California at (323) 726-0303 or visit www.tascam.com.

See Us At NAB Booth # N3908

World Radio History

PRODUCT EVALUATION

Plug-In Cuts Hash With Noise Gate

Bias' SoundSoap Pro Noise Reduction Software Has Modules for Click and Crackle, Rumble and Hum

by Read G. Burgan

Most digital noise reduction software products use similar approaches. While there are differences in the details, at their hearts are impulsive and broadband noise removal tools.

Bias Inc. offers a noise reduction plug-in, available for Mac and Windows XP hosts using Direct X, RTAS and VST plug-ins, which manages to move the classic approach to a new plateau. The first difference is in the design on the plug-in itself.

In the past, noise reduction tools had their own particular plug-in. Bias' noise reduction plug-in includes four noise reduction tools in modules it calls "tabs."

Chain of tools

There is a method to the Bias approach. Noise reduction works best if the tools are applied in a particular order. By design, Bias' plug-in applies the tools in the recommended order.

The plug-in works in a manner similar to the chain feature provided by many digital audio editors. This feature allows the user to chain together a number of tools and then apply and hear them in real time as their parameters are adjusted.

Any or all of the Bias tools can be applied in the Preview mode. This allows the user to hear the combined or individual effect of the tools.

Bias also has innovated a design for its broadband noise reduction tool. The graphical user interface has twelve sets of sliders for adjusting the threshold and the degree of noise reduction.

As with other noise reduction software, the user first takes a sample of noise from the sound file. When this is done, the software sets the threshold and degree of noise reduction automatically. The software also divides the noise into 12 frequency bands based on the unique characteristics of the sample noise. The attack and release times can be adjusted and two "tilt" knobs provide further adjustment of the ratio of the attack and release times between the low- and high-frequency bands.

Because each sample noise is unique, the 12 bands into which the noise is divided are unique for every individual noise sample. Each of the dozen sliders controls the threshold and the amount of reduction for a particular band.

The user can tweak the settings while previewing the results in real

See SOUNDSOAP, page 79 ▶

Kamesan

▶ Continued from page 76

with surface-mount components is the unit cannot be repaired in the field easily. No schematic is included with the unit, so it must be returned to the factory if calamity ensues.

Included with the mixer is a protective vinyl cover. It comes in two pieces, with Velcro fasteners and drawstrings. It is made of lightweight material, which is unlikely to hold up for long. Users of the KS-342 will probably want to purchase the optional and more rugged KS-342CC case, which can bulk up to accommodate the KS-6001 and 6002 expansion units.

The 22-page operating manual includes specifications, a block diagram of the mixer and illustrations of controls and connectors. All applications and functions of the KS-342 are well-explained. The manual appears to have been written by a native speaker of English, as it is not in the difficult "Japanenglish" jargon that accompanies much imported gear.

A quick bench check confirmed that the KS-342 met or exceeded its frequency response, noise and distortion specs. Field tests confirmed the ease of use for a simple field mix, although most of the advanced features were not needed.

Kamesan's KS-342 provides a lot of horsepower, more than might be needed for a typical remote broadcast. Stations that do live recording of music, however, may be able to make good use of this mixer's advanced features, and benefit from its durable construction.

Pricewise, the Kamesan mixer is a high-end device, and I suspect the prime audience is film and television. It would be definite overkill to use this unit for local sports remotes or covering a grand opening at the mall.

But for radio stations that are serious about recording live music on location, features such as the slate microphone, ability to mix left and right separately, phantom power and multiple mixing configurations may be worth the extra cost.

Tom Vernon is a multimedia consultant in Philadelphia. He can be contacted by e-mail at TLVernon @blazenet.net, or by calling (717) 367-5595.

Ask us about the most advanced technology in digital consoles and routers for Radio and TV

AEQ

BC 2000 D Digital Console

- Cost effective and flexible design.
- Flexible inputs and outputs allocated to faders.
- Design adaptable to digital and analog environments for a single studio or multi-studio installations.
- Enhanced interconnectivity between engines through MADI multi-channel links.
- Incorporating motorized faders with position memories enabling the allocation of up to 9 different channels per fader and with instant access.

BC2000 D Router

The same router used by the BC 2000D Console works as a stand-alone router, with 2048 inputs and outputs, summing and processing, with a scalable and modular architecture.

For more information and user references please visit us at www.aeqbroadcast.com

AEQ also offers excellent communication and audio equipment

- Fixed and portable ISDN Audio Codecs and telephone hybrids.
- Advanced multi-channel talk show system.
- Multiplexers, analogue mixing consoles, AD Converters, monitors and digital commentary system for large sport events.

Phone: 866 817 9745 (US only)
(954) 581 7999
Fax: (954) 581 7733
e-mail: sales@aeqbroadcast.com
url: www.aeqbroadcast.com

Visit us at
The NAB Show, Las Vegas, April 18-21, Booth N-1418

World Radio History

Products & Services SHOWCASE

Buy simplicity, reliability and service

EAS

Price $1750.00

Equipment is in stock for immediate delivery!

Now available with optional DTMF control via a phone line.

GORMAN-REDLICH MFG. CO.
257 W. Union St. Athens, Ohio 45701
Phone 740-593-3150
FAX 740-592-3898

- 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
- 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

jlmg@gorman-redlich.com Web Site: www.gorman-redlich.com

◆ *Also available: weather radios, antennas for weather radios, crystal controlled synthesized FM digitally tuned radios, remote signboards, cables for interconnection, character generators*

AM-1 Audio Monitor

An ideal half-rackspace or desktop monitoring solution, the compact AM-1 provides internal amplification for the monitor speaker and/or stereo headphone output. Front panel level controls and signal level indicators are provided for each channel. The analog input levels are internally assignable to -10 dBv or +4 dBu. The balanced audio input connectors are locking XLR. Power supplies are internal. Quality is throughout.

See Videoquip at NAB - Booth #C1535

VIDEOQUIP RESEARCH LIMITED
www.videoquip.com

Phone: 416-293-1042
Fax: 416-297-4757
Toronto, Canada
TOLL FREE 1-888-293-1071

MAC+ and MiniMAC+

Remote Site Monitoring Systems

Reach Your Site Via:
-GSM Phone
-Regular Phone line
-Satellite Phone
-IP Network

Receive Alarms Via:
-Fax
-GSM/SMS
-Regular Phone Line
-Pager
-E-mail/IP Network

IP capable
MAC+ and MiniMAC+
are the latest developments
in an ongoing research program.
These RTU's, together with the MacComm
and MacNet softare, provide solutions that can
meet needs from small single-station operations to
large international networks.

COMLAB inc.
2300, Leon-Harmel Street, suite 220
Quebec,Canada, G1N 4L2
Tel. 418.682.3300 Fax: 418.682.8996
e-mail: sales@comlab.com web: www.davicom.com

See us at NAB Booth N1100

The Simple Cell Phone Interface Solution

FJ-500 FlipJack

CELL PHONE INTERFACE

Connect To Standard Telephone In Event Of Poor Cell Phone Connection

CONEX ELECTRO-SYSTEMS

Call For More Info
800-645-1061
www.conex-electro.com

Affordable, Flexible, and Dependable???

You Bet!

PACEMAKER IIK

Shown: PM-218

AUTOGRAM
800.327.6901
www.autogramcorp.com

Now with gain adjust

VoxPro® PC

Fast, Simple Voice-Phone Editing. ver 3.3

208.842.5202 x204
www.audionlabs.com

If You're Here!

..so are the potential buyers for your products and services.

Radio World's Product & Services Showcase pages are a great place to promote your business.

To advertise, call 703-998-7600, ext. 154
or e-mail: sfewell@imaspub.com.

World Radio History

SoundSoap

▶ Continued from page 77

time. The sliders can be locked so threshold and reduction sliders move in unison, or they can be unlocked allowing the user to adjust each slider individually.

At first this approach felt awkward. After working with it for a while, I found adjusting the individual sliders to remove remaining noise as intuitive as it was effective.

The advantage of 12 individual sliders for adjusting both the threshold and the reduction is the user can pinpoint the offending noise spectrum without affecting other areas of the frequency spectrum.

Noises off

The Bias approach is clever in that it provides an advanced means of removing specific areas of noise while keeping the overall operation simple. I found it was relatively easy to remove both impulsive and broadband noise using SoundSoap Pro. ("Impulsive" noise refers to noise created by a sharp impulse, the most common forms of which in my line of work are the pops and clicks heard on phonograph records.)

The results were good — essentially comparable to results I achieve with other noise reduction software, and in some cases better.

Bias incorporated a noise gate into SoundSoap Pro. Frankly, I have been waiting for someone to do this, as experiments I have done in chaining a noise gate to other existing broadband noise reduction software have been promising.

Now that someone has actually done it, does it prove helpful? Yes. I found that it took some time to learn how to set the parameters of the noise gate, but once I did, it was helpful in eliminating remaining noise that occurred at low levels.

probably the easiest to use. It has two controls: a Click Threshold and slider and a Crackle Threshold and slider. Adjusting the sliders increases or decreases the aggressiveness of the respective controls. I found that together the two controls are able to remove most impulsive noise found in long-play records and electrical transcriptions. A click meter flashes in red to give a visual indication that the software is removing pops and clicks.

The Hum and Rumble module is the first of the four modules in SoundSoap Pro. The hum portion functions essentially as a notch filter and contains three controls. The Frequency slider determines the fundamental frequency at which the filter is applied and can be adjusted over a range of 20 to 196 kHz. The Q Slider determines the bandwidth that will be affected by the filter and the Depth Slider determines how deeply the filter will be applied.

Bias has added a Hum Meter that works in conjunction with the Frequency slider. As the Frequency slider is adjusted, the Hum Meter's red line will increase or decrease in proportion to the amount of hum at a given frequency. This helps the user to set the Frequency slider to the exact frequency at which the hum is greatest.

The hum portion of this module also contains a Harmonics slider that enables the user to apply the notch filter to as many as nine harmonics of the fundamental frequency. In addition, a Tilt knob allows adjustment of how deep the subsequent harmonic frequencies are cut.

The Rumble filter is a single slider calibrated in Hertz that enables the user to remove rumble and related low frequencies over a spectrum of 20 to 500 Hz. It has a fixed slope and Q value.

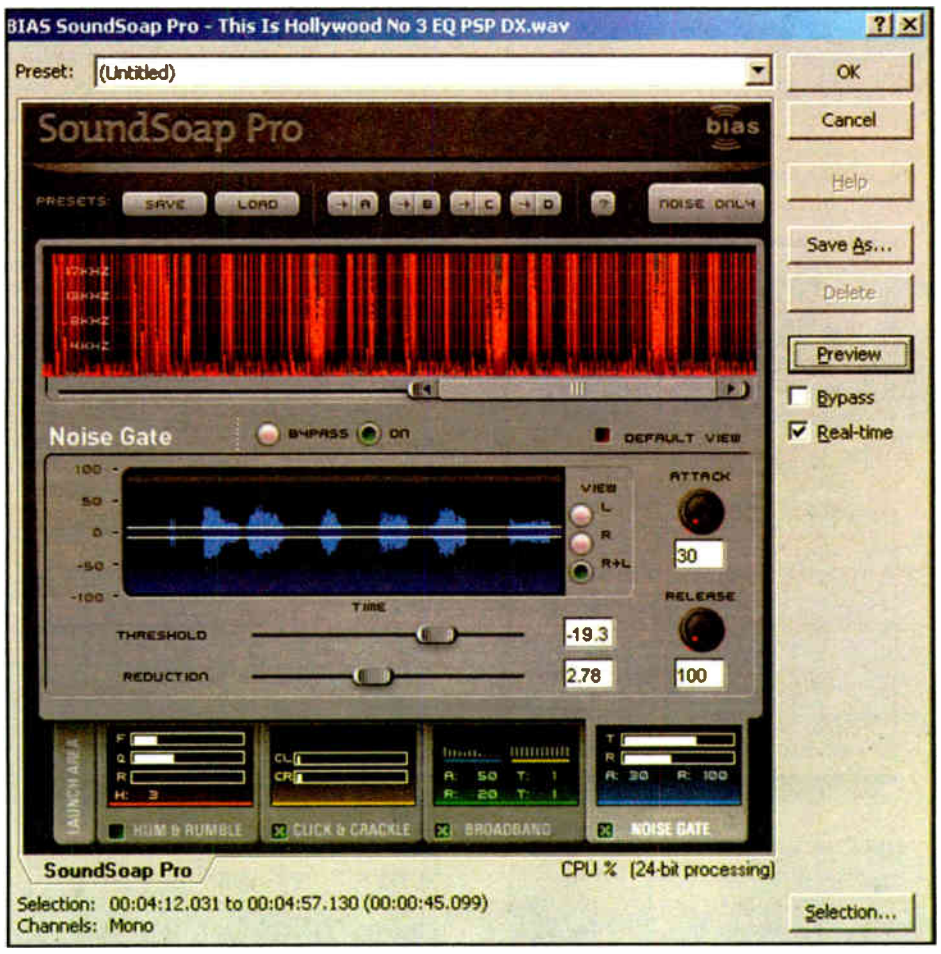
The Hum and Rumble module proved effective in removing both hum and other low frequency noise. At 96 kHz/24-bit sampling rate, the Hum module did not work properly, but Bias has promised to fix this problem in a free update.

I would have liked at least some of SoundSoap Pro's parameters to be automatable. I'm told that in some versions of the plug-in, they are. Currently they were not automatable in Sound Forge 7.0, which I used as the host application.

Overall, I rate SoundSoap Pro as a high-quality noise reduction plug-in that is user friendly and capable of producing good audio restoration. The low learning curve, ease of use and the quality of the restoration should make this a welcome product for many kinds of radio production.

Whether you are looking at your first noise reduction software, or want to add another tool to your arsenal of noise reduction tools, SoundSoap Pro is a sound investment.

Read Burgan specializes in digital audio restoration of phonograph records, electrical transcriptions and magnetic tape media. Reach him at rgb@chartermi.net.



SoundSoap Pro's Noise Gate in action.

Bias incorporated a noise gate into SoundSoap Pro. Frankly, I have been waiting for someone to do this, as experiments I have done in chaining a noise gate to other existing broadband noise reduction software have been promising.

Product Capsule:
Bias SoundSoap Pro Noise Reduction Plug-In

Thumbs Up

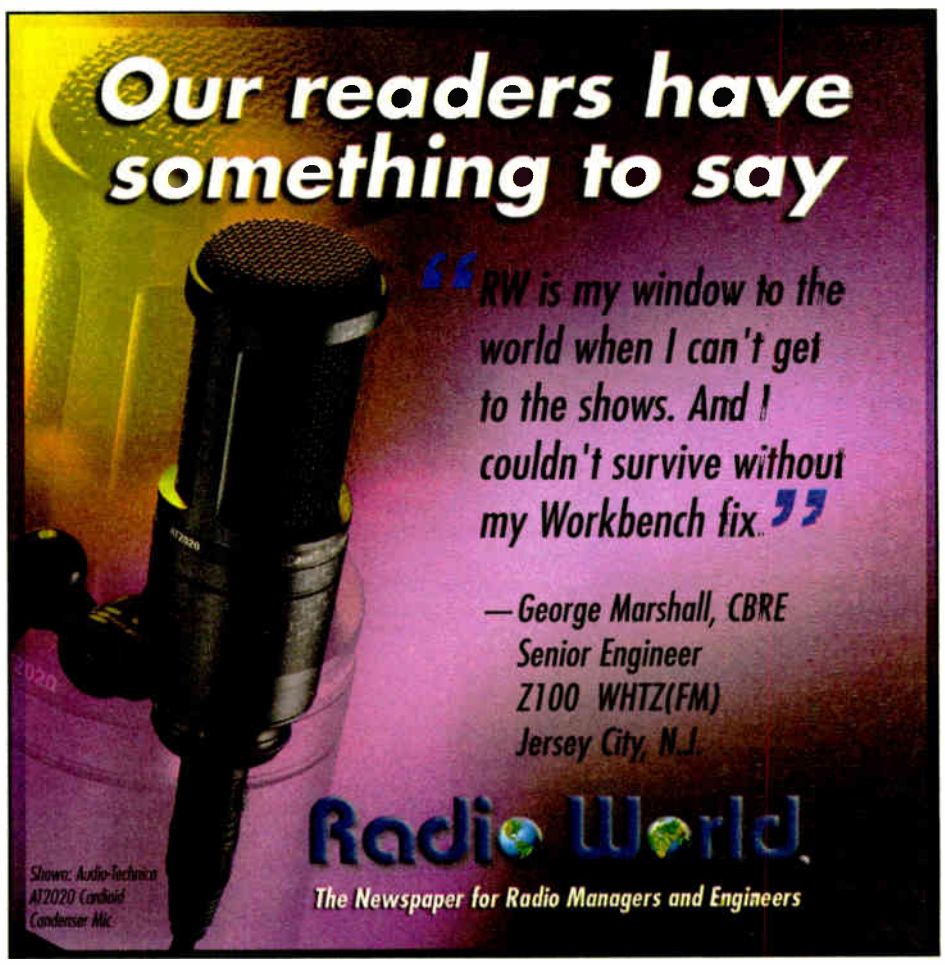
- ✓ Easy user interface
- ✓ High-quality sound
- ✓ Logical arrangement of tools
- ✓ Broadband noise reduction provides ability to target specific areas of noise
- ✓ Includes noise gate for added noise reduction
- ✓ Hum module targets both hum and other low frequency noise

Thumbs Down

- ✓ Parameters not automatable in some versions
- ✓ Bug in Hum module at 96 kHz/24-bit sampling rate

Price: $599

Bias Inc. in California at (707) 782-1866 or visit www.bias-inc.com.



World Radio History

PRODUCT EVALUATION

Library Has Foreign, Sci-Fi Bites

Nightingale's Voice Drops 4 Features 750 Voice Elements Suitable for Radio

by Ed Lacomb

There is one thing of which an editor cannot get enough: Stuff.

No, I don't mean the junk that collects in the bedroom closet or the drawer in the kitchen. I mean the stuff of which great productions are made: sound bites.

Follow my logic here. If a sound editor was in the field with the recording guys, said editor would drive the recording engineers nuts because the editor would want many variations of whatever is being recorded. Nightingale Music Productions has created a series of outstanding products dedicated to giving the editor more of the "stuff" he needs when it comes time to sit in front of the NLE.

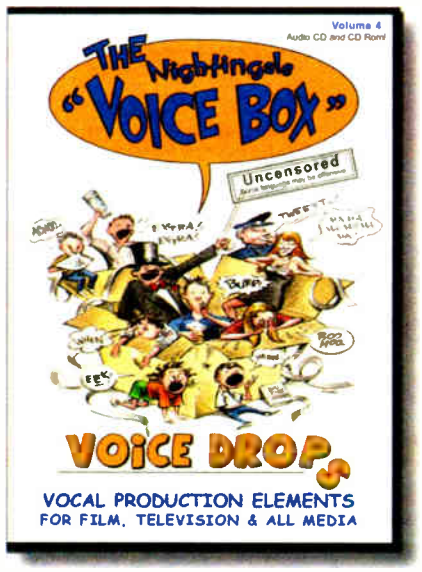
The Nightingale Voice Box Voice Drops Volume 4 features vocal production elements for film, television and all media. It is the followup to Nightingale's Premier Collection containing Volumes 1 and 2, and their Just Kids and Babies, Volume 3.

This volume of bits and pieces of the human voice covers a variety of topics too wide to list, but I can give you a brief glimpse at highlights.

You can try out elements from categories including Calls and Commands; Distress and Fear; Hip-Hop Phrases; Movie Lines (cleared from 18 movies); Questions; Reactions; Kidstuff; Occasions; Love Sex and Romance; and Insults.

It can become draining for producers to rely constantly on a receptionist to provide that certain cameo voice you need in a pinch. On the flip side, hiring top voiceover talent to provide what you need can bust the budget in a hurry. Therein lies the beauty of Nightingale's Voice Boxes.

With the release of Volume 4, Nightingale added more comical and over-the-top pieces that make it ideal for radio production. The package is stronger from a general radio production perspective than from a radio imaging perspective, although you will certainly find quite a bit of useful stuff for hip-sounding radio imaging.



As I tracked through the package on the first pass, it became clear that this set of discs can add to your creative spark as you imagine the potential uses for each piece. Amazing are the new directions in which simple word association can take you.

The Voice Box Volume 4 is a two-CD set. One is for audio playback in your standard CD player. The other is a data CD containing WAV files that can be imported into your digital editing system; or if you are like me, you can let WAVs reside on your hard drive for quick, easy imports.

Like all good libraries, the Voice Box comes with a comprehensive catalog enclosed in a two-disc DVD-style box, and a searchable database is available online at *www.nightingalemusic.com* in Mac or Windows formats.

In an environment where time is literally money, rapid access and the ease of finding what you need in a pinch are essential for any sound library. Nightingale delivers on that ideal. If including a large number of voices in your productions is a style you crave, you'll enjoy the more than 750 sound bytes that Nightingale provides in the Voice Box Volume 4. Only about 10 percent of them have been altered from the original content — usually to add impact to the element.

The package is stronger from a general radio production perspective than from a radio imaging perspective.

I found the elements to be useful and, in some cases, very specific. For example, most libraries that contain vocal reactions have the generic oooo's and aaahh's. The Voice Box gives you that, but you can find a Jewish "Oy vey;" a female "Whee dawgy;" or even a British "Oh my God."

Many of the phrases are contemporary to today's ear and, as you might imagine, can be used in a large variety of ways. What editor has not needed a kid during a critical edit at 1 in the morning? Simply head to the Voice Box and you have kids saying everything from "Can I have one of those?" to the attitude-driven "na na na na na."

Foreign languages have a fair amount of representation in the Voice Box, as well — and not just foreign accents speaking English. You can find foreign phrases like the French "Bon Nuit" ("Good Night"), in addition to Spanish, German, Italian and Japanese. There also are accents from countries such as Australia, Ireland and Britain.

One of the more unique areas of the library is that of Zaps, Stings and Effects. Naturally, many libraries have these kinds of effects, but the Voice Box has these effects created by the human voice.

Sci-Fi is well represented, with beeps, transporter beams, ray guns and aliens shrieking. Now, you might be asking yourself, "Why in the world would I want a cheesy-sounding human voice effect for a ray gun?" The answer is: One day you may be working on a cheesy reproduction of "War of the Worlds" and the Voice Box will come to the rescue.

An editor will never have enough sound bites from which to choose, but at least Nightingale's Voice Box Volume 4 gives a quick fix when you're in a pinch. Priced at $129, it's worth the small investment to have such a fine selection of ready-to-go voices at your disposal.

For information contact the company in Toronto at (416) 221-2393 or visit www.nightingalemusic.com.

Ed Lacomb is a frequent contributor to Radio World.

Products & Services SHOWCASE

Network Control of Voice Processors?

You bet. Network control gives you the freedom to adjust processors while they're on the air - without leaving your desk. Network control gives you the power to remotely manage programs running on processors in multiple studios. Network control helps you realize the potential of digital audio.

Give each AirTools 6200 Digital Voice Processor its own IP address on your station's LAN. Then *you're* in control.

Contact your AirTools dealer and see what network control can do for you.

airTools™
Engineered by Symetrix
AirToolsAudio.com

See us at NAB Booth N4006

World Radio History

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

AM Ground Systems
Reliable, On-time Installation
Quality Workmanship
Ground System Evaluation and Repair
www.amgroundsystems.com
1-877-766-2999

Pirod 180' self support 6' base. James Phillips, WOOO LP, POB 438, Pauldine OH. 419-782-8592.

Superior Broadcast Products
Television & FM
Transmitters and Antennas
Built in the USA
contact Benny Springer
or Jimmie Joynt
Call us 800/279-3326

3-Bay tuned to 103.1, with 150' foam coax, on tower, buyer to remove, used as back up through 2002. BO. Bruce Kierking, KNDY, 1212 11th Rd, Marysville KS 66508. 785-562-2361 or kndy@bluevalley.net.

RW Online

Shively 4 bay w/radomes tuned to 103.1 FM. Removed for upgrade 2002, $4000/BO; 300' 1-5/8" gas coax on tower, buyer to remove, BO. Bruce Kierking KNDY, 1212 11th Rd, Marysville KS 66508. 785-562-2361 or kndy@bluevalley.net.

Want to Buy

3-1/8" and 1-5/8" coaxial relays. Continental Communications, 314-664-4497, Fax 314-664-9427, ccontcomm@sbcglobal.net.

CAREER

Where can I find... a job? an engineer?
SBE
RESUMEBank
JobsONLINE
www.sbe.org
(317) 846-9000

CART MACHINES

Want to Sell

Broadcast Electronics Series 2100C (4) old cart machines, one record unit and three players, units are without top covers and may need slight repair, $200 takes all four units and a 96 cart rack, individual unit purchase possible, delivery possible. Jeff Riehl, Bethel College Radio, 1001 W McKinley Ave, Mishawaka IN 46545. 574-257-2542 or 574-252-8601 (leave message).

ITC 99-B stereo record/-playback in excel cond, $350. Tom Toenjes, KJTY, 1620 Riley Cr, St Marys KS 66535. 785-640-6047, tomt@oct.net.

You're in the right place!
Radio World
Broadcast Equipment Exchange

CODECS

ISDN LONG DISTANCE
$o.0799/min.
*64k Digital Service
*Dial Around Available
*No Monthly Minimums
*No PIC Fees, Quick Setup
*Service By Major Carrier
www.isdnlongdistance.com
866-447-3653
Accunet Technology Group, Inc.

Radio World
Equipment Exchange

COMPLETE FACILITIES

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

Want to Sell

ADM 3643 stereo broadcast console, 36 mixing channels, 24 mic/12 line, 4 subs, 3 output masters includes patch panel rack. FREE! Pay moving expense. Bob Heiney, 281-460-6043 or bbheiney@sbcgloval.net.

Gates Yard tube type mono console, $250. Tom Toenjes, KJTY, 1620 Riley Cr, St Marys KS 66535. 785-640-6047. tomt@oct.net.

Ramko DC 38-10S, old broadcasting board, comes with manual and extra parts, 10 channels w/4-input capability per channel, audition and pgm. Outputs, needs some fixing up, $400/BO. Jeff Riehl, Bethel College Radio, 1001 W McKinley Ave, Mishawaka IN 46545. 574-257-2542 or 574-252-8601 (leave message).

Want to Buy

On-Air analog console, minimum 6 input stereo, less than 10 years old. Email:robertcharleswilkinson@hotmail.com.

DISCO-PRO SOUND EQUIP

Want to Sell

Shure M267 classic 4-channel mixer in good condition, $90. Mark Larsen, KBQR, Box 20335, Piedmont CA 94620. 510-465-6035.

Shure M267, new in box, $250. John Brewster, Radio Deluxe, 2401 Blanche Rd, Manhattan Beach CA 90266. 310-546-6451.

LIMITERS/AUDIO PROCESSING

Want to Sell

Orban 8100A Optimod. James Phillips, WOOO LP, POB 438, Pauldine OH. 419-782-8592.

CRL SG-800, etc. FM processor in excellent condition, $750. Tom Toenjes, KJTY, 1620 Riley Cr, St Marys KS 66536. 785-640-6047, tomt@oct.net.

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/imiters, call after 3PM CST, 972-271-7625.

CRL SEC 800 spectral energy compressor. Randy Swaffer, WEEN, 231 Chaffin Rd, Lafayette TN 37082. 615-666-2169.

MICROPHONES

Want to Sell

Professional microphone collection (73), Western Electric, RCA, Shure, Altec, and Sony. All mics like new, re-ribboned, etc. Will sell as package only. Bill Cook 719-687-6387.

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

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
Member of BBB

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

Antique record cutter, complete RCA 73A. James Phillips, WOOO LP, POB 438, Pauldine OH. 419-782-8592.

Comrex DXR-1 codec G.722 codec for OS0 data circuit, both ends, 1 yr old w/Adtran modems, $1500. Dave Bischoff, KPAM, 888 SW 5th Ave, #790, Portland OR 97204. 503-552-3291.

Want to Buy

1-5/8" motorized 4-port RF coaxial switch. Preferred motor voltage 120vac. Preferred control voltage 12 – 24vdc. Gary Curtis, KTLW, 818-779-8455 or email: gcurtis@ktlw.net.

MONITORS

Want to Sell

Belar FMS-1 modulation monitor with instruction book, $495. Hugh or Carol Ellington, Ellington Radio Inc, POB 468, Brewtor AL 36427. 251-867-4824.

RECORDERS

Want to Sell

MCI J110 1/2 studio r-r, Ampex 351 stereo. James Phillips, WOOO LP, POB 438, Pauldine OH. 419-782-8592.

Otari DTR85 DAT recorder w/manual, like new, $600. Danny Brou, KJMJ, 212 Wainwright Rd, Pineville LA 71360. 318-445-4843.

REMOTE & MICROWAVE

Want to Sell

120 Watt Vocom STL amplifier. 8.8 watts input. "N" female I/O connectors. Includes rack ears. $1500. Call John at 217-220-1195.

Dolby/Marti 2 channel digital DSTL. $12,500 when new. $8000 or best offer. Call Jaycee Marshall, 817-219-1178.

WE RENT FOR LESS
Blueboxes
Zephyrs
POTS Codecs
RF/Audio Gear
FM Exciters
FM Power Amps
STL's
Test Equipment
If we don't have it, we will get it! SCMS, INC. (800) 438-6040
"You Know We Know Radio"

Moseley STL complete composite 6010 Tr + 606 Rec, 948.000 mHz, Harris CD Link, CDL 950R, Dolby DP5501 + DP5502 DSTL. James Phillips, WOOO LP, POB 438, Pauldine OH. 419-782-8592.

Want to Buy

Marti RPU equipment. Continental Communications, 314-664-4497 or contcomm@sbcglobal.net.

SATELLITE EQUIPMENT

Want to Sell

Complete Ku Band Uplink! SierraCom 2600 VSAT controller, Comstream digital audio codes/Mux, Comstream PSK digital modem, BO. Bob Simmons, Simmons Bdctg of North Dakota, 9453 Highway 1, Langdon ND 58249. 701-256-1080 ext 12.

STATIONS

Want to Sell

HADDEN & ASSOC.
• Texas Class A Cash Flow-$975K
• Fla. Gulf FM C3 25KW-$975K
• SE TV FullPower CashFlow-$3.5M
407.699.6069
E-mail: Haddenws@aol.com
Web: Haddenonline.com

2 AM Radio Stations: both 1kw day & night non-directionals. Located 26 miles apart in W. Texas. Recent upgrades with solid state transmitters and land. 2004 sales $183,000, profitable and growing. Owner retiring. Contact Jim Hoffman at 520-818-9441. Email: jfhoff@att.net.

COMPLETE RADIO STATION: Non-commercial FM license to operate at 160W in south-western PA. Available with studio, transmitter and tower. Price is negotiable. E-mail pghconfoffice@juno.com or call 412-374-1170.

WYBG 1050 AM, 1000 watts daytimer, Massena, NY, #1 news/talk in Northern NY and E. Ontario. Includes, downtown studios 4 acre transmitter site, tower, etc. ASAP – Health reasons, call Curran Wade, 315-764-0554.

KDDK-FM/KFRA-AM Franklin, Louisiana. Up-graded, renovated, auto-mated. $795,000 with seller financing. 337-924-7102; kddk@bellsouth.net.

STUDIO EQUIPMENT

Want to Sell

COMPLETE STUDIO EQUIP-MENT PACKAGE FOR SALE. From automation to EAS. Like new, only 1 year old. Details at 222.jock2.com.

OWNER RETIRED. Selling equipment from Music Director Programming Ser-vice. Sony DAT recorders, Scully and Revox half-track R2R recorders, Burwen TNE & DNF units, DA's, Timer Clock, SAE 5000, Russco & Technics TT's, Speakers, 25-Hz generator, Maxell 1/4" Pro-tection masters, Sports Remote Broadcast Equipment and more. Call Budd for complete list. 413-783-4626 or Email: bclain@usadatanet.net.

TAPES/CARTS /REELS/CD's

Want to Buy

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-687-6357.

World Radio History

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 AFCCE

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.commtechrf.com

GRAHAM BROCK, INC.
BROADCAST TECHNICAL CONSULTANTS
Full Service From Allocation to Operation AM/FM/TV/AUX Services; Field Work; Antenna and Facilities Design
Over 45 years engineering and consulting experience
912-638-8028
202-393-5133
www.grahambrock.com

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 Dennerest Sq., #E, Dennerest GA • 706-778-6611

IEM *Serving Broadcasters Since 1948*
Mullaney Engineering, Inc.
Member AFCCE
9049 Shady Grove Court
Gaithersburg, MD 20877
(301) 921-0115
Fax (301) 590-9757
mullaney@mullengr.com

dataworld
Market Analysis
Engineering Software
Ethnic/Demographic Data
Custom Full-color Mapping
Sales Marketing Packages
www.dataworld.com 800-368-5754
info@dataworld.com fax: 301-656-5341

R. MORGAN BURROW, P.E. & ASSOCIATES, P.C.
ALLOCATION STUDIES
(AM, FM, TV, LPTV) New facilities, site relocation, FM upgrade, diplex
FIELD WORK A SPECIALITY
- AM Directional antenna adjustment, measurement & proof
- RADHAZ measurements - RADiation HAZard evaluation
- FM & TV field intensity & other measurements
- Facility inspections for purchase/insurance purposes
- CATV Leakage Testing

ELECTROACOUSTICS
OSHA measurements
RMB&A 304-258-7921 · Fax 304-258-7927

Doug Vernier
Telecommunication Consultants
Broadcast Engineering Consulting
AM/FM/TV/LPTV/DTV
Custom mapping service
Frequency searches
Propagation prediction
FCC application preparation
V-Soft Communications Software for your PC
(800) 743-3684
www.v-soft.com

M Celenza
Communications Consultants
FM-AM-TV-LPTV-LPFM
Applications, Amendments, Upgrades, Frequency Searches, Directional Antennas
Field Work (Station Inspections)
631-965-0816 or 516-429-8340
celenza@prodigy.net
41 Kathleen Crescent, Coram N.Y. 11727

Reach Broadcast Professionals!
For more information, including rates & deadlines, fax Simone Fewell at +1-703-671-7409.
Advertise today!

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

SPACE IS AVAILABLE!

Are You a Distributor?
ADVERTISE HERE!
Space is available.
Call 703-998-7600, ext. 154.

EMPLOYMENT

HELP WANTED

CLEAR CHANNEL RADIO

Clear Channel Radio has openings for Market Engineering Managers in several markets. Successful candidates will oversee all technical aspects of the market and must be highly skilled not only in technical matters, but also exhibit strong management skills. This position will have substantial hands on requirements, so if you are looking for a desk job, this probably isn't for you.

Clear Channel Radio leads the industry in technological innovation and support for quality engineering. We offer Excellent Pay, Technical Training programs, 401K, Employee Stock Purchase Plans, Great Benefits and many Opportunities for growth and advancement.

If you have great technical skills and are ready to work with our highly qualified team...

Contact:
Steve Davis – Sr. Vice President - Engineering
Clear Channel Radio, 2625 S. Memorial Dr., Ste. A
Tulsa, OK 74129, 918-664-4581 Fax 918-664-3066
stevedavis@clearchannel.com

Clear Channel is an Equal Opportunity Employer.

D.A.V.I.D. Digital Audio & Video Integration & Development

D.A.V.I.D. Systems Inc. is seeking a National Sales Manager for it's North American operation.

D.A.V.I.D. (Digital Audio & Video Integration and Development) develops products & system solutions for the broadcast market, concentrating on radio & related internet services.

We are seeking a highly motivated individual with significant experience in the radio systems business. The ideal candidate will have worked in the automation segment before & have an up to date Rolodex to work with. He or she understands the workflows & operational needs of both public & private radio operators. Our market is characterized by long purchasing cycles – the National Sales Manager needs to be self-reliant & have a keen understanding of the nature of project business in order to be successful.

We offer competitive compensation, health benefits, above-average paid vacation and growth opportunities. If you enjoy working with an effective & customer-oriented team, please send your update resume & references to: D.A.V.I.D. Systems, Inc., PDB 1297, Brookline MA 02446 or email to: info@digasystem.com.

EMPLOYERS / EMPLOYEES
Click On No. 1 Staffing & Job Service:
www.KeystoneAmerica.com
TECHNICAL ENGINEERING SALES/MGNT VPGM
VIEW OR POST JOBS - FREE

Broadcast Engineer: Muskingum College, located 70 miles east of Columbus, Ohio seeks broadcast/radio-TV systems engineer. Full-time position provides technical and operational support for radio/TV studios, transmission systems, and classrooms; maintains technical compliance with FCC regulations for the college's noncommercial FM station and provides expertise in installing and maintaining analog and digital audio/video systems and computer networks. Minimally requires Associate's Degree in Broadcast Engineering or equivalent professional experience. Review of applications will continue until position is filled. Send cover letter, resume, transcript, and contact information for three references to: Jeff Harman, Director of Broadcasting, Muskingum College, 163 Stormont Street, New Concord, Ohio 43762. EOE.

POSITIONS WANTED

Promotions personality! Outgoing, friendly, crazy and creative dedicated, and loyal individual. Experience with Cool Edit, copywriting, Windows, Excel, Microsoft Publisher, and Outlook, etc. Call Jennifer, 817-237-9612.

Run your employment ad on our web site for only $2 per word!

Call Simone Mullins for all the details at 703-998-7600, ext. 154.

www.RWonline.com

PROMOTE YOUR BUSINESS!
To advertise, call 703-998-7600, ext. 154 or e-mail: sfewell@imaspub.com.

To advertise, call 703-998-7600, ext. 154 or e-mail: sfewell@imaspub.com.

World Radio History

ECONCO NEW TUBE

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 HABLA ESPAÑOL

ECONCO NEW TUBE

TRANSMITTERS

TRANSCOM CORP.
Serving the Broadcast Industry Since 1978
Fine Used AM & FM Transmitters and Also New Equipment

USED FM TRANSMITTERS

1KW	1998	Harris Quest Solid State
1.5KW	1987	BE FM1.5A
3.5 KW	1986	Harris FM 3.5K
3.5 KW	1992	Harris HT3.5
5 KW	1982	Harris FM 5K
6 KW	1995	Henry 6000D
10KW	2000	BE FM 10T
10KW	2001	Henry 10,000D-95
20KW	1978	Collins 831G2
25KW	1982	Harris FM25K
25KW	1980	CSI T-25-FA (Amplifier Only)
30KW	1986	BE FM30A
50KW	1982	Harris Combiner w/auto exciter-transmitter switcher

USED AM TRANSMITTERS

1KW	1983	Harris MW1A Solid State
1KW	1986	Harris SX1A Solid State
5KW	1985	Continental 315R1
5 KW	1982	Harris MW5A Solid State
10KW	1982	Harris MW10A
50KW	1985	Continental 317C2

USED EXCITERS
Continental 802B
New 20 watt-synthesized

NEW TV TRANSMITTERS ANALOG AND DIGITAL
Special Discount Pricing On:
VHF AND UHF (10 W to 10KW) — TV Antennas, TV STL

USED TV TRANSMITTERS
10KW VHF — NEC PCN 1213
30KW UHF — RCA TTU-30A, CH 50

BUSED MISC. EQUIPMENT
Audio Amplifiers:
BGW 85
Crown D-75
New Denon 720R Cassette Player
Potomac Phase Monitor AM19 w/sampler
Potomac Phase Monitor 1901 Digital 2Twr
Sola Voltage Regulator 60hz 1KVA s-phase

AND MUCH MORE.....
Returning & Testing Available
CALL US FOR A QUOTE!

2655 Philmont Ave #200, Huntingdon Valley, PA 19006
800-441-8454 • 215-938-7304 • FAX No. 215-938-7361
VISIT OUR NEW INTERNET SITE: www.fmamtv.com
SEND YOUR E-MAIL REQUESTS TO: transcom@fmamtv.com

Want to Sell

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

BESCO INTERNACIONAL
World Leader in AM - FM Transmitters
"Now in our 34th year"
AM & FM Pre-Owned Units In Stock
All Powers • Manufactures • Instruction Books • Spares & All Complete
Visit our Website:
www.besco-int.com
Or Call Rob Malany, National/Int'l Sales at 321-960-4001

CCA 5KW FM xmtr, 1987, model 5000G w/spare tube, single phase, grounded grid, solid service, removed for upgrade3 2002, $12,500/BO. Bruce Kierking, KNDY, 1212 11th Rd, Marysville KS 66508. 785-562-2361 or kndy@bluevalley.net

Harris B, Gates 1, 1kw transmitter on 1560, bought in 1998, great condition, all as is. Buyer responsible for S/H, $7000. Gary Hayes, WATJ/WKKY, Geneva OH 44041. 440-466-9559.

Harris MX 15 FM exciter, 1984, removed for upgrade 2002, $1000/BO. Bruce Kierking, KNDY, 1212 11th Rd, Marysville KS 66508. 785-562-2361 or kndy@bluevalley.net.

CCA HELP
▪ Rotron Blowers ▪ Rebuilt Plate Blockers ▪ Tubes
▪ Tube sockets/parts ▪ most all transmitter parts
▪ rebuilt tuning line assemblies
Goodrich Ent. Inc
402-493-1886
www.goodrichenterprises.com cgoodrich@tconl.com

Harris BC10H, 10kw AM in good cond, 1410 kHz, $4000. Tom Toenjes, KJTY, 1620 Riley Cr, St Marys KS 66535. 785-640-6047. tomt@oct.net.

Optimod 8000A FM exciter in excel cond, $700. Tom Toenjes, KJTY, 1620 Riley Cr, St Marys KS 66535. 785-640-6047. tomt@oct.net.

OFF THE AIR?
Emergency Back-up Rentals
FM Exciters - STL's - FM Pwr Amps - Antennas - Studio & Test Equipment
SCMS Inc (800) 438-6040
"You Know We Know Radio"

Want to Buy

AM Phasors, phasor parts, AM-19 phase monitors, RF switches, AM Transmitters. Continental Communications, 314-664-4497, Fax 314-664-9427, ccontcomm@sbcglobal.net.

AM or FM translators in western U.S. Please contact Dougs@ihradio.org or 530-584-5700 ext 11.

www.rwonline.com

TUBES & COMPONENTS

Want to Sell

4CX250BC used tube in good condition. Made 100% power when last used. Was kept as stand by, $75; 4CX250BC (NEW) tube, $100. A. Martin, 27518 County Rd 3, Merrifield MN 56465. 218-765-4321.

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.

Radio World Equipment Exchange

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
Eimac CPI Communications & Power Industries Pro-Tek®
SVETLANA EEV
OMB BROADCASTING USA DISTRIBUTOR
BEST PRICES FROM OUR STOCK
To Order:
1-800-881-2374
Outside U.S. (352) 688-2374
Se Habla Español
3089 Deltona Blvd. Spring Hill, FL 34609
BEST SERVICE
352-688-2374 Fax 352-683-9595
Website: www.dandcelectronics.com

POWER Eimac YOU CAN TRUST
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
CPI Communications & Power Industries division

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: rfp@rfparts.com Web: www.rfparts.com

SPACE IS AVAILABLE!

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, 2005

	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	170	145	124
Classified Line Ad	$2/word			
Blind Box Ad	$15 additional			

Call Simone Fewell, Ext. 154, Classified Ad Manager, to reserve space in the next issue. Use your credit card to pay, we now accept VISA, MASTERCARD and American Express.

www.rwonline.com

World Radio History

ADVERTISER INDEX

This listing is provided for the convenience of our readers.
Radio World assumes no liability for inaccuracy.

PAGE	ADVERTISER	WEB SITE URL
77	AEQ	www.aeqbroadcast.com
76	Altronic Research	www.altronic.com
43	Aphex Systems	www.aphex.com
51	APT (Audio Processing Technology)	www.aptx.com
28	Armstrong Transmitters	www.armstrongtx.com
66	Arrakis	www.arrakis-systems.com
61	ASG.AON	www.nab-aon.com
26	ATI	www.atiguys.com
5	Audemat-Aztec Inc.	www.audemat-aztec.com
78	Audion Labs	www.audionlabs.com
22	AudioScience	www.audioscience.com
78	Autogram Corporation	www.autogramcorp.com
60	Axia, A Telos Company	www.axiaaudio.com
50	Belar	www.belar.com
46	Bext	www.bext.com
48	Broadcast Data Consultants	www.broadcastdata.com
15	Broadcast Electronics	www.bdcast.com
59	Broadcast Electronics	www.bdcast.com
35	Broadcast Software Int'l (BSI)	www.bsiusa.com
75	Broadcast Warehouse	www.broadcastwarehouse.com
31	BSW	www.bswusa.com
23	Burk Technology	www.burk.com
46	Circuit Werkes	www.circuitwerkes.com
62	CKE/HVCA	www.rectifiers.com
78	ComLab	www.davicom.com
7	Comrex	www.comrex.com
44-45	Comrex	www.comrex.com
78	Conex Electric Systems	www.conex-electro.com
30	Danagger Audio Works	www.danagger.com
46	Dayton Industrial	www.daytonindustrial.com
27	Dielectric Communications	www.dielectric.com
10	Digigram	www.digigram.com
62	Digital Weatherman	www.digitalweatherman.com
39	Dorrough Electronics	www.dorrough.com
4	Electronics Research Inc.	www.eriinc.com
40	ESE	www.ese-web.com
25	Eventide	www.eventide.com
78	Gorman-Redlich Mfg. Co.	www.gorman-redlich.com
62	Grace Broadcast Sales	www.gracebroadcast.com
1	Harris	www.broadcast.harris.com
24	Heil Sound Ltd	www.heilsound.com
14	Henry Engineering	www.henryeng.com
70	HHB/Sennheiser USA	www.hhbusa.com
71	Inovonics	www.invon.com
53	JK Audio	www.jkaudio.com
6	Kintronic Labs	www.kintronic.com
57	Klotz Digital AG	www.klotzdigital.com/america
62	Kozacko Media Services	www.fybush.com
16	Logitek	www.logitekaudio.com
46	Mager Systems	www.magersystems.com
67	Moseley Associates	www.moseleysb.com
38	Mouser Electronics	www.mouser.com
37	Musicam USA	www.musicamusa.com
17	Nautel	www.nautel.com
19	Nautel	www.nautel.com
29	NPR Satellite Services	www.npr.org.euonline
8	Omnia, a Telos Company	www.omniaaudio.com
73	Omnirax	www.omnirax.com
41	OMT Technologies	www.omt.net
49	Orban	www.orban.com
12	Prophet Systems Innovations	www.prophetsys.com
64	Quasar-Tech	www.quasartech.cl
46	Raduga Automation	www.raduga.net
63	RCS	www.rcsworks.com
62	RF Licensing	www.terrestrialrf.com
3	S.C.M.S.	www.scmsinc.com
69	Sabre Communications	www.sabrecom.com
65	Scott Studios	www.scottstudios.com
18	Shively Labs	www.shively.com
55	Sierra Automated Systems	www.sasaudio.com
72	Sine Systems	www.sinesystems.com
20	Studio Technologies	www.studio-tech.com
21	Susquehanna Radio Corp	www.susquehannaradio.com
80	Symetrix, Inc	www.airtoolsaudio.com
13	Telos Systems	www.telos-systems.com
11	Tieline America	www.tieline.com
78	Videoquip Research	www.videoquip.com
68	Ward-Beck	www.ward-beck.com
2	Wheatstone	www.wheatstone.com
87	Wheatstone	www.wheatstone.com
88	Wheatstone	www.wheatstone.com

GUEST COMMENTARY

NAB Should Focus on Spring

A Veteran Exhibitor Says the Fall Show Is Hurting Radio in the Spring

by Ernie Belanger

As vendors and attendees ready themselves for the annually NAB spring wingding, let's be honest with ourselves and NAB. For those of us in radio, the spring show, as it stands, is no longer working.

This is apparent by what appears to be a dwindling number of radio/audio attendees and the shrinking floor space taken up by exhibitors in our hall. Regardless of what statistics may show, vacant aisles during large parts of the show afternoons and the "ghost town" of a radio hall for most of Thursday speak for themselves.

The days of a vibrant radio/audio hall are gone thanks to consolidation, rising expenses and a splintering of the attendee base between two shows.

What to do?

There is no doubt that we can return the radio portion of the spring show to prominence. But to do so will take the cooperation of the NAB Executive Committee and the NAB Radio Board. Sadly, neither seems willing to budge on the matter.

The Radio Board and Executive Committee need to come out of denial mode and come to grips with the reality of the marketplace they helped create and which they endorse. Since consolidation began, the number of domestic radio attendees at the spring show has plummeted.

Consider just the largest radio group owner. Its stations would once have accounted for 1,400 to 2,800 attendees, if you assume just one or two per station. We now see less than about 10 percent of that potential.

This pretty much holds true for other group owners. Further, other groups have pulled out of NAB and send no one.

To make matters worse, the Radio Board and Executive Committee continue to demand that the association host a fall Radio Show. This weakens the industry by competing with the spring event as the best opportunity for radio to meet its present and future challenges. It also makes justification of exhibiting at either show difficult due to marginal attendance at both.

Some have suggested moving the radio hall to the South or TV hall in an attempt to increase foot traffic. This ignores the root of the problem. Also, history indicates that when radio/audio was in the South Hall, it merely served as a doormat, a walkway for the masses coming to the show for television.

If this were a workable solution we would still be at the entrance of the South Hall, and NAB would have kept the TV floor's growth from forcing us into our own hall — or, I should say, our half of a hall, as the size of the radio/audio floor continues to shrink.

Despite NAB's pronouncements on this topic, the picture at the moment is bleak. But I see a way to return the radio portion of the spring show to prominence.

First let me ask this question, which the Radio Board and Executive Committee should be asking themselves: What is the best opportunity for the radio industry to meet the challenges it faces?

The answer is simple: Have the greatest technical, creative and business minds in radio, from around the world, meet once a year at a single location. The synergy of this convergence of knowledge and creative thinking has the potential to propel terrestrial radio to a new level of preeminence.

Creative and sound solutions to cure a myriad of radio's ills can be developed; new and innovative ideas can be shared. The results of a brain trust of this magnitude have not yet been experienced.

To make this happen the NAB must stop splintering the industry. It should eliminate the fall Radio Show.

This will give everyone in radio one focus every spring. This approach has the greatest potential to help the industry find the innovative solutions it needs.

For attendees, it is the best opportunity radio has for a strong future. For exhibitors, the attendee base would no longer be splintered; we would see nearly twice as many domestic attendees at the spring show, making it once again worth the investment.

This solution is a triple win: for the NAB, for the radio industry and for radio/audio exhibitors. There is no other single solution that would have this huge benefit.

NAB has nothing to lose, except maybe a few dollars. But then again they could hold a fall TV show to more than make up for the small financial loss of not having a fall Radio Show.

Ernie Belanger is sales and marketing manager at Armstrong Transmitter. The opinions are his own and are not intended to reflect those of Armstrong Transmitter, its owners, employees or managers. This year will be his 20th NAB spring show, 19 of which he has attended as an exhibitor.

Sourcebook Omission

The 2005 Radio World Sourcebook looks great, but our company was omitted.

Thermo Bond Buildings manufactures pre-fabricated and pre-wired transmitter buildings, used to house sensitive equipment at remote sites in any environment. These shelters are shipped fully assembled, including lights, outlets, air conditioners, heaters, grounding, etc. With every order, Thermo Bond generates a complete set of construction drawings for the customer to approve prior to construction.

Contact us in South Dakota at (800) 356-2686 or visit *www.thermobond.com.*

Doug Olson
Sales Manager
Thermo Bond Buildings
Elk Point, S.D.

World Radio History

GUEST COMMENTARY

The Quest for What's Next in Radio

The Author Says Nonprofit, Independent Technology R&D Is Vital to Radio's Longevity

by Mike Starling

Mike Starling is vice president of engineering and operations for NPR.

Despite having weathered the advent of TV, 8-tracks, CB radio, cassettes, CDs and satellite radio, radio broadcasting faces unprecedented uncertainty about retaining our primacy as the companion medium at home, at work and in the dashboard. Few will argue there is little risk in losing mindshare and timeshare to podcasting, the death star or emerging wireless internet radio.

TABLE 1

	HD Radio	Satellite Radio	Wireless Internet
1. Is it portable?	Yes	Yes	Yes
2. Is it mobile?	Yes	Yes	Growing
3. Is it well suited to automotive use?	Yes	Yes	No
4. Does it support multiple content streams?	Yes	Yes	Unlimited
5. Is there an established distribution platform?	Yes	Yes	Emerging
6. Easy to use and intuitive?	Yes	Yes	Improving
7. Does it support time shifting?	Coming	Coming	Yes
8. Does it permit subscription activity?	Coming	Required	Yes
9. Is it media rich, supporting text and graphics?	Coming	Coming	Yes, and video
10. Support in-depth user interaction	No	No	Yes
11. Does the model avoid added costs per user?	Yes	Yes	No
12. Is there industry traction in this direction?	Yes	Yes	Yes
13. Are stations essential to distribution?	Yes	No	No
14. Is there a demonstrable new revenue stream?	Yes	Yes	Likely
15. Does it offer a compelling new art form?	Coming	Emerging	Yes
16. Are Public radio stations leading and, apt to gain share?	Yes	No	Few
17. Is it fee free?	Yes	No	No

Table 1. Starling says only digital radio offers substantial and shared benefits to both stations and national programmers. But further technology research, he says, is vital.

We are all yearning for an understanding of what's next. What can be next? What will be next? What should be next? And how can the radio industry ensure that what should be next, will be?

Vision quest

For radio, the 2,500 stations now on the road to HD Radio represent an inflection point that will make an enormous difference in whether radio will be thriving and how it will be used a decade from today.

At the 2005 Consumer Electronics Show, three emerging audio broadcast technologies were on full display: satellite radio, HD Radio and Internet wireless radio. To size up a few of the issues ahead, consider Table 1.

In my view, only digital radio offers benefits to both stations and national programmers. For those of us who believe that substantial influence and sustainability results from integrating local and national services, this is extremely good news.

But given the looming choices of satellite, podcasts and Internet radio, complacency with our current broadcast system would be myopic. Every station should have a layered strategy to bolster and maintain radio's primacy, especially in the captive venue of drive time.

One of the most intriguing facets of the digital age is that digital information is inherently untrustworthy.

No longer can we trust that sound, pictures, text or movies represent what they purport to capture. Whether it's a National Guard memorandum, a picture of a face on the surface of Mars or the placement of the first down line, we need humans with yardage chains to testify that things are indeed as they appear. The constraints not only of time and space, but of reality itself are being relaxed by information technology.

Some "expert" commentators on the subject of IBOC consistently derided every aspect of the system and ownership, never granting a quarter to the brilliance of Yankee ingenuity at work. They failed to appreciate how the system could — with the help of a best-in-class audio codec — be readily turbocharged to yield tremendous opportunities for new public services and new revenue opportunities to promote sustainability.

Just 18 eighteen months after the codec switch prompted some pundits to declare HD Radio conclusively derailed, both commercial and noncommercial colleagues have rallied around the Ibiquity system and the multicasting future it enables.

Is it not ironic that the unredeeming Howard Stern's defection to satellite broadcasting for a sum of money unheard of in terrestrial radio has prompted our industry to get serious about both HD Radio and multicasting? The recent, nearly half-billion dollar commitment to HD Radio is the largest technology upgrade in "earth radio" to date.

In the face of subscription dollars wafting up to the "death star," the hand wringing of old has been left behind. The cackles of "Will it work?" "Is the Ibiquity license fee acceptable?" "How dare the FCC pick a winner!" or "Shouldn't we only endorse a worldwide standard?" appear to have vaporized as quickly as it took Howard to whisper those two special words "I accept."

Technology truth-seekers

As many have observed, the promise of what lies ahead often outpaces reality, whether it is flying cars, the paperless office, 3D videophones or "getting on the virtual bus."

Although the perception of digital reality is fungible, there are immutable laws of physics the human race has yet to surmount — small nuisances like the speed of light, coding delay and disruptive interference from frequency sharing.

Arbitrating among technology experts, who often have disclosed or undisclosed vested interests, is not a new problem. In an earlier era, a Presidential Advisory Group on "Anticipated Advances in Science and Technology" proposed establishing a "Science Court" meticulously to sort scientific facts from the non-scientific issues to ascertain the truth of complex engineering disputes.

Not only has forecasting by technical wizards been seriously deficient, an awareness of fundamental technical realities can escape many brilliant technical minds. A legendary example was De Forest's inability to grasp that his "Audion tube" could be used as a powerful regenerative amplifier — the missing precursor for launching the entire radio industry.

Throughout the electronic history there have been leaders with technical mastery and a clear vision who realistically understood how the legal, marketplace and technical innovations could align to create valuable new products and services.

Dave Sarnoff and Bill Gates made a lot of their own luck, but much of it grew from clear vision and the relentless passion for seeing their visions become reality.

Missing resources

Once there was an important role for technology research in shaping broadcast media. NBC and CBS Labs shared a multi-decade commitment to innovation and brought us color television, electromagnetic recording, audio processing, electronic newsgathering and a host of operational improvements that made decisive differences in operating budgets.

The FCC itself was once a bastion of unparalleled engineering expertise, making fundamental discoveries about propagation and setting the benchmarks for decades of evolving standards and practices. Eventually, the FCC turned away from a sizable investment in engineering prowess and increasingly became beholden to the assertions of commercial proponents.

Mike Starling

In the 1970s and early 1980s the Corporation for Public Broadcasting housed a technology unit under the tutelage of Chief Scientist Phil Rubin and Deputy Chief Rob Bednarek. They did great work spearheading fundamental contributions moving program distribution to satellite technology, improving UHF reception and working toward the All Channel Radio Receiver Act, defeated on the Hill by entrenched AM interests.

Yet, for reasons now lost to us, the CPB shifted focus concurrent with the arrival of the first consumer digital devices — devices that for the first time outpaced "broadcast quality" as the unequaled standard of highest technical fidelity.

More recently, PBS housed the last national broadcast technology lab, the Advanced Television Technology Center (ATTC), which made fundamental contributions to the development, testing and evaluation of competing digital television systems. But, like NBC Labs long ago and CBS Labs in 1986, the ATTC shut its doors in 2003.

As we move forward into the 21st century, we move deeper into knowledge media, with entirely new inflection points ahead. Is radio resigned to exploiting quietly the remnants of initiatives whose inevitable objective is to cannibalize our listenership?

Or might we make path-finding a priority to guide us in evaluating competing options for our technological future? One rooted in both public service and market sustainability?

It is time for a lasting, public service-driven, radio broadcast technology research center. Its activities would be dedicated to the proposition that fact-based technical knowledge and relentless focus on listener engagement are both means and ends. Such a center should focus zealously — first, last and always — on the user's experience.

Maintaining listener focus would be guarded by independence, and being decidedly non-profit in nature and affiliations. History has shown that the inevitable pressure to support products, services and intellectual property of parents and partners would otherwise undermine strategic objectives.

Moreover, such a center should be insulated from non-mission budgetary pressures by operating under an endowment, contributed by organizations and individuals committed to re-inventing a dynamic future for the original wireless medium.

The rigor to attain greater use and enjoyment of "earth radio" is at hand — if we act to shape a future that might and should be.

World Radio History

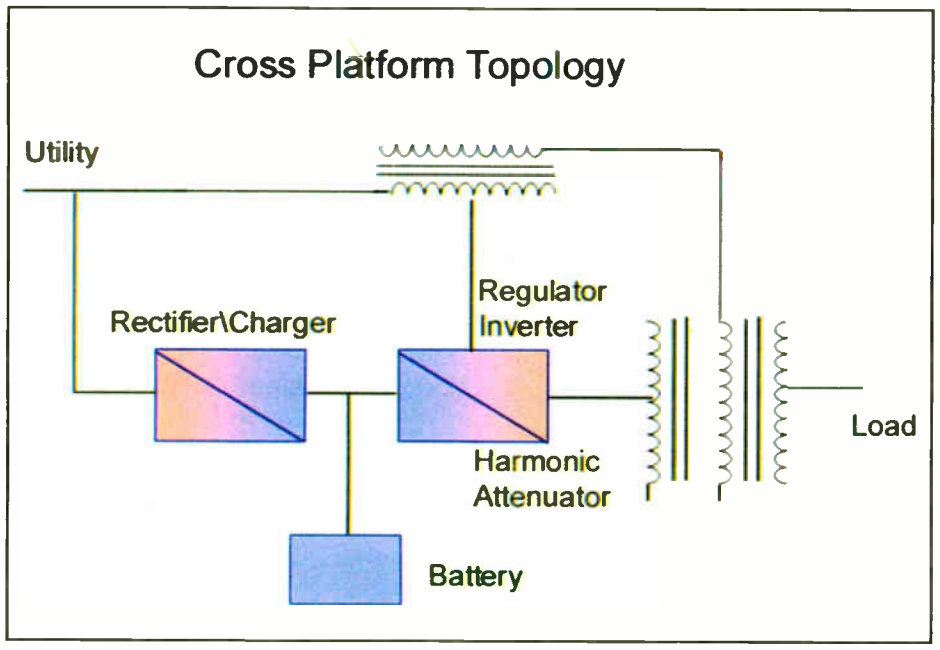
◆READER'S FORUM◆

Generator to UPS Compatibility Issues

This letter is in response to the problem presented by Les Proctor (letters, Feb. 16) regarding UPS compatibility with backup generators.

approaching 3:1 or greater. Most backup generators (when sized less than three times the rating of the UPS) exhibit high output impedance characteristics causing significant voltage distortion when subjected to these non-linear load demands.

The UPS becomes the culprit. The distortion created by the UPS is seen by the

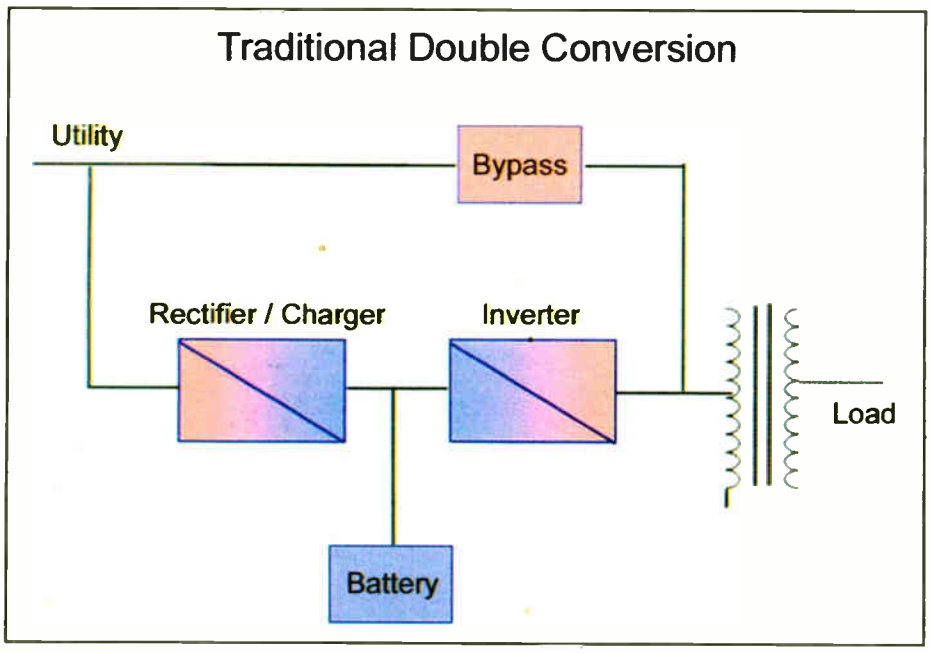


Cross-platform topology at work.

The primary problem with traditional double conversion UPS systems is that their input is no more than an industrial-grade rectifier to feed batteries and an inverter. These rectifiers produce vast magnitudes of harmonic currents with crest factors

UPS as an unacceptable waveform, causing the UPS to disengage from the generator and operate on battery power. With the UPS disengaged, the generator's output becomes acceptable, allowing the UPS to reengage.

The solution is a UPS that limits the



non-linear loading effects and is capable of accepting a wider range of distortion.

Cross-platform topology builds on the advantages of the double conversion systems by introducing an additional inverter, limiting the reflected harmonies and bringing the crest factor back to 1:1 ratio. The backup generator sees the equivalent of a linear load.

The linear loading assures the generator's output remains sinusoidal and remains engaged as the primary source of power. Any distortion generated by other loads is "reactively filtered" by the UPS. Equipment connected to the UPS is inoculated from any other ancillary peripherals. In addition, the reactive filtering removes harmonic distortion caused by the loads connected to it.

Ken Krause
World Design Concepts and Technologies
Madison, Wis.

A Surround Standard? Not Yet

Surround sound, which some think is a "killer app" for HD Radio, is approaching a crossroads.

As our masked engineer Guy Wire points out in a column in the upcoming Radio World Engineering Extra and online, consumers have been enjoying 5.1 DVD movies in home theatres for years. Sirius and XM are producing and showcasing 5.1 content on at least one channel each. Again satellite is first with a new, attractive feature, lending the surround discussion a sense of urgency.

Multi-channel audio and surround sound are over 40 years old. Our Skip Pizzi has traced its evolution in a recent series of articles providing a wealth of historical background and understanding of the technology. But it was not widely embraced as a consumer product until the movie industry settled on the Dolby Digital 5.1-channel format, now used for most DVDs and in digital television.

Guy Wire writes that the recording industry is missing out on a great opportunity by creating more new titles — and by revitalizing past hit songs — in 5.1 in formats like DVD-A and SACD.

But, he argues, nobody would hear such content on radio unless a clear technical standard at the receive end compels radio stations to implement the necessary production and transmission infrastructure to deliver HD 5.1. There are at least five contending entities, with different techniques and system designs. All promise impressive surround results.

Not everyone agrees with Guy Wire on the need or appropriateness of a standard. Some say a marketplace decision is the proper approach — that the consumer and broadcaster are best served by such a process. It's not like the FCC's marketplace decision on AM stereo, this school of thought argues, because surround systems can coexist, as they do in home theater.

Moreover, there is a higher-level problem with surround content for radio, in that 5.1 music from record companies is not currently produced with stereo downmix compatibility, and the claims of coding proponents that their systems are compatible are dependent on such compatibility of content, these critics argue.

The Guy Wire camp and others will fire back that this approach is indeed tantamount to the AM stereo decision. They ask, "Have we not learned anything from that colossal mistake?" Broadcasters, receiver manufacturers and the consuming public deserve a standard to reduce confusion and allow mass production of compatible equipment, they say; and the NRSC, CEA and Ibiquity should coordinate efforts to advance a standard.

The upcoming NRSC-5 standard on digital radio also will not include any specification of IBOC audio coding, and while some might question the wisdom of that omission, we think it implies that the NRSC may not have within its scope any consideration of surround-sound enhancements to such coding. But the NRSC does now have a Surround Sound Audio Task Group to consider many of these issues (co-chaired by Pizzi and Steve Fluker). No doubt there will be a great deal more talk about "standard vs. marketplace" at the NRSC and elsewhere — perhaps including the FCC.

Allow us to remind all parties that it's early. Most broadcasters who are even thinking about these things are more concerned about getting HD Radio on the air.

This is a broad and volatile issue, but it should not be allowed to become a distraction from the more important work of HD Radio's initial deployment. Let's take time to study 5.1 digital radio. Indeed the time may come when a standard should be chosen. But not yet; and we need not even choose whether to take that path right now.

— RW

—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
Thomas R. McGinley	—	Technical Adviser
Michael LeClair	—	Technical Editor, RWEE
John Bisset	—	Contributing Editor
Skip Pizzi	—	Contributing Editor
T. Carter Ross	ext. 120	Editorial Director
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)
Terry Hanley	ext. 130	Production Editor, RWEE & Listings Coordinator
Peter Finch	—	Editorial Assistant, Milan

—EDITORIAL CONTRIBUTORS—

W.C. Alexander, Bruce Bartlett, Frank Beacham, Naina N. Chernoff, Harry Cole, Mark Durenberger, Charles Fitch, Ty Ford, Scott Fybush, Harold Hallikainen, Craig Johnston, Paul Kaminski, Peter King, Mark Lapidus, Sharon Rae Pettigrew, Carl Lindemann, Frank R. Montero, Ted Nahil, Tom Osenkowsky, Ken R., Rich Rarey, Tom Ray, Randy Stine, Travis the V/O Guy, Barry Umansky, Tom Vernon.

Radio World
Vol. 29, No. 8 March 30, 2005
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
Product Showcase & Classified Ads: Simone Fewell	703-998-7600 x154	Fax: 703-671-7409	e-mail: sfewell@imaspub.com
European Sales Mgr., Africa, Middle East: Raffaella Calabrese	+39-02-7030-0310	Fax: +39-02-7030-0211	e-mail: rcalabrese.imaspub@tin.it
Japan: Eiji Yoshikawa	+81-3-3327-2688	Fax: +81-3-3327-3010	e-mail: callems@msn.com
Asia/Pacific: Wengong Wang	+86-755-5785161	Fax: +86-755-5785160	e-mail: wwg@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 13, 2005

For address changes, send current and new address to RW a month in advance at P.O. Box 1214, Falls Church, VA 22041. Unsolicited manuscripts are welcomed for review: send to the attention of the appropriate editor.

—ADMINISTRATION & PRODUCTION—

Stevan B. Dana	President/CEO
Carmel King	VP/Group Publisher
Marlene Lane	COO
Chuck Inderrieden	CFO
Eric Trabb	Sales & Marketing Director
John Casey	Associate Publisher
Davis White	Production Director
Melissa SE Robertson	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: Reprints of all articles in this issue are available. Call or write Emmily Wilson, P.O. Box 1214, Falls Church, VA 22041; (703) 998-7600; Fax: (703) 998-2966, Copyright 2005 by IMAS Publishing (USA), Inc. All rights reserved.

—Printed in the USA—

World Radio History

The Wheatstone GENERATION-5 has the POWER and FEATURES Stations Demand the MOST

LOTS More!

Our Generation-5 provides your operators with a straightforward traditional control surface coupled with all the benefits of digital technology. It gives you the flexibility of system-wide source, mix and destination control (any signal any*where*), a powerful mix-minus section and a complete event store, name and recall system. One wire from this surface can control THOUSANDS of wires in your technical operations center.

And while the G-5 *feels* like an analog console, its DSP-based mixing engine keeps your digital sources digital while converting analog sources to switched digital, eliminating crosstalk and noise. It can furnish remote and telcom functionality on any input fader without fear of feedback—a real plus in back-to-back daily operations. Its built-in graphic displays keep operators on top of things with just a glance. And since the entire system is software based, you can accommodate any format with a press of a button.

Like all our Generation Series consoles, the G-5 has complete failsafe options available, such as automatic fail-over DSP and CPU cards and redundant power supplies. We can even provide scheduling software and studio mounted satellite cages that can be configured to mix independently from your main routing system.

At WHEATSTONE** we've built and sold over a thousand digital audio consoles.* The G-5 is a culmination of all that experience. *Benefit from our expertise — choose **WHEATSTONE!

Wheatstone

600 Industrial Drive, New Bern, North Carolina 28562
252-638-7000 / www.wheatstone.com / sales@wheatstone.com

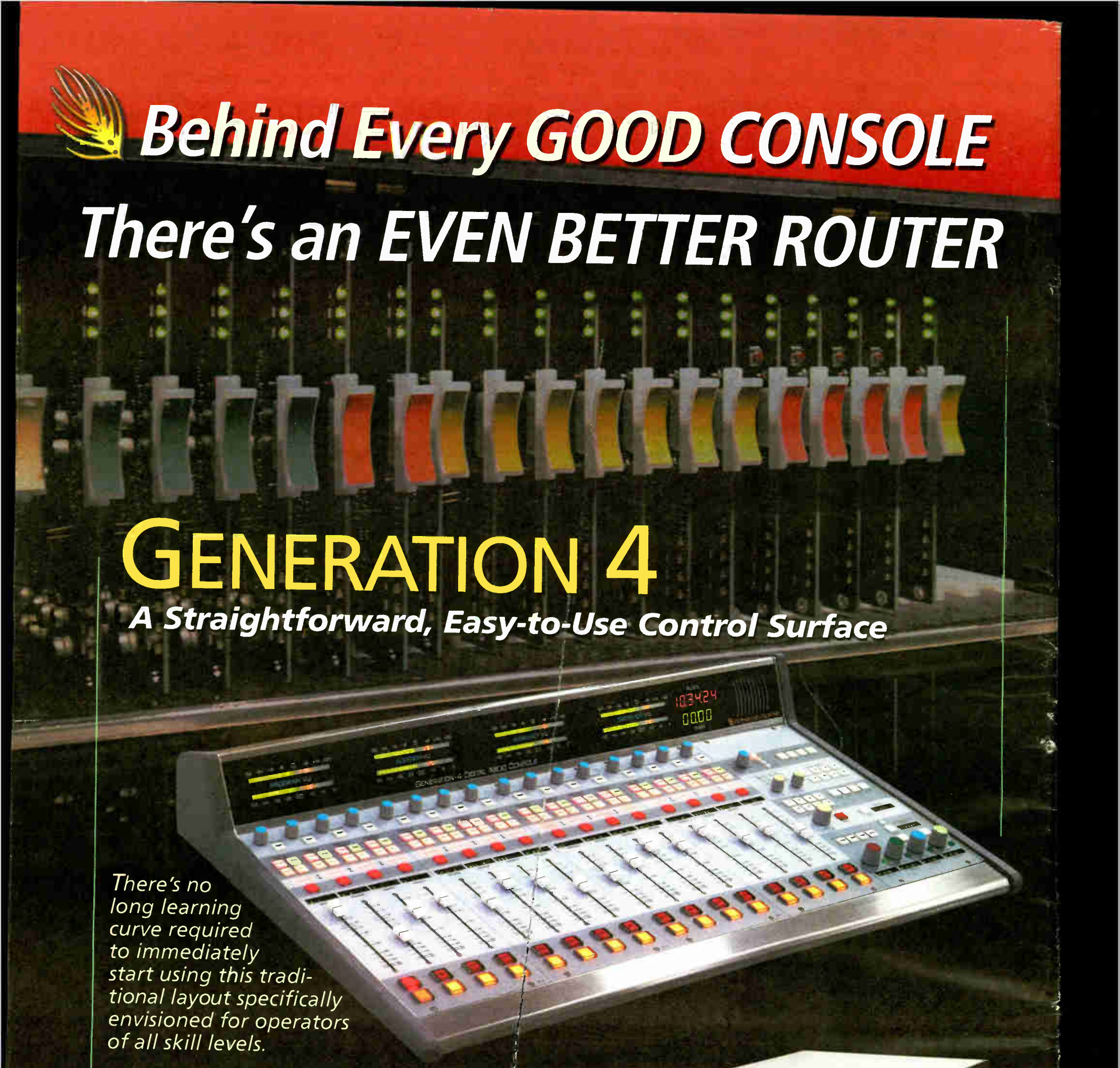
copyright © 2004 by Wheatstone Corporation

World Radio History

Behind Every GOOD CONSOLE There's an EVEN BETTER ROUTER

GENERATION 4

A Straightforward, Easy-to-Use Control Surface



There's no long learning curve required to immediately start using this traditional layout specifically envisioned for operators of all skill levels.

***BRIDGE TECHNOLOGY** enables the GEN-4 surface to operate far beyond the limits of its studio mainframe. Integration with the Bridge digital audio network router provides systemwide access to all station on-air and off-air audio resources via interlinked CAT-5 or fiberoptic cable. And of course, we all know **EXPERIENCE COUNTS**! With over eighty Wheatstone Generation control surfaces already operating in the field, you can be assured your installation will proceed smoothly and on time.*

the digital audio leaders

Wheatstone

www.wheatstone.com

Copyright © 2004 by Wheatstone Corporation

World Radio History