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Radio World®
The Newspaper for Radio Managers and Engineers
November 22, 2000

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NewsBytes Now Every Business Day at www.rwonline.com

Who Are These People?

FCC Sorts Through 1,200 Applications From Widely Disparate Groups

by Naina Narayana

WASHINGTON Low-power FM has been even more of a flash-point issue in radio for the past year. But who exactly are the people and organizations that want a piece of the spectrum?

Applicants for LPFM stations vary widely among nonprofit churches, ethnic groups, student organizations, educational institutions and state and local governments

But no organization contacted by RW — including the FCC, other LPFM supporters and opponents — have compiled statistics to help characterize the applicant pool to date.

How many churches have applied? How many former radio pirates are among the LPFM hopefuls? Does the makeup of the applicant pool help either side in its arguments over the potential impact of LPFM on existing stations?

See PROFILES, page 6 ▶

NEWS ANALYSIS

Automation Marriage May Not Be the Last

Scott, Computer Concepts Merge as Consolidation Moves to Digital Automation/Storage Suppliers

by Randy J. Stine

DALLAS The merger of two radio automation and digital audio storage manufacturers, Scott Studios Corp. and Computer Concepts Corp., may presage further consolidation among suppliers, industry experts say.

This particular transaction is notable because the products sold by Scott and Computer Concepts are critical to radio. Digital automation and storage systems are considered the heart of studio operations. Along with transmitters and consoles, they are among the most important technical purchases a station can make.

Privately, some suppliers say the automation arena is ripe for further

See AUTOMATION, page 8 ▶

A Scott Studios SS32 system is at work on the computer at right, along with the 'Goodfellas' afternoon drive team of KPWR(FM) in L.A.

World Radio History

◆ NEWSWATCH ◆

Kennard: Fee for TV 'Spectrum Squatters'

WASHINGTON As radio ponders how to make a digital transition, TV continues to argue over its own.

NAB doesn't think too much of the FCC chairman's plan to recommend to Congress that TV stations pay a fee to use their analog channel after Jan. 1, 2006.

"Sadly, he is trying to shift the blame for a faltering DTV transition," said NAB President/CEO Eddie Fritts.

The FCC has not required all digital TV sets to receive digital signals, nor has it required interoperability between DTV and cable operators, Fritts said.

Kennard called TV stations "spectrum squatters" in a speech before the Museum of Television and Radio in October. He said in order to speed up the digital transition and get TV to pay more attention to its public interest obligations, he plans to recommend to the next session of Congress that TV stations pay an escalating "spectrum-squatters' fee" for using the analog channel after the 2006 target DTV transition deadline.

Kennard also urged lawmakers to require that all TV sets include the capability to receive digital signals by January 2003 and make 2006 a hard deadline for conversion to digital.

FCC Chases Info Leaks

WASHINGTON FCC commissioners, tired of reading in the press what they're going to do before they do it, have clamped down on information leaks. An agency task force also has been created to improve internal controls on nonpublic information.

The commission has passed an order that requires anyone who conducts business with the commission, such as lobbyists, lawyers and consultants who obtain nonpublic information, to return it without disseminating it.

The rules have always prohibited unauthorized releases of private information by employees, but now, the rules spell out what happens to those who have "leaked" material.

Commissioner Michael Powell, task

See NEWSWATCH, page 14 ▶

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Engineers Affected by Consolidation

by Ken R.

Some rejoiced. Some cried. But no engineer in the radio industry remained untouched by the Telecommunications Act of 1996. Deregulation changed everything.

The part of that legislation that altered the landscape so drastically were the local radio ownership rules, which permitted owners to control as many as eight stations in a single city, depending on the number of facilities in that market.

Overhead reduction

There's no question that this change made it possible for a few large groups to purchase unprecedented numbers of individual stations and thereby reduce their overhead. But how did this consolidation affect broadcast engineers?

"Radio has not been supportive of engineering, so engineers have had to find ways to support themselves," said Chip Morgan, president of CMBE Inc.

Radio has not been supportive of engineering, so engineers have had to find ways to support themselves.

— Chip Morgan

"We are a consulting and integrating company, and I must say that while some engineers have left the business, the ones who stayed are the ones who really love it."

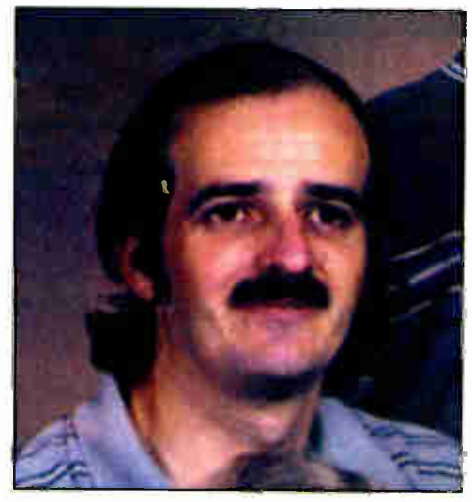
Morgan said that when consolidation began in earnest, large broadcast companies had the money to hire the best people.

"Others engineers sort of hunkered down and worked with smaller clients over a larger area," said Morgan.

Morgan believes that people with a high level of knowledge deserve to be highly paid. "But if a guy comes up with an idea that makes a company millions of dollars, how do you put a number on that?"

Morgan believes the engineers who started their own consulting firms in the wake of consolidation wanted to work with people who understand and appreciate technical skills.

Morgan said that with the increasing use of computers in radio stations, it's harder to find people who know the RF side of the industry.



Terry Keith Hammond

"It's a plug-and-play society now," said Morgan. "But those of us still in the business are obviously not just here for the money."

Jobs are harder to fill

Engineering manager Mark Manuelian oversees WBZ(AM), Boston, part of the CBS group in that city. For a recent job opening, Manuelian advertised in several industry publications, the SBE bulletin board and with local papers and colleges.

"Of the 25 applicants, only three broadcast people applied," said Manuelian. "And all of them lacked any engineering background. They were looking for production jobs and thought 'chief engineer' might be close."

Manuelian is frustrated with the low

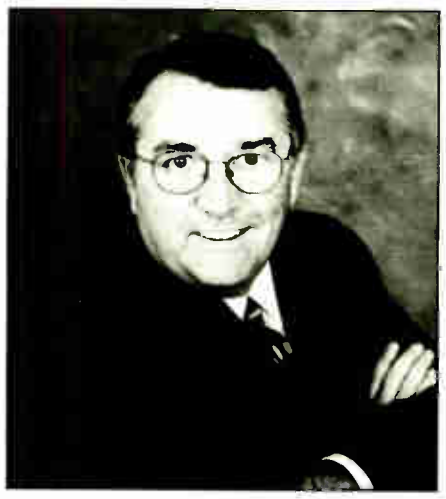
See JOBS, page 10 ▶

Two Markets for Radio Managers: Slim, None

by Ken R.

One would think that in a good economy, experienced station managers would find many opportunities.

But that's not always the case in the aftermath of consolidation. It's not unusual to find markets that once employed 13 general managers and now have only two or three.



Joseph Reilly

"Some of these guys just don't get it," said David Small, president/CEO of Media Executive Search in Dallas. "They need to take a look at options outside the radio industry."

Small said that in many markets where consolidation is the rule, the management openings are just not there anymore, regardless of the talent of the applicants.

"Some of these people are quite capable of good performance, but often new owners want to bring in their own people," said Small. "But there are some good positions in related fields."

Small said television and cable companies desire people with radio experience, but displaced managers need to be more open-minded.

"Managers should look into any field that deals with an intangible, such as Internet and other areas where there are companies seeking alliances with broadcast," said Small.

"I've talked to people who tell me they wish things could be like they were five or 10 years ago. Well, that ain't gonna happen," said Small. "The guys who are adaptable will make it and the rest will be very unhappy."

How we got here

Experts say broadcast groups in 2000 feel tremendous pressure to trim their bottom lines.

"A few years ago, broadcasting fell into the hands of venture capitalists who were more interested in buying and selling," said Dick Sheppard, search consultant for Top Echelon Network.

"The supergroups like Infinity and Clear Channel pay big bucks for their new properties and then they have this overwhelming debt service."

Most program directors are merely errand boys.

— Jay Trachman

Sheppard spent 35 years in the broadcast business managing stations and later working for Arbitron before becoming a headhunter.

"Even with the addition of non-traditional revenue, stations have a hard time covering their debt."

Sheppard said many people who worked in broadcasting when it was less volatile thought that they would be in it forever.

"These are creative people, so we try

See MANAGERS, page 14 ▶

World Radio History

RW to Add Internet Radio Section

The Internet is changing radio. It is an unprecedented force. A marvelous new tool. A threatening competitor to our very livelihoods. Or all of the above.

What's a manager to do?

Starting in January, **RW** will expand our efforts to help you make sense of this whirling, shifting, startling medium.

In every other issue, the new section *Internet Radio* will bring you business profiles, news analysis and technology discussions about radio and the Net. Streaming, ad insertion, Web management, ISPs, the birth and death of dot-coms, how to get the most out of your Web partners.

Already, thousands of articles and millions of words have been written about the Internet at large. But **RW** has always aimed to help our own special community of radio managers and engineers understand how trends like this affect their jobs and their lives every day.

We've been writing about these topics in our News and GM Journal sections; indeed, **RW** was the first radio trade publication to write regularly about the Internet and Webcasting, long before most other magazines understood what it meant for our business.

But from what we've seen at recent trade shows, in chat groups and in advertisements in these pages, the Net radio marketplace is exploding and changing so fast that it deserves its own special section.

We launch *Internet Radio* in our Jan. 3 issue. You can get a sneak peek starting in this issue on page 41.

★ ★ ★

A number of readers called to compliment us on Pete Krieger's article in the Sept. 27 issue. Krieger offered tips to help you fight telephone RFI complaints. But we didn't tell you how to contact him.

Krieger is a former customer systems engineer for Lucent Technologies and is owner of K-COM Telephone Interference Filters. Call him at (877) 242-4540, send e-mail to *k-cominfo@k-comfilters.com* or visit *www.k-comfilters.com*

★ ★ ★

One of my favorite pieces of radio equipment is the station remote vehicle. Why, I don't know. Maybe it's the romance of the road, or all the memories it brings up of funky remote appearances.

The station van or truck is an important part of your station's face to the community. In an upcoming issue, we'll tell you about the coolest vans, trucks and cars, and give tips to help you get the most out of your choice when buying.

If you have an unusual remote vehicle, or if your company makes them, tell us about it so we can share the news with our readers. Send an e-mail to author Ken R. at *KenR5367@aol.com*. We'd love your photos too.

★ ★ ★

Consultant Buc Fitch continues his excellent series about the National Electrical Code in this issue.

Buc does present me with a challenge as an editor, because he is so prolific. The man literally brims over with ideas for articles and with anecdotes about radio station infrastructure.

Along with a given article, he might send me one or two sidebar stories and three or four illustrations — wonderful pieces of artwork that are simply too large or detailed to be reproduced in a newspaper.

For example, in this issue Buc packs his story with useful information about a station generator installation. He asked if we could reproduce a detailed technical drawing of the "W-QRM" sample power layout. It's great stuff. Unfortunately, his graphic measures two feet by three feet!

That graphic is available to interested readers, along with two pages of generator base design. Drop Buc an e-mail to *fitchpe@home.com* and tell him I said hi.

★ ★ ★

In *Buyer's Guide* in this issue, we read about a dozen or so neat new toys for radio people. Among them are solid-state Flash recorders. This technology trend caused me to pause and ponder the evolution of field portable decks.

In my years of radio journalism and, later, helping to equip stations as a salesman, I never had the chance to work with a completely solid-state digital audio field recorder.

As a radio news hound, my companion was an inexpensive consumer model. I envied colleagues who had those nice Marantz cassette decks with hefty mics and long cables that terminated in XLR connectors.

As a salesman, I recommended analog decks from Marantz and Sony, then added DAT portables and eventually MiniDisc machines to my lineup. My customers occasionally dealt with other formats like the mini-DAT. And remember DCC?

From the Editor

Paul J. McLane

What features would you want in the ideal radio field recorder? What are your experiences with solid-state digital portables? Let me know at *radioworld@imaspub.com* and I'll share your thoughts.

Zephyr prefers Radio World

Someday the elves of the radio engineering world will invent the perfect field recorder for radio. Its audio will be linear, and it will offer instant cut access, no moving parts, fidelity beyond our ability to hear and a connection to the world's electronic plumbing via a universal port.

It will have an XLR input.

And it will cost $99.

★ ★ ★

Last, I couldn't resist sharing this photo of a rescued cat who now lives at the offices of our friends at Telos and Cutting Edge.

Fittingly, her name is Zephyr, and she has an all-black brother named Omnia. We're sure the nice kitty intends to read the paper, not shred it.

World Radio History

GUEST COMMENTARY

Uncle Sam's Radio Is at Risk

The Former U.S. Director of Engineering for Radio Free Europe/Radio Liberty Foresees a Glum Future for U.S. International Broadcasting

by Stanley Leinwoll

On March 2, the Commerce Business Daily, a United States government publication, carried the following announcement:

"The Broadcasting Board of Governors, International Broadcasting Bureau, has a requirement for expert consultant services to provide advice and assistance to the IBB's Office of Engineering and Technical Services in the field of international broadcasting frequency management.

"Specifically, the Contractor shall be required to provide an independent analysis of alternatives for effective frequency management and scheduling practices of the International Broadcasting Bureau to achieve greater efficiency of operations."

This announcement was, in fact, a cry for help, an attempt to end the growing problems of wasted resources, indifferent management and poor utilization of technical assets in IBB's Spectrum Management Division.

Spectrum management

One vital element of the IBB is the Spectrum Management Division, which is responsible for the preparation of medium- and shortwave broadcasting schedules. Professional spectrum management requires detailed knowledge of shortwave and medium-wave radio propagation principles, a thorough groundwork in frequency management, and hands-on experience with the preparation of broadcast schedules.

The Internet ...
is vulnerable, and has serious drawbacks in vital IBB target areas.

The Spectrum Management Division is responsible for delivering IBB programs to the target areas via shortwave. Indeed, the most brilliantly written program material is of little value if it cannot be heard clearly by its listeners in the intended target country.

The division includes a costly worldwide technical monitoring network that consists of nine full-time technical monitoring offices, 60 contract monitors and approximately 35 remote monitoring sites.

The Technical Monitoring Unit is responsible for determining how well U.S. international broadcasting operations are being heard throughout the world.

According to its Web site, the system makes approximately 2.5 million observations per year, at a cost of close to $1.5 million annually. The Russian government advised me recently that its technical monitoring budget for 2000 is $35,000.

The Monitoring Unit does not provide reception reports to IBB programmers, nor does it issue regular technical assessments for the IBB's director of the Office of Engineering and Technical Services. Regrettably, the chief of IBB's Spectrum Management Division has had no training in hands-on frequency management, preparation of shortwave broadcasting schedules, or in the coordination of shortwave broadcasting frequencies.

A negative consequence of his inexperience is that he is severely limited in overseeing a division whose primary activities deal with shortwave broadcasting. It is somewhat akin to asking a student nurse to perform open-heart surgery. Therefore, IBB shortwave and medium-wave broadcasting schedules have suffered. Errors that have inadvertently crept into transmission schedules have gone undetected.

For example, a high-power medium-wave transmitter in Munich is currently carrying VOA English during the daylight hours, when medium-wave propagation is generally confined to the ground wave. Therefore, approximately $100,000 per year is being spent to transmit English to the Munich area.

Stanley Leinwoll

Violating a basic tenet

There are numerous examples in the current IBB shortwave broadcasting schedule where one of the basic tenets of efficient frequency management, frequency continuity, is being violated. By frequency continuity, I mean the use of a single shortwave frequency for as long a period as possible.

Breaks in continuity are not listener-friendly.

The Spectrum Management Division also requires an informed leader who can explain to the top engineers at IBB the advantages and continuing importance of medium- and shortwave cross-border broadcasting.

The Spectrum Management Division reclamation project was withdrawn about

See GUEST, page 10 ▶

Messer: Another View

H. Donald Messer, doctor of engineering, director of the Spectrum Management Division, International Broadcasting Bureau, has a personal response to the Guest Commentary above that is not an official opinion of the IBB:

The opinions expressed by Mr. Leinwoll paint an extremely distorted picture of the activities underway within the IBB to improve continually the delivery of U.S. government audio and video broadcasting material around the world. Simply stated, we are using all reasonable means to get our program material to our listeners and viewers around the world.

Shortwave broadcasting, formerly the basic way of doing this, is now only one of several methods that make sense to employ. For example, affiliate station rebroadcasting, which is done by satellite feeds to cooperating local radio and TV stations, provides consistently high quality to more than 1,000 urban locations. Shortwave transmissions have nowhere near the effectiveness in these areas.

This is just one example of fitting the shoe to the foot. We should be roundly criticized if we were sticking only to shortwave cross-border broadcasting, rather than the other way around.

Market diversity

The IBB and, in particular, the members of its Spectrum Management Division are keenly aware of this diversity of markets and means of most effectively getting to them with high-quality transmissions. Mr. Leinwoll's opinions are skewed to shortwave and medium-wave scheduling worldwide, with little regard for the value of these other means, or, in fact, in the development work going on to improve shortwave and medium-wave broadcasting through the means of using modern digital modulation techniques.

The Spectrum Management Division is at the forefront of this conversion. Some day soon because of these developments there will be a major improvement in delivery prowess via the traditional long-range cross-border propagation methods.

Finally, Mr. Leinwoll, who dwells negatively upon the qualifications of the new IBB heads of engineering and within it the Spectrum Management Division, does a real disservice to those members of the Spectrum Management Division who are experts in frequency scheduling and monitoring of our shortwave and medium-wave network. These people are dedicated, competent and deserve to be recognized for the good work they do.

If there is anyone who knows that shortwave frequency coordination and the assignments that arise from them each six months during each of these periods are subject to daily fluctuations in signal strength, and hence received audio quality, it is he.

One cannot have perfection. Management of this portion of the division's work is done in a very competent manner largely by the staff, with oversight by the head of the division.

World Radio History

Profiles

▶ Continued from page 1

It is difficult to categorize who is applying without looking at every filing. Lists of filings are accessible on the FCC Web site at *www.fcc.gov/mmb/asd/lpfm*

Supporters say LPFM will give access to the airwaves to a broad group of diverse community organizations that don't have a voice on the airwaves in these times of consolidated facilities and tightly-programmed formats.

Its harshest critics say the new service not only causes interference to licensed stations; it also legitimizes pirates. And indeed, former unlicensed operators are eligible to apply if they took their stations off the air by a cut-off date in early 1999 or when told to by the FCC. But it's difficult to judge how many such operators have actually applied.

And could the commission ascertain that someone who applies for an LPFM had previously operated an unauthorized station? Possibly not right away. The FCC has streamlined its paperwork in general and moved toward simple "yes" or "no" answers on forms.

Once it does find out someone lied on an application, a commission source said, "We would bring out the big (enforcement) guns."

On-air control area of Sight Seer — West Michigan Radio Reading Service, operating on the subcarrier of WBLU-FM, Grand Rapids

The FCC received about 1,200 applications during the first two filing windows. A third window is set for the end of this month. All told, the commission will conduct five filing windows, concluding in May 2001.

During the first window, the commission received more than 700 applications from 12 states and territories. More than 300 were sent by organizations in California; groups from Georgia and Louisiana submitted around 100 applications each.

In the second batch, the FCC received 473 applications from 10 more states and Puerto Rico. The most in that window were from Michigan applicants, who filed 87.

The following is a sampling of applicants, chosen to show the variety of individuals and groups seeking LPFMs:

Applicant: Central City Lutheran Mission
Market: San Bernardino, Calif.
Proposed Frequency: 105.5 MHz
Description: The non-profit mission hopes to reach listeners in the large Southern California community by developing programming targeted toward urban youth and the city's large minority community. According to Tom Dolan, the mission's director of communications programs, most of the 24-hour programming would be educational and community-based, focusing on issues affecting the mission's clients and surrounding community. The mission hopes to reach all San Bernardino's 165,000 listeners from a tower, which would be built at the mission. Dolan said the station would be a unique addition to the market featuring talk radio programs for kids, English as a Second Language classes and educational programs about health care issues.

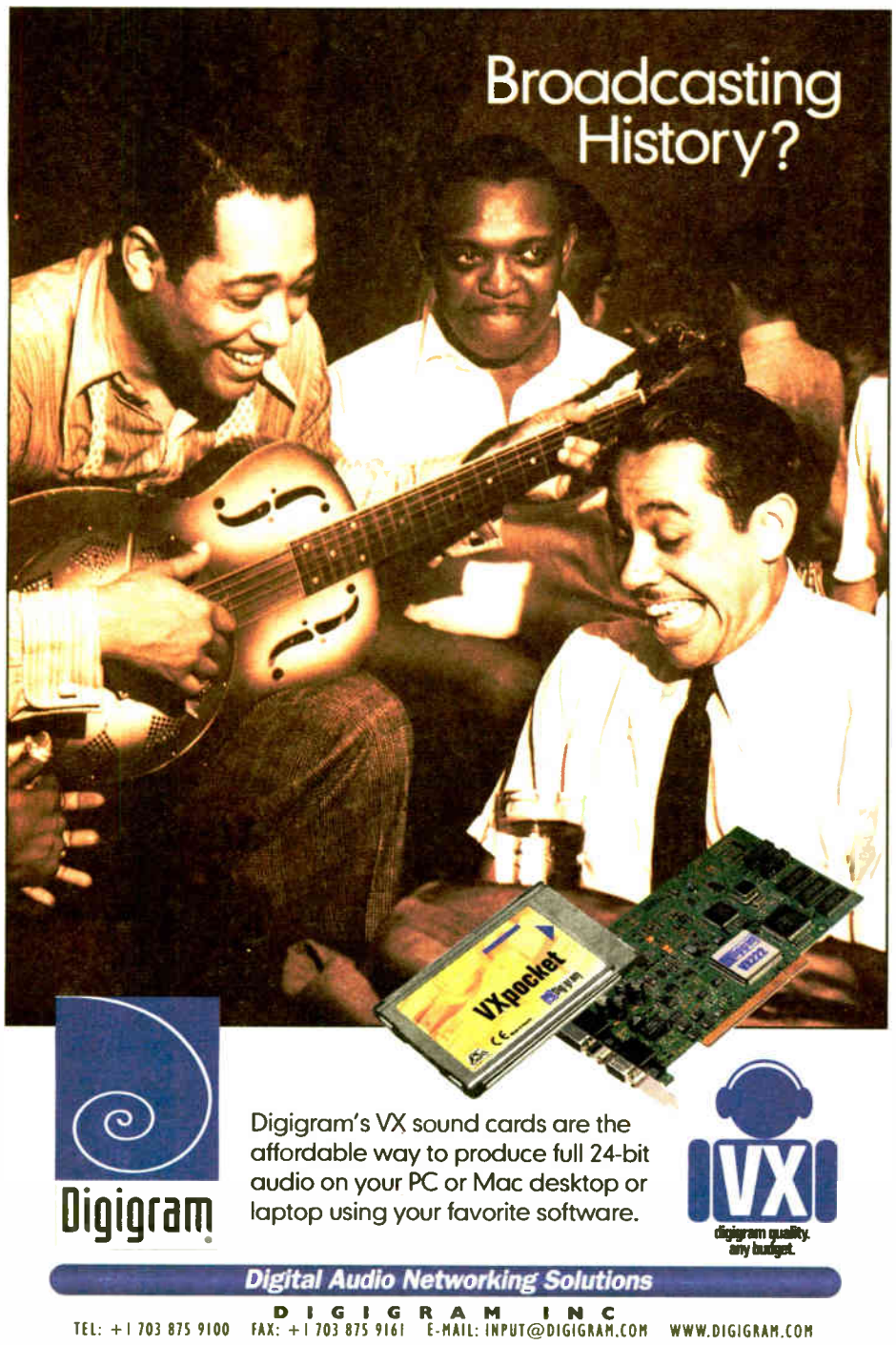
Applicant: Calvary Chapel Twin Cities
Market: St. Paul, Minn.
Proposed Frequency: 97.7 MHz
Description: Located in a suburb of St. Paul, the chapel, part of the network of Calvary Chapel churches from across the country, hopes to launch its own 24-hour station to reach approximately 100,000 listeners in the southwestern portion of the Twin Cities. "Our desire to get some Bible teachings on the air and (broadcast) some contemporary Christian music," according to Pastor Mike Fernandez. "We would like to get bring to a wholesome type of entertainment to the community." In addition, the chapel hopes to use the frequency to air conferences, seminars and call-in shows to discuss religious issues.

Applicant: Hmong National Organization
Market: St Paul, Minn.
Proposed Frequency: 97.9 MHz
Description: Founded in the early 1980s, the non-profit organization has been addressing the needs of the Twin Cities' Hmong population, which comprises 75,000 immigrants from Southeast Asia, and is now looking to expand its services by using the airwaves. "There are a lot of challenges with language and culture," according to the organization's Executive Director Valeng Cha. "There needs to be one source for the community that is a portal for information." Cha hopes to offer educational and community affairs programming addressing issues such as gender equality, health issues and women's issue, talk radio programs and translate the local news into the languages of the Hmong people.

Students from Brown Student Radio, renting airtime from a local station, have applied for an LPFM

Applicant: Sight Seer — West Michigan Radio Reading Service
Market: Grand Rapids, Mich.
Proposed Frequency: 95.1 MHz
Description: Since it started operating a radio reading service as a subcarrier of a 3 kW station 15 years ago, Sight Seer has helped between 3,000 and 5,000 blind and print-disabled clients have the opportunity to read books, magazines and newspapers. Now the non-profit organization seeks to expand that service for the rapidly growing immigrant community in Grand Rapids. "To catch the ear of the listener, we would provide information on the enhancement of English skills, local government and public safety," according to Ken Van

See PROFILES, page 7 ▶



World Radio History

Profiles

▶ Continued from page 6

Prooyen, a member among the 100-person volunteer staff at Sight Seer. The group plans to offer 24-hour programming in Spanish and the predominant language of the area's Asian community.

Indiana Historic Radio Museum
PRESERVATION FOR POSTERITY

Applicant: Indiana Historic Radio Museum
Market: Ligonier, Ind.
Proposed Frequency: 93.9 MHz
Description: A lack of a radio or television station in the town compelled the organizers of this small radio museum to apply for a frequency. The station would broadcast and old radio programs that are kept at the museum, who will hold the license, said Marcella Schultz, assistant curator of the museum. Moreover, she said, the station will air local news for the West Noble area, which comprises four towns and has a population of six to seven thousand, and English language lessons for its growing immigrant community. "There's no good means of communication in the area," Schultz said. "We want to provide local news," she said. Already, the museum has received contributions and offers to donate a location for the tower, engineering work and used equipment.

Applicant: Brown Student Radio
Market: Providence, R.I.
Proposed Frequency: 96.5 MHz
Description: Currently renting seven hours of airtime from a local station, a Brown University student group hopes to get a license to start its own radio station. Funded through the University, the station will feature news, cultural and sports programming for the 7,000 students on campus as well as some of 250,000 residents of Providence, said general manager Nathan James. Though the students would solely operate the station, they receive no formal broadcast training through a communications or engineering program because of the school's heavy focus on liberal arts, James said. "Everyone who is interested in the station goes through a training process handed down from each generation. It allows for a more creative approach to radio broadcasting."

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RW Online

http://www.rwonline.com

Budget Delayed LPFM Action

Radio Debate Caught Up in Partisan Bickering Between GOP Leaders and the White House

by Naina Narayana and Leslie Stimson

WASHINGTON The rhetoric over low-power FM reached a high volume right before the elections, and its fate was caught up in larger debates over spending issues between Democrats who wanted to adjourn the second session of the 106th Congress and Republicans who saw a chance to gain concessions from the White House the longer the debates continued.

Language to restore full channel protections from LPFM to existing stations was included in a spending measure that President Clinton vetoed in late October. After reaching an impasse over this appropriation and five others to fund the government, lawmakers decided they would return to Washington in a lame-duck session to finish their business.

Thus the fate of efforts to limit LPFM was unclear as Congress went home for elections.

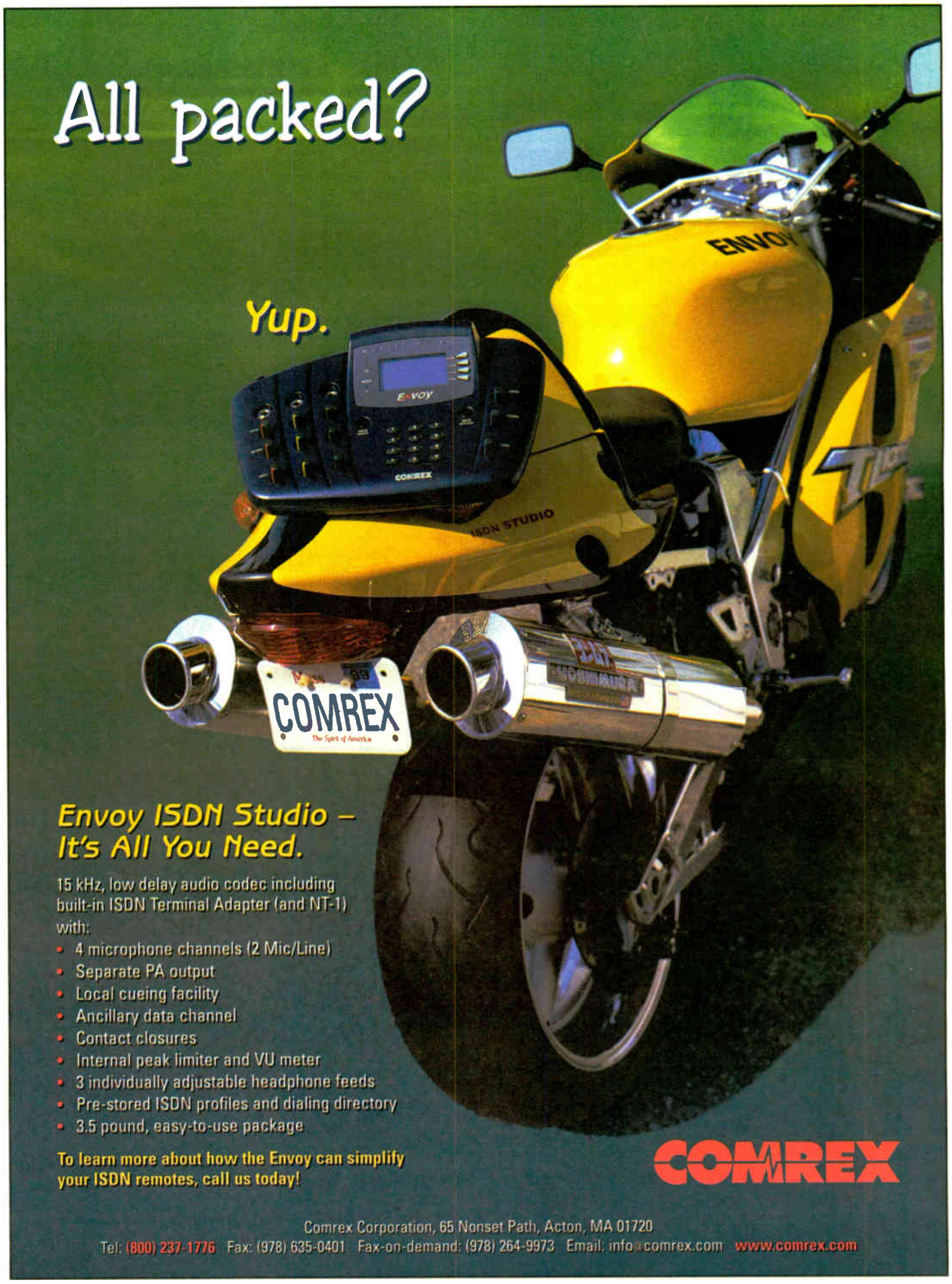
NPR, NAB and the International Association of Audio Information Services were on one side of the debate; LPFM supporters and FCC Chairman Bill Kennard lined up on the other side.

NPR, IAAIS and Kennard wrote dueling op-ed pieces that were published in The Washington Post.

The IAAIS and NPR said they have asked the commission for more than two years to maintain reasonable protection for translators and radio reading services operating on FM subcarriers.

The FCC has provided third-adjacent protection to FM stations using their

See LPFM, page 12 ▶



World Radio History

Automation

▶ Continued from page 1

consolidation.

In this merger, Scott Studios Corp. and Computer Concepts Corp. have combined businesses but will retain their names and individual product lines. Both create touch-screen digital audio systems for radio. Computer Concepts also designs traffic and billing systems for radio and TV.

The combined company has 3,500 radio customers in the United States and more than 100 employees.

Financial terms of the merger were not disclosed. The deal included a stock swap between principle owners.

The president of the new entity is Dave Scott. The former president of Computer Concepts, Greg Dean, becomes vice president and chief technical officer. Scott and Dean own equal shares in the privately held entity.

Supplier cluster

"This was really an opportunity to eliminate redundancy and increase efficiency of our companies by combining resources," said Scott. "We're also doing this because our customers have grown. It's really a matter of getting bigger to match the size of the (broadcast) companies we now sell to."

Scott said if Scott Studios and Computer Concepts must service clients with seven or eight radio stations in the same building, as is now the case in many groups, his company must "cluster ourselves as well, to provide more services."

The two will share technology and source code, Scott said. Both design Windows applications and DOS-based systems. Scott Studios plans to launch a Linux-based studio system in the first half of 2001, Scott said. Both program in the C++ computer language.

Scott believes the merger, which closed Sept. 30, places the company in a better position to stay in front of the technology race with other digital audio storage manufacturers.

"Our business is really a leap-frog business in that whoever is leading the pack changes from time to time, depending on the latest technology," Scott said. "As soon as one company develops something new, the others copy it."

One of the benefits of the merger will be in research and development, Scott said. Combined, the companies will employ 16 full-time computer software designers.

Computer Concepts also gives Scott Studios its first chance to integrate with an in-house traffic and billing system. Dave Scott called that a big advantage.

Dave Scott with the Maestro log screen, developed by Computer Concepts, on the monitor at left

Both companies will sell and further develop Computer Concepts' Visual Traffic System, a 32-bit traffic and billing software package for high-speed information and commercial scheduling.

Scott said Visual Traffic would be released in an Application Service Provider model this fall. Mainframe computers in Dallas and Kansas City will process a radio station's traffic and billing system.

"The big benefit is that this enables radio salespeople to access inventory avails and prices either via Palm Pilot or the Internet from the advertiser's location. It's a very efficient method," he said. Scott compared it to going on the Internet to book "an airline flight or hotel room."

The latest version of Visual Traffic was demonstrated at The NAB Radio Show in September. Scott said the technology went into beta sites in October.

Scott called Computer Concepts the pioneer of digital audio systems that "actually worked" back in the late 1980s.

"That was back when people couldn't spell digital audio and here, Computer Concepts held patents on different systems and was delivering solid products," Scott said.

Scott said most administrative and production work for the two companies would eventually be merged at Scott's Dallas facility. Computer Concepts' support, research and development, and sales office will remain in Lenexa, Kan.

No job cuts have taken place because of the merger, according to Scott.

Scott Studios and Computer Concepts clients will continue to go through the same channels for support and sales.

"Customers of both Scott Studios and Computer Concepts will see no interruption of technical service or support. Our aim is to change as little as possible for them," Scott said.

WSB(AM/FM) in Atlanta has been a Computer Concepts customer since 1993.

The Cox Radio Inc. stations use the Maestro digital audio storage system for music and commercial storage and playback.

Charles Kinney, WSB(AM/FM) director of engineering, said that as long as the new company keeps Computer Concepts' product line intact, specifically the Maestro, he would be satisfied.

"We've been pleased with (Computer Concepts) systems. My fear is that support could be reduced or they'll try to integrate Scott Studios into (Computer Concepts). If I had wanted Scott Studios, I would have bought them in the first place," Kinney said.

The automation and digital storage arena is competitive. Radio buyers can choose among computer-based products from a list of suppliers that also includes Broadcast Electronics, Dalet, MediaTouch, Prophet Systems, Enco Systems, Broadcast Software International, Netia, Register Data, Management Data, Arrakis, LPB, CartWorks, CBSI, Mediatron, Pristine and others.

Some in the industry believe more mergers among this group are inevitable.

A sub-plot is the acquisition of automation companies by broadcasters, as is already the case with Clear Channel/Prophet and Cumulus/BSI.

However, Scott said he doesn't expect to see major broadcast companies jump in to scoop up more suppliers.

"First, the support on Wall Street isn't there for most broadcasters to lay out large amounts of money for acquisitions right now," Scott said. "And I still feel most broadcasters are hesitant to make major purchases from suppliers who are owned by major broadcast competitors in the same markets."

Growth vs. maturity

Observers called the Scott Studios/Computer Concepts merger a sign that suppliers are still being affected by the consolidation of their customer base.

"Consolidation is driven by synergy, and as long as two companies see it in each other, (consolidation) will continue to happen," said Ron Paley, president of MediaTouch, a manufacturer of live assist and automation equipment.

Don Backus, director of sales and marketing for digital audio storage manufacturer Enco Systems Inc., said there is a chance for more consolidation in the supplier category, but maybe not for long.

"I think there will be more probably, but not a lot. Many of us are quite comfortable with our companies structured as they are," Backus said.

Some experts believe the automation and digital storage market is mature, compared to the early days of the computer revolution in radio. But others still see plenty of business opportunities.

"The latest figures I saw showed at least one-third of major-market radio stations in the United States were still using tape decks and playing music on CD or had outdated automation equipment," Scott said.

Paley said technology advances made by audio storage manufacturers mean an ever-increasing number of radio station engineers looking for equipment. That means no slowdown in the sales boom for his company and the industry just yet.

"As the computer industry evolves, the replacement or upgrade cycle of automation and storage systems continues to shorten thereby creating demand for bigger and more feature-laden systems," Paley said. "The industry is looking at linear audio for the purity of it and the edge in a competitive marketplace.

Several other competitors contacted for this story declined to comment.

At a Glance

Computer Concepts Corp.

Established: 1974
Employees: 50
Address: 8375 Melrose Dr., Lenexa, Kansas 66214
Telephone: (913) 541-0900
Fax: (913) 541-0169
President: Former president Greg Dean, now VP and chief technical officer of the combined companies. Holds equal number of shares of privately-held company with Dave Scott.

Scott Studios

Established: 1992 by Dave Scott and Vice President Karen Blyth
Employees: 50
Address: 13375 Stemmons Fwy., Dallas, Texas 75234
Telephone: (800) SCOTT-77
Fax: (972) 620- 8811
President: Dave Scott, president of the new entity. Holds equal number of shares of privately-held company with Greg Dean.

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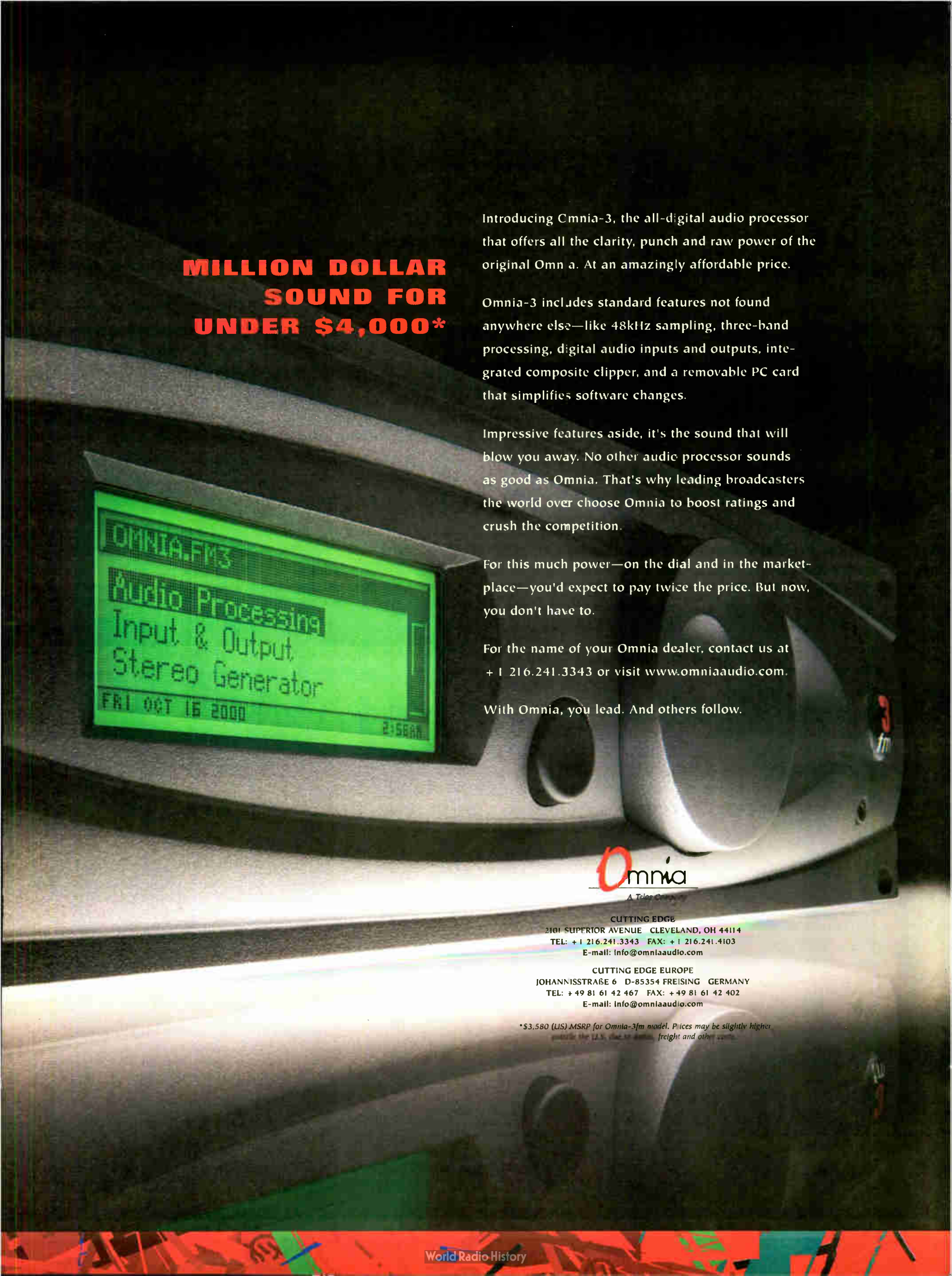

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World Radio History

Guest

▶ Continued from page 5

six weeks after it was posted in The Commerce Business Daily. Coincidentally, the director of the Office of Engineering and Technical Services, an internationally recognized leader in radio engineering science, was summarily replaced by a person with no degree in engineering, and no formal college education; clear indications of turmoil in the IBB.

For the past five years, the focus in the IBB has been toward moving from cross-border broadcasting to the more vulnerable Internet and affiliate activities. Major IBB shortwave transmitting assets were shut down and cannibalized. At present, the IBB is aggressively pursuing the shutdown of additional transmitter sites, including the primary facility used to broadcast to population-dense western Russia and Ukraine.

Ultimately, such emasculation could doom U.S. government international broadcasting.

Shortwave use stable

There is a growing body of evidence to indicate that shortwave broadcasting, which has been a mainstay of U.S. government international broadcasting for more than half a century, is not on the decline. There has, rather, been a shift from developed areas to Africa, the Middle East and Asia, and the use of shortwave frequencies throughout the world has remained stable for years.

Certainly the development of new information technologies should continue. But they are vulnerable in the primary U.S. government target areas, such as Iran, Iraq, China, Russia and some countries of the former Soviet Union. Consequently, continued reduction and de-emphasis of shortwave is dangerous, because of the weaknesses of the newer technologies in these target areas.

The current spin in IBB calls for enhanced emphasis on more "modern" means of communication, such as the Internet and affiliate broadcasting. The Internet, however glitzy it may be, is vulnerable, and has serious drawbacks in vital IBB target areas.

A recent article by Carl Kaplan in Cybertimes, on the New York Times Web site, entitled "Governments Learn How to Censor the Internet, Report Says," provides information indicating that the theory that the Internet is impervious to censorship is wrong. The article challenges the contention that online censorship is difficult or impossible to achieve, reporting on methods that some administrations use to control the Internet.

Affiliate broadcasting, the use of local facilities in target countries, is reliable only so long as the host country is reliable. During the Chechnya crisis, Russian Prime Minister Putin threatened to shut down Radio Liberty affiliate broadcasts in Russia because of the manner in which RL was reporting on events there.

On the other hand, shortwave broadcasting knows no national boundaries. Transmissions on shortwave travel great distances via the ionosphere; they are reliable, inexpensive and not subject to political climate changes. They can be jammed, but jamming can be overcome, as those of us who were active during the Cold War demonstrated. And there are about half a billion shortwave receivers available worldwide.

As things now stand, uncertainties in the IBB, and an apparent inability on the part of the BBG to take control, augur a glum future for U.S. government international broadcasting.

The author was U.S. director of engineering of Radio Free Europe/Radio Liberty from 1975-1993. He has had 50 years of shortwave broadcasting experience, and is currently a shortwave broadcasting technical consultant.

***RW** welcomes other points of view via e-mail to* radioworld@imaspub.com

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Jobs

▶ Continued from page 3

number of qualified people available. "There's too much competition from other fields which have better buzzwords," said Manuelian.

"I need someone who knows what a microphone is, someone who knows how to wire a patch bay.

"The person we finally hired came to us through our ad in Radio World," said Manuelian.

I need someone who knows what a microphone is, someone who knows how to wire a patch bay.

— Mark Manuelian

Allen Boaz, owner of Electronic Services, a contract engineering company, said, "Deregulation caused the industry to lose a lot of talented people," said Boaz. "I'm getting contracts with groups that already have full-time employees who are badly overworked. Many engineers make the same money they made working for two stations, but now they have eight stations to watch over."

Boaz understands that licensees are in the business of making money, but he feels that if engineers have more responsibility, they should be paid accordingly.

"There are days I get very discouraged, but engineering is what I do," said Boaz.

Consolidation in the future

Lawrence Behr, CEO of the LBA group, a consultancy based in North Carolina, obtained his FCC license in 1957 and works with clients globally.

"It used to be that engineers were the repositories for a lot of arcane knowledge and the transmitter was the heart of the station," said Behr. "Today's broadcast industry is centered around computers and it's not so much of a 'black art.'"

Behr believes that in the coming years, deregulation will allow broadcast owners to outsource the operation of their transmitting plants.

"The BBC in England already does that, and I know several major players in the tower industry who would like to see it happen here too," said Behr.

"There could be a resurgence of a small but well-paid group of RF engineers who will be working with third party-owned radio transmitting facilities that will be leased to the licensee."

Keith Hammond, president and technical director of Broadcast Services based in Texas, handles frequency searches and general consulting.

"I blame deregulation as much as consolidation for the way things are now," said Hammond. "You no longer have to have a license, and a lot of stations just hire guys off the street."

Hammond said owners who hire unqualified engineers don't find out what they've done until something breaks down.

Hammond is concerned that contract engineers spread themselves too thin when they try to supervise up to a dozen stations. "You end up being on call 24/7," said Hammond. "You can make two or three times the money working at a local computer store."

Hammond still finds broadcast work exciting, and in fact describes himself as having the "radio disease."

"No matter how bad it gets, I'm afraid I'll stay in it," said Hammond.

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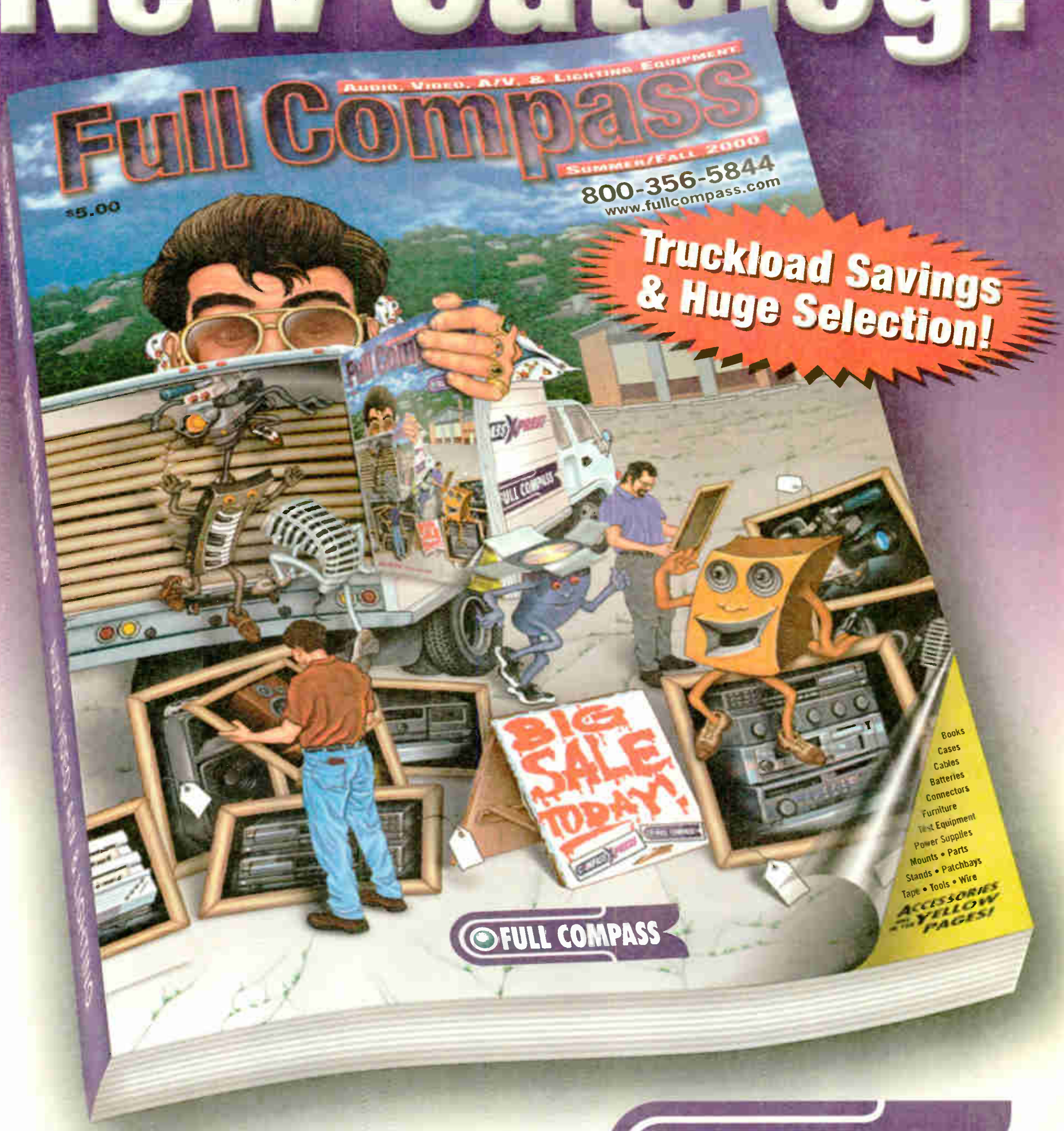

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LPFM

▶ Continued from page 7

subcarriers while the commission conducts interference tests, but that protection is considered temporary.

"It is indeed a sad day when the agency charged with ensuring adequate protection for the nation's listeners abdicates that public trust," wrote NPR and the IAAIS.

FCC Chairman Kennard, in turn, lumped NPR in with NAB. He said the latter had "dispatched their high-power lobbyists to prowl behind closed doors and use(d) the congressional appropriations process to quickly and quietly bury the program."

Kennard was referring to efforts to attach the full-channel protection bill to a larger spending measure in the last days of lawmaking prior to the elections.

That measure, S-3020, sponsored by Rod. Grams, R-Minn., was viewed as a compromise by NAB, NPR and the IAAIS. It would call for a measured rollout of the LPFM service, and restore full channel protections to existing stations.

S-3020 is companion legislation to a measure passed by the House earlier in the year; its LPFM language also was included in the House and Senate versions of the appropriation to fund the departments of Commerce, State and Justice and District of Columbia government. (Also included in this appropriation is the FCC budget.)

President Clinton vetoed the measure for reasons including LPFM. As lawmakers tried to craft new language the White House would approve, NAB was confident the LPFM language would remain intact. Low-power supporters hoped it would be removed.

All three associations have said during the debate they do not want to kill the LPFM service, but rather, believe the commission should have conducted more tests for potential interference to existing stations before promulgating the rules for the service.

But as the issue became more of a flash point in October, the IAAIS went further. It accused the FCC of withholding test results of the receivers its blind and visually impaired listeners use to hear reading services provided by its members.

LPFM supporters painted the Grams measure as a way to kill the service, and urged Congress not to pass it.

Earlier in the session, Commerce Committee Chairman John McCain, R-Ariz., introduced a bill calling for substantial penalties for anyone filing frivolous interference claims against LPFMs. In late October, McCain complained that the effort to attach the Grams legislation onto the bill before the Senate Appropriations Committee would bypass his committee.

He protested to Appropriations Committee Chair Sen. Ted Stevens, R-Alaska, and to President Clinton that the move was "an attempt to circumvent the normal legislative process."

How many

Because the FCC had not finished sorting through the approximately 1,200 LPFM applications it had received by late October, it was unclear how many LPFM station construction permits would be issued, whatever the outcome of congressional action.

One source said restoring third-adjacent channel protection would effectively cut in half the potentially available stations for the first 650 or so viable applications in the first filing window. This figure does not take into account multiple applications filed for a single frequency.

Low-power proponents said they were not happy about the debate becoming an election-season football.

LPFM became merely a bargaining chip in the appropriations process, according to Pete triDish, the pseudonym of a former pirate and member of the Prometheus Radio Project, a nonprofit organization that guides LPFM applicants through the FCC application process.

"Low-power radio is out of the hands of the people who have studied the issue carefully and who are qualified to make an intelligent public policy determination based upon the engineering facts and the legal framework governing radio," he said.

Moreover, said another proponent, existing stations already pose more of an interference problem than LPFM stations.

"Full-power grandfathered stations are close together (on the FM band) and nobody has any problem with those," said Cheryl Leanza, deputy director at Media Access Project, a public interest organization representing a number of LPFM applicants.

She said the NAB had given "virtually no evidence" that the technical testing was wrong.

The fate of the new class of low-power FM stations may lie in the hands of the U.S. Court of Appeals for the District of Columbia Circuit, which set oral arguments for Nov. 28 in NAB's lawsuit against the FCC.

In early November, the association was preparing for the oral argument.

Should Congress pass the LPFM language, the association said it would review its options and decide whether to go forward with the suit.

Leanza doubted NAB could convince the appeals court to reverse the FCC's order.

"The legal test that the FCC decision must pass in order to be upheld is very easy to pass," she said.

Another source disagreed, saying the D.C. Circuit Court of Appeals "does not rubber stamp (FCC) decisions."

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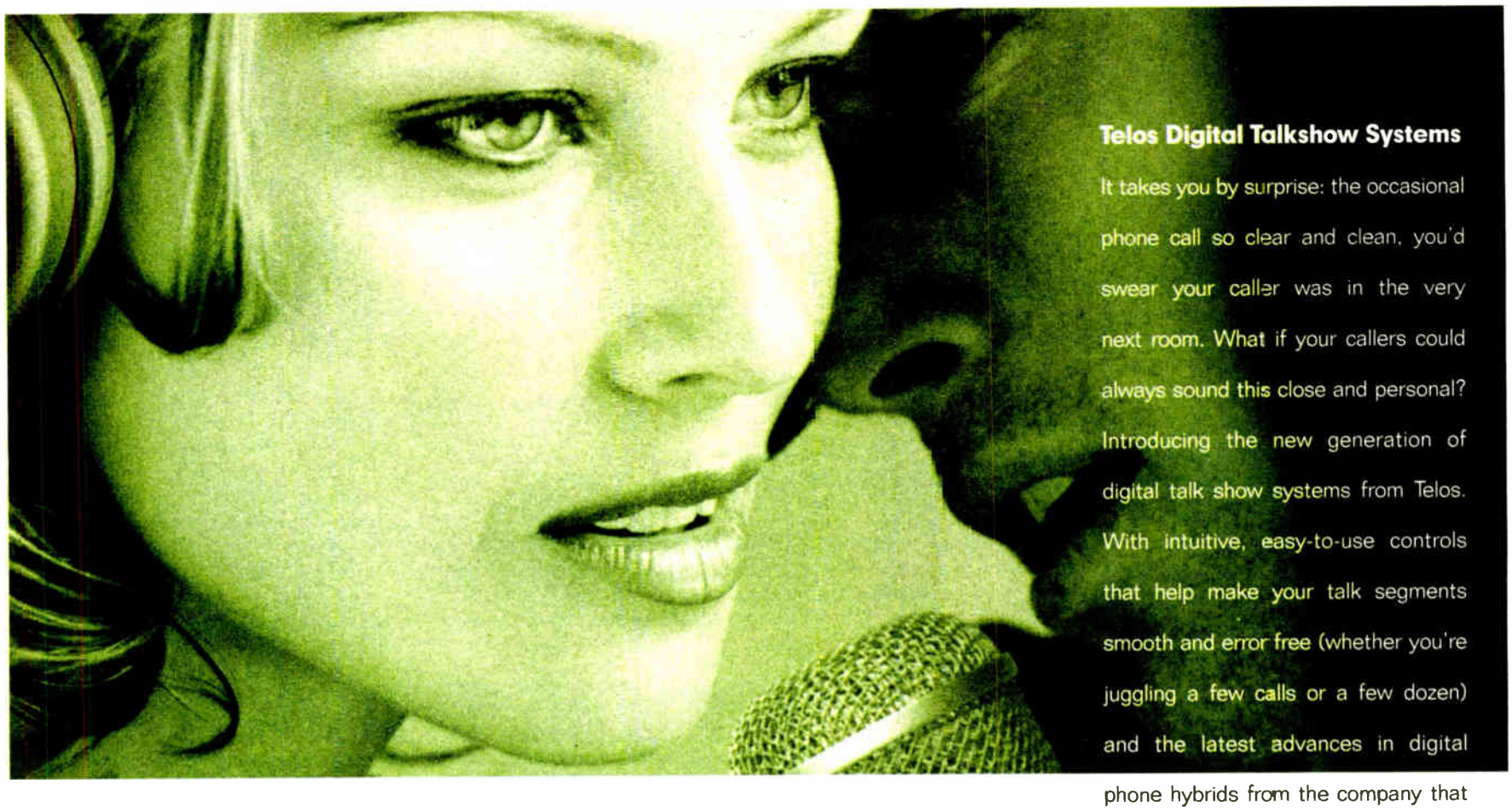

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World Radio History

Managers

▶ Continued from page 3

to find areas where their skills will transfer, but we haven't been as successful as we want to be," said Sheppard.

It's not unusual for a station manager to see three ownership changes in four years. "Managers are just plain stressed out," said Sheppard.

He stays in touch with many people in the business. "They're just not where they used to be," said Sheppard. "Some of these guys are now working with syndicators, some have moved into dot.coms or advertising agencies."

Fewer options

Sheppard empathizes with some of these former managers who have been consolidated right out of their jobs.

"The older ones have fewer options because broadcasting is all they want to do. When that's gone it's like their identity has been stripped away."

Jay Trachman is a former broadcaster who has successfully moved into an allied field. He's now president/CEO of Creeyadio Services, a company that produces a weekly newsletter/prep service. His company also puts on workshops at stations.

"The biggest change I've seen in management since consolidation is that now most program directors are merely errand boys," said Trachman. "Today it's the corporate program directors who call the shots."

Trachman watched the duties of program directors diminish from the days when they were entirely responsible for a station's sound to the current situation in which they are primarily administrators in many cases.

Some good news

Is the white-collar radio scene all bad news?

"No," said Tony Brandon, president of American General Media, which owns 45 stations. "While the inventory of general managers is high, we're always looking for good salespeople."

Joseph A. Reilly, president of the New York State Broadcasters Association, agrees that there are a lot fewer managers today than there were five years ago.

"But we also have some new jobs at radio stations that never existed before," said Reilly. "This would include vendor co-op people, promotions and Internet sales specialists."

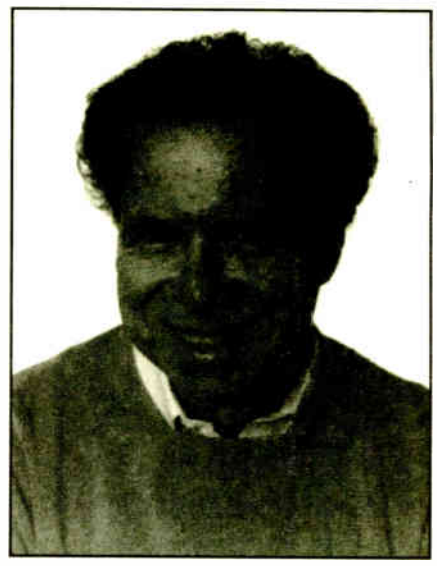
Reilly said overall, consolidation was good for radio management because it allowed radio to earn a bigger share of the advertising pie.

"Radio is actually easier to buy now because you're dealing with fewer people," said Reilly.

Small markets also present a unique set of opportunities for employment. In the hinterlands where the biggest groups have not yet stepped in, the challenge is *keeping* good people.

The guys who are adaptable will make it and the rest will be very unhappy.

— David Small

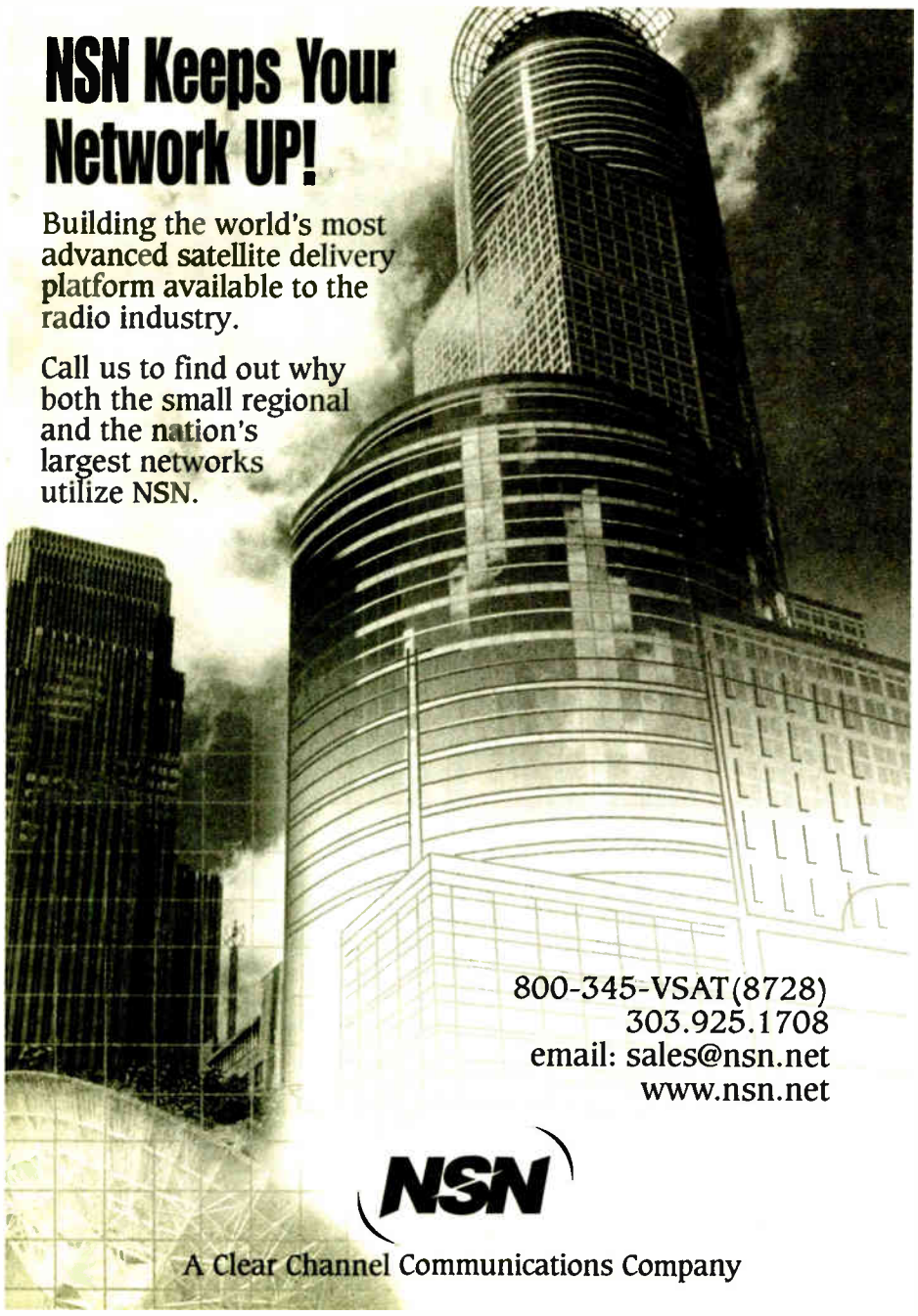


Jay Trachman

"We are finding it harder to be competitive," said Jerry Papenfuss, president of Results Radio Group, which owns stations in five small markets in Minnesota. "Radio people develop a lot of good qualities like discipline, which makes them attractive to other fields."

Papenfuss said that money is the primary issue when it comes to retaining good people, with the number of hours a week required as a secondary factor.

"Radio is an exciting business and that's helped us keep a lot of our older management in place," said Papenfuss. "But the younger guys are going to turn over more often."



NEWSWATCH

▶ Continued from page 2

force chair, agreed with his colleague Harold Furchtgott-Roth that leaks are part of the FCC culture and says that must change.

However, Furchtgott-Roth opposed the action, saying the old rule was clear and the commission shouldn't legislate a solution.

Contest Rigging?

Independent Florida state senate candidate Andy Martin filed consumer fraud charges in all 50 states in late October alleging that Clear Channel Communications is defrauding listeners in its station contests. He claims Clear Channel makes listeners believe they are competing for a prize on only one station, when really they are competing with Clear Channel listeners nationwide. Clear Channel said it's running fair and honest contests and its officials believe the suits do not have merit.

Klein Gone From DOJ

WASHINGTON Joel Klein left his post as assistant attorney general for the antitrust division of the Department of Justice at the end of September. Klein's principal deputy, Doug Melamed, has been named acting assistant attorney general of the division.

Broadcasters will remember Klein for the increased scrutiny radio deals received following passage of the Telecommunications Act of 1996, when the dollar amounts of radio transactions grew large enough to garner such review.

"Joel has been a terrific head of the antitrust division. He has made a lot of difficult calls and, in our opinion, has made most of them correctly," said Sens. Mike DeWine, R-Ohio, and Herbert Kohl, D-Wis., in a joint statement.

Klein, with the DOJ five and a half years, plans to explore opportunities in the private sector.

High Court May Hear LPFM Case

WASHINGTON The U.S. Supreme Court may decide by December if it will hear a case brought by former unlicensed low-power FM operator Alan Fried against the federal government.

In 1996, Fried operated a 20-watt station in Minneapolis without a license. The FCC fined him and confiscated his equipment.

Fried told the court his constitutional rights have been violated because there was no way he could be on the air legally with a low-power station after the FCC stopped allocating frequencies for that classification.

Wilson Joins CEA

ARLINGTON, Va. Dave Wilson has joined the Consumer Electronics Association as director, Technology and Standards. His responsibilities include technical issues related to audio and video equipment, specifically, working with CEA's Audio Systems, Video Systems, Product Safety and Compliance and Cable Compatibility Committees, as well as the National Radio Systems Committee and other industry groups.

Previously, Wilson worked for six years for NAB's Science & Technology department. When he left, his title was manager, Technical Regulatory Affairs.

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World Radio History

The Dollars to Doughnuts of Power

Radio Stations Can Benefit in Many Ways From Standby Generators

Charles S. Fitch

This is one in a series of articles about the National Electrical Code and how it applies in the radio station environment. Previous installments can be found on www.rwonline.com

Let's get down to the details of a typical installation.

As described in more detail earlier, our hypothetical generator location is a somewhat isolated, mountaintop Class B FM transmitter site.

Making a choice

Many factors, most of them related to cost, have led us to decide to install an 8 kW single-phase generator fueled by liquid petroleum (LP) for our standby power plant. This modest generator will power the following:

- Tower lights
- A 1 kW single-phase transmitter
- Select terminal gear — the STL receivers, the remote control system including the transmitter RF transfer switch, audio processing, TSL, RPU, AM hop STL, burglar alarm and the like.

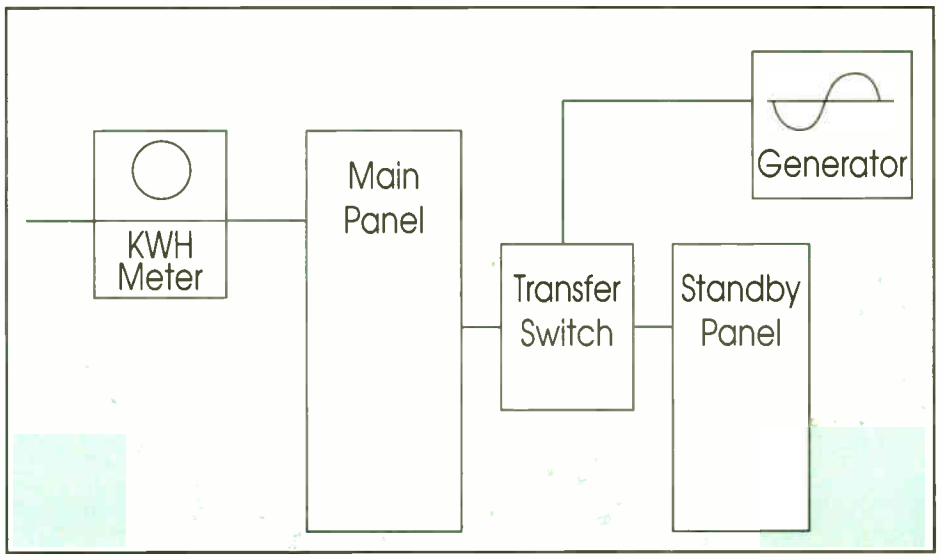
Please review the power functional for this bogus station, W-QRM, Utopia. These loads are clustered on a separate single-phase panel downstream from the three-phase service main panel and the AC transfer switch.

The remote control, STL receivers and other devices are on UPS supplies to avoid disruption for the 30 seconds during which the generator decides if this power outage is momentary or not.

We have configured our control system so after 30 seconds of any of the following circumstances our standby will start:

- High voltage on any of the three normal phases (greater than 220 volts over a normal 208)
- Low voltage on any of the three normal phases (lower than 198 volts over a normal 208)
- No voltage on any or all of the three normal phases (low voltage taken to an extreme)
- Phase reversal on any of the three normal phases
- Wrong frequency or drastic phase shift between phases (+/- 10 degrees from 120 degrees)

We also have a "jitter signal" from our surge suppresser system. If we experience more than a predetermined count of surges or dips in short succession, it will give a start command to the engine.



The electrical layout for the transmitter site can be divided into four parts: supply and metering from the utility; main three-phase entrance panel; standby transfer switch with emergency subpanel; and generator.

Once the engine has started and comes up to speed, the AC power transfer switch will change the input of the "standby panel" to the generator.

After a series of command interlocks are made — this includes correct AC voltage, correct AC frequency, RF transfer switch on standby transmitter output and main transmitter off — the standby transmitter is turned on.

Reliable service

The standby arrangement takes about one minute total to switch on. We have designed our system so that the generator will have a minimum supply time of 15 minutes to avoid short cycling before it will transfer back after all faults are cleared.

The generator remembers that it has run and cancels the next automatic exercise for that week. A low-fuel feature on the fuel supply flashes an alarm on the remote control and sends an alphanumeric page to the CE via the burglar alarm page feature to call for a refill when needed.

Although coverage-wise the station has gone from a Class B to a Class A, it is on the air reliably and can satisfy the public service needs of most of the metro listeners through a long-term power loss or natural disaster emergency. Cost for this comprehensive installation, soup to nuts, would be about $20,000. This would be about half of the cost for backing up the power of the site completely.

Up here on our mythical mountain, one notable item of expense was a properly designed and installed concrete generator base. We made it oversized so that it could also be used for a 100 kW unit in future when our fortunes improved.

At many locations an "Alaskan sled" foundation is adequate. This is a six-inch slab of concrete on which the generator is attached, sufficient to keep the unit in place and level. At this site, excessive groundwater caught between the surface and the ledge at the top of this mountain dictated that we had to be under the frost heave line.

There is no more powerful force in nature on earth than freezing water. Frost heaves can move even huge objects over great distances and tear cables and fuel lines. We wanted this engine to stay put.

The 8 kW was a little larger than needed, but it provided some cushioning to avoid the engine gunning normally experienced when red beacons flash on a loaded generator. It also gave us the extra power needed to put the county emergency radio repeater on this supply as well, which was an appreciated convenience for the county and an excellent gesture of citizenship for the station.

Our installation was viewed as optional by the NEC and covered by Article 702.

The NEC requires signs at the service equipment and associated panels indicating that a standby power source is available and markings stating whether complex ground schemes are present. This is for the safety of anyone who might have to service this equipment. No one likes close encounters of the lethal kind.

Next time, we will complete our NEC review of generators.

A detailed 2-by-3 foot drawing of W-QRM's power layout and two pages of generator base design can be obtained from the author. Send e-mail to *fitchpe@home.com*

■ ■ ■

Charles S. Fitch, W2IPI, is a registered professional consultant engineer, a member of the AFCCE, a senior member of the SBE, lifetime CPBE, licensed electrical contractor, station owner and former director of engineering of WTIC-TV and WHSH-TV. He has been a FCC licensed commercial and amateur operator for more than 40 years.

MARKET PLACE

AKG Broadcasts On-Air Mic

The C 4500B-BC large diaphragm condenser microphone from AKG Acoustics is designed for on-air radio work. A photo of this mic is shown on page 58.

The mic features a front-end-firing capsule position, electro-magnetic screening and internal pop-filter.

This condenser microphone has a transformerless output, which is designed to provide immunity to electro-magnetic fields. The metal housing and double screening of acoustically open sections are provided to increase shielding.

Additional features and design elements of the mic include an integrated 120 Hz roll-off filter, a -20 dB pre-attenuation and a low self noise and high overload point, which offer a dynamic range of 135 dB.

AKG developed a multilayer pop filter for the C 4500B-BC, giving internal pop control between the front grille and microphone capsule.

For more information contact AKG Acoustics in Tennessee at (615) 360-0499, fax (615) 360-0275 or visit the Web site at www.akg-acoustics.com

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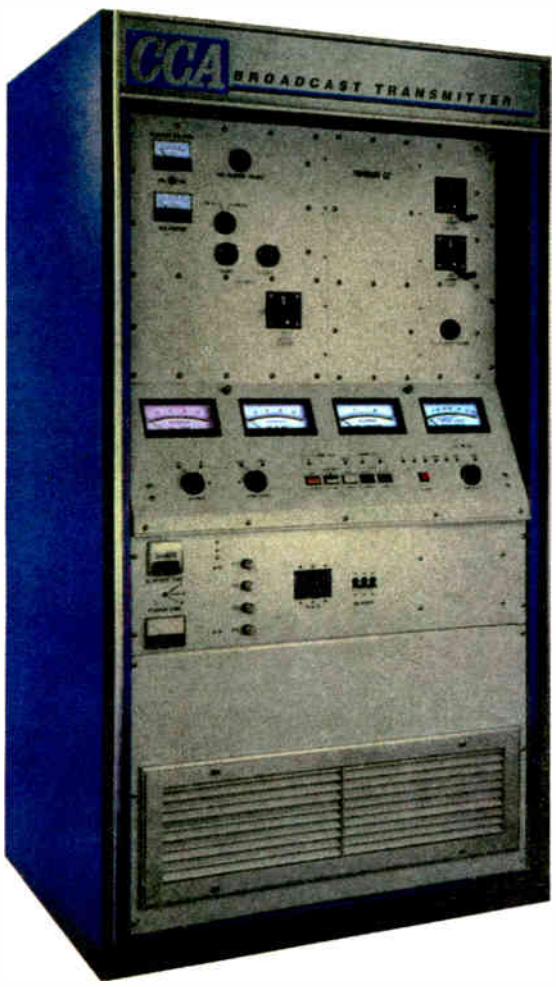

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World Radio History

GUEST COMMENTARY

Media Convergence, Info Warfare

A Technical Consultant Walks the Show Floors And Finds Few People Concerned About Network Systems Security in Broadcast and E-Broadcast

Paul Flint

The NAB Radio Show has come and gone, but my mind is also still on the spring NAB show in Las Vegas earlier this year.

The theme presented for the bright shiny new century was "The Convergence Marketplace." It may advertise a fiasco in the making.

Those of us who ride life in steerage often find perverse comfort participating in symbolic voyages into disaster. For myself I would fantasize one of those great roles: a diminutive ice steward on the Titanic, a balloon vendor purveying to the expectant crowd at Lakehurst Naval Air Station, a well-wishing partisan gifting Bill Clinton an ornate and abundant humidor.

Broadcasting has not come to terms with information systems security.

"NAB 2000: The Convergence Marketplace" referred to the terribly trendy melding of nearly everything: commerce, government, business, religion, war, sex and in this case, radio and television broadcasting, with the Internet. The NAB Radio Show continued this theme, with dozens upon dozens of new exhibitors, almost all devoted or related to radio and the Net.

This convergence is forced. Technically, radio involves electromagnetic transfer of information in free space. The Internet's technical architecture currently uses point-to-point wire based transmission methods. Thus Internet radio, and its sister term Internet broadcast, are oxymorons at the current state of the art.

Myopic approach

Broadcasting, which thrives on hubris, defines in its own Internet convergence the totality of the province. With sublime presumption, the boffins of analog media now behave as if this new dataspace was developed and delivered for their exclusive interest, convenience and necessity.

The systems developed and expounded in the broadcast sector continue to be seen through the myopic viewfinder of marketing, the informational nutrient sucked by these media Borg.

Good marketing remains the prevailing element in the dominant information system architecture that broadcasters have adopted. While the sector comes late to the Internet party, it does so without the benefit or experience of those who have gone before.

This is best demonstrated by the single-vendor approach to operating systems exhibited at the NAB shows this year.

Microsoft had an ample section of the largest exhibit hall at their disposal. Broadcasters appear to perceive this single operating system vendor, Microsoft, to be as ubiquitous a resource as electromagnetic spectrum.

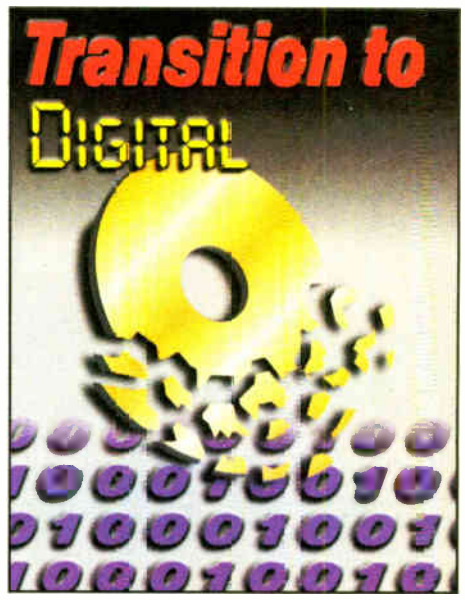
This makes some decisions easy, such as what kind of format you would choose for a floppy disk at a broadcast seminar.

Broadcasting's unconsidered readiness to put all its eggs in Bill Gates' basket is a symptom of its inability to come to terms with a cold, dark space — the coming problem of information systems security.

There is some poignancy in the confusion and lack of focus apparent at these broadcast events.

In the fast-paced world of technology, broadcasters know their value depends on holding the attention of the audience. The audience that broadcasters monopolized for at least three-

See FLINT, page 29 ▶



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World Radio History

WIRED FOR SOUND

Choose Appropriate Cables

Steve Lampen

Charles "Buc" Fitch and I have been trying to coordinate our columns in RW. He writes about the National Electrical Code, while I'm talking about wire and cable, which is supposed to meet the NEC.

The code is a moving target. The authors regularly come out with a revised version. Sometimes these revisions affect your choice of wire or cable. If you save copies of magazine articles about the NEC, or old copies of the code itself, make sure to buy an up-to-date copy.

You can order one through bookstores that specialize in technical publications, online at most of the larger discount booksellers or call (800) 344-3555.

Looking for ratings

One of the most interesting changes in the last few years is the issue of non-rated cable. For a while the rule was that unrated was fine as long as you put it in conduit.

Not anymore — now the code has been changed so that it can be *interpreted* to state that all cable in conduit must be rated. The cable doesn't say what rating, just that it must have some rating.

More than a few engineers live dangerously, scoffing at the mention of the NEC or rated cables.

And that is a problem with any code, especially a "voluntary" code like the NEC. You can talk to the association that publishes the code. But your local fire marshal, building inspector, planning commission or board of permit appeals — not to mention your architect, contractor or system integrator — may choose to interpret the code in a completely different way.

Arguing with any of the above will be almost as nice as beating your head against a wall, and about as constructive. The key is to confirm that all of these people agree about which standard, such as the NEC, is to be recognized and that all parties agree to the interpretation of the code.

More than a few engineers live dangerously and scoff at the mention of the NEC or rated cables.

"They'll never inspect me," they say. "My station is in (insert name of any city with less than 50,000 population), and our fire marshal doesn't have a clue."

I usually smile and nod, and hope s/he doesn't come back to me when someone with the power tells her/him to rip out all the nice wiring he just did.

Lots of cables are unrated. As a rule of thumb, I would say an unrated cable made today probably is not intended for installation.

Consider microphone cables. These cables are made to be flexible, rugged and low self-noise (they don't make electrical noise when being flexed). Why waste those features by installing such a cable in a conduit?

Much of the cost of these cables was spent giving you those features. So don't waste them. Use microphone cables where you can see them, where you need the flexibility, ruggedness and low noise. If you intend to put that signal in a conduit, make a transition from the microphone cable to an install version.

The install version is most often smaller, lighter and cheaper. It might even beat the performance of the mic cable. Of course, it won't be as rugged or flexible, or deliver the same low-noise performance. But that's okay; it will be in a conduit where it is protected. It won't move once it is installed, so self-noise isn't a factor and flexibility may even be a hindrance to installation.

Flexible cables often have soft matte finish jackets. These plastics have a tendency to "grab" the inside of a conduit, causing the cable to bunch up and making it much harder to pull.

What is needed is a hard and shiny jacket. This will slide through the conduit and the stiffness resists bunching up. The trick is to give the cable enough flexibility to be pulled through some 90-degree turns, but not so much that it grabs and bunches up.

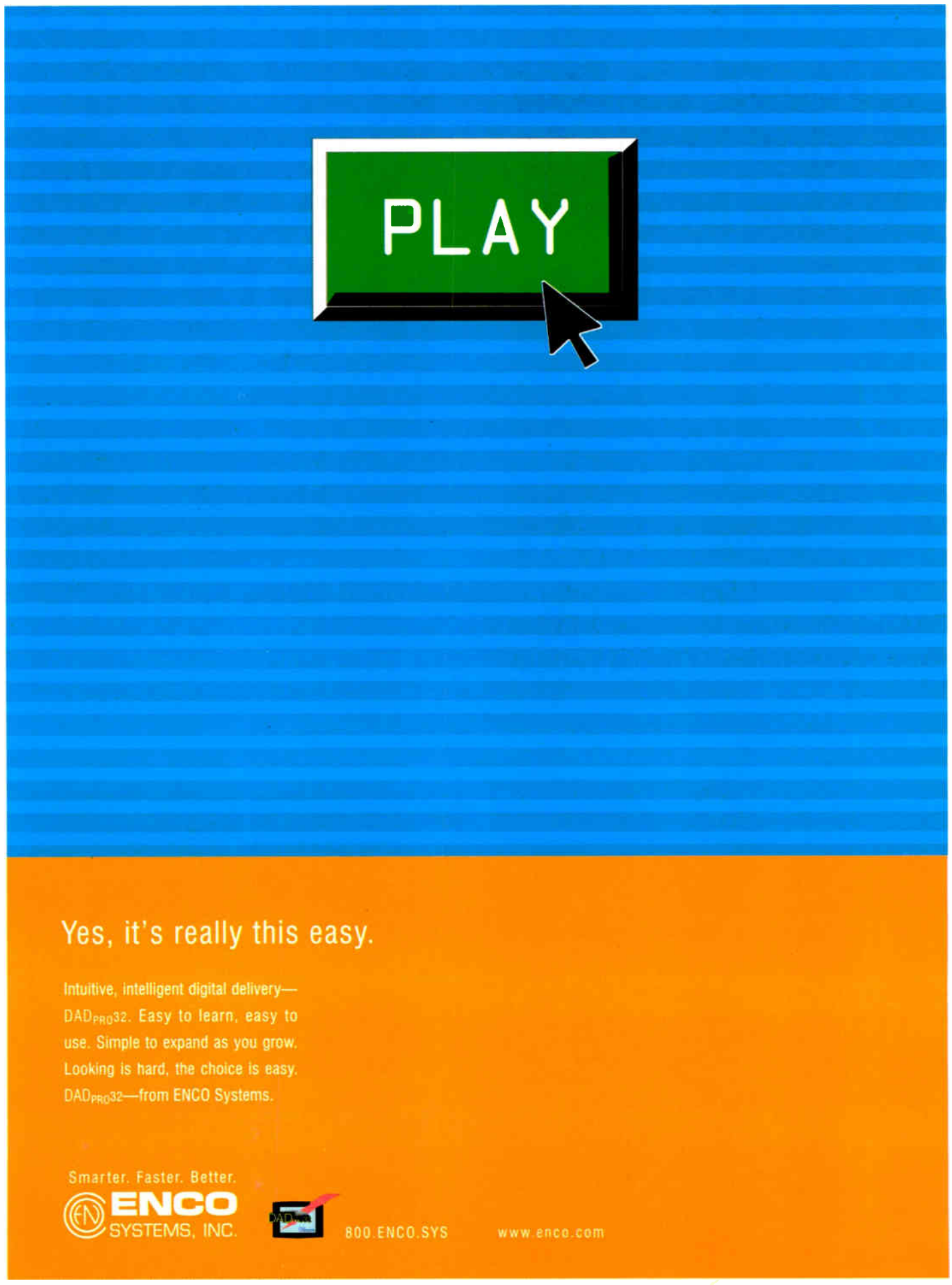
The exceptions to unrated cables are those old cables from the Dark Ages — anything invented in the 1960s or before.

Many inspectors have allowed such cables to be "grandfathered" in installations, especially when the station has been using these cables as their standard for decades. Soon, however, they will no longer look the other way.

Go look at your cable now. The fire rating should be clearly marked on the jacket.

The most common ratings are CL2,

See LAMPEN, page 25 ▶



World Radio History

Associated Press Radio agreed with **WarpRadio.com** for the licensing of AP audio services to WarpRadio streaming audio affiliates. More than 350 affiliates and their Internet listeners will have access to AP Radio newscasts through separate licensing agreements.

"Streaming audio is a dynamic aspect of the Internet, and WarpRadio is rapidly becoming a leader in this important segment of the radio market," said Thomas Callahan, general manager of AP Radio. "Radio Internet listenership is growing."

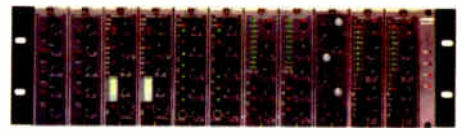
WarpRadio hosts Net listings of radio stations and offers stations a turnkey approach to digital streaming. ...

The **Salem Radio Network**, meanwhile, selected AP Radio to provide it with national and international news, entertainment prep, sports, business and weather. AP Radio will use satellite and the Net to deliver SRN audio and text for production of its hourly newscasts, delivered daily to approximately 770 Salem affiliates. ...

KBZS(AM), a Silicon Valley/Bay Area station airing business and technology news, can be heard online using RealNetworks RealAudio and Microsoft Windows Media technology. KBZS uses the WEBCASTi AM/FM turnkey service from **BRS Media**. ...

This summer, **MeasureCast** launched what it called the first third-party streaming audience measurement service featuring next-day reports. It also signed its first customer, **BroadcastAmerica**, the "world's largest Internet broadcaster." ...

Aphex Systems supplied several dozen 9000 Series Dominator II Multiband Peak Limiter Modules for systems specified by JHS Acoustics that have been installed aboard **Royal Caribbean** cruise ships.



Aphex 9000 Series

The single-channel Model 9721 Dominator II precision peak limiters are used ahead of digital signal-distribution systems, to control peaks entering the analog-to-digital converters and maintain a high S/N ratio.

JHS Acoustics also supplied an array of Series 9000 Dominator II limiters to **The Church of Jesus Christ of Latter Day Saints** for two venues at the organization's Salt Lake City headquarters.

Aphex also supplied Model 2020 Series Dynamic Processors to **WestwindMedia.com**, a custom content-provider for the Internet. The dynamics-control units are being used ahead of data-compression systems that provide streaming audio content for Net-based news and information providers. ...

SiteShell Corp. and **New Northwest Broadcasters** entered into a master affiliate license agreement. SiteShell will create and maintain a locally branded, format-specific, e-commerce integrated Web site for each of the New Northwest radio stations.

siteshell.com
Home of the BlueDot WebSite NetWork

New Northwest said it will maintain an internal Internet group, but the arrangement will permit it to focus its resources on developing revenue producing Web-site advertising and promotional programs. New Northwest President Ivan Braiker will serve on the affiliate advisory board of SiteShell's BlueDot WebSite Network.

SiteShell also entered into a master affiliate license agreement with **Commonwealth Broadcasting**, the 29-station group based in Kentucky. ...

A top California radio station is putting hospital bed technology to work. **KGO Newstalk**, an ABC Radio affiliate in San Francisco, selected **Harris Corp.** to provide studio equipment and systems for a major broadcast facility renovation.

For its talk studios, KGO bought Harris AMX broadcast and production consoles from Pacific Research & Engineering, with 34 input modules. KGO will use Harris custom furniture for its main talk studio, including hydraulic-activated workstations for up to six people. The workstations will have adjustable monitors and Corian surfaces that can be positioned. The hydraulic system is similar to that used in hospital beds.

An **SAS** routing system at KGO will allow the analog consoles to accept digital inputs via conversion capabilities in the router. ...

SSL said three SL 4000 series consoles were delivered for installation by Uzbekistan state broadcaster **RTV** as part of the major refurbishment of its radio broadcasting facility in the capital, Tashkent.

See WBW, page 25 ▶

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One of SS32 touchscreens is shown above. The log is at the left. Instant access Cart Walls are at the right. Visit scottstudios.com or call 800 SCOTT 77 for info.

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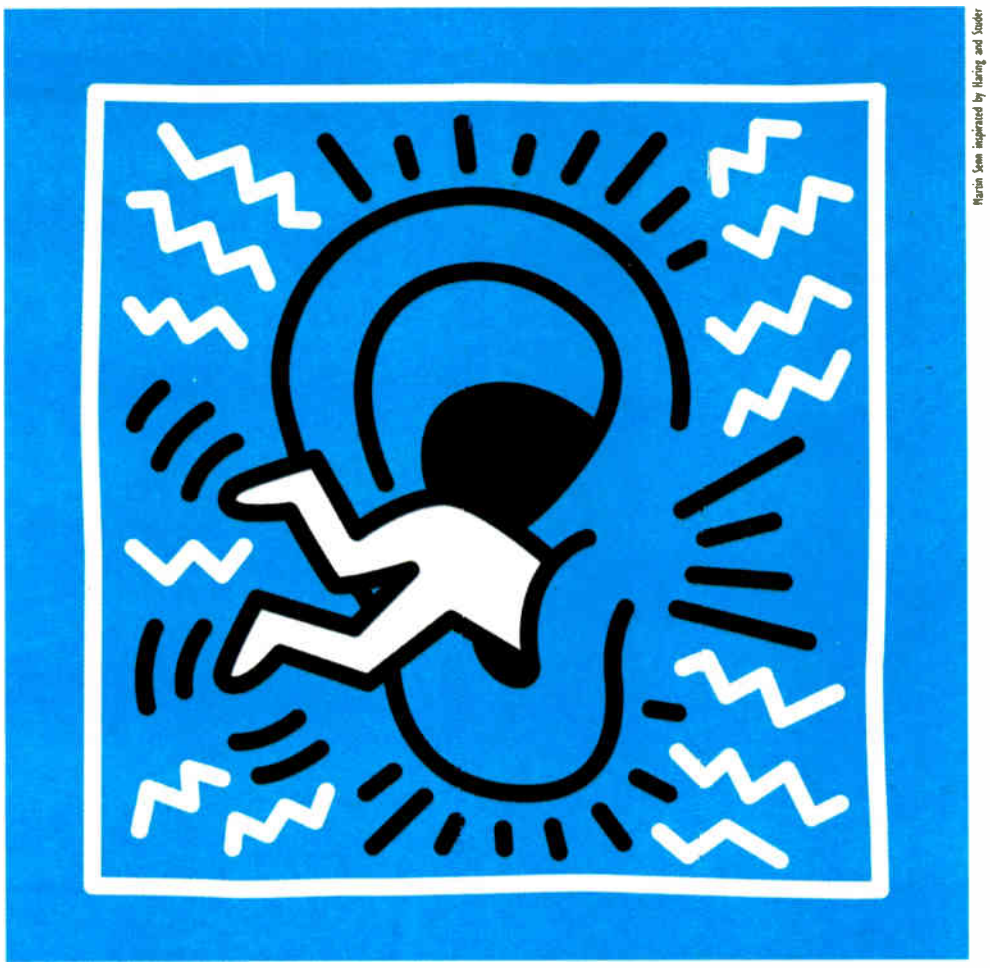

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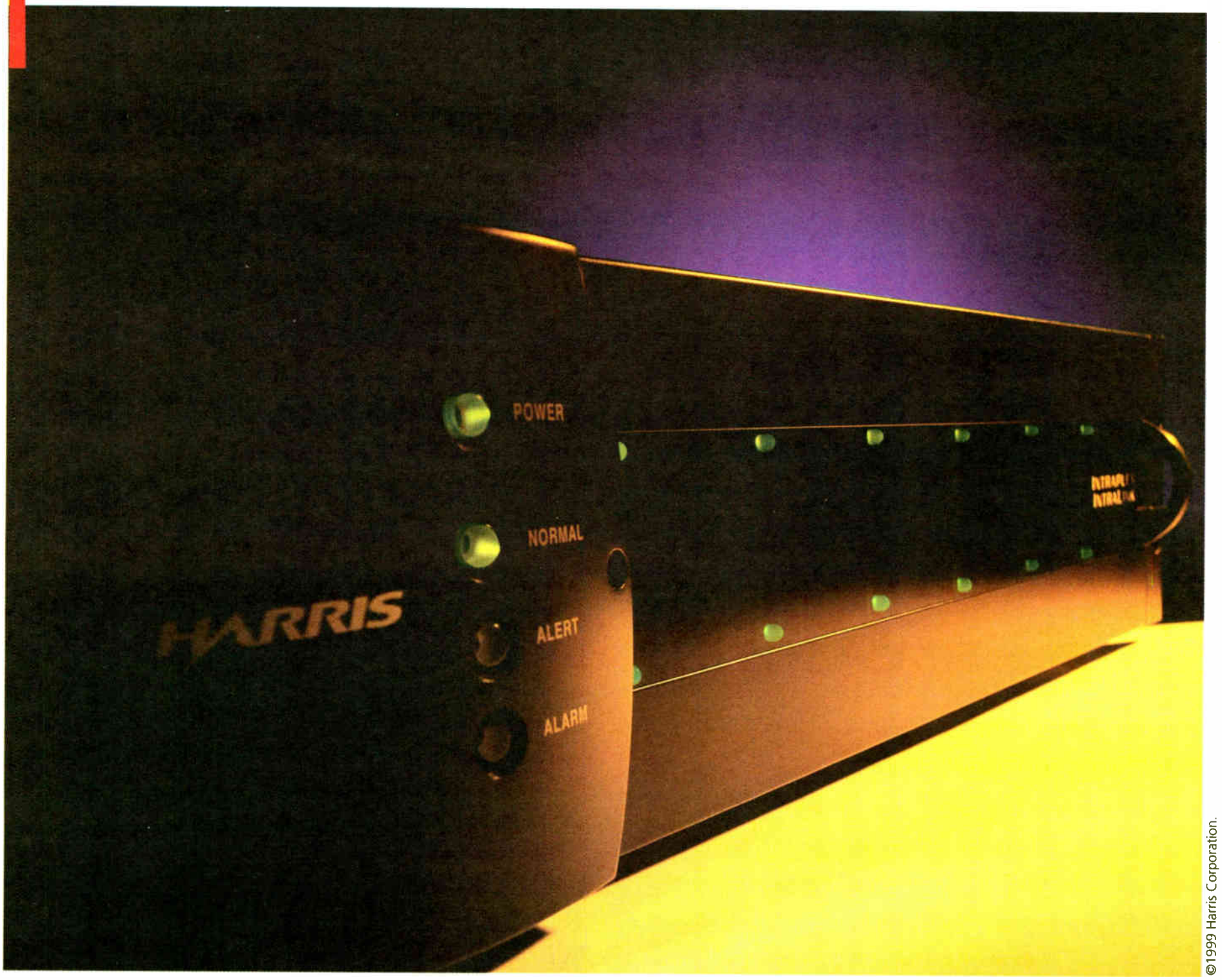
Saves space. Saves money. Saves you searching for the codec that was in the control room yesterday.



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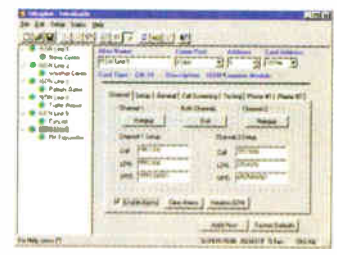

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World Radio History

WBW

▶ Continued from page 22

Komil Redzepov, technical director at the state radio broadcaster, said, "We will primarily use the new consoles for the recording and mixing of national music programs." Three more consoles are scheduled for delivery later. ...

Sennheiser has increased its profile in the interview mic arena. It unveiled its MD 46 cardioid interview microphone as part of **NBC** coverage at the 2000 Summer Olympic Games in Sydney, Australia.

The handheld cardioid model was produced after talks with NBC's project manager for sound at the Olympics, Bob Dixon. According to Sennheiser, Dixon was interested in a cardioid interview mic with studio sound. An omni model will come later.

NBC Sports used 170 of the new mics at the Games, among other Sennheiser products. ...

Sennheiser's MD46 went to Sydney

Audemat said it worked with **Susquehanna Radio Corp.** to verify signal profiles for its radio stations in the San Francisco market. The campaign ran prior to The NAB Radio Show and included the new Audemat Fieldstar and the FM-MC3.2 with Goldenear software.

Fred Greaves, director of engineering for Susquehanna Radio Corp., said, "We will actually verify and map out the actual coverage of each station, down to the neighborhood level simply by driving around the area."

"Who's Buying What" is printed as a service to our readers who are interested in how their peers choose equipment and services. Information is provided by suppliers.

Companies with news of unusual or prominent sales should send information and photos to: Radio World Managing Editor, P.O. Box 1214, Falls Church, VA 22041.

Lampen

▶ Continued from page 21

CL3, CM, CL2R, CL3R, CMR, CL2P, CL3P or CMP. There are other ratings, but these cover most of the cable installed in broadcast applications.

If there is another rating, or what you think is a rating, check the NEC book or drop me an e-mail. If it doesn't have a rating, it is unrated.

The land of plenum

Every so often, I see a piece of plenum cable running in a conduit. Now you might think this is a big mistake. After all, plenum cable is intended for use where the cable is not in a conduit. So why would anyone put a plenum cable in a conduit?

The answer is simple. Part of the run of this cable will not be in a conduit but will run through a plenum area. Then it is easier to make the whole cable plenum-rated, instead of making a transition from one kind of cable to another.

Of course, you could have avoided the conduit altogether. Usually I see "plenum in a conduit" in stadium projects, in which a contractor is doing the audio and video wiring. A different contractor installs the conduit, and the issue of plenum or non-plenum spaces may not have even been considered. There's a technical term for this. It is called "wasting money."

There is also a recent increase in the introduction of riser-rated cable. Riser rating is only one step below plenum.

Riser-rated cables can go between floors vertically, without a conduit. Many video cables are now available in riser ratings. Even multipair analog audio snakes are manufactured in riser ratings.

Misinformation is floating around about riser-rated cables, though. They can go between floors without a conduit, but they don't stop the requirement for fire blocking between floors. The fire blocking can go right around the cables, so you still have to put that in.

Next month we will look at starquad cable designs.

■ ■ ■

Steve Lampen is a technology specialist, multimedia products for Belden Electronics Division in San Francisco. His book "Wire, Cable, and Fiber Optics for Video and Audio Engineers" is published by McGraw-Hill. Reach him at shlampen@aol.com

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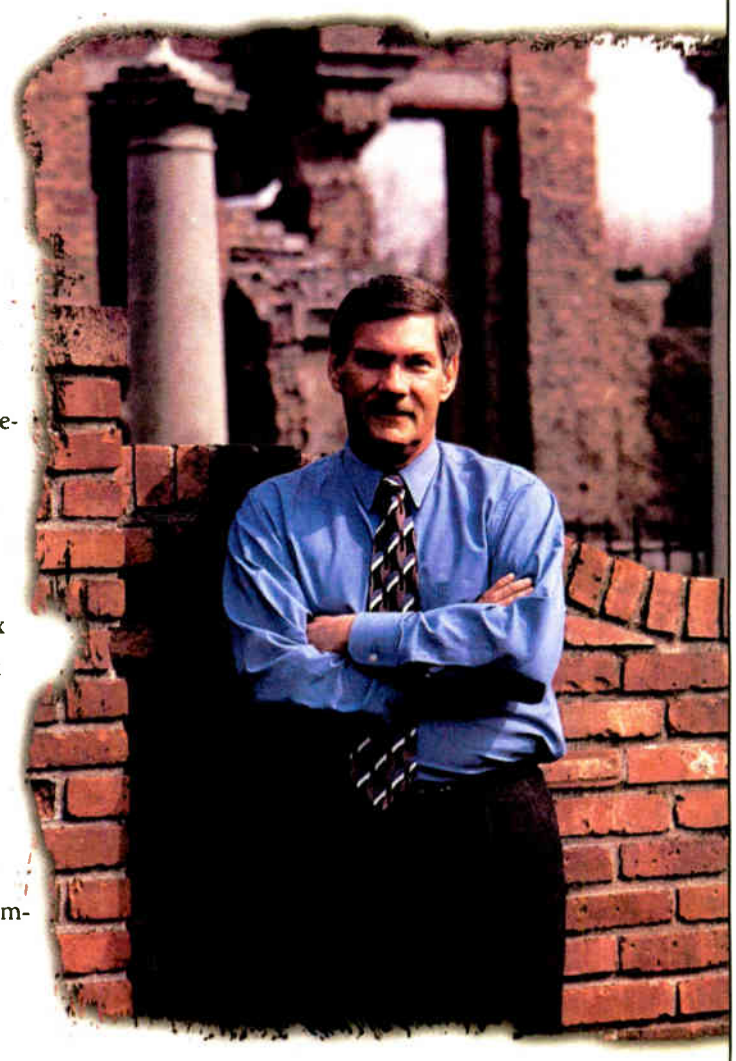

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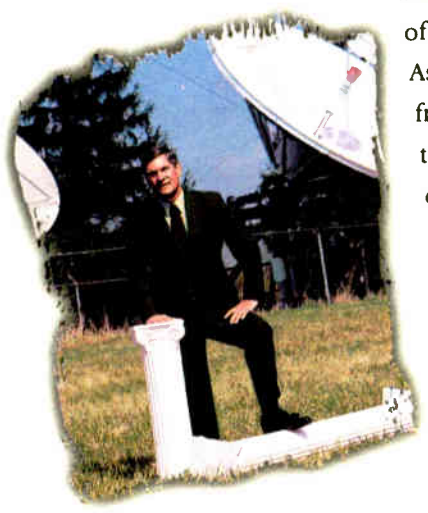

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World Radio History

Workbench

Radio World, November 22, 2000

Strong Towers Make Strong Signals

With Cold Weather Setting In, This Is a Great Time to Conduct FM Tower Site Inspection

John Bisset

Last column, we reviewed some of the things that should be checked at transmitter sites. Most of the suggestions were outside the transmitter building or antenna-coupling units (ACUs) found at AM sites.

Fig. 1: Check the security of grounds on your transmission lines

If you take care of an FM, remember to check these outside parameters. At the base of the tower, check that transmission lines are grounded properly and that the grounds have not broken off or have hardware missing.

Ensure that ground kits are installed so the wire runs down toward the earth. Looping a ground lead up the tower defeats the purpose. As lightning energy travels down the transmission line, a properly installed ground kit leads the energy to ground — not back up the tower to a ground stud.

In Figure 1, in addition to having each cable grounded with a ground kit, the station has numbered each cable to trace or identify lines in the event of problems. This is helpful particularly at sites with multiple lines going up the tower.

★ ★ ★

As you inspect the base of the tower, check that cable support clamps, ties or spring hangers are not damaged. Do you have an ice bridge? If not, consider budgeting for one.

Shards of ice falling off towers can damage transmission lines. If your manager needs a cost comparison, show him the price of the ice bridge vs. a new run of transmission line. Add in the off-air time, or at least, consider the reduced power you'll be running because of the VSWR caused by the dented cable.

You know if the failure is going to happen, it will be the week before Christmas, so the station will lose all the Christmas spots. Murphy's Law loves holidays.

An ice bridge also provides adequate cable support from the building to the tower. Leaving a cable to dangle as you see in Figure 2 is inviting trouble. Not only can falling ice damage the coaxial line, it's hanging so low that someone can either walk into it or accidentally strike it with a tool or ladder.

Note in the background of Figure 2, the ice bridge and how the cables are routed beneath it.

How is your tower paint? With the end of year in sight, budgeting for tower painting may be in order. As you obtain painting quotes, get at least three references and call them. If you can visit the stations that have been painted, then that is even better.

There are a few bad apples out there, posing as qualified tower riggers and painters. Don't get caught with a job you have to do twice.

★ ★ ★

You may encounter the older hollow leg towers as you make your inspection. Check the weep holes at the base, small holes that permit water to flow out of the hollow leg.

If they are clogged at the base, they probably are clogged further up the tower. Have a qualified tower company inspect each section and clear the holes.

Also check any braided grounds, such as those used on the Austin Ring transformer in Figure 3. These can deteriorate

See WORKBENCH, page 28 ▶

Fig. 3: Ensure that grounds are connected properly

Fig. 2: An ice bridge will also provide cable support

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World Radio History

Workbench

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in time.

The newer prefabricated communications shelters have made grounding a breeze. Typically, they are tied into the tower ground system when the shelters are installed. Check the ground leads running outside the building as well.

Fig. 4: Make sure that building grounds are intact

Figure 4 shows a ground lead exiting the building and tying into the station ground strap. Note that this building also has a hurricane mount. A screw-type anchor is set into the ground at each corner of the building.

A metal strap connects the building bracket to the anchor. It is hard to believe that any hurricane would develop enough energy to move one of these concrete communications shelters, but I guess it can happen. The anchor bracket reduces the chance, and in some areas, is required by the local building code.

Check tower light photocells and the tower lighting conduit. Conduit should be secure, so that rain does not enter.

Some conduit has a vented junction box, to provide airflow inside the conduit. This prevents moisture from building up inside, due to temperature variations. Check that the vent is not clogged or torn open, exposing the box to bees.

For the AM engineer, that aluminum enclosure or small building at the base of the tower contains a lot to look at. We'll start reviewing these dilemmas next issue.

■ ■ ■

Submissions for this column are encouraged and qualify for SBE recertification credit. Fax submissions to (703) 323-8044, or e-mail jbisset@harris.com

Build Your Own 'Regency Tester'

Gary Palamara

From time to time, I find myself needing to check the continuity of audio or video lines which have been run over long distances. Usually this work requires a helper and a two-way radio. But every so often I end up working alone and must devise a scheme for checking wire continuity.

You could, of course, solder and crimp everything and just hope for the best. But since most of us enjoy sleeping at night that just won't work.

Massive job

With the hotel under renovation, it seemed a perfect time to install the wiring into the ceilings and walls. But the job of checking the wiring would be massive.

For several days I thought about how to approach this. I needed a way to check both phase and continuity of all of the connections that emanated from several floors and terminated in one of three equipment closets.

Both ends of the wire would have to be checked. I knew I could enlist a helper. With a two-way radio and an ohmmeter or buzz box, we could check each wire individually. But that meant more cost to the hotel and another potential labor negotiation. I began to think of schemes to check the wiring while working alone.

Although the problem is difficult the solution was a simple one.

Before viewing the completed circuit, let's discuss the concepts involved. It's more important to understand the concept of what's happening. After you think about your own situation, you may want to alter the circuitry to suit your needs.

Figure 1: Three equal-value resistors divide a 3-volt DC power source. Each resistor in our example is 2.2k ohms.

The resistors could be any value as long as they are equal. As you know from your school days, a 3-volt source voltage, divided by three equal-value resistors in series, will drop 1 volt across each resistor. So if we measure between the bottom or ground side of the circuit, (Pin 0), and the junction of each resistor, our voltage will increase by 1 volt as we go up the chain until we reach the top connection and our 3-volt source.

In practice, the exact voltage change

See TESTER, page 30 ▶

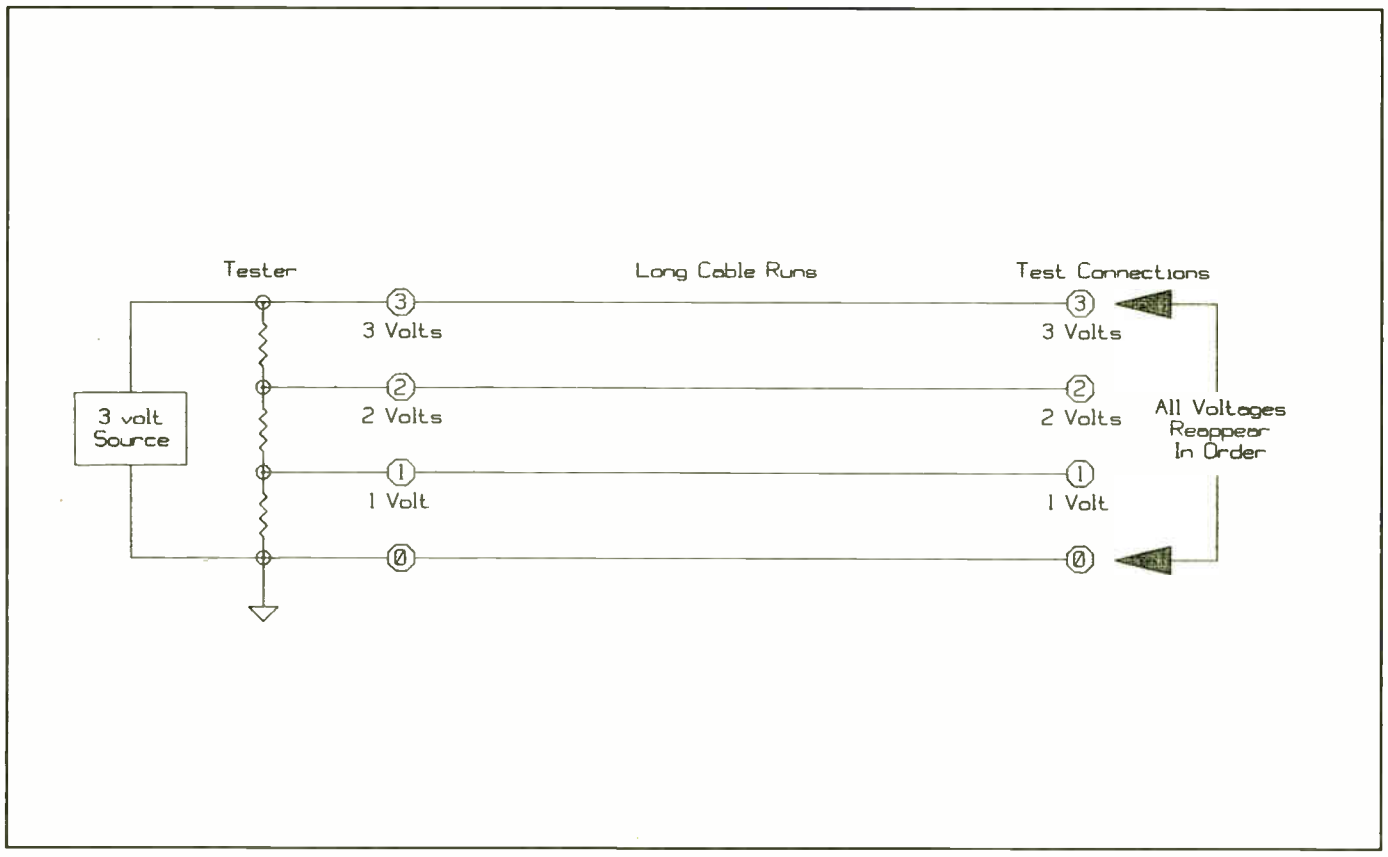

Fig. 1: Regency Hotel audio video tester

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World Radio History

Flint

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quarters of a century is moving on to the Internet.

Wisely, broadcasters foresee their future in an ability to move with their audience, by joining the widening torrent of "e" enterprises — e-business, e-commerce, e-government, e-trading, e-tc — now making their mark on the Internet.

One observation that I and my colleagues brought back from the NAB activities in Las Vegas and San Francisco is that few people are concerned about network systems security within the broadcast / e-broadcast world. Coupled with the system vendor and operational components of the broadcast industry, this oversight will continue to have serious security consequences in the immediate future.

Vulnerability

For instance, as I attended the lectures and visited the exhibits in Las Vegas, I did not need to look far for examples of the broadcast industry's vulnerability to security breaches:

- The visitor from abroad, testing his digital camera by taking detail shots of competitors' circuit assemblies.
- Touted at the engineering seminar as the latest thing in transmitter remote control, NT-based Internet Information Server is child's play to breach — unlike the broadcasters' current private or dial-up transmission links.
- Told by a salesman that the major satellite relay system his booth represented wasn't worried about security, I stood at the booth and hacked the control system on display in under one minute.

The operational methodology of broadcasters melds with the prevailing information system design philosophy. This philosophy is reflected best by Microsoft's removal of the BASIC interpreter from system distributions starting with Windows 95.

Subsequent distributions make access to basic programming resources the province of "professionals." The common design goal is best expressed as follows: *Build a smart system, operate with average people.*

This approach probably has its roots in the industrial revolution and general mass production. It is the basic paradigm that has built our radio and television infrastructure. Our entire mass-market technology base reflects this fundamental design concept.

In contrast, the Internet is based on an open, freely distributed discussion format moderated by the Internet Engineering Task Force. The documentation and specifications of this standards-setting body are in the public domain and are available in the form of Requests For Comments.

Not only do these documents make for interesting reading; they define the Internet in a very public way. The approach can be summarized: *Build an average system operated by technically smart people.*

This is both the promise and the problem of the current Internet. Just because you are technically savvy does not mean you cannot be malicious, especially when your adversary who is *not* technically smart.

This paradigm defines most of our current news stories about the Internet. They're all about information warfare, and the ignorant, innocent broadcasters look about as resourceful as the Children's Crusade.

Content is king

What rules the broadcast world is content. There has been and will continue to be information warfare, particularly in the broadcast industry. The Internet is merely the most recent and most promiscuous venue.

At the spring NAB show, not one booth was devoted to network security.

While there are no rules in information warfare, generally there are two objectives:

1. Keep your competitor from good information
2. Give your competitor bad information

Media systems are by nature competitors for information. For good or for ill, radio and television broadcast media systems communications are, before our eyes, morphing from dedicated private dial-up/full-term private leased interconnections, to full-term, Internet-based systems.

The NAB's convergence theme demonstrates this beyond a doubt. However, at the spring event, where more than 100,000 people witness the "networkization" of broadcasting, not one booth was devoted to network security. The fall show was little better. This lack of concern is so dumb, it's sorry.

Nothing is more competitive than the broadcast industry. The basis of competition within the broadcast industry is audience share.

To determine who is getting the biggest share of the customer's dollar, broadcasters agreed to use a ratings system run by an independent survey organization. These surveys themselves are just another form of information. Based on the industry norms, how secure are these information sources? If the security of this survey information were ever called into question, the entire industry would suffer.

Broadcast Darwinism

Will Information Warfare eventually strengthen our broadcast network infrastructure?

One solution here might be to dramatize the conflict. In the old television show, "Max Headroom" developed Information Warfare in a fantasy context with considerable international success.

Imagine sanctioning real-time information warfare between competing media outlets. This "WWF" of information warfare might present itself as a new "trans-media" show called "Get Out of Jail Free," in which contestants — members of the technical staffs at broadcast network outlets — are given sanction to attempt penetration of competitor's facilities.

The entire operation is documented for distribution on Web, audio and video. You work out the kinks in your security apparatus and get great ratings at the same time!

Realistically, the future of broadcast system security inevitably will involve the NAB, through the promulgation of a code similar to The Radio Code. Oddly enough, while the NAB Code remains operational, we found no current reference to it anywhere on the NAB Web site.

Having established broadcast practices, policy and guidelines in the past, the NAB may perceive a need to establish guidelines regarding the media convergence.

I suspect that the words "Compliant With NAB®" will become a copyright-protected NAB certifying trademark that must be present in HTML source for participating "Good Players" in a future Web space. While this certification program could be lucrative for the NAB, assuming that it immediately exploits its existing intellectual expertise in the area of policy, it will be of limited practical use.

This limit is due to the exploitable nature of the security system architecture that has already been bought into by broadcasters, as evidenced by the prevalence of Microsoft at NAB technical showcases.

Independent Verification and Validation of all broadcast software source code is the answer to the security architecture issues posed by the media convergence that the NAB shows augur. In order to solve this IV&V problem, Open Source Software and the built-in peer review and source management implied is the only viable methodology.

It would be wise for the NAB to require it for system accreditation. While the OSS architectural debate is currently raging in the educational, financial and military sectors of modern dataspace, the outcome is a no-brainer. OSS is the only practical way to system security and assurance.

Thus, the NAB must embrace this OSS model in its initial policy pronouncements to foster proper security architecture.

The sad thing is that this is highly unlikely.

I would like to thank Bill Eldridge, David Baden and Tom Carson for their help in preparing this article.

■■■

Paul Flint is an independent technical consultant and inventor with experience in broadcast management, appraisal, engineering, systems network design and security architecture.

***Radio World** welcomes other points of view. Write to the address on the inside last page or send e-mail to* radioworld@imaspub.com

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World Radio History

Tester

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depends on the match of the resistors involved. The more closely the resistors are matched, the more closely each voltage measured will change by exactly 1 volt.

The circuit in Figure 1 is at the heart of the continuity tester used throughout the project. Now let's hang long wires on our basic circuit. This scenario will allow us to move to the other end of the line and measure the same voltages that we saw at the tester itself.

If all is well, the 3-volt voltage drop should magically reappear on the other side of the wire. Any incorrectly installed wire or cable will lead to a faulty reading at the other end. The only way you can start at the zero point and get an increase of exactly 1-volt as you go up the line is if all connections are wired correctly. With a little practice, you can easily spot the mistakes.

The circuit

Figure 2 shows my completed circuit. Two 9-volt batteries in series provide a portable voltage source. The approximately 18-volt source is regulated down to 12 volts by an LM-7812 voltage regulator. You could use the batteries without the regulator, but a constant voltage source is important if we want to develop an exact drop of 1 volt across each resistor. A string of twelve 2200-ohm resistors are placed across the 12-volt source.

My resistors were not precision tolerance. Junk-box resistors that were checked for the closest match I could find works well. You could use any value, but remember the 12 resistors are across the voltage source. If you want the batteries to last for more than a minute or two, don't use low-ohm resistors.

The 2.2 k ohm resistors equal approximately 26 k-ohms total. With 26 k of resistance across the source, the biggest draw on the battery is the LED indicator.

My tester needed to work for audio and video lines, so I installed insulated BNC connectors. At the junction of each resistor in the string, a wire is attached. The wire is soldered either to a pin of a Switchcraft D3M type chassis mount connector or to an insulated BNC connector.

Pin points

With every pin of each connector attached to a different voltage point along the resistor string, you will notice that no two audio or video pins carry the same voltage potential! For example, using Pin 1 of the first XLR as our common point, if you measure the voltage between Pins 1 and 2, you are actually measuring the voltage drop across one of the 12 equal resistors, or 1 volt. If you measure between Pins 1 and 3, you will get a drop of 2 volts and so on down the line until you get back to the voltage source.

In Figure 2 you will notice a dashed line running between pin one of the first XLR and Point A. By connecting Pin 1 of XLR 1 to this point, there are two resistors between Pints 1 and 2 of XLR 1.

The reason: your common point on the far end of the line will be Pin 1 of the first XLR. So when you are measuring the voltage between Pins 1 and 2, we want Pin 2 to read 2 volts and Pin 3 to read 3 volts, and so on along the chain. If you only have one resistor between the first two pins, your voltages are off by 1 volt on the first XLR.

Again, it does not matter that you build the tester exactly, only that you understand what's happening and how to use it. Using Pin 1 on XLR one as our common point, you can measure Pin Two as 2 volts and Pin 3 as 3 volts and Pin 1 on the second XLR as 4 volts and so on.

Assess your needs before building your own version. Construction is straightforward. The LED indicator may be omitted to extend battery life, but if you remove it, you won't know when current is flowing through the resistor string.

I also added a connection point in parallel with Pin 1 of the first XLR. This allows me to plug one end of my meter directly into the tester, which makes things a little easier when I'm testing short wires right near the test box.

If your situation requires you to check only two balanced lines at a time, go for a 6-volt system and two XLRs. Of course, you may use any type of connector. Patch panel connectors, pigtails with A3Fs or A3Ms, banana-type binding posts, even RCA connectors if that's what you need to test.

With my tester, I used short, two-foot jumper cables for the audio and video lines. The jumpers were plugged into the wall jacks and the metering took place at the termination point.

The only wrinkle is that you must plug in the jumpers in the correct order for metering to be correct at the far end. If you get the jumpers out of order, your voltages will be wrong on the other end.

I must confess I screwed up at least once in my haste to get the job done. If you find a problem, double-check yourself before you start unsoldering any connectors.

Continuity testing

After I finished the tester, I recalled another situation in which I was trying to test continuity across a 25-pin computer cable. I wanted to know the pinouts for some project I was constructing. I did what everyone probably does: I tried to hold both ends of the cable in one hand and with the other hand I was juggling the leads to a digital multimeter. As I touched one lead wire to one end of the cable, I had to count the pins on the other connector to find the mate. All this while I was trying to look at the DMM to see if I had continuity (no audible beep!).

The point: if you have to check a lot of these connectors, you can build a tester for them with a little creativity. Using a 24-volt regulator and Pin 25 as your common connector, you can plug one end into the tester and just measure the voltages on the other side pin for pin. I even envisioned a large box with every multi-pin connector I could think of, all mounted and ready for testing. You could even include binding posts for checking bare wires. Pretty neat, huh?

Have fun adapting, creating and building your own Regency Tester! Let me know what you come up with.

■ ■ ■

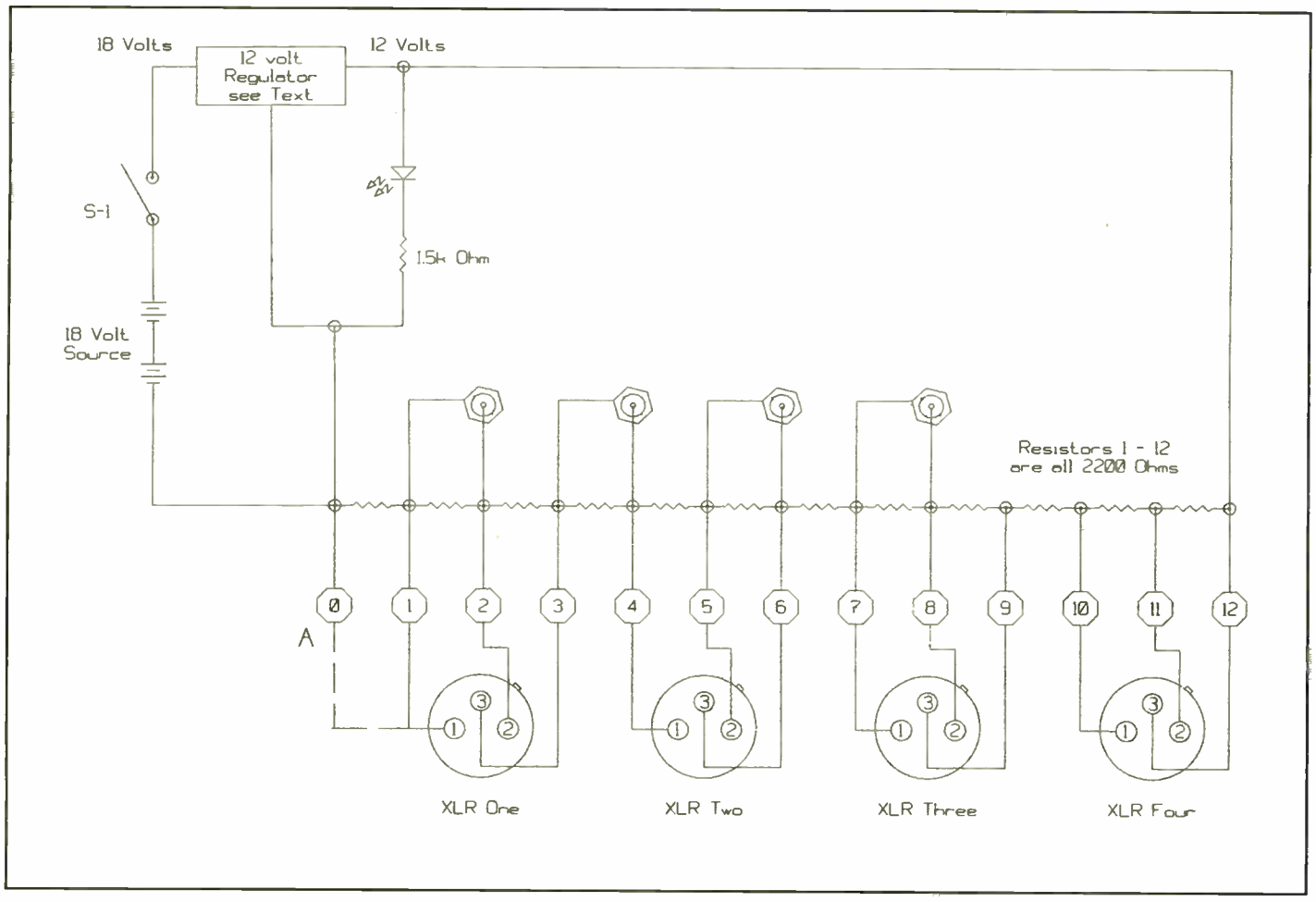
Details about the Regency Hotel installation are included in the online version of this story at www.rwonline.com

Gary Palamara began his career with Armed Forces Radio and has spent three decades in audio and video. He has worked as a studio and field engineer at the Olympics, U.S. Open Tennis, the NCAA and NBA Finals and The Miss America Pageant.

He owns Morningstar Sound, a professional sound services company in New Jersey.

Reach him via e-mail to morningstar@monmouth.com

The completed unit



Regency Tester: In the completed circuit, 12 volts is divided by 12 equal resistors. A voltage drop of 1 volt is measured at the junction of each resistor; 13 wires may be checked using this method. The 'Regency' tester may be used to check opens, shorts or crossed wires without the aid of an assistant.

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World Radio History

GM Journal

RHOF Class of 2000 Page 37

Radio World | Resource for Business, Programming & Sales | November 22, 2000

Ownership Rules Discussed

Scott Fybush

Think establishing a multi-station cluster in a market is easy?

Probably not. But even after you've worked through the financing and persuaded a reluctant seller, there's yet another obstacle: the regulatory and legal maze that's left even experienced lawyers unclear about just what constitutes a market.

"The total number of stations in a market can be expanded by counting distant signals at the far end of a single station's coverage," said Brian Madden of the Washington firm Leventhal Senter & Lerman.

But while that definition is useful for making a market seem larger — and thus allowing an owner to control a greater number of signals — Madden said the FCC uses a different standard when considering how many stations an owner actually controls in any given "market."

For that determination, the FCC looks only at overlapping contours — so if one station's primary contour doesn't overlap another part of a group or an acquisition deal, they're not considered to be in the same market and don't count against the ownership limits.

There's more

Confused yet? Madden notes that even some commissioners are unhappy with the definition, most notably Gloria Tristani, who has dissented in

See CLUSTER, page 34 ▶

News/Talk: A Matter of Questions

Ken R.

Jack Swanson, operations manager of KGO(AM) and KSFO(AM), San Francisco, defined the sometimes-elusive success of news-talk radio when he said "there are no secrets ... only questions."

His beliefs are echoed by talk consultant Walter Sabo, president of Sabo Media, who said, "Most general managers ask the wrong questions before their news or talk station even hits the air."

Sabo said the typical question is "who can we get," meaning what audience is available in the market.

"You should be asking 'who do you want to talk to?'," said Sabo. "What do these people talk about with their friends and what are they currently consuming in terms of popular culture?"

Successful talk radio

According to Sabo, the most important task is to select one target demographic and talk about only the things they are interested in.

"Failure to do this only leaves you an audience of people who just want to hear somebody talking at them, and that's mostly older people."

Sabo, speaking at the recent NAB Radio Show in San Francisco, suggested that talk stations need few if any studio guests.

"It's important for the host to bond with the listeners." Sabo suggested that a station should mirror music formats in terms of production values. "And it's crucial to maintain a superior knowledge of your target audience," said Sabo.

"We recently undertook a study to determine how well people understood terms we use in radio," said Sabo. "We found that when people think of the term 'mix,' they are just as likely to think of a cake mix as a radio station."

Sabo also said that only 39 percent of the people in Chicago knew that "Talk 890" referred to WLS(AM).

"About 22 percent of the people tested thought the term referred to a cell phone and 13 percent thought it was some sort of hearing aid. "And this station spent a lot of money promoting themselves this way," said Sabo.

Greg Moceri, program director of full-service talker WSB(AM), Atlanta, found himself in the awkward position of suddenly losing the Dr. Laura franchise after heavily promoting her show on his station.

"We decided to extend the hours of two of our other local personalities rather than trying an unknown," said Moceri. "Now our ratings are higher than ever and it proves that radio is bigger than any one personality."

One thing we do is bonus our people every quarter based on the ratings. That keeps them going.

— Greg Moceri

Another way WSB breaks with tradition is by placing a consumer expert on their air for four hours every afternoon. "We have Clark Howard, and he talks about credit cards, Firestone tires ... whatever people are interested in. And our research shows virtually no burnout with our listeners."

But how does a station keep people motivated day after day, especially when the station is at the top of the heap?

"Well," said Moceri," one thing we do is bonus our people every quarter based on the ratings. That keeps them going."

Greg Moceri

The same characteristics that make a talk host fascinating to listen to can make that same person difficult to work with.

Strong ego, long-held beliefs, sarcasm, and other personality traits don't always work as well in the office as they do over the air.

"Neil Boortz is a pain in the ass, but loveable," said Moceri. "The first time I sat down to review an aircheck with him he said 'you're the 15th program director I've had here ... are you going to get out those little clocks?'"

Relations improved however as Moceri gained Boortz's confidence. The two now play golf together.

Mary June Rose, program director of WGN(AM), Chicago, was asked by Swanson, the session's moderator, if any of her hosts were difficult.

"Every one of them," she said. Yet Rose does not feel the need to critique them via aircheck sessions. A bond of mutual respect has been built between Rose and her lineup of local talk talent.

"And I tell them we have to be very careful about what we say on the air," said Rose. "Our credibility is off the meter, so if we say it, it is true."

World Radio History

BROADCAST LAW REVIEW

Gone Today, Here Tomorrow?

Wondering Whether the Death of the Personal Attack and Political Editorial Rules Presage a Return of the Fairness Doctrine

Barry D. Umansky

This fall marked a truly fascinating and seemingly final round in a joust between the Federal Communications Commission and the U.S. Court of Appeals in Washington, D.C.

At issue were two related FCC rules — the personal attack rule and the political editorial rule. The commission created both decades ago on the concepts embodied in the now-abandoned "Fairness Doctrine."

As of today, those rules are gone. Attempts by an FCC majority to maintain the rules — after a 20-year broadcasters' campaign to end them — were unsuccessful.

On Oct. 11, a clearly upset Court of Appeals panel ordered the FCC to rescind the rules. And the FCC did so on Oct. 26. But this may not be the end of the story.

Behind the curtain

During the weeks prior to and after the court's action, we got a glimpse of at least certain FCC commissioners' resolve to maintain and restore these regulations.

Indeed, the court's latest opinion gives the agency the latitude to do just that, *if* the FCC is able to devise a judicially acceptable justification for the rules.

Some at the commission believe that such a new legal theory does exist — and that this theory could support not only these rules' restoration but also the return of the Fairness Doctrine.

Some at the FCC believe that such a new legal theory does exist — and that it could support the return of the Fairness Doctrine.

But what is the role of government with regard to what broadcasters can or cannot say in support of candidates, to challenge a person's character or to support a particular side of a controversial issue in the community?

And how might a so-inclined commission take us back to a former era of government programming regulation?

The Communications Act directs the FCC to grant and renew broadcast licenses *only* if "public interest" will be served. Any violations of specific statutory provisions or regulations may be deemed contrary to the public interest and could constitute grounds for revocation of a station license.

But the FCC's interpretation of what serves the public interest always has been a moving target. And the commission's position on the public-interest ramifications of editorials and political endorsements is no exception.

Prior to 1949, the FCC policy was that stations *could not* be an advocate on controversial questions and *did not* have the privilege of editorializing.

In the famous *Mayflower* decision of 1940, the commission said that freedom of speech on radio must be broad enough to provide full and equal opportunity for the presentation to the public of all sides of public issues.

Indeed, as one licensed to operate in a public domain, the commission said the licensee has assumed the obligation of presenting all sides of important public questions, fairly, objectively and without bias. The public interest — not the private — is paramount, the FCC said in the *Mayflower* decision.

Based on the concept of requiring a balance of viewpoints on issues in light of "spectrum scarcity," the *Mayflower* decision largely met with disfavor among broadcasters, who asked the commission to reconsider.

In response to these complaints, the commission held public hearings in the spring of 1948 to determine whether its policy should be changed.

Forty-nine witnesses, representing the broadcasting industry, members of the public and various other organizations presented testimony at the hearings.

In June 1949, the commission issued a report announcing that stations *might* editorialize *provided* they offered opportunities for opposing points of view.

Fairness Doctrine defined

About 15 years later, in July 1964, the commission adopted a public notice summarizing its interpretive rulings on the so-called "Fairness Doctrine," which it had

See UMANSKY, page 38 ▶

World Radio History

PROMO POWER

Let's Bring Back Live Remotes

Mark Lapidus

It's exciting to do. Talent has a difficult time doing it well. Fewer and fewer program directors let them happen anymore.

Yes, I'm referring to what was once part of a balanced diet in radio: the live broadcast remote.

While it's true that certain formats like talk, sports and, to a lesser degree, country, do more live remote broadcasts than others, the frequency of these remotes is also dwindling.

One of the great ironies is that technically, live broadcasts are much easier and cheaper to execute. Computer technology created the explosion of ISDN service in most parts of the United States. With the arrival of data transfer technology, even POTS systems on regular phone lines sound pretty decent.

It wasn't that long ago that an equalized line could run more than a thousand dollars. Now, once you have invested in the hardware, it's unusual to spend more than $300 for superior-sounding results.

Why, then, are stations doing fewer live broadcasts? One reason is that much on-air talent today just lacks experience doing them. This may sound silly, but like anything else, practice and direction are important in molding talent.

These days there are a lot of DJs under 35 who have not had the experience of doing live remotes several times weekly from concerts, events and furniture stores.

Sure, a lot of those gigs made for awful radio — especially when the talent was required to sell the product — but it also prepared them for the important live remotes that put magic on the radio.

Good PDs taught the jocks not to use the station as a public address system, but to concentrate on painting the picture for the listener far away in their car or home.

Remote magic

It's the magic of the live broadcast remote that we should strive to bring back to the airwaves. For many, this means testing the water with talent, allowing short breaks at first and then developing more spontaneity. And, finding those talents who are exceptional at making moments come alive using words, sounds and preproduced elements.

We should also encourage on-site direction from a producer or even the program director. Someone of authority should be on hand to feed the talent ideas, guests, sound bites, offer immediate positive feedback and motion when it's necessary to get on with the show.

What's the most appropriate time for a live broadcast? When you know that your core audience would love to be there, but can't be. It's easy to confuse this with the "nah, nah, nah ... I'm here and you're not" approach.

If that's all your talent is capable of communicating, then you are better off staying home. However, if you can develop DJs who can make your listeners engage their senses, then you've won a mighty battle.

They may long remember bringing in the New Year with you, spending the night with ghosts in that haunted house, or even experiencing the thrill of other fans at a concert that they could not attend.

Art

The live broadcast is tricky business. A lot has to be done behind the scenes so the talent feels comfortable and prepared. The setup has to look cool. The clients, if any, must be kept away from the talent, or at least introduced with an intermediary who can handle concerns (and believe me, clients always have concerns).

The equipment has to work perfectly. The public address system has to be continually adjusted so that the attending crowd can react, but at the same time, not feed back or make the station sound hollow with dull echo.

Knowing the mission before tackling the broadcast is enormously helpful.

Hold a brief meeting before each live broadcast to set expectations and discuss potential hazards.

There's a lot of talk right now about Internet radio and satellite radio. Most agree that broadcast radio will continue to thrive by being local. When done cinematically, the live broadcast remote can make our localism sizzle.

I'll never forget my first broadcast remote: it was from a county garbage dump on recycling day. On that very day I learned that when I painted the right picture, I actually make people smell their radio.

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Cluster

▶ Continued from page 32

many such ownership hearings.

Defending the commission during a panel discussion at The NAB Radio Show was Mass Media Bureau Chief Roy Stewart.

"The market definitions we use now made sense when there was a limit on the number of stations in a market you could own, and it was four," he said.

Stewart quickly knocked down suggestions of different market definitions, such as Arbitron's rated markets.

"What do you do when there is no Arbitron market?" he asked, expressing hope that the commission will soon come up with a rulemaking to clear up its definitions.

Complicating matters further is the question of cross-ownership. Stewart said a revised rule on broadcast-newspaper cross-ownership is being considered by the FCC, but there's no sign yet of what form it might take.

"Perhaps the commission would try treating newspapers like they do TV ... perhaps you could treat a newspaper like it was another TV voice," suggested Marissa Repp of the Washington firm Hogan & Hartson.

Stewart said the commission is more likely to be lenient on radio-newspaper combinations than on TV-newspaper deals.

"The problem is, most Americans get their news and public affairs programming from TV," he said, raising the issue of a lack of diverse viewpoints if TV stations and newspapers are allowed to combine.

In addition to the FCC, another government agency increasingly is making its voice heard in big broadcast deals: the Department of Justice.

"Often you do not know there's a Justice investigation until your FCC application goes nowhere and ends up just sitting there," Repp said.

While many broadcasters believe the Justice Department only steps in when deals affect 40 percent or more of a market's revenue, Repp said Justice will sometimes intervene in much smaller deals when they would create a monopoly in a dominant format or in a target demographic.

The department's recent emphasis, she said, has been on ensuring that at least three healthy licensees remain in each market.

"The only real advantage I can see with the Department of Justice," Repp said, "is that at least you can talk to them."

In many cases, she said, would-be buyers have been able to negotiate confidentially with Justice lawyers to get a purchase approved.

And if all else fails?

"One of the best ways is to go to the Hill and have the senator involved write letters to the commission," said Harry Martin of the firm, Fletcher Heald & Hildreth in Arlington, Va.

World Radio History

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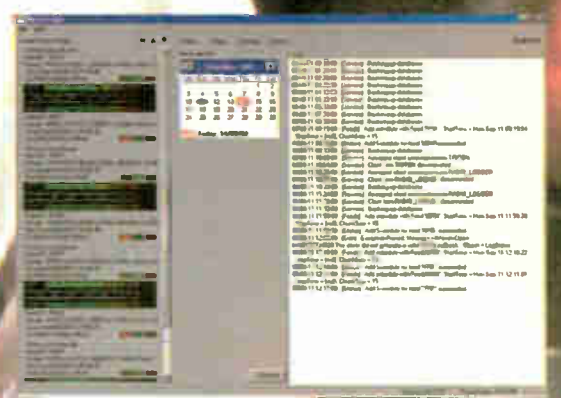

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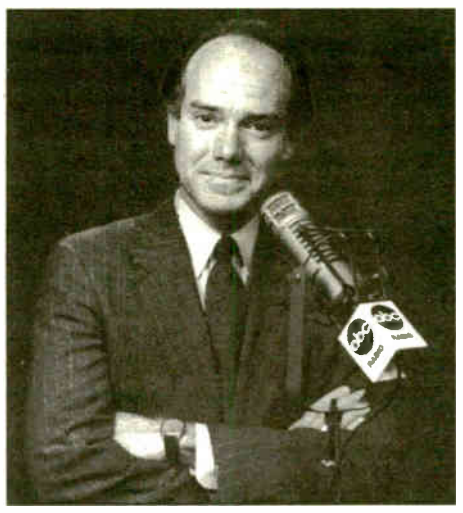
Radio Hall of Fame Inductees

The Radio Hall of Fame inducted the class of 2000 on Saturday, Nov. 18, at a black-tie dinner ceremony at the Cultural Center in Chicago.

This year's Hall of Famers include Dick Bartley, Amar G. Bose, Eddie Cantor, Fred Foy, John A. Gambling and Milo Hamilton.

The RHOF said that the induction ceremony was broadcast in many radio markets via the Premier Radio Networks. AMFM Networks Casey Kasem was host and Westwood One's Jim Bohannon was the announcer.

— Laura Dely



Dick Bartley

Producer/host of ABC Radio Network's 'American Gold,' 'Rock and Roll's Greatest Hits' and 'Yesterday Live,' Dick Bartley is the creator of the first live national oldies program, 'Rock and Roll's Greatest Hits,' which debuted in 1982 and is heard every Saturday night on ABC Radio Network stations.

John A. Gambling

The Guinness Book of World Records lists 'Rambling With Gambling' as the longest continuous radio broadcast in the world. John A. Gambling was the second of three generations in his family to host the radio program, which began in 1925 with his father, John B. Gambling, as host. The honoree's son John R. Gambling left the show this summer.

Eddie Cantor

The late comedian Eddie Cantor's radio show, 'The Fleischmann Hour,' was radio's highest rated program for seven consecutive years in the 1930s and '40s. At one time among the most popular people in America, Cantor helped establish the March of Dimes to combat polio.

Milo Hamilton

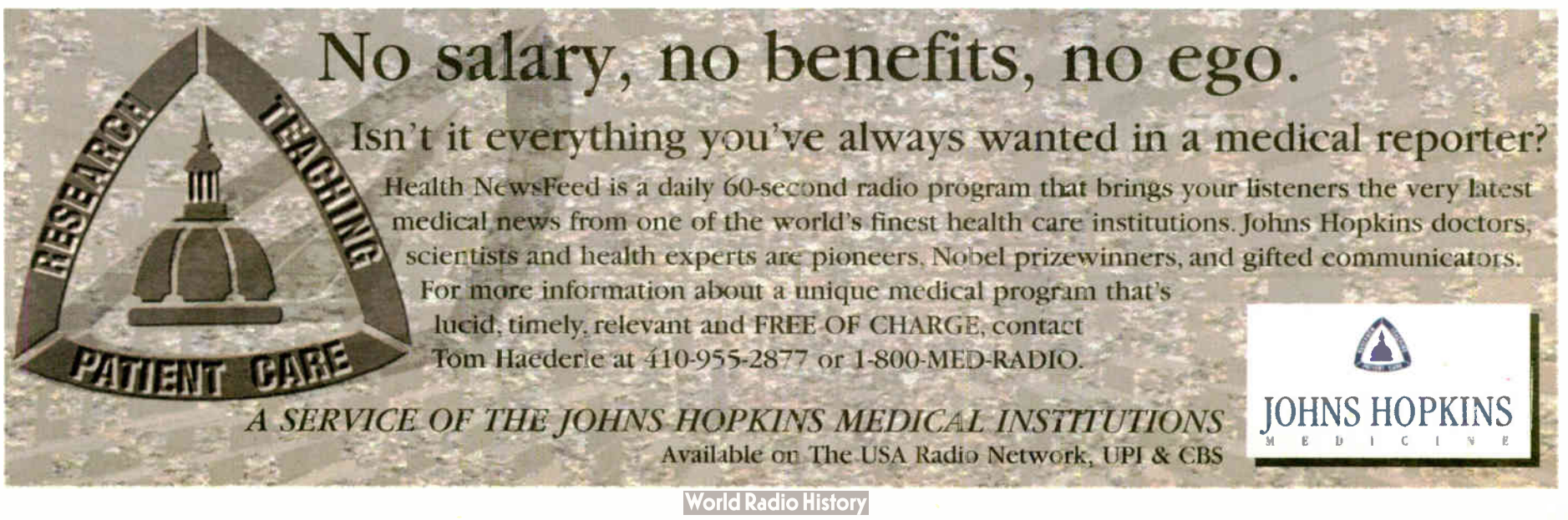
For more than 50 years, Milo Hamilton has called the plays for radio's baseball fans. Currently the voice of the Houston Astros, he called Ernie Banks' five grand slams in a season, Stan Musial's five homers in a doubleheader, Roger Maris' 61st homer in 1961 and Hank Aaron's historic 715th home run in 1974. He is only the tenth sports announcer to be inducted into the Hall.

Fred Foy

'Return with us now, to those thrilling days of yesteryear...' opened the 'Lone Ranger' radio show from 1933 to 1954. It was Fred Foy who spoke those words at the beginning of the Lone Ranger show.

Dr. Amar G. Bose

The man behind one of the most recognized names in audio equipment, Dr. Amar G. Bose founded Bose Corp. in 1964. While a graduate student at the Massachusetts Institute of Technology in the '50s, Bose was disappointed with the speakers in his stereo system. This inspired him to design speakers that could deliver the realism of a live performance. Today, Bose audio products are heard from the Olympic games to the Sistine Chapel to NASA space shuttles to the Japan National Theatre.



World Radio History

Bayliss Foundation 'Dis'honors Larry Wilson

On a foggy October night in New York City, the Bayliss Foundation gathered several hundred of the radio industry's finest owners, brokers, bankers and advertisers to roast Citadel Communications President and CEO Larry Wilson. The black-tie event was held at the Pierre Hotel.

Each year, the Bayliss Foundation selects an outstanding broadcaster or other industry figure to tease and embarrass before an audience that pays handsomely for the privilege of witnessing the spectacle.

Proceeds from the annual Media Roast benefit the Bayliss Radio Scholarship Fund.

Since its 1985 inception, radio industry students from universities and colleges nationwide have received the Bayliss Foundation Awards to further their careers in the radio industry. Total scholarship dollars awarded now exceed $619,000. More than 220 potential broadcasters have received the foundation scholarship.

The Bayliss Foundation was founded in memory of radio broadcaster John Bayliss as an endowment to support the foundation scholarship.

— Laura Dely

Larry Wilson with his tormentors, the 2000 Bayliss Media Roast 'roasters.' From left, back row: Frank Kalil of Kalil & Co. Inc.; Bob Dipiero of Love Monkey Music; Dick Ferguson of Cox Radio; Master of Ceremonies Bill Stakelin of Regent Communications. Front: Bob Proffitt of Citadel Communications; roastee Larry Wilson of Citadel Communications; Jeff Dashev of Interep Research.

The Bayliss Foundation staff with Bayliss Foundation Scholarship recipients at the Media Roast. From left, back row: Bayliss Foundation Executive Director Kit Hunter Franke; John Bayliss Jr.; Michelle Bayliss; Amy Schieselbien (1998 recipient); Joe Bayliss. Front: Alice Bayliss; Adam Berger (2000 recipient) and Becky Sandlin (1999 recipient).

Umansky

▶ Continued from page 33

created in the 1949 editorializing opinion.

Less than three weeks later, the commission adopted specific regulations requiring that stations give notice to person, whose "honesty, character, integrity or like personal qualities" have been attacked in connection with the broadcasting of views on controversial issues of public importance.

These regulations, first found in former Section 73.123 of the commission's rules, had their most recent incarnation in Sections 73.1920 and 73.1930.

The history

The constitutionality of the Fairness Doctrine was challenged in the famous *Red Lion* case. But the court upheld the doctrine in 1967 and the U.S. Supreme Court affirmed that decision in 1969.

Sixteen years later, and in light of the huge increase in the number of electronic media voices in this country and in individual markets, the FCC issued its 1985 *Fairness Report*.

This report concluded that the Fairness Doctrine had a "chilling effect" on speech, that it interfered with the editorial judgments of broadcasters and that it was unneeded in light of this growth in media outlets.

Based on these findings, the commission decided, in the 1987 *Syracuse Peace Council* case, that the Fairness Doctrine was unconstitutional and that its enforcement of the Fairness Doctrine would disserve the public interest.

The commission's repeal of the Fairness Doctrine was affirmed by the Court of Appeals two years later.

For nearly 20 years — starting prior to and running many years after the demise of the Fairness Doctrine — broadcasters have challenged the personal attack and political editorial rules. Responding to the initial challenges, the commission began a rulemaking in 1983, asking for public comment on the rules' justification and public interest merit.

The FCC may justify adherence to a more intrusive, programming-based regulatory scheme as a form of broadcaster 'substitute payment' to the public.

Facing FCC inaction, broadcasters unsuccessfully petitioned the FCC (in 1987 and again in 1990) to issue a decision. In 1996 and again in 1998 (after a 1997 2-2 deadlock among the commissioners), broadcasters asked the Court of Appeals to *force* the FCC to act.

But, the commission again deadlocked in 1948. Chairman Kennard chose not to participate because he had once advocated rescission of the rules while working at the National Association of Broadcasters.

But, the court this time demanded that the two FCC commissioners in favor of retaining the rules "expeditiously" provide a comprehensive and specific justification for their retention.

However, with no such action a year later, broadcasters again went to court to force FCC action. And this time the court set a Sept. 29, 2000, deadline for the FCC to justify the rules.

The FCC missed the deadline. Five days later, however — and despite the court placing the burden on the FCC to justify the rules — the commission released a decision that merely suspended the rules for 60 days and shifted the burden to broadcasters to document an *increase* in their political and editorial speech in the absence of the rules.

In order for the commission to take this "action," the FCC chairman "unrecused" himself, acknowledging in a formal statement that parties supporting the rules had encouraged him to participate in the commission decision-making process.

Gone for now

Apparently tired with the commission repeatedly refreshing the record in a seemingly endless proceeding, where the FCC's inaction resulted in the record continually becoming stale, the court simply ordered the FCC to rescind the rule. It was a short and tersely written opinion.

But even as the commission was rescinding the rule at the court's order, the agency chairman indicated that steps were being taken to restore the regulations through a new rulemaking proceeding. However, it would appear that any FCC effort to restore the personal attack/political editorial rules, let alone the Fairness Doctrine, could not be founded on the now unsupportable theory of a limited number of electronic media voices.

As the text of the commission's short-lived "60-day suspension order" intimated, a possible new theory for such regulation (including restoration of the Fairness Doctrine) would be that broadcasters received their spectrum "free" — rather than paying the billions some other industries paid for spectrum use — and that a more intrusive, programming-based regulatory scheme should be justified as constituting a form of broadcaster "substitute payment" to the public.

Clearly, any effort to restore these regulations will be affected by the political and ideological character of a majority of commissioners, the influence of the congress and the soundness of any new legal theory offered to support such a regulatory scheme.

But students of FCC regulation long have observed the cyclical nature of programming rules and restrictions. As such, the fall of 2000 may not have seen the final round on these or other programming-based regulations.

As a companion piece to this article, excerpts of past FCC decisions and current rules can be seen at *www.rwonline.com*

■ ■ ■

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World Radio History

Monetize Your Stream: Ad Insertion

New and Familiar Suppliers Scramble to Capture a Developing Niche Brought on by Internet Radio

Laura Dely

The Internet was supposed to provide bull's-eye targets that would enable advertisers to court, win and count users — a big advance for which advertisers presumably would pay a premium.

But to date, Internet advertising has been a bust. Banner ads, the predominant form of Internet advertising, have not delivered the results that it promised. Clearly, some other way will have to be employed if Net radio will be profitable.

For radio broadcasters, there are concerns not only about how to monetize the Internet, but also about just how much Internet radio is going to cost them to start. Managers must consider staffing, technological components, new equipment and what will happen to the terrestrial audience if listeners turn to Net radio.

Many radio executives are left wondering if they should even bother.

Moving fast

But as more stations stream onto the Net, Internet audio ads certainly will increase. Presumably, these ads will be profitable; the audience is already accustomed to receiving ads with radio programming, and the ads can be targeted.

A number of new ad insertion services allow a radio Webcaster to send its usual on-air commercial to terrestrial listeners, while adding several different ads in their Internet stream, targeted to appropriate users.

Your spouse could hear an ad for a gift wrapping service while you might hear an ad for cars, although you are both listening to the same station on the Internet at work.

A big question for many broadcasters is, "How much is this going to cost me?"

The answer, it seems, is that depends whether you sign up with a company that offers a tiered revenue arrangement — AdAcoustics is an example — or whether you chose a company that provides a suite of services, such as Lightningcast.

New services give radio managers fresh, powerful ways to reach targeted audiences via the Web

Revenue models vary. Philippe Generali, president of RCS, said his company allows a station to pay either a fixed fee or a share of revenue earned for ads sold on the Internet stations that RCS Live Ad Insertion serves.

With AdAcoustics, a station receives a share of the ad revenue generated against its content. AdAcoustics is designed to work with any automated system. Its patented ad insertion technology is turnkey and is available to listeners in seconds, said Robert L. Wolfe, president of The MusicBooth, AdAcoustics' parent company.

The equipment needed is provided, installed and supported by AdAcoustics at no charge to the station or group. A station needs only to provide a shelf in its rack room to house the equipment.

"The only thing we'll need for your engineer to do is point to where they want us to put the box," said Wolfe.

RCS will add its SplitStream product to its automated RadioShow service. For non-automated stations, their engineers will install the system at the station. (RCS also offers Insert, which allows one stream of ads to go to a station's entire Internet audience, with no targeting capability.)

"It's extremely simple. We know that their time is precious, so in order to minimize the disruption at the station, we install software on the phone," Generali said.

Chris Maskill is co-founder and vice

See AD INSERT, page 50 ▶

RW Launches *Internet Radio*

What's happening in Internet Radio? How does it affect your job as a radio manager or engineer? Who are the most popular Webcasters and Web suppliers? Is your radio group pursuing the best possible Net revenue strategy?

In 2001, **Radio World** will help you make sense of the lightning-fast changes happening in radio and the Net with an exciting new section called *Internet Radio*. It will appear in alternating issues beginning Jan. 3. The following pages of this issue offer you an early peek.

Internet Radio will provide analysis of Net radio business deals, ratings, services, technological developments, "how to" stories, station experiences, and interviews with regulators and business leaders who are in the vanguard of the new world of radio and the Internet.

Carl Lindemann's popular *Internet Radio News* column will move to the new section. And we'll hear regularly from experts on Internet advertising strategies and Internet sales tactics.

For almost 25 years, **RW** has helped you thrive through times of change in the radio industry. *Internet Radio* continues that tradition.

We also invite your ideas. Tell us about your successful Web venture, Net strategy or favorite Internet supplier. Send e-mail to *radioworld@imaspub.com*

World Radio History

WEB WATCH

New Net Schemes, Dreams and Snoops

Carl Lindemann

Web Watch is a roundup of all things radio and the Web. Send your news and tips to LD@imaspub.com

Have we seen the last election that wasn't fought and won online?

After driving around while listening to the so-called presidential "debates" on **NPR**, I wondered if legislation might be afoot to ban such broadcasts as hazardous.

The sonorous sounds of the candidates spouting and speechifying were an altogether different danger than the suicidal cell phone at the wheel. The rhetoric was not distracting. Instead, it was sleep-inducing.

As the public becomes accustomed to the Web's interactivity, the kind of pseudo-debate that was passed off for the reasoned give-and-take of authentic discussion just won't cut it. Before long, Internet-savvy voters may be in a position to negotiate the ground rules with the candidates themselves. Do I hear "smackdown"?

World Football League?

Football mania is at mid-season form.

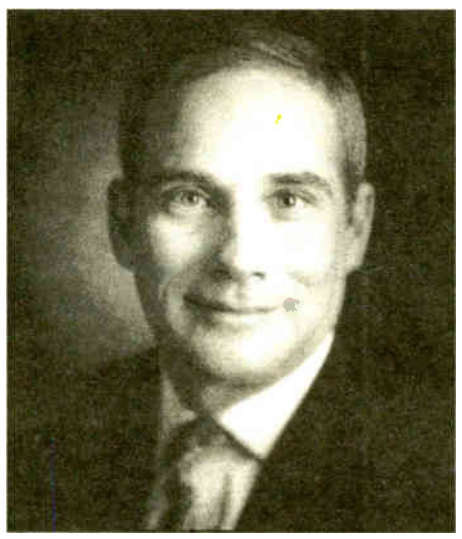
While the **NFL** itself keeps a tight hold on its online content stateside, the league announced a strategic partnership with **GlobalMedia.com** and **Fantastic Entertainment** to deliver broadband streams of games overseas.

This follows the NFL's test marketing of Webcasted games in Singapore and Amsterdam last season

"The NFL is committed to extending the reach of its games to fans around the world and to promoting new technologies and new media to achieve that goal," said **Tola Murphy-Baran**, the league's senior VP of market development.

Tola Murphy-Baran

What's unclear is the impact on TV revenues should these broadband streams be intercepted by fleet-footed Web watchers.



Jeff Mandelbaum

Other news from GlobalMedia.com is that President and CEO **Jeff Mandelbaum** has taken on the additional responsibilities as chairman of the board. He replaces company founder **Michael Metcalfe** who retains the title of director.

Overnight sensation

After signing **BroadcastAmerica.com** as its first client just months ago, **MeasureCast** is now a major player in the online media metrics business.

On Oct. 10, **Ed Hardy** took the reins as CEO at MeasureCast after years of working with and for **Citadel Communications.**

He comes to MeasureCast as an original investor at its start-up in 1999. Having Hardy at the helm caps off a lot of good news at the upstart.

In September, the company announced a slew of Webcasters that signed on for reports from the next-day audience size and demographics service. At current count, the company claims to keep tabs on more than 1,700 Internet broadcasters.

Recently announced strategic alliances with media rep firms **Katz Interactive Marketing, MediaAmerica Inc.** and **Interep** should be very helpful in putting MeasureCast on the radar screens of the mainstream advertising community.

If **Arbitron** takes as long to respond to this challenger as it does to get out its online reports, MeasureCast's future should be bright.

How the cookie crumbles

Speaking of tracking people online, it seems that the government might do well to enter the Internet metrics business.

A **General Accounting Office** study found that 13 government Web sites were tracking visitors with "cookies" and other snooping tools despite posted policies that proclaim the practice forbidden.

Among the malefactors were the **U.S. Customs Service, Bureau of Labor Statistics, Federal Emergency Management Agency, the National Parks Service** and the **Health Care Financing Administration**.

Sen. Fred Thompson (R-Tenn.), chairman of the Senate Governmental Affairs Committee, was quick to blame the outgoing executive.

"How can this administration talk about protecting policy when its own agencies jeopardize some of the public's most private information?" said Thompson.

Fortunately, Thompson seems to have held back in calling for a special prosecutor to investigate "**Cookiegate**" in excruciating detail.

Blinding me with science

MusicMatch picked the second-annual **Interactive Music Xpo in Los Angeles** to announce its **Jukebox 6.0** software with "MusicMatch Radio" integrated into the popular MP3 player.

Ed Hardy

"Most Internet radio stations either sound like a shuffling of CDs from the 1980s or are simply terrestrial stations

See WEB WATCH, page 46 ▶

Flex-Studio

- One Size fits all modular design
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- World famous Modulux cabinetry
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- Only $4995 complete ! ! !

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web: arrakis-systems.com phone: (970) 224-2248

World Radio History

Paul Revere on foot.

Paul Revere in a boat.

Paul Revere on a horse.

Paul Revere on a horse.

Paul Revere and
his sore butt on a horse.

Paul Revere and his horse
captured by the bloody Brits.

Paul Revere on foot.

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The lantern guy in
the Old North Church.

Patriot militia in Concord.

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History would be a lot shorter if our forefathers could have skipped the middle acts and gotten straight to the point. At Activate, that's exactly what we help you and your business do. We put your audio and video on the Internet, so you can get your message directly to whomever you want. Radio programming, IPO road-shows, earnings reports, even an occasional battle signal. For more information, call us at 1-877-577-9261. Or look us up on the Web at **Activate.com.**

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World Radio History

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Comrex MATRIX List $3,700.00

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A Telos Company

Special Offer on the Omnia 3

Say hello to Omnia 3 – the all-digital audio processor that offers all the clarity, punch and power of the original Omnia – at an amazingly affordable price. Whether you broadcast on FM, AM or the Internet, there's one to fit your needs. And each Omnia 3 includes standard features not found anywhere else – like 48 kHz sampling, multi-band processing, digital audio I/Os, integrated composite clipper and a removable PC card that simplifies software changes. Make your purchase by 12/31/00 and receive a Free Omnia remote software and modem bundle (a $230.00 retail value) plus a 2-year extended service package (warranty and software upgrades). Call today on this special offer!

Omnia OMNIA3 List $3,580.00 Call for BSW Price

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Arrakis DigiLink IV Makes On-Air Delivery and Production Easy

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- Both Satellite and Hard Disk Automation
- Voice Tracking, Segue Editing, Phoners and More
- Triple Play and Record DL4 Workstation
- Just Add Your Own PC Computers

Arrakis DL4STD2 List $7,995.00

Configurable Studio Furniture Package

Quality, beauty, modularity and low-cost knock-down shipping combine to make the Arrakis Modulux a sensible furniture package. It comes complete with components to create a variety of configurations, including left- or right-handed, Short L, Long L, and Unbalanced U.

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Aphex 2020WITH03 List $6,995.00

Now Include "Top and Tail" Editing of Sound Files

New 'Dash E' Version Offers Flexible Instant Access

Instant Replay re-defined the term Hot-Keys, with an easy-to-use control panel that offers rapid fire playback of 50 cuts, ordered in 10 different banks. Now Instant Repla expands your ability to select the exact audio bite, or portio audio file that you want with "Top and Tail" trim editing. Up 24 hours of stereo audio can be stored on Instant Replay's self-contained hard drive. Call today to order.

360 Systems DR554-E List $3,250.00

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World Radio History

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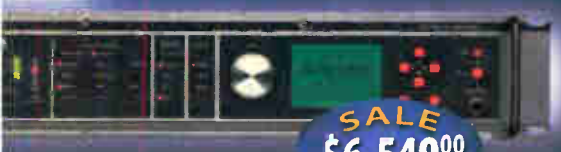

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rol interface with software;
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Add Call Screening Software for Just a Buck! (a $520 value)

Wouldn't it be great to have a talk show system that connects directly with digital lines – without all the hassle of analog conversion? This 12-line telephone system uses two digital hybrids to bring ISDN clarity right into the studio, and if you don't yet have digital service, you can use your existing POTS lines and upgrade for ISDN later. Order now and receive Call Screening software for only $1 (a $520.00 retail value) plus a 2-year extended service package (warranty and software upgrades)! Offer expires 12/31/00.
Call for more information.

Call for Best Price

orban

Now with 5 Times the Processing Power!

Loaded with Motorola's latest DSP chips, the Optimod 8400 comes equipped with more than five times the raw processing power of its predecessor. The 8400 retains many proven OPTIMOD-FM 8200 features, such as the five-band and two-band processing structures. But with supercharged processing power, the improvements are clearly audible. The result is a noticeably louder and brighter signal, yet with the smoothness and pristine clarity needed to hold listeners for extended periods. Place your order today.
Orban 8400 List $10,700.00

Call for Best Price

Symetrix

6-Output Headphone Amplifier

Symetrix' newest headphone amp features 6 direct inputs and 6 direct outputs with individual level controls; stereo/mono switch; assignable LCR mono cue input; proprietary high voltage drive technology; internal power supply; crystal clear, low distortion for reduced listening fatigue. Option: HR-1 remote with audio loop through for daisy chaining.
Symetrix 506E List $529.00
Symetrix HR-1 List $65.00

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State-of-the-Art Moseley Digital STL

Moseley's Starlink SL9003Q is the transmission leader: an open architecture, all-digital, 4-channel aural STL without compromise. Using spectrally efficient QAM (quadrature amplitude modulation) technology, it conveys up to four linear uncompressed audio channels over a single narrow bandwidth 950 MHz STL channel. This uncompressed 16-bit linear audio is absolutely uncompromised and can be configured with up to two pairs of stereo audio – that's like getting two radios for the price of one! Call for a 30-day trial.
Moseley SL9003-4S (4-channel stereo) List $16,250.00

World Radio History

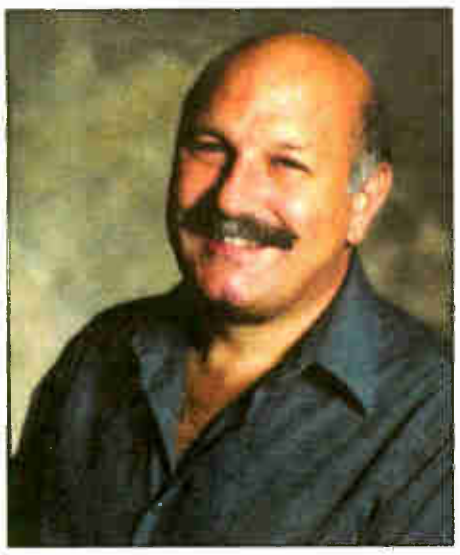
Web Watch

▶ Continued from page 42

re-broadcasting their content online," said **David Bean**, veteran radio programmer and newly appointed VP of programming for MusicMatch.

Musicmatch Radio will be delivered online by **Akamai's** server network. The new offering promises audiences a mid-ground between passive radio listening and playing prerecorded music — a concept mapped out earlier by **Imagine Radio** and others.

Basically, the system "learns" to anticipate the listener's preferences on the basis of prior music choices. What this means is that Bean and his programming consultants will be able to custom tailor playlists for Musicmatch users.



David Bean

But about listeners who prefer a "shuffling of CDs from the 1980s"?

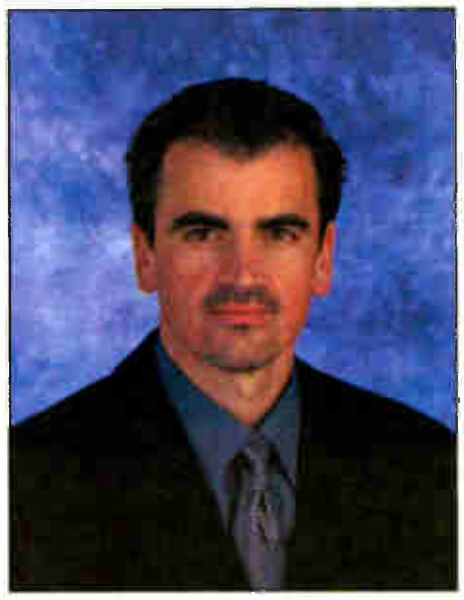
Plucking the peacock

While some companies are on the go and on the grow, others are still reeling from the overall retrenchment in the dot-com arena. Many otherwise promising businesses are faltering because funding has become scarce.

Get Media, one of my top picks last year for a killer New Media/Radio hybrid concept, has folded for lack of second-round funding.

Eventually, someone will pick up where they left off to make it easier for radio listeners to make impulse buys of the music on-air.

Elsewhere, **NBCi** announced that its **president and CEO Edmund Sanctis** resigned and would not be replaced. Sanctis joins a host of others who've willingly or unwillingly left the foundering firm.



Edmund Sanctis

This year, NBCi's stock price underwent a "correction" that by autumn had dropped it to less than 10 percent of the value it started with in January 2000.

New Napsters

This month, **Bertelsmann AG**, one of the parties represented in the lawsuit against **Napster.com**, announced that not only would it drop out of the **RIAA** pack suing the file-swapping site, it would also make a loan to Napster, in exchange for an equity stake in the company it previously sought to shut down.

Bertelsmann hedged its offer against Napster coming aboard its subscription-based business model that will provide payments to copyright holders, including songwriters, recording artists, recording companies and music publishers.

RIAA said that while it "welcomed" the development as a "step in the right direction," it (minus Bertelsmann) would continue its lawsuit against Napster.

Elsewhere, as **Napster mania** continues, others are looking for ways to transform Napster's idea into concepts that are less likely to draw the **RIAA's** ire. On Oct. 5, Massachusetts-based **Gotuit.com** received a patent for **SongCatcher technology**. Instead of sifting through hard drives for downloadable sound files, SongCatcher scans the airwaves to skim music off of radio broadcasts.

The system identifies and sorts songs creating a listening library. Since the audio comes from terrestrial broadcast instead of Internet downloads, it's perfectly legal. **This isn't likely to thrill the RIAA.**

The **NAB**, too, might be less than sanguine about a technology that can be used to extract advertising. The free-beta version of the program is available at *songcatcher.com*

The Janus way

After a long stretch of sounding like a stuck record about Napster, the RIAA has taken some time off their virtuoso one-note performance to propose a new music rights organization to collect Webcasting royalties.

Though the RIAA has been typically

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World Radio History

Web Watch

▶ Continued from page 46

closed-lipped about the tentatively named "**SoundExchange**," word is that the industry organization would manage this itself. But the notion of extending the RIAA's reach in this arena has some seeing this as inherently unsound.

The **Future of Music Coalition** sees a conflict of interest in such an arrangement.

"We simply do not see how the RIAA could be successful in simultaneously representing artists and independent labels at the same time that it is a trade organization for the major record labels," said Jenny Toomey, FMC's executive director.

Can it be that not everything is harmonious in the Record Biz? Expect a few more sour notes aimed at the RIAA at **FMC's Policy Conference for the Future of Music in Washington in January**.

Database race

Before *I* start to sound like a stuck record, here's a shameless plug for an unusual fellow I met a few months back at the **Streaming Media East Conference in New York**.

Rob Gould, formerly an intellectual property attorney, is off and running with **Quinzer.com**. Gould was moderator at a panel on his legal specialty at the convention.

However, he had left that arena to create a database service for Web sites. According to Gould, **Quinzer.com can add a database to any radio station Web site for a paltry $20 a month**.

Quinzer.com lets station staff create feedback forms, contests and registration forms with a back end to store names, address, phone numbers and whatever else seems pertinent.

Enough said. Go ahead and sue me for supporting those who have forsaken litigiousness.

Other noteworthy startups include **digitalmediaclick.com**, an online "**Vortal**" for information targeted at digital media pros.

What's a "vortal?" Unlike portals that are the proverbial mile wide with information and just a few inches deep, "vortals" or "vertical portals" are narrow in focus but have a lot of depth.

In other words, all the information and links gathered here are focused specifically on what's of interest to producers using digital tools.

This is a good bookmark for the Web browser. In addition to offering a wealth of information, it will offer a new venue to pick up/unload gear.

A new opportunity for eBay?

Another election note: some enterprising dot-com entrepreneurs thought to tap the enormous flow of dough that goes to broadcasters for campaign commercials.

While such advertising can only indirectly influence voters, **vote-auction.com** offered a more direct approach.

The site's motto, "Bringing Democracy and Capitalism Together," revolved around a plan to collect absentee ballots from disaffected voters and sell the whole lot to the highest bidder. The absentee ballots up for grabs are filled-out — all except for the choice of candidate. The winner makes the selection.

The "Voter Empowerment Kit" on the site suggested contacting a "candidate's financial supporters and let them know that they are wasting their money on political advertisements, that the money should go directly to the voters instead."

According to the Associated Press, more than a thousand Illinois residents registered before a restraining order was issued shutting down the site. The bid price was up to $12.38 per head — hardly cost effective given that paid political ads deliver the vote for just a few bucks each. At last word, the offshore operators of this enterprise were back up-and-running showing once again that though Democracy might falter, capitalism will shine through.

vote-auction.com Web site

World Radio History

Groups Join Local Markets Online

Broadcasters Get Their Web Act Together and Develop Strategies for Net Success

Steve Sullivan

Those imps among us who enjoy watching people squirm know that the best way to send a roomful of radio executives into a collective dither is to ask them what their Internet strategy is.

Traditionally, radio has had a scattershot approach to the Web, with individual stations doing their own thing — or having it done for them. Some of it has been good, but much of it has not.

Now, however, station groups are finally getting their acts together and coming up with strategic approaches to the World Wide Web. While the world watches for Clear Channel's Internet strategy, other groups have recently unveiled their plans.

LMIV

The Local Media Internet Venture is a consortium of four of the top 25 radio groups in the United States, along with Canada's largest radio station owner. The initiative, which was in development for more than a year, was formally announced in September at The NAB Radio Show.

The project's champion is Jeff Smulyan, chairman and CEO of Emmis Communications, who will also serve as LMIV's chairman. He said the LMIV is "the first Internet solution designed for local media that serves the interest of the local broadcaster rather than that of a third party interested in building a success with our content and our advertising inventory."

In addition to Emmis, LMIV's partners are Bonneville International, Entercom, Corus Entertainment and Jefferson-Pilot Communications. Collectively, the LMIV group owns more than 160 radio stations in North America.

Additionally, Bonneville, Corus, Emmis and Jefferson-Pilot own and operate 11 television stations and several specialty television production units among them, while Emmis' holdings also include half-a-dozen regional magazines.

Said Jack Swarbrick, LMIV's chief executive and president, "It's quite a diverse group in terms of local media interests. We remain committed over the long period to being a resource for all media, but we're starting from a radio platform and we want to master that first."

Funding

An independent company, each LMIV partner is expected to kick in $1 million for its start-up. Eventually the partners are expected to contribute one dollar per radio station listener for ongoing funding of the project. That would value LMIV at approximately $37.5 million based on current audience estimates.

The LMIV creates a funded network that will provide audio streaming, Web site design, content and revenue-generating services for the stations' Web sites. Until now, those services have often been provided by outside companies that served each station individually and capitalized on radio's rich content for a share of any revenues that resulted.

"By cutting out the middleman it gives them a chance to reclaim their content," said Jim Boyle, an analyst with First Union Securities. "And if it can be properly done in a line-extension manner where the costs are kept relatively minimal, then you have a chance to drive a fair amount of revenues and drive a fair amount of profits because you're not loading it up with too much infrastructure costs."

"Our core philosophy is to make the station's site better, to give them all the technology they need and all the content they need to compete," said Swarbrick.

LMIV is in the process of lining up what should be an array of technical partners to facilitate the needs of the station sites.

While streaming and ad insertion partnerships are still in negotiation, other deals have been made.

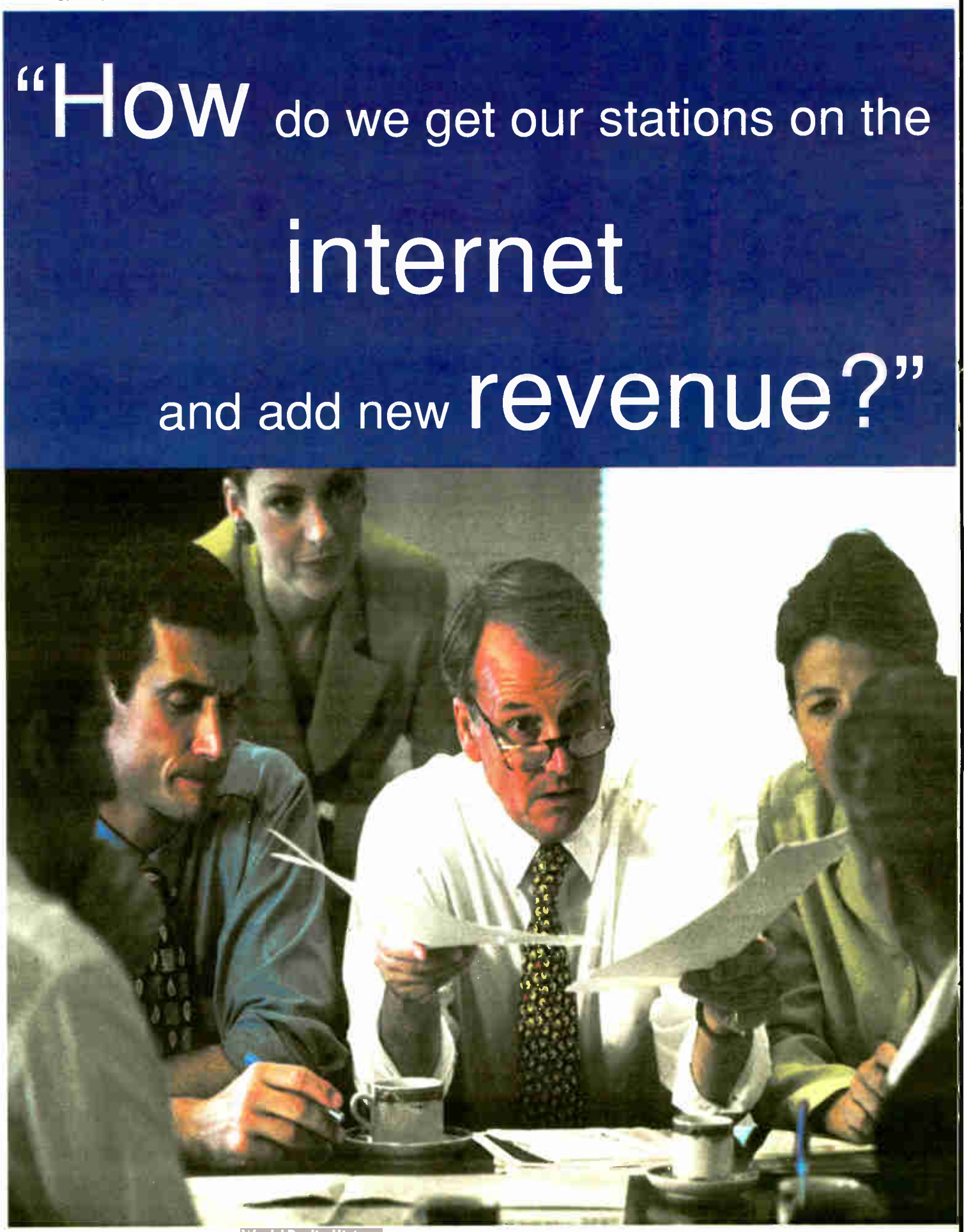
"Several vendors play a role in supporting our commitment to database management and the dynamic serving of content," said Swarbrick.

"Among those we have already entered into agreements with are ATG and Interwoven." ATG and Interwoven are partners in a software development venture that develops and maintains the complex infrastructure required for a multimedia Web site.

Jack Swarbrick

"In the sense that the network is new,

See LMIV, page 49 ▶



World Radio History

LMIV

▶ Continued from page 48

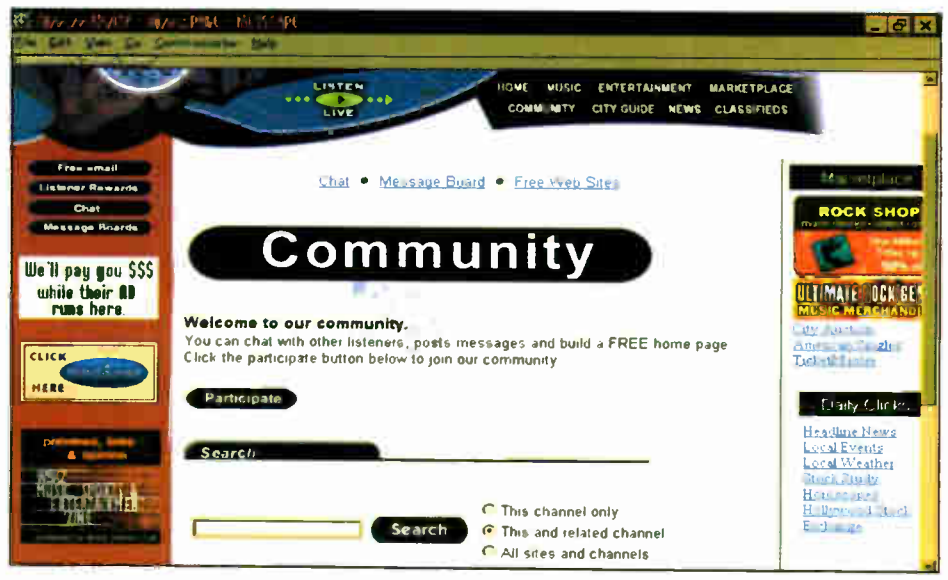
none of our vendors are replacing anyone. On the other hand, as affiliates come on board, they will be using network technology as soon as they are free of existing commitments in any particular area."

"The network will provide a lot of content which will be made available to the local sites to use at their discretion. It will appear as localized content on the site even though the network will have provided it. The local sites are encouraged to continue to add as much locally generated content as possible.

"For example, when we do a deal with a national news provider, we'll serve up all of that news information weather and sports in a way that features matters of local interest."

Swarbrick said instead of having a traditional Webmaster, each station would staff its site with people who are content managers and marketers. He said more aggressive stations would have a content manager in addition to a sales person and an affinity manager. The content manager will be someone who can mine the database for revenue opportunities.

"We'll attempt to tap multiple streams of revenue," said Swarbrick. "We're excited about the opportunity to help facilitate the commerce of local businesses, who are core to local media advertising on the sites. We'll have advertising revenue, both in terms of traditional online advertising — buttons, banners and tiles — but also audio insertion advertising on the Web sites themselves.



WSKZ(FM) Web site

"We think we're in a position to generate significant revenue through sponsorship relationships on the sites. With regard to the local advertising community, we think we have an enormous advantage with our existing relationships with that community and helping to bring value online for them.

"They are an advertising population that the national players cannot reach in a cost-effective way. The flip side of that is that the network gives us an opportunity to sell into the national advertisers in a way none of us have been able to before. We'll be able to deliver through the network on-air and online presences in all the major markets in a very dynamic way."

Swarbrick said there would eventually be a national sales team working along with local staffs selling into the sites. In the markets where the partners have significant station presence, he said a local network sales unit would be responsible for sales to avoid duplication of effort.

First Union's Boyle said that while this can be an effective way to make money, no one should anticipate a station's Web site to match what its broadcast product brings in.

"I don't think if a particular radio station bills $10 million with their terrestrial signal they expect to get $10 million online. This is a line extension that happens to have different distribution, not a second radio station. But in terms of margins, I would imagine they would expect comparable margins to what they would see in their core business."

Citadel goes its own way

Swarbrick said most of the LMIV partners' stations already have sites running, but they will begin to transition to the network standard when beta testing begins during the first quarter of 2001. He anticipates other stations will be added to the network throughout the remainder of the year and hopes for 500 stations online reaching 70 million listeners by the end of 2001. That obviously suggests more partners being added to LMIV.

"We are absolutely extending the opportunity to participate as owners to all media companies."

One of the companies unlikely to come into the group in the near term is Citadel Broadcasting. Citadel was one of the companies originally involved in the LMIV project, but it pulled out this past July. Reports circulated that Chairman and CEO Larry Wilson was upset about project delays and because the other partners would not provide assurances for

See LMIV, page 50 ▶

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World Radio History

AUGUST WEBCAST RATINGS: NETCASTER RULES

An Internet-only Webcaster occupied seven of the top 10 spots in the August InfoStream Webcast Ratings, according to Arbitron, as online listening continues to grow.

NetRadio, streamed by Akami and iBeam Broadcasting, ranked No. 1 with its '80s Hits Channel, a contemporary hit radio format. NetRadio also held Nos. 3, 4, 5, 6, 8 and 10 in the top aggregate tuning hours measurement.

The Webcaster streamed formats that ranged from classic rock to contemporary hits to smooth jazz, alternative, country and classical. NetRadio Corporation is a publicly held company based in Minneapolis.

Virgin Radio was No. 2, with its hot adult contemporary format. It is a privately held company owned by Richard Branson, and is a unit of Virgin Audio Holdings, LLC.

The top U.S. radio station streaming audio online was WABC(AM)'s www.wabcradio.com, ranked No. 9, with a news/talk/information format.

"Listening online is showing significant increase across the board for channels in the Webcast Ratings," said Joan FitzGerald, director of marketing and research and development, Arbitron Internet Information Services.

"These results reflect the findings from our latest Internet study, which showed that listening online has tripled in the last two years and that people who consume streaming media are an incredibly desirable consumer segment."

Arbitron also released a revision to its July Webcast ratings. The company said it had received incomplete data from some of its providers for that month.

With the complete data, 11 channels reflect higher ATH ratings: Global Media's Kool Hits channel, WOKQ(FM), ABC Radio Network's Tom Joyner program, eYada.com, Christian Pirate Radio, WBLS(FM), Global Media's The Edge, One-on-One Sports, KBLX-FM, Global Media's Innercity Soul channel and WBLM(FM).

— Laura Dely

Arbitron InfoStream Report — August 2000
Top-10 Aggregate Tuning Hours (ATH)

Channel/Format	URL	Internet Services	ATH
1. NetRadio – 80s Hits Contemporary Hits Radio	*www.netradio.com*	NetRadio	311,600
2. Virgin Radio Hot Adult Contemporary	*www.virginradio.co.uk*	Scottish Media Group	264,800
3. NetRadio — Vintage Rock Classic Rock	*www.netradio.com*	NetRadio	264,400
4. NetRadio — Hits Contemporary Hits Radio	*www.netradio.com*	NetRadio	263,400
5. NetRadio — Smooth Jazz New AC (NAC)/Smooth Jazz	*www.netradio.com*	NetRadio	257,600
6. NetRadio — The X Alternative	*www.netradio.com*	NetRadio	254,800
7. KNAC.com Pure Rock — Album Oriented Rock	*www.knac.com*	Enigma Digital	254,500
8. NetRadio — Quiet Classics Classical	*www.netradio.com*	NetRadio	208,400
9. WABC-AM — News Talk Information	*www.wabcradio.com*	ABC Radio	194,100
10. NetRadio — Route 1 Country Country	*www.netradio.com*	NetRadio	179,300

Arbitron InfoStream Report — July 2000
Top-10 Aggregate Tuning Hours (ATH) (Revised: Oct. 24, 2000)

Channel/Format	URL	Internet Services	ATH
1. Virgin Radio Hot Adult Contemporary	*www.virginradio.co.uk*	Ginger Media Group	236,100
2. NetRadio — 80s Hits Contemporary Hits Radio	*www.netradio.com*	NetRadio	201,000
3. KNAC.com Pure Rock Album Oriented Rock	*www.knac.com*	Enigma Digita	148,600
4. NetRadio — Hits Contemporary Hits Radio	*www.netradio.com*	NetRadio	146,900
5. NetRadio — Vintage Rock Classic Rock	*www.netradio.com*	NetRadio	143,300
6. NetRadio — The X Alternative	*www.netradio.com*	NetRadio	133,600
7. NetRadio — Smooth Jazz New AC/Smooth Jazz	*www.netradio.com*	NetRadio	131,000
8. WABC-AM News Talk Information	*www.wabcradio.com*	ABC Radio	119,500
9. CFNY-FM New Rock	*www.edge102.com*	Corus Entertainment	115,000
10. KPIG-FM Album Adult Alternative	*www.kpig.com*	New Wave Broadcasting LP	111,700

Ad Insert

▶ Continued from page 41

president of Activate Corp., a streaming services provider that has partnered with RCS on ad insertion services. Maskill said getting started with ad insertion is easy. Activate delivers 24/7 encoding, live ad insertion and impression based reporting.

"Our service is turnkey. We'll send the station a computer with all the necessary software, then we order a DSL line and speak with the radio engineer," Maskill said.

Of the several elements that must be pulled together in order to do ad insertion is that stations must know something about who is listening to them online.

Information such as a user's zip code, gender, age, purchasing and Web preferences are basic components that must be at hand in order to begin to target specific members of an audience.

Some stations already do this through online contest entry forms. Listeners are driven to the station's Web site enter from on-air pitches and promotional spots. Listeners provide the required information listed above on the contest entry form.

"Stations can encourage their over-air audience to use the Internet — stations clearly have the power to drive usage by promoting their Internet station on-air," said Bill Pearson, CEO of RadioWave.com, an ad insertion company that is a Motorola subsidiary.

Some stations not only build their listener database this way, but also promote their Web site and streaming Webcasts too. Stations can also enroll listeners in station

Philippe Generali

membership clubs in the same way.

Enigma Digital, a Net-only radio Webcaster, is a beta tester of the RCS SplitStream Dynamic Ad Insertion software. It is well positioned to use ad insertion technology, said Michael Anderson, vice president of production at Enigma Digital, because they have a huge database that has been provided on an "opt in" basis by their stations' audiences.

"We can deliver to advertisers incredibly focused buyers that are ready. We know about our users, we know what they're doing, we know what things they're interested in, we know what kind of things they do and we can use that to our advantage to make our ad insertion really work," Anderson said.

Another way to match ads to listeners is to use a third-party database company. Some of the ad insertion companies offer a tie-in to these giant databases as a part

See AD INSERT, page 52 ▶

LMIV

▶ Continued from page 49

easy exit in the event Citadel was acquired.

Citadel Vice President for New Media Bill Perrault said, "Basically it was a difference of opinion in how the corporation was going to be structured. At the same time we had created our own network, too, and we decided to put our efforts into that."

Analyst Boyle said Citadel's pullout doesn't necessarily indicate a problem with LMIV or with Citadel's own approach.

"To think that any large gathering of major media groups could have unanimous agreement on anything — especially a start-up — would be irrational. In some cases, the group approach should work quite well. But in other cases, individuals have a set of assets that can make an individual approach more than sufficient to begin with."

Alliance initiave

In early October, Citadel announced its initiative, which features alliances with online community-builder KOZ and technology and services provider Real Media. Like LMIV, Citadel's Web project will have national and local components for both content and sales.

Citadel operates approximately 200 stations in 42 markets reaching approximately 14 million listeners. Perrault said 136 of the stations already have sites up and running. He said the goal is to have 176 sites representing 199 stations, noting that in markets where Citadel simulcasts a single signal over two frequencies, there will be a shared Web site.

"The Web is really just an extension of radio, another advertising medium," said Perrault. "We believe there's a huge opportunity for Citadel to extend its revenue capabilities by having this Internet initiative. We're starting to set some targets and goals in each market based on feedback we've gotten from local marketers. We're in market sizes 30-150, so it varies from market to market. But a station in a decent-sized market should be able to generate six figures in its first year of operation."

Thresholds of success

While both LMIV and Citadel are reluctant to publicly discuss precise revenue targets, both groups have set similar traffic targets that will determine if the online ventures are successful. To be viable, the network Web sites must attract at least 10 percent of their listening audience during their first year of operation. For LMIV that means they are looking for a minimum of 3.75 million unique visitors, while Citadel is looking for 1.4 million visitors.

LMIV's Swarbrick said, "We have experience from some stations now online that show that with more fulsome sites they're able to attract as unique users in the neighborhood of 30 percent of their audience.

"As a business proposition, we just need to hit 10 percent to be successful. Our goals are to do better, but as long as we start to penetrate existing audiences at about the 10 percent level, this is going to be a successful business."

■ ■ ■

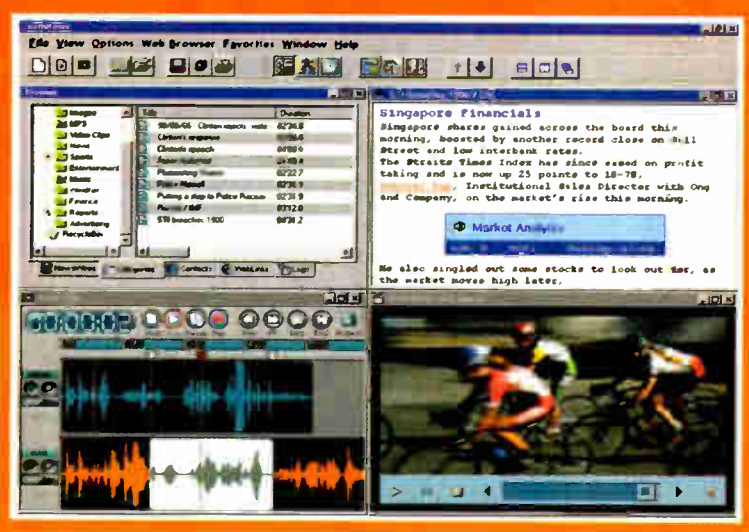
Steve Sullivan is co-founder of the Advanced Interactive Media Group and is a frequent contributor to ***RW****.*

World Radio History

BROADCAST THE WORLD

Professional Production Tools

Rich Media Webcasts



Multimedia Applications Desktop

ART MONEY GRAPHIC

The Internet, satellite, and DAB are changing the rules of broadcasting. Being "digital" is no longer good enough.

Dalet has responded by incorporating the latest technologies into our digital automation system. Our multimedia content database is now coupled with an Internet broadcast engine, professional multimedia production tools, and integrated workflow management. For broadcasters, this means streamlined operations, greater audience retention, and new revenue sources including e-commerce.

Customers including ABC, CNN, NPR, CBS, and VOA already trust Dalet with their programming and operations. So whether you broadcast news, music, or talk, contact us to find out how we can help you make the most out of your content.

www.dalet.com

Visit our website or call us at 212-825-3322

dalet
DIGITAL MEDIA SYSTEMS

World Radio History

Ad Insert

▶ Continued from page 50

of their ad insertion service.

One ad insertion company that does this is AdAcoustics. It has partnered with the data-driven marketing firm MatchLogic.com. The company provides access to a database of general anonymous information it has collected on Internet users for years.

AdAcoustics accesses only the general information needed to entice advertisers and is careful to protect the privacy of the listeners it is targeting. Wolfe said he is sensitive to privacy concerns of Internet users.

"We give no information about our clients' listeners to advertisers — this is extremely important information and we will not abuse it in any way," said Wolfe.

RCS also offers this kind of database access as part of its ad insertion service. Generali said his company has partnered with Engage Inc., an ad server company that matches Internet audio ads to particular listeners.

The Engage technology allows RCS to customize ads for listeners' browsers without knowing any personal information about them, according to Engage.

Generali said this type of targeted ad is valuable to streamers.

"We know the user's gender, location, previous cookie info. Therefore the CPM is higher than with terrestrial ads and hence value of this inventory with this type of advertising is higher," Generali said.

Many of the ad insertion companies RW spoke to offered some form of integrated e-commerce opportunities with their services.

e-Commerce

From the Fetch It icon that sits on the AdAcoustics player to the Buy Me button that that RCS offers for a station's Web site, users can click through to get more information about the songs or ads they hear on a streamed signal.

A consideration that holds advertisers back from Net radio is that the size of the audience now is just too small. Although Net radio users are better educated, have high incomes and spend more online as a group than the average American, they are still just a slice of the total population.

Pearson said almost no one questions that the Net is going to be a major distribution for radio content, but said broadcasters need to take the long view now, in the early years of Internet radio.

"There is a big chicken-and-egg phenomenon going on right now. The problem with the pricing when a broadcaster first starts to use the Internet is that the audience has to build. And it will build gradually."

Bill Pearson

Tom Des Jardins, CEO and chief technology officer at Lightningcast, an ad insertion company that also offers a suite of streaming services, said no radio station can be started overnight or with the turn of a key. And an Internet station is no different.

"Anyone who says you're going to start making money on the Internet in the next five minutes is high," Des Jardins said.

Pearson agrees that Net radio will take time to develop, but that radio knows what to do as the audience builds.

"And as that begins to happen, then the stations need to go back and say to their advertising clients, 'Now look, here's the audience now and here's how it's growing. I'll charge you this much now, because it's an early stage, just like advertisers have always been charged.'

"If you have a new format for a station that hasn't proved itself yet, the pricing you get when it is new is a lot lower than once it's been out in the market for a year and gotten a good audience share," Pearson said.

The same thing, Pearson said, is going to happen with the Internet.

Fragmentation

Broadcasters have expressed fear that Net radio, with its hundreds of niche formats — even in these early days of the industry — will fragment their terrestrial markets. A common lament heard from broadcasters is that if they put their signal on the Internet, they'll be competing with themselves.

There is cause for concern on this point. A recent Arbitron-Edison Media study found that less than 10 percent of listeners listen to terrestrial signals on the Net. But Pearson draws a cautionary parallel with the position of the television industry when cable first appeared.

"The network TV broadcasters in the '60s and '70s saw that cable was growing slowly and they essentially sneered at it. They said, 'This is a small, niche, unimportant business. We're television — we're the big market.' They totally ignored cable.

"Cable is now vastly more profitable than TV is, and the TV broadcasters don't own it. They could have owned it, but they chose not to. I think radio people have a similar type of opportunity," Pearson said.

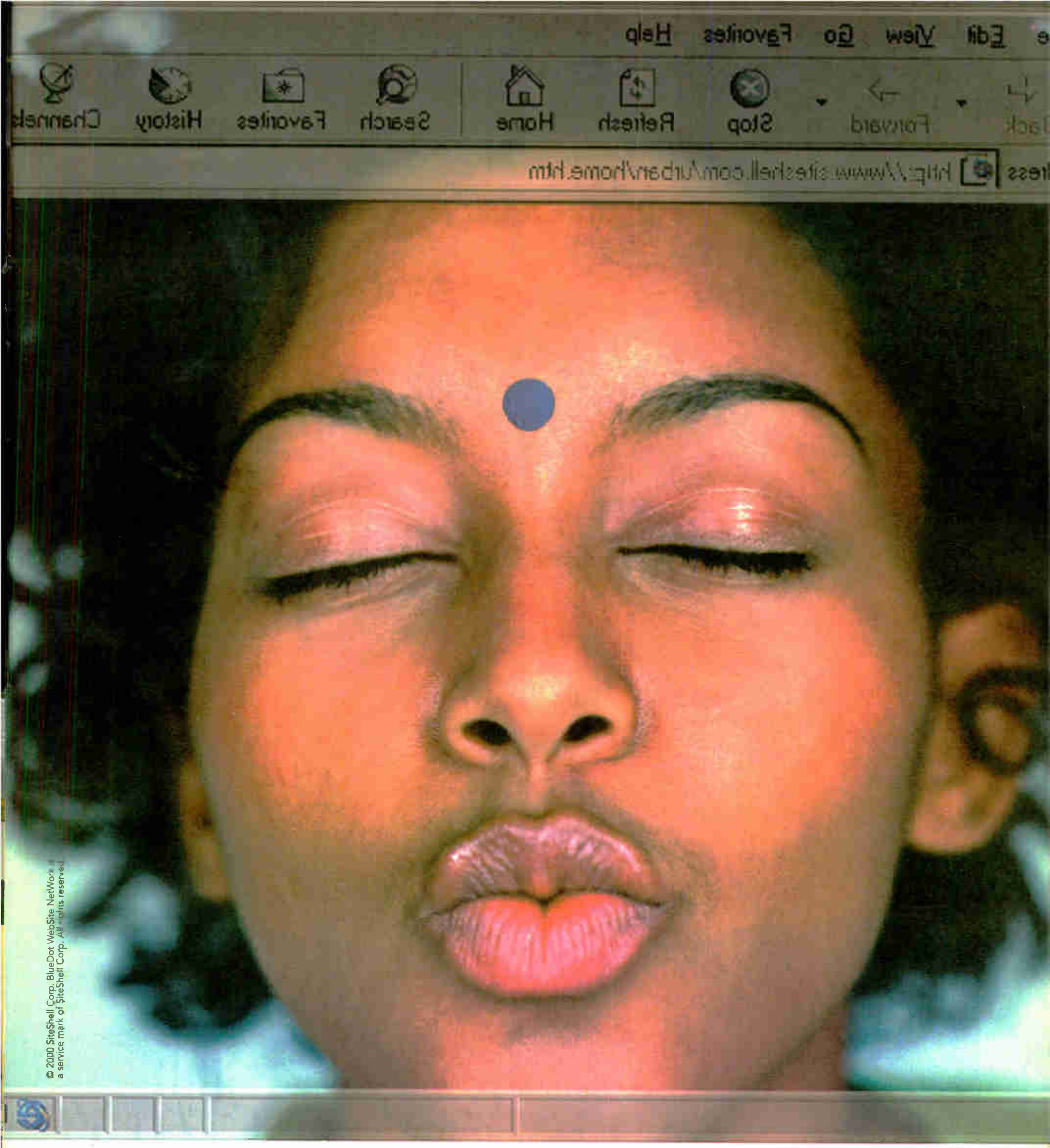
It's 2 a.m.
Do you know where a Two-Track Recorder is?

Chances are, there's one on Broadcastmarket.com, the auction and classified website designed exclusively for audio and video professionals. Whether you're looking to purchase a few items or an entire studio, Broadcastmarket.com is the first place to look for all of your equipment needs, whenever you want, day or night. Log on to broadcastmarket.com and find just what you're looking for. Any time.

broadcastmarket.com

Your online A/V auction site

World Radio History



repeat after me...no work, just checks. That's the mantra of the BlueDot WebSite NetWork℠ Imagine launching a locally branded website—that targets your audience and format—with no development or maintenance hassles and no monthly update fees. We do all the work to keep your site fresh. We also offer access and admin tools if you want to update station-specific content yourself. We handle streaming from your on-air signal or CD-R, again with no monthly charge. On top of that, we make you a 50/50 partner in a sophisticated e-commerce system. Right on your site. You can even sell our private-label Internet access to earn monthly income. It's as turnkey as it gets. Visit www.siteshell.com or call us at 203-929-9101.

siteshell.com
Home of the BlueDot WebSite NetWork

World Radio History

NET RADIO SERVICES

NetMedia Convergence Creates Web Help

Still waiting to make the jump into cyberspace? NetMedia Convergence says its EAST I LINK program offers a way to develop a customized Web site with shopping mall, classified advertising and more than 1,000 licensed content possibilities.

EASY i LINK PROGRAM™

The services offered eliminate the need for station-side commitment to training or developing new technical skills.

NetMedia Convergence offers service packages. Most are in exchange for two minutes of airtime per day.

For information, contact NetMedia Convergence in Texas at (972) 373-8900 or visit http://nmcnet.com

R@dioWall Street.com

R@dioWallStreet.com provides three daily investor newscasts to stations each weekday.

Timely corporate news and long-form interview content are available for station Web sites. News is taken from in-depth interviews with CEOs, executives and analysts, in the form of convertible 90-second or three-minute

R@dio WallStreet
A Service of Investor Broadcast Network

vignettes. A customized audio player for your station skin is provided by RWS. Delivery is via Starguide Satellite or MP3 download.

For information contact the company in Philadelphia at (888) 311-8225 or visit www.radiowallstreet.com

The iBeam Radio Solution

Streaming, live ad insertion, syndication and pay-per-view access are part of iBeam radio services.

iBEAM BROADCASTING

iBeam's network of "MaxCasters" is deployed internationally at local ISP locations. These placements avoid Internet backbone congestion and guarantee the best Webcast signals.

Hybrid fiber-satellite architecture lets iBeam to bring content to the edges of the Internet and closer to listeners. End user experience is enhanced with iBeam's high-fidelity streams, regardless of the demand for content.

iBeam offers radio stations a mechanism to supplement traditional ads with higher-value, targeted Internet ads. Stations may sell their own inventory or have iBeam partners sell it.

Reports on a daily, weekly or monthly basis allow stations to track listeners' patterns and report audience size to trusted third parties.

For more information contact iBeam in California at (408) 523-1600 or visit the company Web site at www.ibeam.com

TuneInNow Network Rates the Hits

TuneInNow.net has unveiled its approach to rating music.

"You'll find thousands of songs already rated by real people on our Songstats Web site," said Erik Schwartz, founder/CEO. "People rate our tunes at home or at work and they tell us what they really think."

Erik Schwartz

The company was founded by Internet veterans of Yahoo!, Apple Computer and Women.com networks.

"This is a lot better than auditorium testing or bothering people at home during dinner," said Schwartz.

Listeners are encouraged to rate songs from 15 categories and "the more you play the more we pay" incentives urge frequent visits.

For information contact TuneInNow Network in California at (415) 552-8637 or visit www.TuneInNow.net

FMiTV Premiers New Stations, Service

FMiTV Networks has launched two stations and a media player.

XTRAi.com — an offshoot of Xtra Sports Radio — joins KIISFMi.com as the second radio station in the company's iSuperstation line up. It will offer original programming, which includes sports features, movie trailers, music videos and a live rock music station while targeting a male Gen Y (teens-24) demographic.

Laurence Norjean, chairman and CEO of FMiTV

The third station in the company's line up, WBLSi.com, features four live original music streams to cater to a variety of tastes — The Jamz, Slow Jamz, Hip-Hop and WBLS Classics — also giving listening audiences on-demand access to a archive of music and music videos.

FMiTV supplements its on-line programming with a proprietary media player.

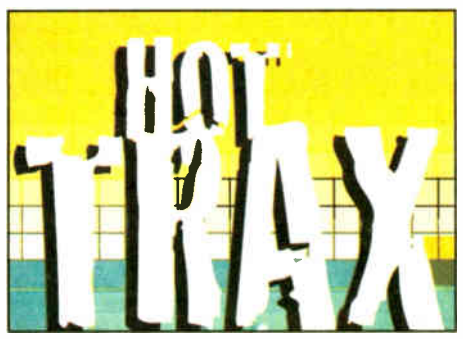
"The only thing that really matters to an audience is the ability to turn on (a station or the Internet) and have what they want on demand," said Laurence Norjean, chairman and CEO of FMiTV.

For information contact FMiTV Networks in California at (818) 295-5400 or visit www.fmitv.com

Linking Radio And Retail

Megastation.com is a portal for new music, movies, games, pop, culture, fashion and contests.

The Web site is linked with Hot Trax, a syndicated radio show hosted by DJs Buzz Bishop and Tyler Alexander with new music and cash giveaways.



The Megastation.com entertainment network collects and stores demographic information that includes the Live-Rating Radio System that allows listeners of each station to rate the programming content and songs heard on the show.

For more information contact the company in British Columbia, Canada, at (877) 448-6342 or visit www.megastation.com

World Radio History

BSW
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BSW carries the full line of Sony professional audio!

Sony's State-of-the-Art CD Recorder

The exciting new CDR-W33 is the first CDR-W Recorder from Sony for professional music applications. It features high-quality, 24-bit AD/DA converters, DSP functions and CD-TEXT support. It's an excellent choice for your project studio or radio production facility. ***Features include:*** selectable DSP functions available on the analog inputs including: Super Bit Mapping® recording (providing high quality recording and noise reduction), 3-band mid-parametric EQ and limiter; high-quality 24-bit AD/DA converters and a 32 kHz-48 kHz sampling rate converter; Control-S for supplied remote and PS/2 (for PC keyboard) allowing basic control and text entry; CD-TEXT support Disc/Track name can be displayed and entered with alpha-numeric characters; 2 times Finalize; fluorescent display; supplied wireless/wired remote control unit; digital and analog record level control; coaxial digital, optical digital and unbalanced analog phono jacks.
Sony CDR-W33 List $799.00

Sony Quality Compact Disc Player

On a tight budget? Need a CD player? This Sony player gets get the job done with jog dial track search, three play and two repeat modes, 3-mode music scan and headphone jack. Optional rack mount kit.
Sony CDPXE500 List $200.00
RK7 rack mount kit **Only $31.00**

Super Compact MiniDisc Player/Recorder

Sony's smallest ever MD machine now fits in the palm of your hand. The amazing recorder has a wired remote control with editing functions and runs on battery or AC power. ***Features include:*** dual headphone jack; digital recording level control; internal battery compartment holds one "AA"-type battery (NC-WMAA rechargeable battery included); 40-second shock resistant memory; digital automatic gain control; sample rate converter; AC adaptor and digital connecting cable supplied.
Sony MZR70 List $279.95

Sony Quality Headphones

The Sony MDR-7506 headphone delivers a surprisingly wide frequency range (5 to 30,000 Hz) in a comfortable, sealed ear format providing maximum isolation from external sound. Collapsible for storage. Includes mini-plug connector with 1/4" adaptor.
Sony 7506 List $177.00

Sony's Acclaimed Portable DAT Recorder

Great for capturing interviews in the field, the Sony TC-DD8 DAT recorder has an anti-shock mechanism for stable recording and playback, high-speed music search, and stereo minijack mic and line inputs. Get up to 4 hrs. recording time on four "AA" batteries.
Sony TC-DD8 List $899.95

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World Radio History

The *Ideal* Analog Console . . .

The Arrakis 1200 Series

- Ideal for On Air, Production, Talk & News
- High Performance Analog Design
- Reliable DC Control of Audio
- Fast & Easy Installation

The Arrakis 1200 Series console is the culmination of more than 20 years of analog console design & manufacture by Arrakis Systems, inc. Three model sizes going all the way up to 15 channels, makes the 1200 fit even large studio applications. The console can be table top or thru-table mounted, and it's low profile is attractive and useful for talk studios. The clamshell design opens to provide quick access to the interior of the console for installation, setup, reconfiguration, or repair. The 1200 is a blend of thoughtful design, and quality components. Better by design due to more than 20 years of experience, the 1200 is the right choice for you . . . as it has been for hundreds of broadcasters around the world.

For more information contact BSW at: (800) 426-8434

World Radio History

AES 2000: Back to the Future!

Brett Moss

The exhibit floor of the 109th AES Convention offered hundreds if not thousands of new products. Here's a sampling, courtesy of Brett Moss of the staff of Pro Audio Review magazine.

Tubes, tubes and more tubes (with some distinctly retro solid state stuff as well). There were tubes in mikes, tubes in processors, tubes in consoles. However, there did not seem to be any tube-based recorders or DAWs.

If one product category could have predominated, it was microphones (all types). Several tube mikes debuted at the show, including some upscale and downmarket ones.

Besides software, there was a plethora of new analog and digital hardware products.

When tubes roamed the Earth

We may be entering the High Renaissance of retro. Alesis and GT showed the VIPRE mic preamplifier. Not only is it stuffed with tubes, it offers controllable microphone impedance and it's all floated inside the box.

dbx debuted the 376, a tube preamp with a parametric EQ, compressor, de-esser and a digital out.

dbx 376 tube channel strip

Universal Audio displayed the prototype of a new mic pre, the 2610. It is a copy of the original Bill Putnam channel strip.

Malcolm Toft and Trident-MTA, distributed in the U.S. by Joemeek/PMI, debuted the A-Series channel strip. It is based on the old Trident A modules.

Oram Professional Audio's Series 80 modules also were on display. They are based on the old Trident modules. Oram also showed the "Al Schmitt Pro-Channel," a compressor/six-band EQ in a big package.

Geoff Tanner showed the rackmount GTQ2 two-channel mic pre/EQ from his company, Phoenix Audio.

Marquette Audio Labs showed a prototype preamp modeled on the Neve 73 and Neve 81 modules — the Marquette 73/81.

Avalon Design showed the AD2022 dual mono preamplifier. The unit is a Class A amp with a mic impedance control.

The Grace brothers showed a smaller version of its preamps. The Model 101 is a preamp following in the tradition of the Model 801 preamp.

Claiming "Zero Distortion Technology," Earthworks demonstrated the 1024, a new four-channel preamp for high-end use.

Royer Labs showed the SX-M2, a preamp that Royer hijacked from the movie industry with a bit of customization.

True Systems, handled by Neumann, demonstrated a two-channel mic pre/A/D converter — the P2 digital with 24/96 and M/S functions.

Earthworks 1024 mic preamp

Sound Devices displayed an array of mic pres — traditional, field-oriented and even a USB one for PC use.

Crest brought several new preamp processors. The ST2 is a two-channel voice processor/channel strip with a SmarTube "tube" processor — the IPro One (mono) and IPro Two (stereo).

API brought the 2500 Stereo Bus Compressor — a new compressor based on API Audio Products technology.

D.W. Fearn showed the new VT-4 Vacuum Tube LC Equalizer.

Microphones

AKG debuted the C 4500B-BC, a mic aimed specifically for broadcast voiceover work. **RW** will be reviewing this one soon.

Shure's KSM32 was so successful that it needed a sequel. The resulting KSM44 is said to be more suited for vocals.

Utilizing the Soundelux R-1 capsule, Marquette Audio Labs has come out with its own tweaked version.

Neumann brought the new M 150 high-end tube mic, based on the M 50.

Audio-Technica brought a pair of affordable stereo shotgun mikes. The AT815ST and AT835ST (slightly longer) both feature a variety of stereo coverage patterns and M/S.

Earthworks reintroduced the Z30X cardioid mic.

Advanced Sonic Concepts/SD Systems has added another horn instrument mic. The STM99 is also aimed at the studio recording market and comes with omni, cardioid and hypercardioid capsules.

Audix showed its multipurpose VX-10 handheld mic.

Studio Projects is a new company under the Joemeek/PMI operation. First in that line of affordable mikes is the TR3, a cardioid tube mic. Smaller condenser mikes are on their way along with a preamp.

Coles/Independent Audio showed a limited edition Florentine Bronze version of the 4038 ribbon mic.

Josephson Engineering showed the C41 and C42 mikes — the C41 is an omni and the C42 is a cardioid.

Behringer entered the mic market with the B-2. It features a one-inch diaphragm.

For extremely specialized applications, Microtech Gefell displayed the KEM 970 Cardioid Plane Mic. The coverage is for a very wide, but not high, field of sensitivity and a high rejection of off-axis signals.

beyerdynamic showed its new Opus line of music mikes along with the SHM 88, a small shotgun mic designed for podium applications.

Perhaps the most interesting mikes could be found at the Symetrix booth. An ingenious craftsman collected quite a crowd with his mikes fashioned out of Maglite flashlight tubes with a power supply in a kid's metal lunchbox.

One last mic note, Micron showed a nifty little battery powered 48V phantom power unit, the Phantom Boom.

Recorders

Sony showed new CD-R and MiniDisc recorders. The CDR-W33 and the CDR-W66 offers a host of pro features. The MDS-E10 and the MDS-E12 are MiniDiscs that offer ATRAC-R, the latest

See AES, page 60 ▶

World Radio History

RW NEWS BYTES

Did you see these breaking stories?

Clear Channel Communications Sues Newsletter

Sprint Customers Can Buy Music With Their Wireless Phones

Gold-Line Debuts Measurement/Recording Microphone

BroadcastAmerica to Merge with SurferNETWORK.com

Seattle Area Trio Delivers Uncompressed Radio to Internet

Get your daily diet of

NEWS BYTES

by visiting us on the Web every business day.

www.rwonline.com

RW NEWS BYTES

from the editors of Radio World

PAR Excellence: The Best at AES

For the fifth year, a select group of audio professionals perused the convention aisles to find the best new gear for our sister publication *Pro Audio Review*.

The judges nominated and voted on their choices for the PAR Excellence Awards. Thirty-five products received the coveted award.

The criteria for the nominations were based on innovation, value and performance. The gear must be new for this AES convention and scheduled to ship by June 2001.

Here is a sample of the winners that may find applications in radio or are of special interest to our readers. For the complete list or to learn more about the products, pick up the November edition of *Pro Audio Review* or visit *www.proaudioreview.com*

Our thanks to the writers and editors of PAR for their assistance in compiling this list.

AKG C4500B-BC Microphone

Features: Large-diaphragm transformerless condenser microphone; front-end firing capsule position; electro-magnetic rejection; 120 Hz roll-off filter; -20 dB pad; multilayer internal pop filter; spider suspension mount.

Judges' Comments: "A full-sounding condenser broadcast microphone that bucks the noise and electrical interference of a busy studio."

Price: $665

For more information contact the company in Tennessee at (615) 399-2199 or visit the Web site at www.akg-acoustics.com

API 2500 Stereo Bus Compressor

Features: Stereo bus compressor with variable link settings; "Old" setting uses the feedback-type compression found in the API 525, 1176 and Fairchild; "New" setting uses feed-forward circuitry as found in dbx and SSL compressors; Auto-makeup gain button allows a constant output level while adjusting threshold and ratio.

Judges' Comments: "Rack-mounted classic API stereo compressor utilizing ATI Paragon's 'Thrust' high-pass filter circuit and a variety of operating modes."

Price: $2,495

For more information contact the company in Maryland at (410) 381-7879 or visit the Web site at www.apiaudio.com

Audix VX-10 Microphone

Features: Handheld vocal condenser microphone designed for live, broadcast and studio applications; 40 Hz to 20 kHz range; cardioid pattern; max 140 dB SPL.

Judges' Comments: "An excellent, punchy-sounding handheld condenser for stage work or in the studio. Excellent price."

Price: $599

For more information contact Audix in Oregon at (503) 682-6933 or visit the Web site at www.audixusa.com

Audio-Technica AT815ST and AT835ST Stereo Shotgun Microphones

Features: 15-inch and 9.3-inch stereo shotgun condenser mics; switchable internally matrixed left/right stereo mode and nonmatrixed M-S mode; selectable narrow and wide stereo modes; 80 Hz shelf.

Judges' Comments: "AT pushes down the prices, while maintaining quality, with these winning and unique low-priced stereo shotguns designed for surround, broadcast and field work."

Price: AT815ST: $999; AT835ST: $899

For more information contact the company in Ohio at (330) 686-2600 or check out the Web site at www.audiotechnica.com

Demeter Amplification Real Reverb

Features: Studio-quality spring reverb; dual Accutronics full-size six-spring reverb tanks; short/long decay time depending on tank used; phase and high-pass filter switches; stereo link, mix and output controls.

Judges' Comments: "Back to the '50s with a real dual-tank spring reverb. Plenty of retro dimension for voice or instrument."

Price: $699

For more information contact the company in California at (818) 994-7658 or check out the Web site at www.demeteramps.com

Denon DN-F20R IC Recorder

Features: Portable IC recorder for ENG applications; no moving parts for added reliability; uses up to two Compact Flash cards for a total of up to 192 MB or storage; mono or stereo operation in MPEG and PCM formats; two XLR mic inputs and two RCA line inputs; parallel remote mini-jack for external control.

Judges' Comments: "Innovative use of IC flash RAM technology for broadcast field recording."

Price: $1,299

For more information contact Denon in New Jersey at (973) 396-0810 or visit the Web site at www.del.denon.com

Digidesign Pro Tools V. 5.1

Features: Fully integrated surround mixing; host-based processing support for RTAS plug-ins; MIDI event editing; Beat Detective audio/MIDI quantizing; 9-pin device control.

Judges' Comments: "Digidesign takes impressive steps in redesigning and expanding Pro Tools' capabilities, adding integrated surround control and third party/native processing."

Upgrade Price: TDM $295; LE $50; free for systems purchased after Sept. 1, 2000.

For more information contact Digidesign in California at (650) 842-7900 or check out the Web site at www.digidesign.com

Grace Design Model 101 Preamplifier

Features: Single-channel transformerless mic preamp; same architecture as the Grace 801; 1/4-inch instrument input; high-pass filter; switchable phantom power; separate gain and trim controls.

See PAR EXCELLENCE, page 62 ▶

World Radio History

PRODUCER PROFILE

Clatter & Din: A Joyous Noise

Ken R.

Clatter & Din is a love child spawned by the illicit affair of two former competitors. At least, that's how it is described on Clatter & Din's Web site.

The description is typical of the sense of humor at the award-winning Seattle production house. Nonetheless, it's true.

Sound designers Peter Barnes and Vince Werner worked at competing facilities until they joined forces in 1994. Their studio boasts a staff of 11 using four networked audio suites. They are also the progenitors of the Internet delivery system SpotTaxi.com.

Frat party

"I wanted to be a recording engineer ever since I could speak English," said Werner. "I liked theater of the mind."

They are not big on proper job titles at Clatter & Din; none can be found on the Web page, in the literature or on business cards. But the studio has still managed to win Emmys, CLIOs, Mercury Gold for Sound Design, One Reel, Golden Lion, Silver Microphones and One Show awards.

rience, but I liked sound effects."

While radio did not work out, Werner landed a gig at Steve Lawson Productions, now known as Bad Animals in Seattle, a specialized audio post production house.

"I spent 10 years there while my now-partner, Peter Barnes, was working at The Music Source."

Shop talk

Barnes and Werner let other people train them before opening their own shop.

"In the early 1990s, technology was changing enough that it became feasible to open a boutique audio place. I didn't need 10,000 feet or a large SSL console, so we thought small," said Werner.

"We only had about 1,200 square feet and some small mixers, but we started doing high-end ad work. Now you can hear great work being done on laptops."

Kris Dangla, another C&D inmate, explained that one of the reasons for their success is the systems they have in place.

"That's what separates us. It's not so much what's in the rooms as what's between them," said Dangla.

Vince Werner in one of the Clatter & Din studios

Recent clients include Adidas, Nextlink, Alaska Airlines, Shopnow.com and AT&T Global. Think of them as cutting-edge production in a playground atmosphere.

"I started out by walking into radio stations trying to get a production job, but they all wanted to hear my voice tape," said Werner. "I had no voice and no on-air expe-

"We have the ability to track elements and jobs and get revisions happening really fast between rooms," said Werner. "We interface to the rest of the world through the Internet with a great vibe, kind of like a frat party."

However, underlying that party mood is a ruthless efficiency.

"Some guys put too much money into mic preamps and not enough into session support," said Werner. "We use TCP/IP standard network protocol to move media files and standardize session databases."

Clatter & Din clients can log in on the Web site and look up what was done for them on any previous session including the announcer talent and music drops. The studio saves all session notes.

House rates begin at $185 per hour, Dangla said.

"But depending on other services we can provide such as budgeting, casting and script preparation, it can go higher. It depends on our creative input on each project."

When sync-to-video is called for, the price jumps to $225 per hour.

"We archive everything to AIT data tapes," said Werner. "That way we can save the board mixes and the edit decision lists for remixing later if necessary. All that's saved redundantly to a server."

Clatter & Din recently completed a project for AT&T Global, which was presented in 5.1 Surround Sound.

"We mixed five discrete channels, one for each speaker, bounced each of the channels down to WAV file and put the media onto a Jazz (drive)," said Dangla. "The audio was played back in sync with the visuals by computer on a 40-foot by 15-foot screen."

Hailing a taxi

As if running the studio was not enough, Barnes and Werner began a second company called SpotTaxi.com, an Internet delivery system for trafficking radio spots.

"Because it's separate, our competitors can use it," said Werner. "It came out of our systems management. It just seemed ridiculous for guys to be driving all the way over here to pick up tapes."

SpotTaxi.com is a custom software application, which is distributed at no cost. The spots are created using MP2 at 256 kbps with a 6:1 compression ratio.

"At the stations, it can be pulled off as an MP2 file or expanded to linear WAV files," said Werner.

Vince Werner began his production career years before most of his youthful employees.

"These kids today don't know how we used to suffer with razor blades," said Werner. "Now they ask me to tell them stories of the old days."

The Clatter & Din Demo

What does it sound like when one crosses a Model T with a chicken? The answer is heard on the Clatter & Din demo reel — one of the slickest examples of sound design I have experienced.

The eight-minute demo confronts the listener with the full force of the stereo field featuring top announcers, dynamic sound effects and a lot of subtle humor. Even the straighter spots are done with a wink at the audience.

Human

One example of the way Clatter & Din uses humor is found in the bit where an insurance agent answers the phone and male caller inquires about buying a policy. The kicker is that the customer is on a cell phone from his car in heavy traffic behaving in a rather dangerous manner.

Insurance spots are usually dull, "feel-good" scenarios that end with a syrupy jingle. Clatter & Din turns that stereotype upside-down in a way that grabs attention using the setup, voice talent and sound effects.

Standout spots

Some of the other standout spots were created for Trojan, the prophylactic manufacturer. This advertiser is obviously trying to reach young men and the usual means do not work. One C&D approach uses a "retro" training record, another uses an overly dramatized dating situation. The result is the listener remembers the product and what it represents.

One more humorous approach is used for "Be Your Own Brewmaster." The fictitious "Dave's Beer" is inserted rather awkwardly into a number of other cliché beer spots, drawing attention to the real sponsor.

In my opinion, Clatter & Din demo provides some excellent examples of what is right with radio advertising today. Contact Kris Dangla at (206) 464-0520 or e-mail her at *kris@clatterdin.com*

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Set it up.

You've got *better* things to do with your time than worry about your station's audio... change light bulbs, fix the PD's radar detector, figure out where all the new batteries went.

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World Radio History

AES

▶ Continued from page 57

in ATRAC compression. Sony also demonstrated the SACD format. For support, Philips and Marantz showed SACD players at the Sony SACD demo room.

HHB showed the Portadisc MDP 500 portable MiniDisc recorder. HHB also showed the BurnIT CDR-830, a new CD-R/CD-RW recorder.

Denon's solid-state media recorder, the DNF20R, was on display as were the DN-1800F and DN-2100F CD players. Denon also showed increased compatibility with Panja installation control software including CD jukebox control.

Alesis announced software upgrades for the M20 ADAT and the MasterLink ML-9600 hard disk recorder/CD-R burner.

surround sound for the DVD-Audio spec.

For its part, MediaFORM showed even bigger CD duplicators, standalone and PC-based, with lower prices. All new MediaFORM duplicators utilize its new SmartDRIVE2 advanced duping drives.

Primera, known mostly for its CD printers, showed the Composer fully automated CD duplicator/printer.

The world of consoles

In the console category, most were high-end studio consoles that would not be found in a radio station. However, there was some radio related console news at the show.

The Mackie SR24.4 and SR32.4 now pack VLZ mic pres.

Studer showed the upgraded D950S. New features include improved ergonomics.

The latest for Klotz at AES was the Vadis D.C.II, the most recent addition

HHB BurnIT CDR-830 recorder

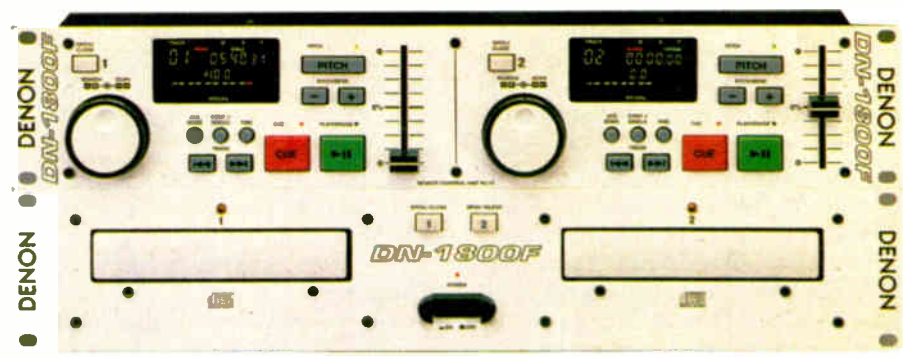
Akai showed upgrades for the S5000 and S6000 samplers, now USB-compatible.

M.A.S.S. 5.1 is the latest from Microboards. It is a DVD-R (not to be confused with the DVD-RAM format) burner with software for mastering 5.1 to the Vadis-processor-based digital console family.

Tascam showed the prototype for the DM-24, a new 24-channel, 24/96 digital mixer. It looks to be aimed at ambitious project studios.

Magtrax, handled in the U.S. by Independent Audio, seems to have moved beyond its school bus yellow boxes with its latest, the Masterbox.

and Fibre Channel RAIDs to Fibre Channel-based hard drive solutions with hundreds of gigabytes of drive space, all capable of ramming hundreds of



Denon DN1800F CD player

The Rane MLM 103 six-channel mic/line mixer and the RS-232 Mic/Line Mixer with Conferencing options are for installs.

Crest also showed several install market mixers and routers. The MA 540 is a five-channel mixer/amp combo while the MM 623 is a six-channel mic mixer and the AM-811 and AM-411 are eight-channel and four-channel mic mixers, respectively.

Something modern

Digital storage and facility-wide networking is an issue. Medea showed the AudioRack, a rackmount RAID storage system based on its successful video RAID products. The AudioRAID, a standalone version, is also available.

Rorke Data showed several large-scale solutions. Everything from desktop SCSI

megabytes of data per second down the line. Also of interest was the debut of a DVD disc library server for storing terabytes of info on a network.

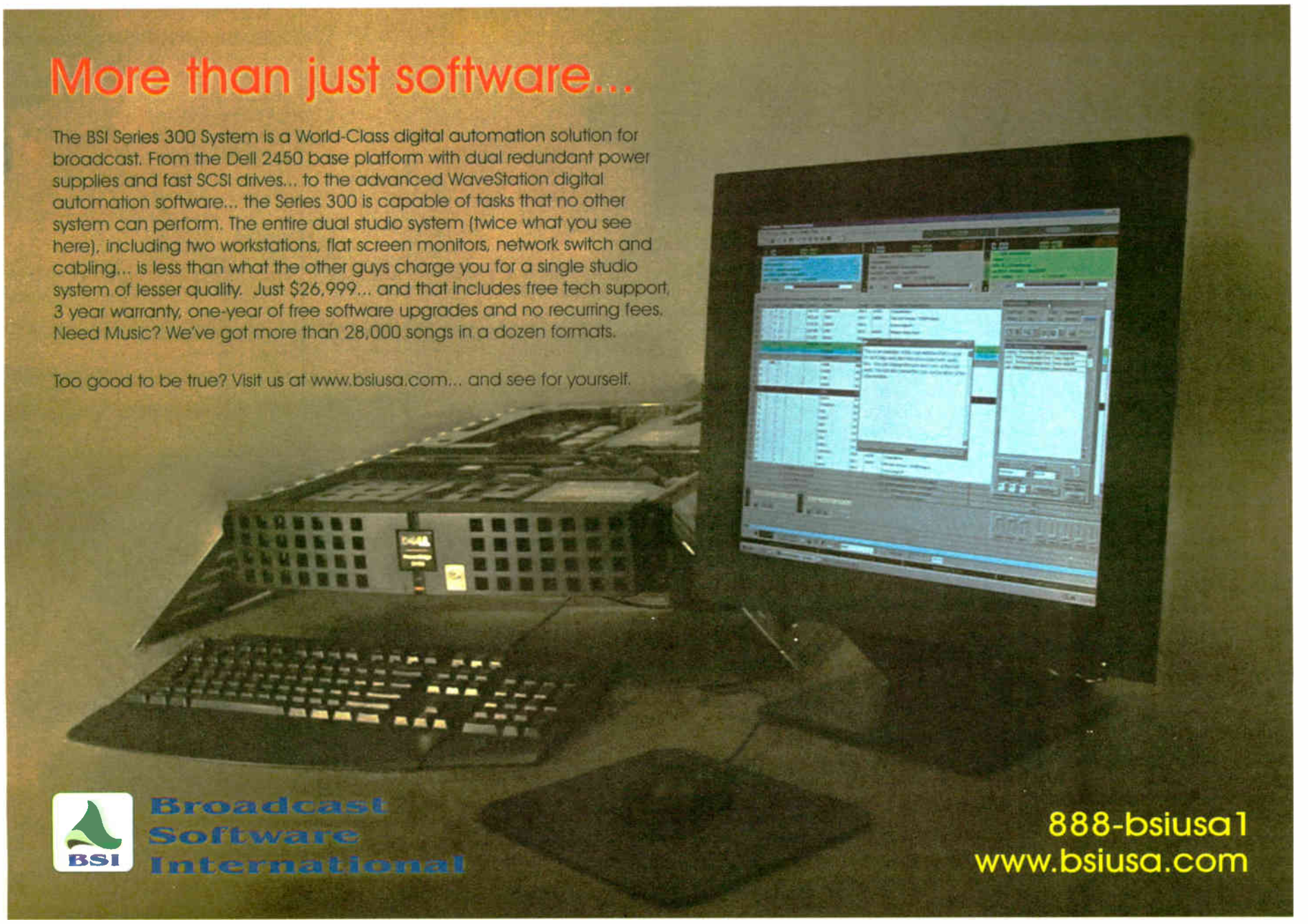
Studio Network Solutions, demonstrated its A/V SAN, a digital storage area network (SAN) system for studio and facility use.

Euphonix displayed several networking interfaces for its line of recorders and editors.

Audio-Service, a company from Germany handled in the U.S. by X-Vision, showed the D.A.I.S. (Digital Audio Interconnection System), a modular routing system based on Yamaha's YGDAI cards.

Using its past experience with

See AES, page 61 ▶



World Radio History

AES

▶ Continued from page 60

LightWinder products, Otari showed what promises to be a major part of its future, the ND-20, the first member of the Echelon family. Perhaps best described as a network nexus, the ND-20 is a 32-channel A/D-D/A, SRC and network interface.

Digital processors

Alesis gathered an amount of walk-by attention with its AirFX, uh, doo-dad. Something of a processor/MI product, the AirFX uses an infrared sensor to control signal processing. Think of an infrared Theremin bred with a Korg KAOS pad.

The news for Lexicon was upgrades for the 960L processing platform.

One of the few new offerings in the A/D-D/A converters field came from Genex. Distributed in the U.S. by HHB Communications, the GXA8 A/D converter and the GXD8 D/A converter are 24/192 kHz and DSD capable.

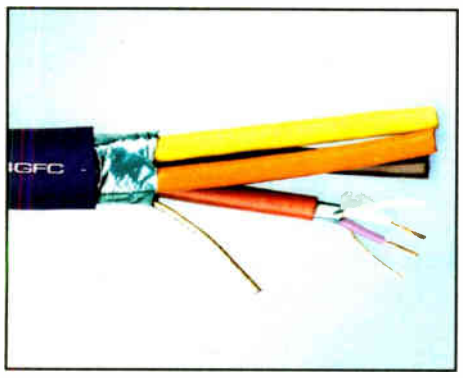
Benchmark put a slightly different spin on its A/D convert, the AD2K+, as it is battery powered with 24/96-performance.

Switzerland's Weiss Engineering showed the DAC1, a 24/96-capable converter.

RME, which OEMs a lot of gear for other companies, also showed an eight-channel converter that reaches 96 kHz.

Germany's MindPrint, distributed in the U.S. by Steinberg, debuted the AN/DI, a 24/96 converter that features word clock along with several types of I/O.

As studios become more digital and more media formats demand time and space in the signal chain, things are getting complicated. To solve these translation problems and get all the signals moving in time with each other some companies are starting to produce a variety of clocks and sync generators.



Gepco 5596GFC digital multipair

Lucid Technology debuted the SSG192 High Definition Studio Sync Generator. It converts sample rates up to 192 kHz, handles video syncs, and speaks in word clock, Superclock and UltraClock.

Running in between the Mackie and the Sonorus booths, Germany's C-Lab showed its TimeMachine universal clock. Handling nearly every format in the audio, video and film world, the TimeMachine offers several I/O options and networkability.

CEDAR debuted a new noise suppression box, the DNS1000 Dynamic Noise Suppressor, designed for real time broadcast, post and forensic applications.

For those edging more towards MI, Digitech showed an amp modeler, the RP100 featuring 26 different 24-bit effects.

Z-Systems debuted the z-K2 K-Stereo, a stereo mastering processor and the z-K6 K-Surround mastering processor.

DW Fearn VT-4 equalizer

Internet broadcasting (or is it narrowcasting?) was a big deal at the NAB Radio show. At AES, the Net was not quite as strong, but many players were present and the applications and usage of the Net showed variety.

Aphex showed its new Model 2020 Dynamics Processor designed for Net broadcasters. The unit has a leveler, multiband compressor, peak limiter and PC interface.

The HitPlayer, from Aztec Radiomedia, is a hard disk jukebox utilizing network distribution. Meanwhile Digigram showed a Dolby Digital surround sound software encoder that is compatible with Digigram sound cards.

Dolby had an impressive demo of AAC encoding for Internet audio delivery. Others talked about the equally impressive DTS movie and music surround sound demo. DTS showed the CAE-4 encoder and CAD-4 decoder for those looking to put their works into the DTS field.

DAW goodies

No one really showed a completely new DAW system this year. What was popular tended to be peripherals, such as I/O boxes and control surfaces.

See AES, page 64 ▶

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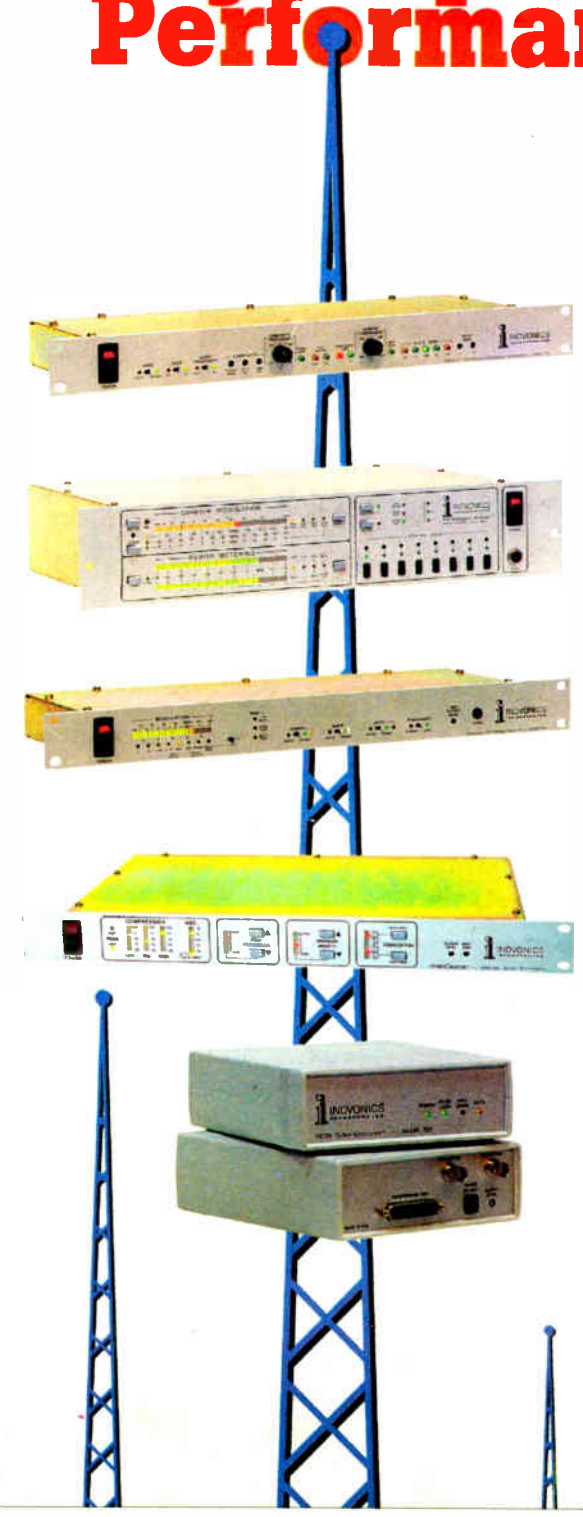

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World Radio History

PAR Excellence

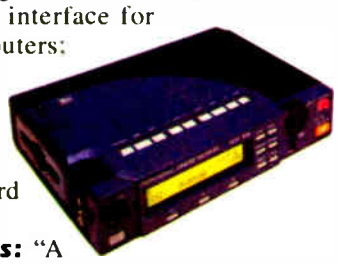
▶ continued from page 58

Judges' Comments: "The Grace high-end mic pedigree trickles down to a home/project studio price."
Price: $699

For more information contact Grace Design in Colorado at (303) 443-7454 or visit the Web site at www.gracedesign.com

HHB PortaDisc MDP Portable MiniDisc Recorder

Features: Rugged construction; NiMH rechargeable, standard AA alkaline, 12-to-15 VDC and AC power options; ATRAC 4.5 algorithm recording; 40-second recording buffer; USB interface for audio transfer to computers; balanced XLR mic inputs with switchable phantom power and limiters; coax and optical digital I/O; On-board editing.



Judges' Comments: "A full-fledged, professional MD portable with unique features emanating from the venerable PortaDAT lineage."
Price: $1,545

For more information contact HHB in California at (310) 319-1111 or visit the Web site at www.hhb.co.uk

KRK V4 Mini Monitor

Features: Shielded, bi-amped "mini monitors" with a 1-inch Titanium tweeter and 4-inch woven Kevlar woofer; Neutrik combo connectors with XLR and 1/4-inch; 65 Hz to 20 kHz +/- 2 dB; optional S8 (pictured under the V4) powered sub-woofer completes the system.

Judges' Comments: "KRK accuracy and fatigue-free sound in a surround-sized powered enclosure."
Price: $399.99 each

For more information contact KRK in California at (714) 373-4600 or check out the Web site at www.krksys.com

Lawson L251 Vacuum Tube Microphone

Features: Reproduction of the classic ELAM 251 capsule; toroidal audio output transformer; continuously variable patterns.

Judges' Comments: "A modern take on the classic Telefunken 251 vacuum tube mic."
Price: $2,295

For more information contact Lawson in Tennessee at (615) 269-5542 or visit www.lawson-microphones.com

Lucid Technology SSG192 High-Definition Studio Sync Generator

Features: Simultaneous Word Clock, 256x Superclock, 1024x Lucid UltraClock, and AES11 outputs; Generates and syncs to video blackburst; Supports all standard frequencies from 32 kHz to 192 kHz.

Judges' Comments: "A cost-effective, low-jitter, high-definition studio master clock with 15 internal clock rates and multiple audio and video I/Os."
Price: $1,750

For more information contact Lucid in Washington State at (425) 742-1518 or check out the Web site at www.lucidaudio.com

Neumann M 150 Tube Microphone

Features: DC-polarized transformerless tube condenser with a modified omni pattern — omni in lower frequencies with increasing directionality in higher frequencies; same head grille as the classic M 50; uses an N149 Vintage power supply; 119 dB dynamic range and a maximum SPL of 134 dB with 5 percent THD; Titanium capsule.

Judges' Comments: "An updated version of the classic M 50 tube microphone with transformerless tube circuit and titanium membrane and capsule."
Price: $5,300

For more information contact Neumann USA in Connecticut at (860) 434-5220 or visit the Web site at www.neumannusa.com

Prism Sound DScope III Measurement System

Features: Portable high-precision test system; two-channel analog and digital signal generators; two-channel analog and digital signal analyzer; single or dual trace display with scope, FFT and sweep capabilities; two-channel continuous-time analyzer; sweep analysis; optional road case.

Judges' Comments: "A lot of test and measurement capability, including 24-bit 96 kHz, into a package under $8,000."
Price: $7,995

For more information contact Prism in New Jersey at (973) 983-9577 or visit the Web site at www.prismmpi.com

Shure KSM44 Studio Microphone

Features: Three-pattern, dual large-diaphragm condenser; 15 dB pad; three-position low shelf; Zinc die-cast housing with integrated three-stage pop protection grille and internal shock mount.

Judges' Comments: "Shure builds on the success of its wide-response KSM 32 by offering up a studio mic with just the right vocal coloration."
Price: $1,340

For more information contact Shure in Illinois at (847) 866-2000 or visit the Web site at www.shure.com

Sony CDR-W66 Compact Disc Recorder

Features: Rackmountable CD recorder with Super Bit Mapping 24-bit AD/DA conversion; coax, AES/EBU and optical digital I/O; balanced XLR analog I/O; RS-232C and GPI control ports; 2x duplication with second W66; DSP EQ and limiter.

Judges' Comments: "A feature-packed high-end CD recorder with SBM, limiter, EQ and all the pro I/O and sync options included."
Price: Approximately $1,400

For information contact Sony in Florida at (800) 686-7669 or check out the Web site at www.sel.sony.com

Studio Projects T3 Microphone

Features: Hand-selected 6072 tube; 1-inch Mylar capsule; fixed cardioid pattern.
Judges' Comments: "Well-priced, nice-sounding tube condenser vocal microphone with 1-inch capsule."
Price: $1,099

For more information contact PMI in California at (877) 563-6335 or check out the Web site at www.pmiaudio.com

Tascam DM-24 Digital Console

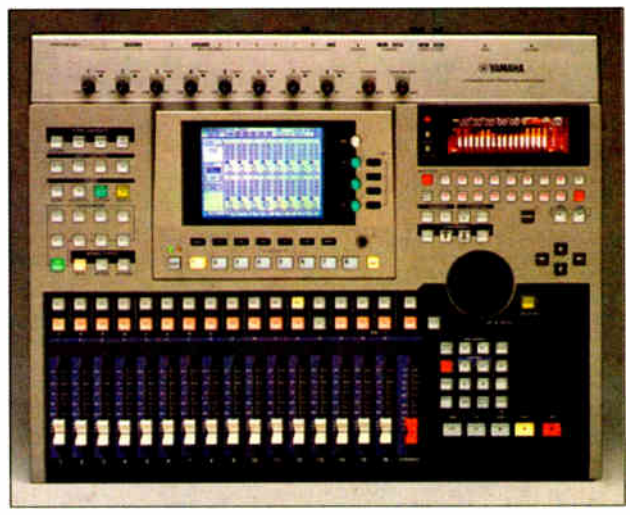
Features: 24-channel automated digital console with a 24-bit, 96 kHz signal path throughout; Transport and MIDI control; TC Electronic and Antares reverb, mic and amp modeling; 100 mm faders; Surround mixing; gates, compression and four-band parametric EQ on each channel; 24 channels of TDIF, one ADAT optical, one AES and two S/PDIF digital ins and outs; 16 channels of balanced XLR mic and 1/4-inch line inputs.

Judges' Comments: "A 24-channel digital board with 24-bit, 96 kHz capability and many other high-end features — at an incredible price."
Price: $2,999

For more information contact Tascam in California at (323) 726-0303 or check out the Web site at www.tascam.com

Yamaha AW4416 Professional Audio Workstation

Features: 44 input channels, 20 mix buses; moving fader automation; two effects processors; 16- or 24-bit recording; 16 recording tracks plus eight virtual tracks per track and additional stereo track; uses standard IDE hard drives up to 64 GB; eight sampling pads with 16 total in two banks; CD-R or CD-RW drive.



Judges' Comments: "Yamaha winningly combines an 02R digital mixer, a digital multitrack recorder and CD burner."
Price: $3,799

For more information contact Yamaha in California at (714) 522-9011 or visit the Web site at www.yamaha.com

Other PAR Excellence Award Winners:

- AMS Neve 88R Console
- Audio Toys Inc. (ATI) Paragon II Production Console
- Benchmark Media Sonic AD2K+ Analog-to-Digital Converter
- CEDAR Audio DNS1000 Noise Suppression System
- dbx 240/241 DriveRack Loudspeaker Management System Processors
- D.W. Fearn VT-4 Vacuum Tube LC Equalizer
- Event Electronics EZbus Digital Interface
- Genelec 1093A Active Subwoofer
- GT Electronics VIPRE Microphone Preamplifier
- iZ Technology RADAR 24 Multitrack Recorder
- JBL EVO Intelligent Sound Reinforcement System
- JBL VerTec Line Array Speaker System
- Mackie SR1530 Powered Live Sound Speakers
- Oram BEQ Pro24
- Telex RadioCom BTR300 Intercom System
- Yamaha SREV1 Reverberator

World Radio History

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World Radio History

AES

▶ Continued from page 61

M Audio showed one of the few new sound cards at the show, the Audiophile 2496. The card is 24/96 capable, controls SCMS and has a breakout cable.

Tascam US-428 DAW controller

M Audio's alter ego, Midiman, showed three MIDI/USB connection boxes, the rackmount Midisport 8x8/s, the Midisport 4x4, the Midisport 2x2 and the micro-sized Midisport 1x1. The boxes handle eight, four, two and one input channels, respectively.

Fairlight announced an upgrade of the main processing engine in the Fairlight DAW and recorder platforms. The new engine, QDC, ups the Analog Devices SHARC processor count to eight for the new Merlin, the FAME2, MFX3.48 and Prodigy2.

Tascam showed the US-428 digital audio workstation control surface. It utilizes the USB port both Mac and PC-compatible and has faders and a jog/shuttle wheel. You will see a review in **RW** of this device soon.

Event Electronics's EZbus is also a USB port controller, but adds full-fledged mixing, matrixing and recording features.

Also showing a control surface was Radikal Technologies. The SAC 2K also features eight faders and a jog/shuttle wheel along with electronic scribble strips.

Roland showed a prototype for a control surface for the VM-7000 mixing/recording system with its optimized editing functions.

Germany's RME, handled in the U.S. by X-Vision Audio U.S., showed an eight-channel, high-end audio card that is PC and Mac-compatible.

Metric Halo moves into hardware with the Mobile I/O 2882, a FireWire-based, networkable I/O box for computers.

SADiE showed the new version 4 of its SADiE software. But, really interesting was the Edit Slate touch-sensitive LCD screen/control surface and the Meridian MLP Professional Encoder. The encoder is a software app for encoding audio files in the Meridian Lossless Packet format, considered one of the better encoding schemes and the basis for the DVD-Audio standard.

Lexicon showed a Mac-compatible version of the CORE2 desktop audio recording/editing system.

On the monitor front

Mackie showed several new speakers aimed at the live sound market, including the SRS1500 subwoofer and the Fussion series.

KS from Germany, handled in the U.S. by CAP Audio Professional a new series of powered studio monitors.

KRK thought small with the new V4 powered mini monitors. KRK's S8 powered subwoofer was designed to go with the little guys for a full package.

Alesis updated its Monitor One closefield monitors with the Monitor One Mk2. A new LF driver tops the list of improvements.

Quested showed its F11 powered monitors in specialized colors and finishes and also debuted a passive version.

Thinking small, Tannoy debuted the SuperTweeter, an upgrade tweeter for some Tannoy speakers and basic equipment for the Churchill speakers, the ones with the "V" port.

Genelec's new smallish powered subwoofer, the 1093A packs a lot of power into a small cabinet. It also adds an onboard 6.1 surround sound bass management system.

Amps get smarter

New from BGW is the Performance Series 3fL Power Amplifier.

Crown rolled out six new amps; the CH series offers high and low impedance outputs while the CL series offers only low impedance.

Behringer showed the results of its acquisition of CoolAudio with an amp based on the CoolAudio technology with efficient high-output.

ATI Digital Matchmaker

Crest Audio showed two new amp platforms. The ST series is a switching power supply amplifier and the LT series offers Crest's Linear Power Supply in a Class D package.

Alesis showed new amps too. The RA150, RA300 and RA500 follow the ground plowed by the RA100 but with concomitantly greater power.

Audio Technologies Inc. (ATI) showed several small boxes some of which are available in battery-operated versions. The DMM100 MatchMaker provides interconnection between various digital formats. The DM200 is a 24-bit digital to analog converter. Last, the HDA100 is a headphone amplifier.

Little Labs showed the Model 4.8 AES Digital Audio Mastering Router that handles 24-bit, five source. Little Labs also showed its PCP Instrument Distro, a little router with 1/4-inch I/O and level controls per channel.

Lots of power conditioning and surge suppression products from Equi=Tech, ETA and Furman. Equi=Tech showed new models with 75 and 100 Amp capacity.

Aphex 2020 dynamics processor

For setting up all this stuff, BGW wheeled out its RN series of 19-inch racks.

And Gepco provided cabling. New for the show was the 5596GFC digital multipair for AES3 24/96 use.

Yet even more

In the test area, Phoenix Audio showed the LinDev from England's Lindos. The LinDev offers a noise generator, sweep, noise and distortion measurement among other tools.

Prism Media generated a lot of interest in its turnkey and comprehensive test platform, the DScope Series III. It consists of a laptop computer and an interface box.

Numerous OEM chipmakers, such as Analog Devices, Burr-Brown and AKM were on hand. These hardware manufacturers are surging forward in their desire to create more powerful chips at a cheaper price.

Analog Devices displayed several flavors of its hefty SHARC processor.

In anticipation of higher bit recording, HHB showed upgraded MO media at the 2.6 and 5.2 GB sizes.

One last thing, the BASF ad girl was signing T-shirts. I think they were showing something new but I can't remember.

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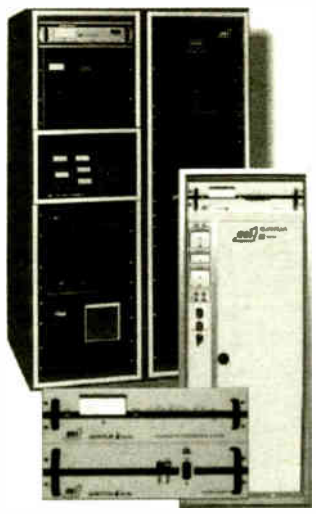

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Provides a convenient way to add front panel control to our smaller profile products with eight LED-indicator-equipped switches.

SRC-1616L Serial Remote Control
Equipped with 16 opto-isolated and CMOS/TTL compatible inputs and 16-Relay (Form C) outputs that may be controlled from a host computer, or a pair of units can be used in a stand-alone configuration (relay extension cord).

MC-16 Telephone Hybrid/Coupler
Full featured telephone line coupler/hybrid provides 32 programs; 32 ASCII strings (DTMF to ASCII); 64 macros; 16 relays; auto answer; 4-digit access codes and much more.

BOS, ROS & PBB-24 Switch Panels
The BOS offers 12 N.O. dry contact switches with status LEDs in a desktop panel. The ROS is similar, but in a single-space rack unit. The PBB-24 provides 24 momentary buttons that can be programmed to output ASCII character strings.

SRC-8 Serial Remote Control
The SRC-8 provides a means of adding 8 channels of remote control to RF, wireline and fiber type STL systems and may also be used with dedicated modems (full & half duplex models).

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World Radio History

AES Software News

The column "Software News" is a regular feature in our sister publication Pro Audio Review. As the November column is the software wrap-up from AES, we thought RW readers might want to read what author Brett Moss learned at the show.

What to make of AES 2000 in Los Angeles? Heaven for mic and tube fiends, but software angels might be excused if they found pickings a little thinner than last year's bountiful harvest.

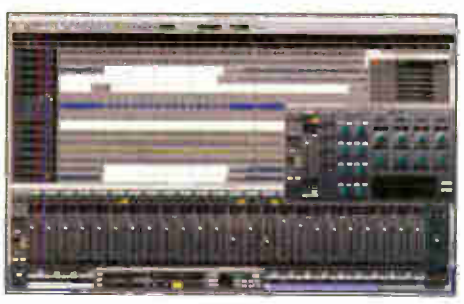
In fact, other than the usual hefty and crowded Digidesign booth — with Pro Tools 5.1 and Digidesign Development Partners on show — the software scene was somewhat elusive.

But here's what I caught in alphabetical order ...

BIAS (*www.bias-inc.com*): New is Peak 2.5 VST. This Mac program is now obviously VST-compatible and will ship with 25 free VST plug-ins. It also sports a new interface. Available for $499 or $699 with TDM compatibility added.

Just a few digits up is the new Deck 2.7, also for Mac. New is ASIO support, a free upgrade. Also on Deck (that's a joke, son), is the long-rumored Deck for BeOS. Soon, they promise ... In further porting news, BIAS announced plans to port everything to PC including the warehouse cat.

BitHeadz (*www.bitheadz.com*): Our busy friends at BitHeadz showed a Mac version of the Phrazer loop program. Unity DS-1 is up to V. 2.0 with Pentium processor optimization, new oscillators and filters, looping functions and expanded routing functions.



Steinberg Nuendo for Mac

BitHeadz also announced that the next versions of the Retro AS-1 analog synth and Unity DS-1 digital sampler programs would be compatible with the new dual processor Macs. Double your fun!

Cakewalk (*www.cakewalk.com*): New bundling configs would have been the only news here (ho-hum) except for the launching of a cool new affiliate site — *TheDirectXFiles.com* All I'm going to say is that if you run a DirectX-compatible system — go! — right now! Plug-in treasures *free* for the taking. Download until your computer begs for mercy.

Native Instruments (*www.native-instruments.com*): The guys behind the Reaktor program that everyone seems to be talking about needed sticks to keep AES gawkers at bay. The show was the first time that many people had a look at the program. The NI gang also showed boodles of Reaktor-compatible libraries through the Dynamo program.

Steinberg (*www.steinberg.net*): For the traditional acknowledgement of the monthly Steinberg missive — Nuendo is up to version 1.5. The important part here is that Nuendo is now Mac-compatible for $1,299. Steinberg and TC Works announced a 5.1 surround reverb plug-in for Nuendo. TC Surroundverb for $699.

For controlling this stuff, Steinberg showed the Houston remote control surface. The unit is MIDI/USB, has nine faders, scrub wheel, LCD screen and is VST-compatible. Price is TBA.

Waves (*www.waves.com*): Waves added a reverberator to the vaunted Renaissance line of processors. Renaissance Reverberator is RTAS, AudioSuite, VST, MAS, DirectX and TDM compatible and will be bundled throughout the Waves product line.

Waves also announced an overall upgrade to core processing algorithms of its products.

Waves Renaissance Reverb

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World Radio History

◆ PRODUCT GUIDE ◆

Products for Radio Air & Production Studios

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

Syntrillium Releases Tutorial, DirectX Support for CE2K

Syntrillium Software released "A Short Course in Digital Audio Processing," a free, animated tutorial authored by Macromedia Director. It is available for free at *http://school.syntrillium.com/tutor/shortcourse.htm*

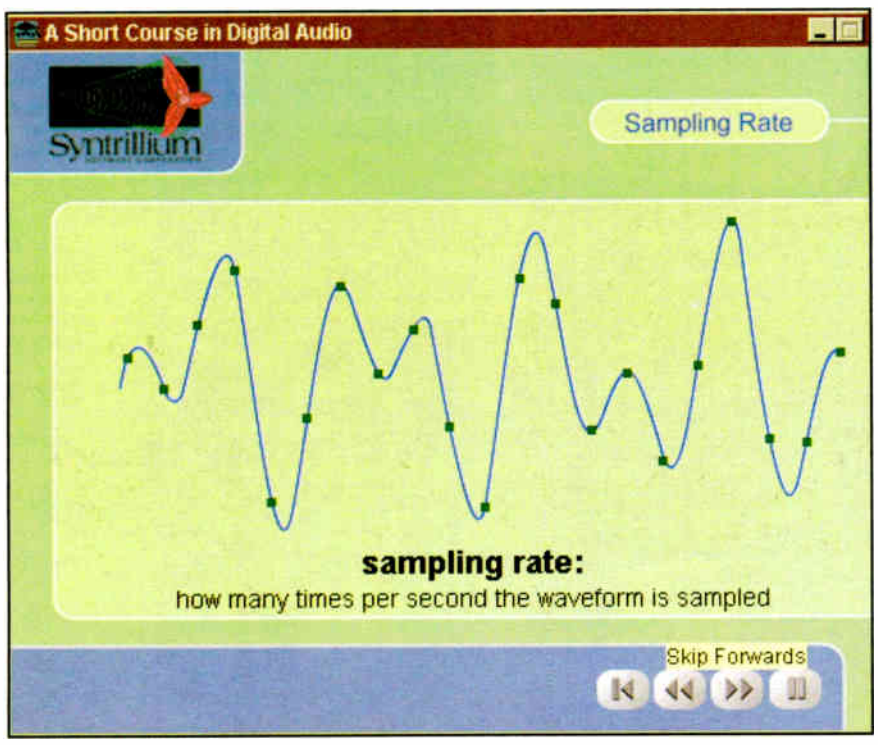
The tutorial covers fundamental digital audio concepts such as waveforms, sampling, bit depth and how sound travels from the air to the computer's hard drive and back.

This latest tutorial is part of the company's growing collection of free tutorials, how-to guides and other resources covering topics related to audio and music recording on *http://school.syntrillium.com*

Syntrillium Software has also released a free plug-in enabling Cool Edit 2000 to use DirectX plug-ins available for download from Syntrillium's Web site at *http://www.syntrillium.com/cooledit*

Cool Edit 2000 already offers MP3 encoding with more than 20 built-in effects with real-time preview and a host of other features for $69. Now it supports DirectX plug-ins.

For more information contact the company in Arizona at (888) 941-7100 or check out the Web site at www.syntrillium.com



Cool Edit Goes Retro With Pong

An "Easter Egg" is a secret sub-program hidden inside a larger program, triggered through an uncharacteristic or unexpected set of keystrokes, or by a secret code passed covertly to others "in the know."

Such is the case with Syntrillium's Cool Edit Pro digital audio software. Go under "Help," click "About," mouse over to the graphic of the flower blossom, then drag the center of the blossom into the focal point of the cone.

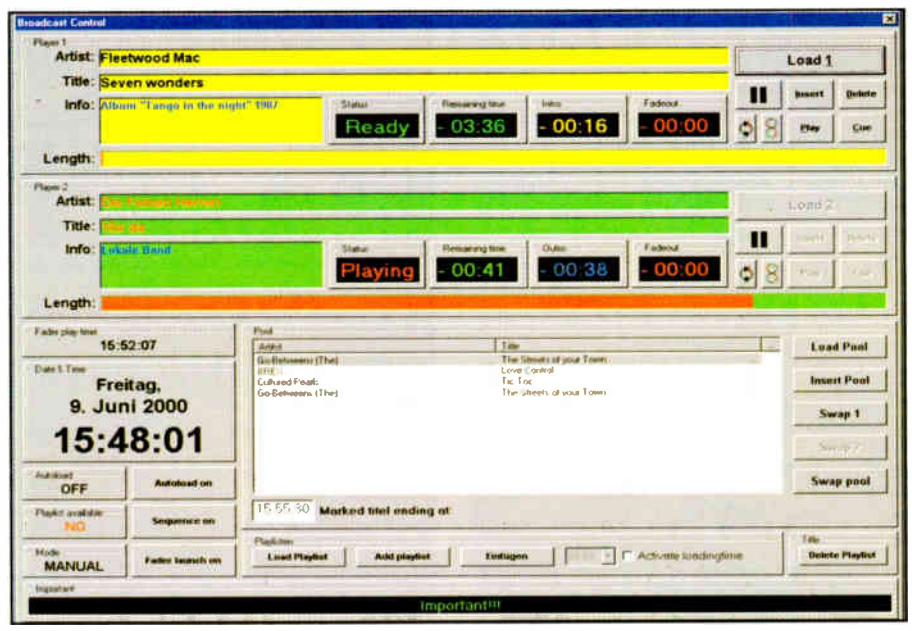
This action automatically launches a game of classic "Pong," the genesis of video games. However, the egg only comes up if there are no files or sessions loaded.

— Al Peterson

Sek'd Steps Into Automation

Sek'd offers AudioCaster, a software-based automation program for the PC that retails for $5,000.

An interface card is included to integrate AudioCaster into existing mixers and to facilitate fader start control. Playback uses WAV files and MPEG compression.



AudioCaster consists of the application manager for creating playlists and the main broadcast control program. The system can run either as a "stand-alone" or with the manager and broadcast control installed on different machines in a network environment.

Playlists can be generated in "automatic mode" for the hourly lists or in "sequence mode" where the generating of hourly lists can be bypassed, for example, in favor of a six-hour playlist.

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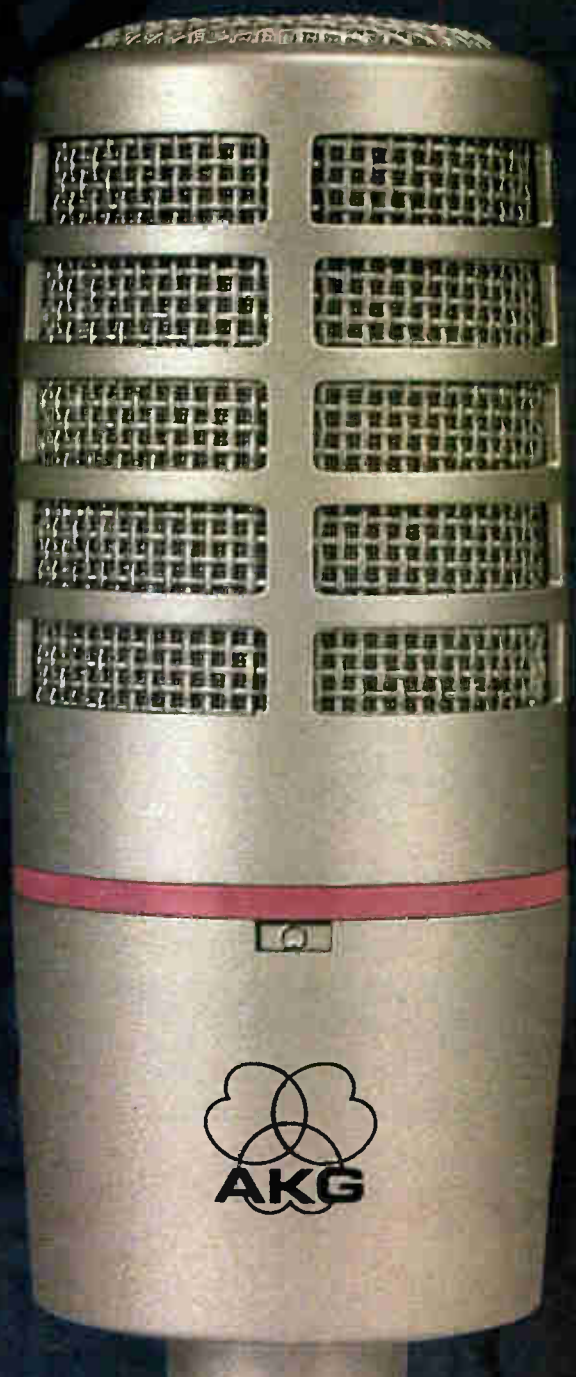

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World Radio History

Buyer's Guide

Neat New Radio Gear In This Issue

TECH UPDATES

Marantz Develops Flash Recorder

The **Marantz** PMD680 portable Flash audio recorder is the latest addition to the company's line of field audio recording products.

The unit records 16-bit digital audio using PC Card media — Flash memory cards. Audio files recorded on the system can be transferred to a computer for editing, archiving, or uploading to the Internet. The Type III PC Card slot accepts both compact Flash cards (with adaptor) and ATA-sized PC Cards.

It records audio in MP2 format — the voice-optimized version of MP3 audio compression. Various compression settings are available to extend recording times on smaller-capacity PC Cards. It can also record uncompressed PCM digital audio as WAV or Broadcast Wave BWF files.

A built-in EDL system enables the user to place reference marks and create playback sequences. It can record through the built in microphone, an external microphone or telephone line.

The PMD680 has a suggested retail price of $1,499.

For more information contact Marantz in Illinois at (630) 820-4800, fax (630) 820-8103 or visit the Web site at www.marantz.com/db

Tascam Tracks 24-Bit With DA-98HR

The **Tascam** DA-98HR is an STRS-format 24-bit multitrack recorder/player.

Designed for digital audio production, it provides record and playback compatibility with all DA-98, DA-88 and DA-38 tapes using the 16-bit, 44.1 kHz or 48 kHz standard. The unit includes eight tracks of 24-bit, 192 kHz audio, is compatible with the DA-78HR system and includes a confidence monitoring feature, allowing for monitoring from tape while recording.

It features digital ins and outs as standard with optional 44.1/48/88.2/96 kHz switchable analog I/O boards. The digital I/O is implemented through two DB25 connectors available in both TDIF and AES/EBU formats for interface into any recording environment.

It offers an LCD display; built-in synchronization addressing RS-422 (Sony P2), parallel control, MIDI in/thru/out and MIDI Machine Control; and the capability of sample-accurate stacking of up to 16 DTRS units of any tape.

For more information contact the company in California at (323) 726-0303, fax (323) 727-7635 or visit the Web site at www.tascam.com

Henry Delivers DigiStor II

The DigiStor II from **Henry Engineering** is a multimessage digital audio recorder. It is solid-state and can store up to 16 minutes of audio with a bandwidth of 7 kHz.

It can record from a microphone or line-level source. DigiStor II supports multiple play modes (single, repeat, random-access, auto-sequence), and features remote-control capability. The "EOM" relay emulates the secondary tone of a cart machine.

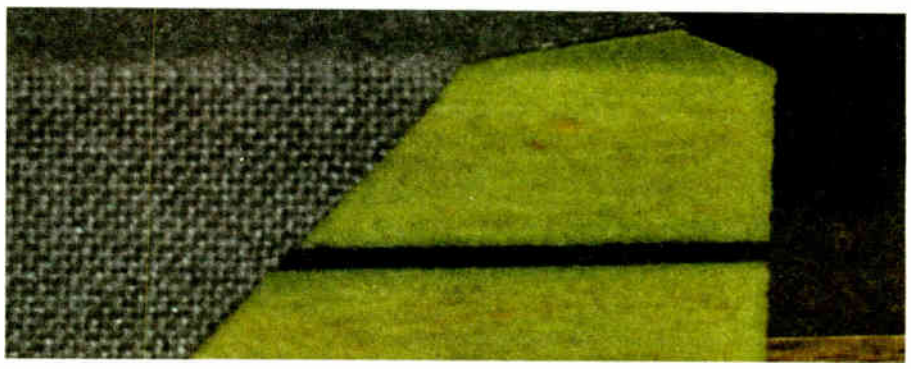
An automatic phone coupler is included for auto-answer message playback via phone lines. Messages are stored in non-volatile memory and are retained when power is off.

The DigiStor II is designed for numerous applications including network news delay, traffic and weather reports, translator ID and local inserts, call-in listener information lines, message-on-hold, call-in news and actuality lines, SAP channel identifier and travelers' information radio.

For information call (626) 355-3656, fax (626) 355-0077 or visit www.henryeng.com

Acoustical Solutions Eats Up Sound

The combination of the AlphaSorb wall panel and the Audioseal Sound Barrier, from **Acoustical Solutions**, is designed to achieve sound absorption and isolation without requiring additional building construction.



AlphaSorb wall panel with the Audioseal Sound Barrier

The units provide an NRC of 0.85 to 1.05 and an STC of 29. The panels are available in sizes up to four-feet by 10-feet, with a thickness of 1-1/8 inches or 2-1/8 inches and are covered in Guilford fabric.

AlphaSorb wall panels, ceiling tiles and hanging baffles can be designed in standard or custom sizes depending on your application. The wall panel edges are constructed with a standard soft, square, radius, mitered, half beveled or full beveled edge or an option of resin hardened edge.

Units may be hung with hook and loop attachment or adhesive for smaller panels and impaling or Zclips for standard size and larger panels.

The Audioseal Sound Barrier blocks sound from transmitting through walls, floors and ceilings. The barrier is a limp-mass material made of high-temperature fused vinyl and no lead fillers. Since the material is dense — it weighs one pound per square foot — this mass is what allows the barriers to prevent outside noise from entering or exiting a prepared space.

The sound barrier is available in a reinforced and non-reinforced version. The material is also offered as part of an acoustical pipe and duct lagging material.

For more information contact Acoustical Solutions in Virginia at (804) 346-8350, fax (804) 346-8808 or visit the Web site at www.acousticalsolutions.com

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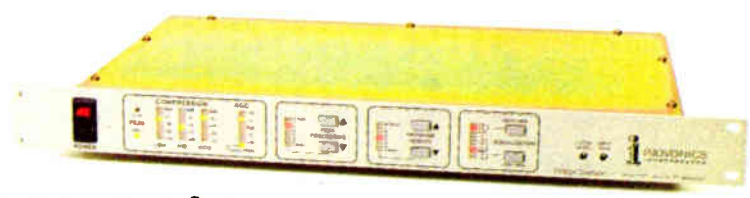

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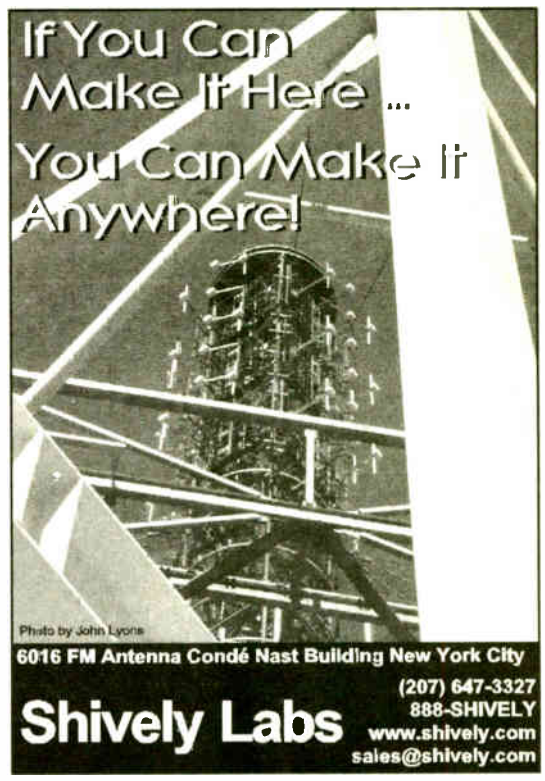

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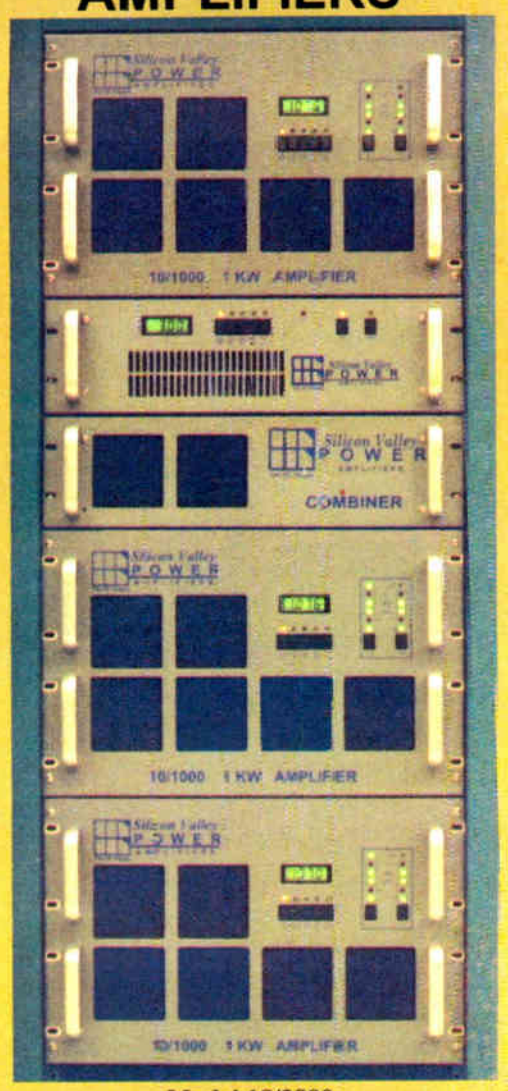

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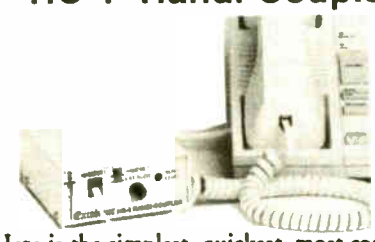

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TECH UPDATES

ATI Makes Digital Match

The **ATI** DMM100 (Digital MatchMaker 100) accepts serial digital NRZ signals such as AES/EBU digital audio from either a 110-ohm balanced XLR input, a 75-ohm BNC or RCA input or a TOSLINK optical fiber.

The unit provides reshaped outputs to simultaneously drive a 110-ohm balanced XLR line, 75-ohm BNC or RCA cables and a TOSLINK optical fiber. Inputs and outputs are transformer-coupled and floating to provide isolation and ground-loop elimination.

It can be used for interfacing short-run fiber or unbalanced RCA digital outputs to balanced XLR or 75-ohm coax for longer cable runs. It will match facility wiring to RCA, BNC, XLR or TOSLINK device inputs.

The multiple outputs of the DMM100 can be used as a digital signal splitter/distribution amplifier. It operates on an external power module or the DMM100-BAT can be run on internal batteries (four AA, not included). A power switch, indicator and Signal Present LED are on the front panel with all signal and power connectors on the rear.

The units are compatible with the ATI NANOAMP series analog and digital products and may be rack-mounted or used freestanding.

The list price for the DMM100 is $259 and the DMM100-BAT lists at $299.

For information call (800) 959-0307, fax (215) 443-0394 or visit www.atiguys.com

Sony Slims Down

Sony Electronics has added two MiniDisc recorders to its lineup of source gear. both are one rack unit high.

The MDS-E10 and the MDS-E12 incorporate ATRAC type "R" algorithm and replace the earlier 2U-high MDS-E58 and the MDS-E11.

The recorders feature 10 "Instant Start" memories and include S/PDIF coaxial and optical digital I/O, as well as analog RCA I/O. Each MiniDisc unit can record or play back up to 320 minutes using ATRAC3 REC mode. Additional features include RAM Edit, allowing temporary, non-destructive editing of TOC files; a PS/2 port on the front panel that allows PC keyboard operation; and a florescent display.

Supplementary MDS-E12 features include a parallel (GPI) port for control from an external controller. Extended recording is available using ATRAC3 REC mode and Relay REC mode combined.

The MDS-E10 retails for $599, the MDS-E12 for $899.

For information contact a Sony dealer, call Sony at (800) 686-SONY or visit www.sony.com/professional

Partnership Yields Flash Recorder

The RCX220, designed jointly by **Digigram** and **Nagra**, is a portable recorder and PC-based audio workstation engine.

In the field, the unit is a handheld stereo digital audio recorder. When connected to a PC by USB link, the system provides the digital signal processing of a Digigram PCX sound card. This enables the user to operate Digigram-powered applications without the need to purchase additional hardware.

As a handheld unit, features include stereo balanced microphone level input at with level adjustment and optional adapter for balanced line input, stereo headphone output and 20-bit A/D and D/A converters.

The recording system uses a removable PC Card Flash RAM recording medium and allows for three hours and 15 minutes of stereo recording time on a 192 MB card at 128 kbps with MPEG Layer 2 coding. The system can record in stereo or mono and features 48, 32, 24 or 16 kHz sampling rates.

For use as a PC audio editing engine, the RCX220 can be connected through a USB link to a PC running Windows 98/NT and recorded files can be transferred through the link. A format conversion utility is included for compression/decompression, bit-rate and sampling frequency. The PC sees the unit as a Digigram PCX sound card.

Nagra will sell and distribute the RCX220.

For more information contact Nagra USA in Tennessee at (615) 726-5191, fax (615) 726-5189 or visit the Web site at www.nagra.com

HHB Communications Says BurnIT

HHB Communications CDR830 BurnIT CD recorder features a 24-bit A-D converter and a 24-bit, multilevel Delta Sigma D-A converter. The unit records on CD-RW professional and consumer CD-Rs and does not use SCMS.

The system includes RCA analog line inputs and outputs and coaxial and optical S/PDIF digital I/Os. It also features an on-board sample rate converter accepting frequencies from 32-48 Hz.

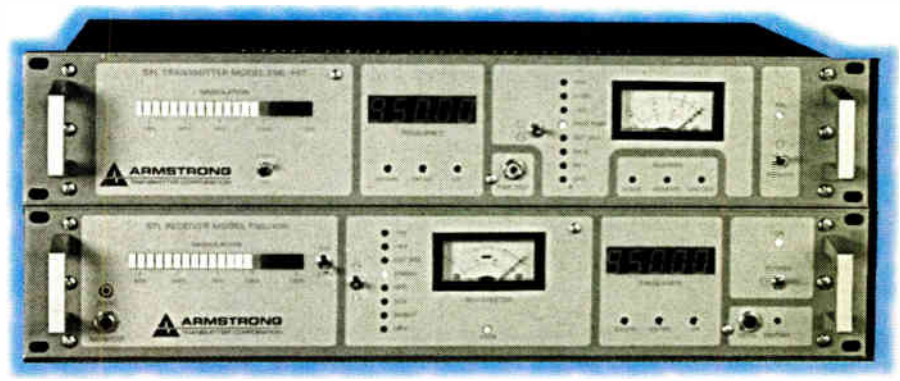
The Auto track increment feature combines with four synchro-recording modes: one track, all tracks and multi-track. The fourth recording mode, finalize, allows users to make digital recordings from CD, MD, DAT and DCC in a one-touch process.

With the CD Text facility, the user can name discs, artist and track names up to 120 characters per title, which are displayed on CD Text compatible players.

The unit includes digital record gain and balance control, input monitoring with track increment rehearsal, fade in/out adjustable from 1-12 seconds, five CDRW erase modes, track skip ID recording, track index search on playback and program, random and repeat playback modes.

For more information contact HHB Communications in California at (310) 319-1111, fax (310) 319-1311 or visit the Web site at www.hhbusa.com

Frequency Agile STL Systems



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TECH UPDATES

Rane Amps Up Voice Processing

The **Rane** VP 12 is a preamplifier with built-in signal processing.

The input can switch from a mic in with 48 V phantom power to a separate line input, or a sum of both. The unit features sweepable high- and low-cut filters, a de-esser, a gate/expander, a compressor and two bands of full-range parametric equalization.

Any processor section can be instantly bypassed and rear-panel jumpers allow reconfiguring the order of processing. A pair of individual output level controls feeds calibrated output meters and pairs of balanced three-pin and screw terminals.

The VP 12 is in a single-space, 19-inch rack-mount chassis and has a retail price of $599.

For information contact Rane Corp. in Washington (425) 355-6000, fax (425) 347-7757 or visit www.rane.com

Ward-Beck Converts With IMP

Ward-Beck IMP impedance converters allow 75-ohm coaxial transmission of AES/EBU digital audio signals. The conversion transformer changes a balanced 110-ohm signal line to an unbalanced 75-ohm signal line on a BNC-type connector.

The company manufactures single in-line and multiple-impedance converters housed in rack-mounting assemblies. Single in-line converters provide male or female XLR-type connectors on the balanced signal side.

Two rack-mounting types are available. The IMP-12 series offers 12 XLR-type connectors (male or female, in any combination) on the balanced side. The IMP-20 comes with 20 circuits equipped with pluggable screw terminal connectors on the balanced side.

The IMP panel series impedance converters are designed to ease system integration. Longer coaxial cable runs are possible, up to 1,000 feet.

For information contact Ward-Beck Systems Ltd. at (800) 771-2556, fax (416) 335-5999 or visit the Web site at www.ward-beck.com

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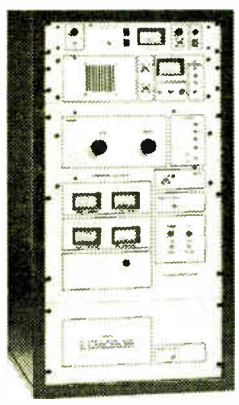

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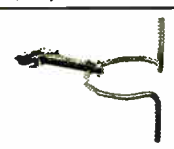

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Aeta Gets In The Mix

The MIX2000 from **Aeta** is a portable field mixer designed for electronic newsgathering. The unit weighs less than 4.4 pounds. It is equipped with insulation transformers and offers 46 dB input headroom with an equivalent input noise of approximately 130 dB. The master control stage uses VCA circuits allowing control of the built-in selectable limiter and compressor.

An optional AES/EBU digital output enables direct connection with linear and nonlinear recording and transmission devices. The four-channel mixer also provides a microphone power supply, pre-fade, independent monitor and master output, MID/Side coding/decoding, panning and an adjustable brightness monitoring bar-graph display with a scale ranging from -40 dB to 8 dB.

Other features include an eight-step input stage sensitivity adjustment, -26dB PAD insertion switch, a phase inversion switch, a high-pass filter and stereo coupling switches.

For information call (973) 659-0555, fax (973) 659-9555 or visit www.aetausa.com

Neumann Distributes Precision

Neumann USA is the U.S. distributor for the Precision 8 microphone preamplifier by True System.

The Precision 8 provides eight channels of transformerless mic preamps, two of which can be used as direct instrument inputs. In addition, each channel offers five segment level indicators with a selectable peak-hold feature.

A button on channels 1 and 2 allows use as an MS pair. Designed for modular digital multitrack units and hard-disk recording systems, the Precision 8 can be connected to Tascam or Mackie digital products via a DB 25 multipin connector.

The Precision 8 is built by Sunrise Engineering. Although Sunrise has designed professional products for other manufacturers, this is the first product debuted under its own name.

The microphone preamplifier has a suggested retail price of $2,695.

For more information contact Neumann USA in Connecticut at (860) 434-5220, fax (860) 434-3148 or visit the Web site at www.neumann.com

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Literature Gallery

Welcome to the third installment of the ***Literature Gallery***, your guide to free information and literature on a variety of products and services in the professional audio and video markets. The alphabetical listing by product category makes it easy for you to search by company and topic. For more information, contact the company directly or circle the Reader Service number that accompanies each entry.

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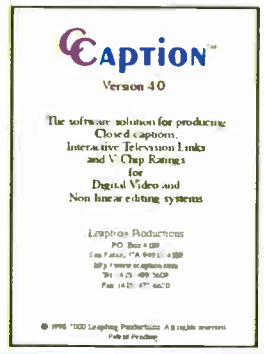

CODECS

The Scoop Reporter II portable codec from ***Aeta Audio*** combines POTS and ISDN, an integrated three-channel mixer, and internal battery supply. The Scoop Reporter II also features 99 user programmable presets, and will handle two microphones and one line level output. Get the Scoop anywhere, anytime with the Scoop Reporter II.

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The acclaimed ISOBOX and new ISOMAC from ***Sound Construction & Supply Inc.*** virtually eliminate hard drive noise. Its patented microprocessor controls the HVLP fan/diffuser air exchange system to keep equipment cool. The electrostatic filter keeps equipment clean.

Phone: 615-884-8257
FAX: 615-884-8258
Web: www.iso-box.com
E-mail: tbeeten@custom-consoles.com
107 Spence Lane
Nashville, TN 37210

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DIGITAL AUDIO WORKSTATIONS

CartWorks offers a complete line of live assist, satellite automation and music-on-hard-drive digital audio systems. Designed to be very user friendly, CartWorks is still powerful enough to handle the most demanding tasks. CD quality audio, easy operation, powerful features and affordable pricing make CartWorks your best choice for digital audio.

Phone: 800-795-7234
FAX: 601-853-9976
Web: www.cartworks.com
E-mail: gthomas@cartworks.com
398 Hwy. 51 N., Ste. 80-172
Ridgeland, MS 39157

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DIGITAL CONNECTION, A/D, SYNCHRONIZATION

AJA Video provides SDI and HD digital video interface solutions for the broadcast, post production and display industries. AJA's product line includes D/A and A/D video converters in miniature, stand-alone units as well as rack mountable products. AJA Video also makes PCI Framestore cards for both SDI and High Definition applications.

Phone: 530-274-2048
FAX: 530-274-9442
Web: www.aja.com
E-mail: sales@aja.com
443 Crown Point Circle, Ste. C
Grass Valley, CA 95945

Reader Service No. 326

DIGITAL MONITORS

The ***Audio Technologies Inc. (ATI)*** DM200 Digital Monitor accepts loop-thru AES/EBU format digital audio data via 110 Ohm XLR and 75 Ohm BNC and RCA connectors. A 24bit, 96kHz D/A converter feeds stereo headphone drivers, balanced audio line outputs and a stereo LED meter. Input sample rates of 32, 44.1, 48, 82.2 and 96kHz are decoded and displayed. A data VALID indicator is provided. Other audio products are portable/studio mixers, distribution amplifiers, mic and line preamps, monitoring and matching amplifiers, along with a variety of other problem solvers.

Phone: 215-443-0330
FAX: 215-443-0394
Web: www.atiguys.com
E-mail: les@atiguys.com
328 W. Maple Ave.
Horsham, PA 19044

Reader Service No. 246

DISPLAY DEVICES

Image Video's RDU-1518/1519 are the latest in a comprehensive line of under monitor display products. These units feature two to four levels of audio metering and are available in single color or tri-color versions. With a depth of only 0.9 inches, these UMD's may be mounted in front of monitors.

Phone: 416-750-8872
FAX: 416-750-8015
Web: www.imagevideo.com
E-mail: info@imagevideo.com
1620 Midland Ave.
Toronto, Ontario
Canada, M1P 3C2

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ENG MIXERS

The MIX2000 by ***Aeta Audio*** is arguably the most rugged and feature-packed portable field mixer on the market. Weighing less than 3.75 lbs. and not much bigger than a paperback book, the MIX2000 provides everything from a MIS Decoder to selectable PPM or VU metering.

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FAX: 973-659-9555
Web: www.aetausa.com
E-mail: sales@aetausa.com
75 Fleetwood Dr., Ste. 200
Rockaway, NJ 07866

Reader Service No. 299

FIBER OPTICS

Multidyne provides fiber optics for video, audio, serial digital video and 1.485 Gbps HDTV; 12-bit digital video and 24-bit digital audio fiber optic transport system; test signal generators; source ID generators; count-down generators; signal loss detectors; equalizers; automatic gain AGCs for video and audio; distribution amplifiers; routing switchers; XLR audio break-out panels.

Phone: 516-671-7278; FAX: 516-671-3362
Toll free: 800-488-8378
Web: www.multidyne.com
E-mail: info@multidyne.com
191 Forest Ave.
Locust Valley, NY 11560-2132

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FAX: 801-627-6980
Web: www.heatshrink.com
E-mail: brodie@kimber.com
2752 South 1900 West
Ogden Utah 84401

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Phone: 310-784-2300; FAX: 310-784-0066
Web: www.anchoraudio.com
E-mail: debbiel@anchoraudio.com
3415 Lomita Blvd.
Torrance, CA 90505

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LIBRARY PRODUCERS & JINGLE HOUSES

Now producers can download single tracks in CD quality with D.A.W.N. (Digital Audio Worldwide Network). ***CSS Music*** also allows users to choose from 216 CDs of royalty-free production music and sound effects to meet every demographic and price consideration. Explore more than 8,000 tracks online with full length streamed samples.

Phone 800-468-6874
FAX: 323-660-2070
Web: www.cssmusic.com
E-mail: info@mail.cssmusic.com
1948 Riverside Dr.
Los Angeles, CA 90039

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LOGO GENERATORS

Burst Electronics' LG-1 Video LOGO Generator/Inserter imports a PC-generated graphics file and overlays that graphic on composite video. The user creates the image using any popular paint program. The image is adjustable in both white level and transparency. The Timed Take feature allows the logo to appear at user selectable preset time intervals.

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FAX: 505-898-0159
Web: www.burstelectronics.com
E-mail: sales@burstelectronics.com
P.O. Box 1468
Corrales, NM 87048

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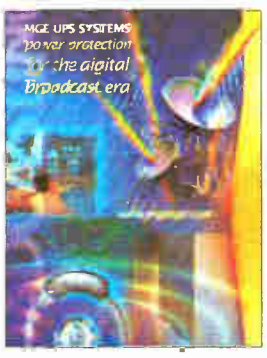

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E-mail: info@inovon.com
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FAX: 603-624-4351
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E-mail: sam.matthews@mcibroadcast.com
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Manchester, NH 03108-4365

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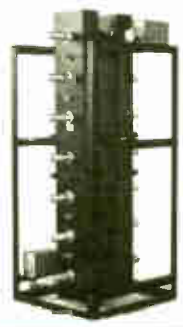

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The ***Opticomm*** FMX-5000 series features single mode (1310, 1550nm) 20 dB laser-based 40Km operation over one fiber, D-1/D-2/D-3 component video as per SMPTE 259M, ITU-R 601 and CCIR 656, 270/360/540 Mbps digital throughput, 10-bit code uncompressed and compliance with ANSI/SMPTE T-14.224 4:2:2 data transmission.

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FAX: 858-450-0155
Web: www.opticomm.com
E-mail: info@opticomm.com
6046 Cornerstone Ct. W.,
Ste. 209
San Diego, CA 92121

Reader Service No. 248

SERVERS/STORAGE

The MA-600 series of Video Servers from ***MATCO*** offer exceptional performance at a reasonable cost. Both the dual stream Motion JPEG box (MA-611J) and the multiple channel MPEG2 unit (MA-6xxM) include all hardware and software necessary to record, store, manage and playback either commercial or program length material. Eighty hours of storage (at 8 Mbits) may reside in the MPEG unit, 24 hours (at 2.5 Mbytes) in the JPEG unit. Additional storage adds expansion units. RAID is available.

Phone: 408-353-2670
FAX: 408-353-8781
Toll Free: 800-348-1843
Web: www.matco-video.com
E-mail: matco@wenet.net
15000 Stetson Rd.
Los Gatos, CA 95033

Reader Service No. 192

STATION AUTOMATION

The ***MATCO*** MA-204B playback automation and commercial insertion controller programs up to three channels, and contains an internal 22x3 Router with optional balanced audio. The MATCO MA-206B is capable of programming 12 channels, and controls your router. Both are capable of controlling VTRs and servers (using Time Code or Tones), as well as the Matco MA-600 series of Video Servers.

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Los Gatos, CA 95033

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SBS Technologies offers a complete line of PCI expansion units that require no software and work with all PC/workstation manufacturers, including Apple, SGI, Sun and Intel PCs. Sizes available are 4-slot, 7-slot and 13-slot. Enclosure types include desktop, mini-tower and rackmount. Products are available for 32-bit or 64-bit systems.

Phone: 651-905-4700
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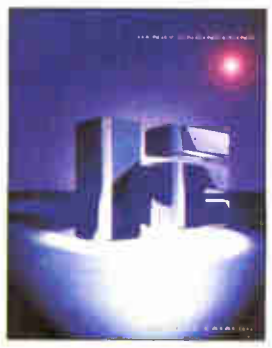

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SWITCHING, PATCHING, DISTRIBUTION

Audio Accessories Inc., a leading manufacturer of audio and video patchbays, has released a new 56-page catalog that features information on 1/4-inch long-frame panels, .172 (TT/Bantam) panels and Audio Accessories' exclusive 1/4-inch 2 x 32 long-frame panels. The catalog has detailed information on more than 50 different styles of pre-wired audio patchbays, including the new KRONE punch-down terminal.

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Web: www.patchbays.com
E-mail: audioacc@patchbays.com
25 Mill St.
Marlow, NH 03456

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TELCO SYSTEMS & HYBRIDS

JK Audio Inc.'s new catalog is packed full of telephone interface tools for radio remotes and television IFB feeds. From a simple telephone interview to a multi-location broadcast. Check out our new RemoteMix Sport and Innkeeper 1x Digital Hybrid. A variety of products to help you with your telephone interface needs.

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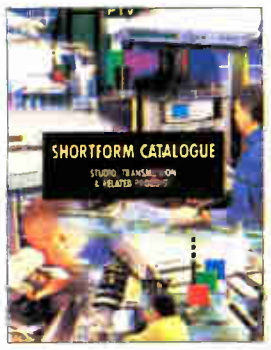

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TEST, METERING & MONITORING EQUIPMENT

With more than 1,500 in service, the ***Inovonics*** 530 FM Mod-Monitor has quickly earned a reputation for accuracy and reliability. The Model 530 measures total modulation, pilot injection and demodulated audio parameters. A preselector with eight station presets facilitates market modulation comparisons, and a companion subcarrier monitor is easily added.

Phone: 800-733-0552
FAX: 831-458-0554
Web: www.inovon.com
E-mail: info@inovon.com
1305 Fair Ave.
Santa Cruz, CA 95060

Reader Service No. 383

TEST, METERING & MONITORING EQUIPMENT

The ***Inovonics*** 520 AM Modulation Monitor features a built-in, tunable preselector and an optional active remote antenna for off-air AM modulation measurements. A peak-holding display and two sets of peak flashers keep close watch over processor and transmitter performance, and an RS-232 port allows remote data display and analysis.

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TRANSFORMERS, TRANSDUCERS & ACCESSORIES

FLEX-CORE offers Catalog 2007, a new 172 page catalog featuring split-core and solid-core current transformers, potential transformers, electrical transducers for AC and DC applications, signal conditioners, signal converters, analog and digital panel meters, analog and digital switchboard meters, digital counters, current probes, current relays, current switches, shunts, shunt switches, selector switches, shorting terminal blocks, fuse blocks, data loggers, multi-function power meters, KWH sub-metering systems and analog to pulse converters.

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Web: www.flex-core.com
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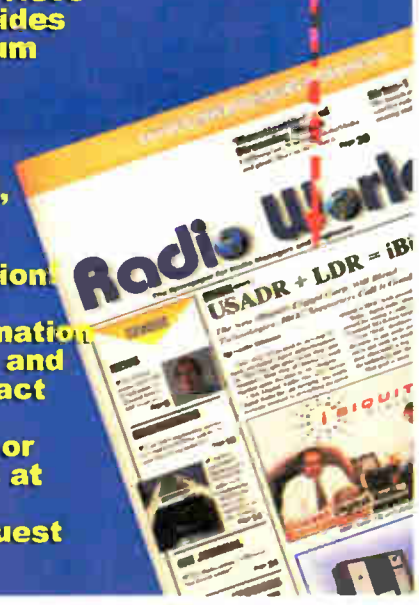

World Radio History

TECH UPDATES

Denon Introduces IC Recorder

The **Denon** DN-F20R IC recorder can record on two IC memory cards and supports a memory capacity of up to 192 MB.

The memory cards are 16-bit FAT formatted, which enables the cards to be read and written to by a PC equipped with an USB-type CompactFlash adapter or a laptop with an ATA adapter.

Audio can be recorded as MPEG 2 Layer 2, MPEG 1 Layer 2 or linear PCM (WAV file) formats, in either stereo or mono modes. Sound quality is user-selectable in recording bit rates of 16 to 768 kbps per channel.

Inputs include two XLR microphone jacks and two RCA line inputs, as well as a parallel remote mini-jack for external control. Microphone control is provided through a low-cut filter, limiter and attenuator located on the recorder.

Rotary controls are provided to adjust recording levels. Level metering can be monitored on the unit's backlit LCD display, which also shows recording settings, file names and other "at-a-glance" information.

To prevent accidental turn-on or misuse while recording, a "key hold" switch can be activated to lock out operating buttons. Outputs include two RCA lineouts and a quarter-inch headphone jack.

The portable IC recorder can be powered by AA batteries or through the AC power adapter. For an in-depth review, check out **RW** Aug. 2, page 35.

For information call (973) 396-0810, fax (973) 396-7459 or visit www.del.denon.com

Acoustics First Sound Cylinder

Acoustics First has taken the concept of an absorbing cylinder and applied it to acoustical foam. The Sound Cylinder design allows the material to mount on any standard microphone stand to reduce interfering audio reflections.

The material can be used as a portable barrier for separating vocalists and announcers from background noise. The unit measures 20.6 Sabins of absorption per unit at 125 Hz. Absorption levels are highest at midrange speech frequencies reaching 48.8 Sabins at 4000 Hz.

Colors for the product include charcoal gray, blue, brown, beige, green and burgundy. Although the Sound Cylinder will mount on a microphone stand, stands are available through Acoustics First.

For information contact Acoustics First Corp. at (804) 342-2900, fax (804) 342-1107 or visit www.acousticsfirst.com

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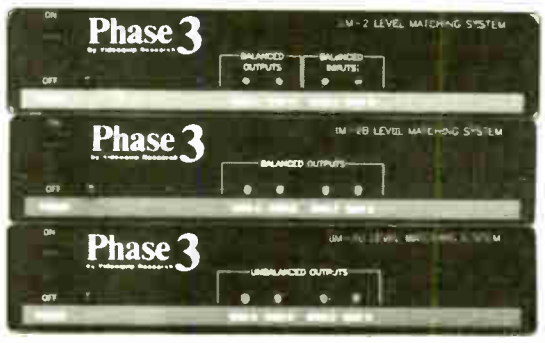

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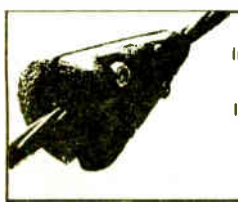

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UREI LA-12 stereo limiter, $550. Mark Schackow, Mark Schackow Recording, 307 4th Ave East, Lemmon SD 57638. 605-374-3424.

Want to Buy

Gates Sta-Level to make a pair. Mark Schackow, 307 4th Ave E, Lemmon SD 57638. 605-374-3424.

Operator & service manual for chip, burner model storey system P-240, MCI, processor board PCA 2500-0611. John Price, 214-321-6576.

Yamaha BP-2 bass generator & pedals schematic/literature. Would prefer electronics, but schematic essential. Bob Meuse, Muse Audio Arts, 191 E El Camino Real #209, Mtn View CA 94040. 650-969-2433.

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Scott Studio AXS on-air workstation & prod workstation w/cards, monitor, etc. Units have never been used & are still in the box, call for details. Bob Kenning, WBYT, 237 Edison #200, Mishawaka IN 46545. 219-258-5483.

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BE stereo cart machine, 1 R/P, lp, excel cond. David Senzig, WJO, 5658 143rd Ave, Holland MI 49423. 888-993-1260 or email: lanser@wjq.com.

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McMartin B502 stereo console, gd cond. David Senzig, WJO, 5658 143rd Ave, Holland MI 49423. 888-993-1260 or email: lanser@wjq.com.

Ramko DC8MS Touchmatic 8 chnl stereo bdct console w/power amp & assys, books, $500/BO. Robert Curtis, WRMC, HC-82-190-C, Violet Hill AR 72584.

Ampex AM10-6x2, excel cond, $295. John Price, 214-321-6576.

Arrakis 2000SC 12 channel console, BO. Clay Freinwald, Entercom, 1820 Eastlake Ave N, Seattle WA 98102. 206-726-7071.

Howe Series 9000 12 channel console, BO. Clay Freinwald, Entercom, 1820 Eastlake Ave N, Seattle WA 98102. 206-726-7071.

Ramko Research DC-8M 8 rotary pot board, works very well, gd overall cond w/manuals, $550/BO. Jim Canwell, Canwell Productions, 1629 W Cleveland, Spokane WA 99205. 509-324-0575.

Tangent 3216, gd cond, BO. Ray Murphy, Ray Murphy Creative, 4607 City Park Rd, Austin TX 78730. 512-349-2231.

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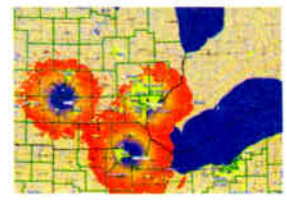

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ACTION-GRAM

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World Radio History

◆READER'S FORUM◆

Don't reinvent the wheel

Dear **RW**,

You praised the merger of USADR and Lucent in the editorial "DAB: Radio Gets iBiquitous" (**RW,** Aug. 2) then concluded with, "A universal receiver, anyone? Now that would be ubiquitous."

It's called "Eureka 147" on the L Band at 1,400 MHz.

The rest of the planet has *already* moved forward *years* ago with that option. It would be cheapest and fastest and best for listeners to follow the world standard and not expensively reinvent the wheel.

But ... Eureka receiver sales have been flat after the "early adopters" bought their toys ... because *the programming is the same unfulfilling garbage.*

And that is the real problem for FM. People don't listen to the Internet because it sounds great; people suffer the Internet audio hassles because the Internet has the programming variety they can't get on the usual FM dial.

And that is why IBOC digital audio broadcasting on the FM band is going to be a catastrophic failure. IBOC will destroy the listening range of many of the smaller independent commercial, religious and community/college radio stations that serve the "unheard third" of American listeners who are escaping the FM dial as we speak.

To bring them back onto the FM dial, we need more variety of programming, and you get that with more channels — that is low-power FM — which IBOC will destroy along with about a third to half of the smaller stations already on the dial.

IBOC will destroy the FM dial, not save it.

When we invented FM, we did not foist one 200 kHz-bandwidth FM station on the AM broadcast band. We created a separate second FM broadcast band, as the rest of the planet has for digital.

We should do the same and not destroy radio *just* to be contrary. Leave FM FM and no mandatory forcing of the market, no mandatory prohibition of FM!

Let the market decide if digital is worth the money.

Christopher Maxwell
Secretary
Virginia Center for the Public Press
Radio Free Richmond Project
Richmond, Va.

Tempest in a teapot?

Dear **RW**,

Dave Hershberger's Guest Commentary "Call for Software-Based DAB" in the Reference Room of *RW Online* touched on something that's been bothering me since I first heard of the COFDM/8-VSB dispute. Are we dealing with a tempest in a teapot?

Why can't the broadcaster choose which mode the transmission uses and let the receiver handle either one?

My first take was to assume the combatants knew what they were talking about and the resulting receivers would be too expensive. But really, folks, what could possibly be more expensive than those underutilized 16:9 HDTV sets?

David C. Crane
Computer Consultant
Houston

Grand alliance?

Ed. note: The following was in reply to a Guy Wire column, posted at www.rwonline.com

Dear **RW**,

Guy Wire has *got* to be kidding. Any time I see the phrase "Grand Alliance" I positively cringe.

Look at the DTV "joke" the TV "Grand Alliance" gave us. Another 40 or so years as the only country in the world with AM television.

This country will soon be the only country *out* of step insofar as DAB is concerned. Know why? Simple. The "big guys" (Clear Channel, CBS/Infinity, etc.) *don't want digital radio!* They're quite happy with the monopoly they have *now.*

Let's take a look at how behind our country is due to monopolies like this. First, if I recall, ISDN arrived in the United States about 15 years after it was commonplace in Europe. Our digital phone system (cellular, PCS, etc.) is years behind even the eastern bloc's.

They have many more features and the systems work much better. France has had terminals on their phones for more than 10 years. Europe has had FM television for almost 25 years. Now, they're about to eclipse us with L-band DAB.

When will we learn? When the government gets the (guts) to make a decision and stick by it without bowing down to the lobbyists of the NAB.

Look at AM stereo. The FCC adopted a perfectly usable system (Magnavox). The broadcasters whined, "Let the marketplace decide," so they did. Where did AM stereo wind up (and music on AM band with it)? In the dumpster.

Get with it, Guy ... as long as big business is involved in decisions, there will be no decisions ... no innovation. They simply want to squeeze every last dime out of what they have until they are forced to change, kicking and screaming all the way.

Dana Puopolo
Chief Engineer
KKBT(FM)
Los Angeles

ARP in the distance

Dear **RW**,

This is in regard to Alan Peterson's article in the Sept. 13 issue, "Powder-Puff AM Is Coming Along."

It would appear he has methodically engineered the equipment layout and carefully planned the format for his macro-media, 1,000 microwatt station, ATR 1170.

But what about the design for the QSL card? Jheesh!

Brad Rohrer
Chief Circuit Maker
Wireless Works
Annapolis, Md.

Rules Should Stay Dead

A federal appeals court recently ordered the FCC to repeal the personal attack and political editorial rules. But there's a chance the rules, along with the rest of the Fairness Doctrine, may be revived.

That would be unwise.

The issue came to a head in October when the FCC temporarily suspended the rules in response to a court deadline. That, in turn, was prompted by filings from RTNDA, NAB and others, which had long sought the repeal of the rules requiring airtime for responses to political editorials or personal attacks.

In its repeal order, the court said it was "folly" to suppose that a 60-day suspension and a call to update the record would cure anything.

But the court did not rule on the legal merits of the rules, leaving a chance they could be revived if the commission could justify them.

The FCC plans to "move promptly," according to Chairman Bill Kennard, to study broadcasters' public interest obligations in the digital age, including whether the rules should be reinstated.

Broadcasters generally oppose any revival of the rules, and some observers don't take Kennard's statement seriously. A congressional source called it "a desperate attempt" to leave a legacy as chairman.

Still, the rules were the last vestiges of the Fairness Doctrine, which said stations had an obligation to "afford reasonable opportunity for the discussion of conflicting views on the issues of public importance." Any talk of reviving the doctrine 13 years after it was killed is noteworthy.

Years ago, the FCC's justification for imposing on broadcasters a doctrine that did not constrain other media was spectrum scarcity. But in this age of vast numbers of information channels, such rules are no longer needed.

Revival of the Fairness Doctrine would have far-reaching effects on programming. For example, some feel AM talk programming really took off once the doctrine died and stations were able to offer listeners a wider range of opinions.

"Do you think a station that airs five hours of Rush Limbaugh would do so if it also had to air an equal amount of time for a political liberal or an independent?" asked one observer.

Broadcasters shouldn't have to think twice about airing various opinions for fear of invoking governmental intrusion.

— RW

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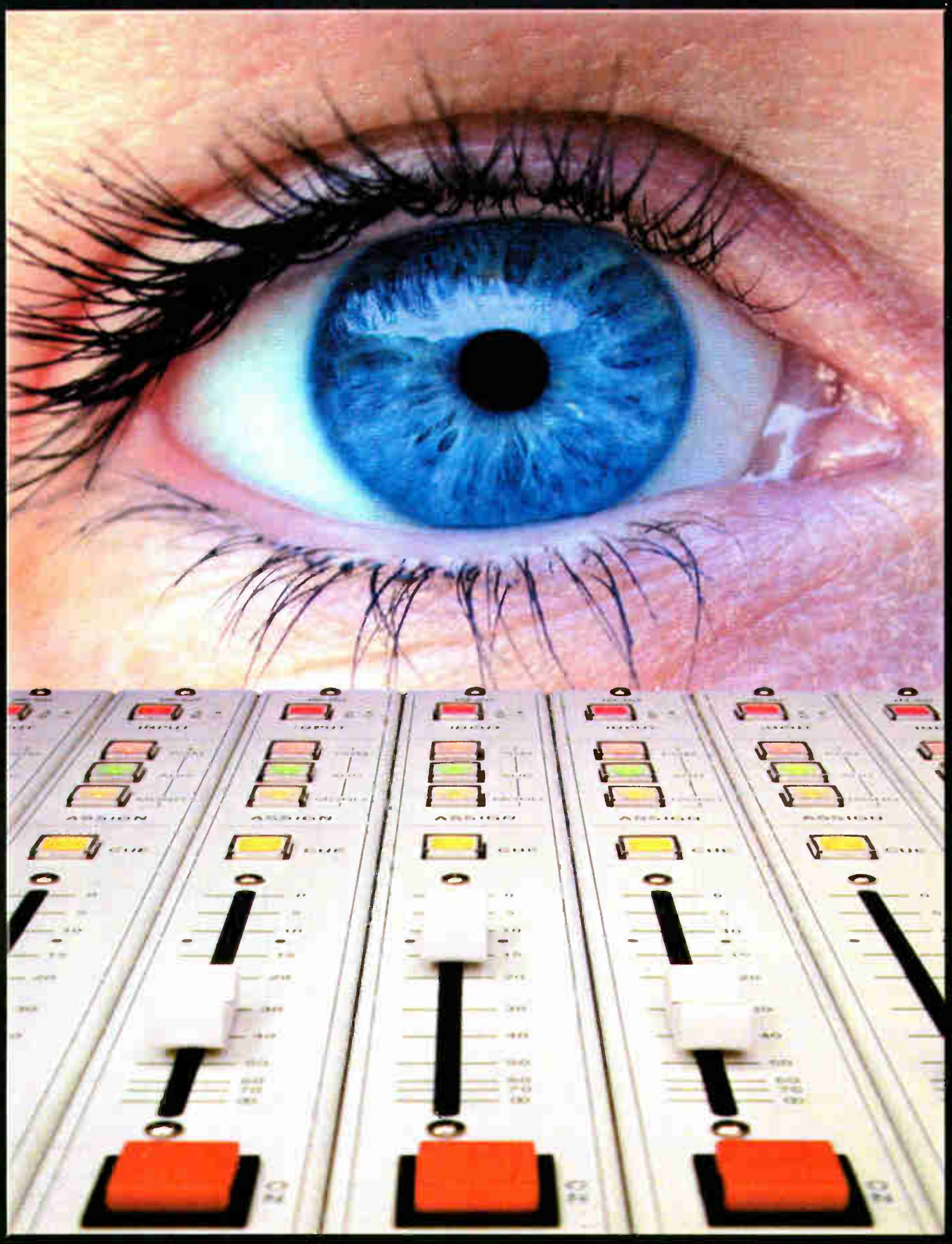

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