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# Radio World

The Newspaper for Radio Managers and Engineers

September 1, 2000

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### NEWS ANALYSIS

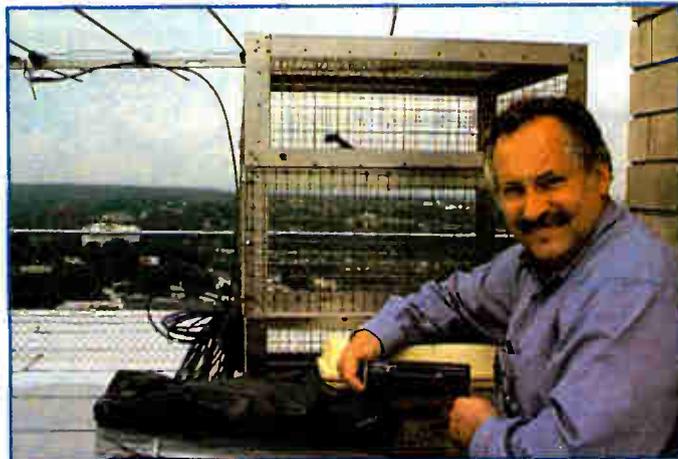
## 'Jukebox Radio' Station Wins Latest Skirmish

by Scott Fybush & Leslie Stimson

**FORT LEE, N.J.** To the average radio listener in northern New Jersey, 103.1 FM is just another spot on a crowded radio dial, playing Frank Sinatra and Barbra Streisand tunes as part of a format called

"Jukebox Radio."

To the FCC and station competitors, W276AQ in Fort Lee, N.J., has been at the center of a case that has dragged on about seven years, raising questions about local programming origination for translators, transfer of control of primary stations, licensee candor and misrepresentation and even the quality of long-distance FM reception.



Gerard Turro on top of a 26-story building where the equipment for his FM translator station 'Jukebox Radio' is located. Shown is a Yagi antenna that feeds a 60dB notch filter at 99.5 MHz. The filter is wrapped in several plastic bags and duct-taped to protect it from the elements. The filter feeds the Sony radio that normally is contained in a weatherproof toolbox. The radio, in turn, is wired to a 34-watt transmitter in the building.

To Gerard Turro, his "Jukebox Radio" is the fulfillment of a long-held quest to bring local FM radio to the county where Edwin Howard Armstrong first broadcast FM nearly 70 years ago.

Detractors say Turro is misusing translators to program an FM station that serves Bergen County without actually getting an FM full-service station license, because no new FM allocations are available in that area.

See TURRO page 6 ▶

### NEWS MAKER

## Barry Thomas Builds Studios For Comedy

by Randy J. Stine

**LOS ANGELES** There was only one thing that could pry Barry Thomas away from his new job as director of engineering at Comedy World Network: his honeymoon.

After two weeks off this summer, Thomas is back at work directing the design phase of a project that will see Comedy World Network move into a 50,000-square-foot facility in Marina Del Rey, Calif., by the end of the year.



Barry Thomas

The new Internet broadcasting venture has been operating from temporary facilities since beginning operations in April. Construction of facilities was due to begin in late August and be complete by November.

Designing and building radio studios  
 See THOMAS, page 5 ▶



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# NEWSWATCH

## U.S., Mexico Agree On S-Band Use

The U.S. government has finished frequency coordination talks with Mexico and reached agreements vital to the companies developing satellite-delivered digital audio broadcasting.

After two years of talks, the United States and Mexico now agree on which frequencies to use for satellite DAB and wireless communications services. The frequency-coordination agreement covers 2310-2360 MHz in the S-band.

The U.S. has a similar pact with Canada. Both documents establish protections to

and from terrestrial users within the designated satellite bands, vital for potential subscribers to Sirius Satellite Radio and XM Satellite Radio to hear the systems without interference in border areas.

Officials for the FCC and the U.S. Department of State said the agreement is a big step toward establishing long-term stability for satellite-DAB, WCS and other terrestrial systems operating in the border areas.

## Nassau: No IPO

**PRINCETON, N.J.** Nassau Broadcasting Corp. has backed off plans

to conduct an initial public offering. The Princeton, N.J.-based group owns and/or operates 32 radio stations.

A spokesman cited recent volatility in technology stocks for the change in plans. "Radio stocks generally trade in sympathy with the technology stocks and we believe we would be better served withdrawing the offer," said the spokesman.

Nassau executives said the company has sufficient working capital and would reconsider an offering when market conditions improve.

Previously announced acquisitions of 11 stations, nine from Aurora Communications and two from Clear Channel Communications are proceeding.

## NAB Blasts Low-Power FM Senate Bill

**WASHINGTON** NAB President/CEO Eddie Fritts said an LPFM bill introduced in July by Sens. John McCain, R-Ariz., and Bob Kerrey, D-Neb., should be renamed the "Interference Assurance Act."

"If these senators listened to their constituents, they would know that the FCC can't handle the interference already out there, let along the new interference that

See NEWSWATCH, page 8 ►

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## AUDITRONICS 4.0 NuStar

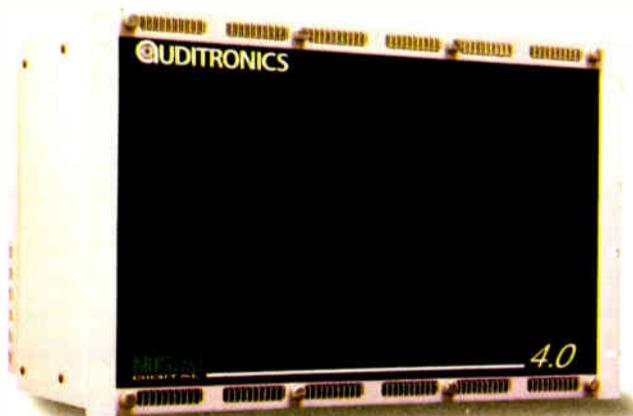
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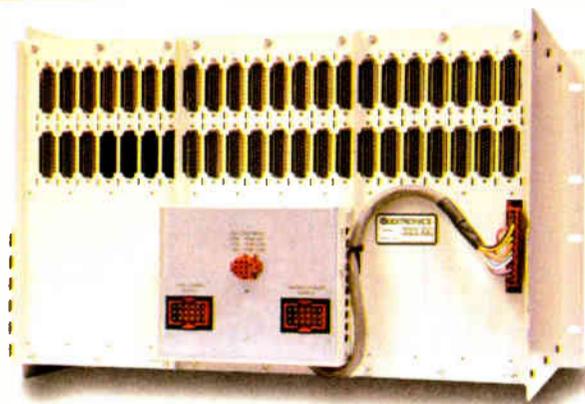
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**AUDITRONICS**



## NEWS ANALYSIS

# Radio & 3G: Merger or Conflict?

by Jeff Cohen

**BRUSSELS, Belgium** Could emerging telecom technologies soon replace traditional radio transmission technology?

That's a core question for participants in both technologies, as discussed by about 200 delegates at a recent meeting on interactive broadcasting organized by the European Commission.

Supporters of the two industries have begun battle lines in what some predict will be a bitter struggle for supremacy.

Observers say the worlds of broadcasting and telecommunications are coming together and that third generation (3G) mobile phones will be capable of receiving radio and television.

## Fascinating issues

The telecom industry referred to "convergence" — meaning that radio and television might cease to exist in their present form and become part of Internet content accessible in a variety of ways, including via mobile telephones.

Helmut Stein of Finnish manufacturing giant Nokia said he preferred a world of "synergy" where broadcasters might retain control of distributing their own signals but only when this suited the particular circumstance.

He cited an example in which a mobile telephone operator offers a service of messaging the user when a team scores a goal in a soccer match and invites the user to press a button to view a video clip of the goal.

## Telecommunications industry reps dismissed radio as 'audio content' that they could easily provide via their networks.

Stein said that while future mobile telephone systems could support data rates of 384 kilobits-per-second in motion or even 2 megabits-per-second when stationary, it would be better for a broadcaster to transmit the video clip via digital terrestrial television.

Nokia has produced a multimedia device that combines telephone with digital video broadcasting, the technology behind DTT.

## Public interest

Other speakers saw a diminishing role for traditional radio broadcasting. When the place of radio in the new converged media world came up, telecommunications industry representatives dismissed it as "audio content" that they could easily provide via their networks.

Some speakers dismissed DAB too, although others stressed its potential for data applications.

But with the emphasis more on data transfer than on audio content, the impression at times was that the vultures were hovering over digital audio broadcasting frequencies and infrastructures.

Wolfgang Klingenburg of Bosch sup-

ported DAB. He described the latest miniature receiver modules and how they could be built into mobile telephones.

Broadcasters Jürgen Burggraf of a German public broadcasting organization and Franz Kozamernik of the European Broadcasting Union also spoke.

Broadcasters should retain their own means of disseminating content and ser-

## Broadcasters fear that governments will be tempted to sell their frequencies to the mobile telecom industry.

vices, said Burggraf.

"Those providing educational or cultural information can make major contributions to the economic wealth of a society by generating qualifications, common knowledge and awareness," Burggraf said. He went on to stress the role of public broadcasters in preserving national cultural heritages.

## Spectrum allocation

Interactive broadcasting was to have been a key part of the discussion on convergence, however discussions of "telecom taking over" broadcasting dominated.

Richard Cooper of BBC Interactive detailed the way his team designed applications that took into consideration user needs and also constituted a good business venture.

He said it is possible to use such services on many platforms (DTT, cable and satellite) and how a return channel via telephone or cable can add greatly to what the audience gets from diverse types of programming.

An underlying issue also began to emerge: the future allocation and ownership of frequency spectrum.

The telecommunications industry would like to take over the spectrum used by broadcasting and those in that industry believe they could use the spectrum to generate a large amount of revenue. Broadcasters fear that governments will be tempted by the prospect of large proceeds from selling their frequencies to the mobile telecom industry.

In fact, shortly after the EC convergence meeting in Brussels, the U.K. government completed an auction of frequencies for 3G telecom systems.

Predicted to raise about \$7.5 billion, the strong bidding between several large

international telecom companies actually brought in about \$33.7 billion.

An article in the British press has suggested that a further sale to telecommunications companies will take place in 2006, this time of broadcasting frequencies, in the hope of raising about \$60 billion.

The British press is widely predicting that in the future, radio and television will

largely reach the public via 3G Universal Mobile Telecommunications Systems.

News of the price achieved in the United Kingdom frequency auction has prompted many other European governments to announce they will follow suit with spectrum auctions.

Burggraf predicted "more and more conflicts over spectrum allocation" in the near future, and he made a plea for governments to look beyond the highest financial return.

## NEWSWATCH

## Court Affirms FCC on Berkeley Pirate

**SAN FRANCISCO** FCC officials are pleased a court in California has upheld the agency's position against one of the original pirate broadcasters, Stephen Dunifer.

The U.S. Court of Appeals for the 9th Circuit said in July that Dunifer has no grounds to challenge the FCC order to shut down so-called "Free Radio Berkeley," because Dunifer never applied for a license.

The court affirmed the FCC's power to license stations.

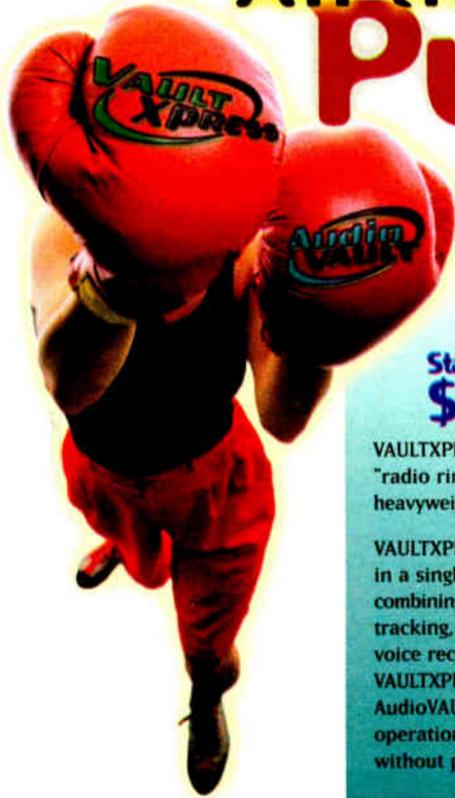
Dunifer intends to continue efforts on behalf of low-power supporters, according to published accounts.

## Harris Looks West

**CARLSBAD, Calif.** Harris Corp. has expanded its telephone sales and support for U.S. radio broadcasters with the opening of a call center in Carlsbad, Calif.

The West Coast Broadcast Center, an extension of Harris' Broadcast Center in Cincinnati, is designed to give customers better access to its studio products, system design services, and installation and maintenance support.

— B.M. Cox



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# Web or Airwaves, Content Still Counts

Imagine sitting in as 50 industry opinion leaders and journalists brainstorm about the future of radio on the Internet.

That's what Cheryl Evans did. She's an assistant professor and the chair of the Mass Communications Department at Northwestern Oklahoma State University.

Evans conducted a study as part of a doctoral dissertation at Oklahoma State University in Stillwater, under her advisor Dr. J. Steven Smethers. She took opinions from radio GMs, PDs, network and group executives, suppliers of streaming services, state and national broadcast association leaders and journalists. I was among several editors of national trade publications who took part.

The research was done long-distance, with panelists who remained anonymous until the study was complete.

As a result of her research, Evans will appear on a panel at the NAB Radio Show. Moderator Rick Ducey of BIA Data Management was a participant in her study.

So what did Evans learn?

"Broadcasters shouldn't forget what they already know so well: how important content and their local audience are," Evans told me after the study was complete.

"It's just a different distribution of the already successful product that they know how to do."

But the Net does bring a new list of competitive considerations. For one example, what visual elements should a station use on its site? Should it install a camera in the studio? Should the looks of the air staff be taken more into account?

"The old adage about having a face for radio won't hold true anymore," she said with a laugh.

Still, the ingredient for success remains the product you put out on your airwaves or your Web stream.

"Another important thing to consider is whether content will be created specifically with a global or local audience in mind," Evans said. "The majority of people felt that localism is going to continue to be an important part of content — that they shouldn't get away from their local audi-

ence, because that's what makes them different from everybody else."

In that environment, marketing your station becomes more important.

"You have to stand out in a sea of not only 10 or 20 stations but worldwide."

Based on responses to her study, she said, "The way to stand out is to talk about your local audience, what's available in your local area."

For instance, a station in the Big Apple shouldn't overlook the loyalty that a transplanted New Yorker will feel listening online from Arizona or Oregon to Mets or Yankees games and newscasts about tieups on the Kosciuszko Bridge.

I can testify to this; a close friend of mine is a fanatic for listening to Boston Red Sox games via WEEI from his U.S. Coast Guard base in Hawaii.

The Net offers opportunities in sales, too, but the promise isn't realized.

"It's still so new," Evans said. It's difficult to identify stations that have had real success selling to national clients or for national business.



Cheryl Evans

"There are some stations that are successful ... turning a profit and focusing totally on local. They're selling space for everything on their site."

The Web also offers hope for specialized formats that couldn't be profitable on the air but could attract a global audience.

"These could be some of the first models that we'll see be successful at a national (selling) scheme," Evans said, adding that

many current innovators are not licensed broadcasters but personal Netcasters.

Soon, old-style radio stations may turn to this new pool for programming ideas, borrowing those formats that succeed.

(This might be a good spot for me to plug my idea of a Net station devoted to baseball history and rebroadcasting classic games. Or the all-Anna Kournikova-all-the-time Web station.)

Expect more media melding. What is radio's competition for Net visitors? It's not just stations in our market or worldwide; it's newspaper and TV melding into their own online ventures, and into ours.

Again, content sets you apart.

Evans isn't an everyday bookworm. She is immediate past president of the Oklahoma Broadcast Education Association, a winner of the Oklahoma Association of Broadcasters award, and recipient of the Lisa John Faculty Fellowship, presented annually to only one broadcast faculty member in the state. She also manages the student-operated radio station at NWOSU.

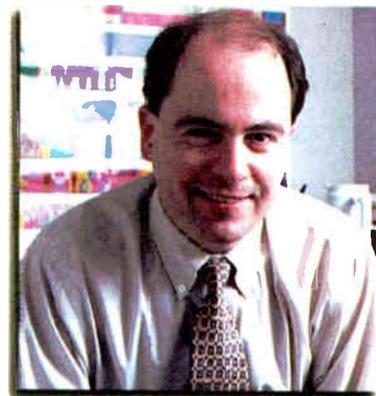
No 50 people with strong opinions will agree on everything. But Evans was able to draw this conclusion.

"Panelists reached consensus on the following issues: Content will remain crucial for stations. Stations should create narrower formats attracting communities of listeners from other geographic areas based on special interests, while not abandoning local audience interests online.

"All station employees need additional training to promote, program and sell the Webcast. Stations should use Web sites to offer new services/formats to listeners (and) advertisers while creating new revenue opportunities, specifically e-commerce. Stations should consider not only how their content sounds, but also its appearance.

"Promotion/marketing will take on new significance as audiences further fragment. Stations should provide resources for the Web operations, including full-time employees, recognizing that the potential exists for the primary signal distribution to evolve from transmitters to servers.

## From the Editor



Paul J. McLane

"Broadcasters should become allies with Web/computer companies. Broadcasters need to re-evaluate their competition because other traditional media now have the capability to offer audio entertainment/information. Stations must determine their Web site's mission and communicate it to their audiences, employees and advertisers."

Easy, right? Now go to it.

You can hear Evans speak as part of the session "Radio + Internet Portal = Super Localism" on Thursday, Sept. 21, at the NAB Radio Show, or write to her via e-mail to [clevans@nwosu.edu](mailto:clevans@nwosu.edu)

\*\*\*

Speaking of San Francisco, add Ted Nahil's name to the impressive list of speakers taking part in "Management Tips From the Experts," the roundtable that I will moderate on Wednesday, Sept. 20.

Nahil is the new vice president of radio broadcast engineering for SurferNetwork.com and is past DOE for Salem Communications in Colorado, Noble Broadcasting in Boston and Greater Media in Detroit. He has also written for RW, including our recent front-page story about Clear Channel's new facility in Denver.

He joins Andrew Butler, Jeff Littlejohn, Frank McCoy, Charles Morgan and Barry Thomas. The panel is Wednesday morning, so arrive Tuesday and start your Radio Show with us.

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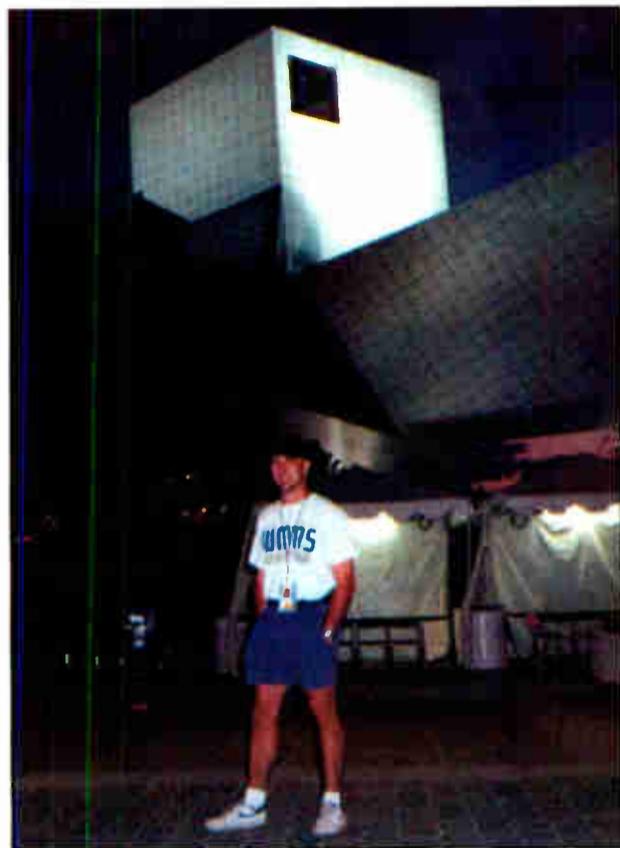
# Thomas

► Continued from page 1  
has become Thomas' specialty.

Throughout his 19-year broadcast engineering career, Thomas has overseen facility construction and buildouts at nearly every turn.

"It's really helped that I've had the chance to design and redesign radio stations over the years," said Thomas. From his very first job in Columbia, S.C., it's been that way.

Thomas, 37, saw another opportunity to build when Comedy World Network contacted him earlier this year. The mandate from management: build on-air and production studios in an old warehouse, which at one time housed sound stages.



Thomas in front of the Rock and Roll Hall of Fame. He was part of the technical team that supported 47 visiting radio stations broadcasting from the grand opening in 1995.

"It gives me another chance to get it right, I guess," he said.

In selling Thomas on the job, Comedy World Network had to convince him to make the switch to a new company in a new industry.

Comedy World has been on the Internet since April in private beta mode, and signed on for the public June 2. Network executives were developing terrestrial radio affiliates in August and hoped to have Comedy World available for syndication via satellite within two months.

"It's not just building a studio. It's building a company," Thomas said.

Thomas said Internet broadcasting is similar in many ways to over-the-air radio broadcasting.

Comedy World Network ([www.comedy-world.com](http://www.comedy-world.com)) is a free service consisting of 18 hours of live talk programming every day.

The network generates revenues by several means. It sells commercial time like a radio station, but it also sells banner ads on its Web site.

It expects to collect syndication fees from terrestrial radio stations later this year.

Comedy World's on-air lineup includes Ken Ober of MTV fame, Bobby

Slayton, Allan Havey and Susan Olsen, who played the character Cindy Brady on "The Brady Bunch."

Comediennes Sandra Bernhard and Julia Sweeney along with Bobcat Goldthwait have also hosted specials.

"It is really a talk format with a sense of humor," Thomas said.

Comedy World's new facility will include 14 studios, including two on-air suites, three production studios and two audio edit suites, Thomas said.

There will also be a live performance studio that will simulate a nightclub atmosphere.

Thomas said the two on-air suites will include Harris Pacific AirWave digital consoles. As much as possible, the new facility will be digital from floor to ceiling. Digidesign Pro Tools and Pro Tools LE systems will be used for audio editing. All studios within the facility will be connected via a 1 gigabit-per-second asynchronous fiber channel network.

## The tinkerer

Thomas said he was drawn to a career in broadcast engineering after finding his father's textbooks on electronics.

"I've been a tinkerer in electronics ever since. It just seemed to be one of the jack-of-all-trades jobs that I thought I could do."

After several years attending the University of South Carolina, Thomas went to work full-time for Audubon Broadcasting Co. at what was then WNOK-AM-FM in Columbia, S.C., as operations director. Like many rookie engineers, he was thrown on the air while learning the technical skills that would serve him well in the future.

"I started at (WNOK-AM-FM) in high school, doing everything from cleaning up to ripping the wire just to be around there," Thomas said.

"I cleaned the tape heads in all of the studios on the weekends, which endeared me to the chief engineer."

The first facility rebuild of Thomas' career came at the stations in Columbia. The rebuild was a "complete modernization," by Thomas' account.

## Modernize

"I remember getting rid of the old Ampro consoles and putting in one of the first Wheatstone boards ever sold," he said.

It was at WNOK-AM-FM that Thomas learned transmission theory and the application of it. In building a new FM transmitter site and moving the existing RCA BTF-10E1 backup transmitter, Thomas said he first realized he was growing as an engineer.

"I maintained the AM transmitters as well. They were RCA BTA-250L and RCA BTA-1R transmitters. (They were) very basic to start with, a series-fed antenna and a few little quirks."

Next, Thomas worked on his first ground-up build for Audubon Broadcasting's former WHTK(AM) in Hilton Head, S.C.

"I was so fortunate to be exposed to all of the planning and budgeting that goes

into a project. Plus, I had several very good mentors early on."

Two of those mentors were Milton Holladay and consultant Robert Lambert.

"They were the two senior engineers in Columbia. When you ran into a problem you called them. It was a college degree just hanging around them. I would puppy-dog around with them as much as I could."

## Life outside the station

A year with equipment dealer Broadcasters General Store in Atlanta as a sales engineer in 1989 gave Thomas a taste of life outside a radio station.

"I found out the only part of the job I liked was going out to stations and helping them fix their problems. I realized I missed being a chief engineer at a radio station."

After seeking a job in a larger market, Thomas set out for Cleveland and the job of engineering manager for Ardman Broadcasting's former WPHR(FM), which is now WENZ.

Another radio station meant completing another buildout.

"It was probably the leanest project I've ever worked on. I mean lean," Thomas said. "A small budget means managing with one eye on the blueprint and another on the pocketbook. You optimize everything you can."

By 1994, Thomas had moved cross-town to become chief engineer for OmniAmerica Group's three stations in Cleveland.

"WMJI(FM), WMMS(FM) and WHK(AM) were really writing the book on combined operations at the time. We were trying to figure out how to put dif-

## Barry Thomas Stats

**Hometown:** Columbia, S.C.

**Resides:** Los Angeles

**Born:** Nov. 11, 1962

**Personal:** Married

**Career:** Nineteen-year broadcast engineering veteran. Previously held technical positions with AMFM Inc. in Los Angeles, Chancellor Media in San Francisco, OmniAmerica Group in Cleveland and Ardman Broadcasting Company in Cleveland. Worked for Broadcasters General Store from 1989 to 1990. Is national secretary of the Society of Broadcast Engineers. Serves on the NAB/SBE Engineering Conference Committee.

ferent radio stations together and operate them with a combined sales and technical staffs," Thomas said.

It was Thomas' first exposure to networking a group of stations. It was also another chance to build new studios.

## Leases, flexibility

"We actually tied all the stations together across a three-block area because we had leases we couldn't break. It taught me a lot about flexibility and utilizing studios for more than one thing."

Thomas' next stop was San Francisco as technical director at Evergreen

See THOMAS, page 8 ►

# Simplicity

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new one. My son's radios are

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you can



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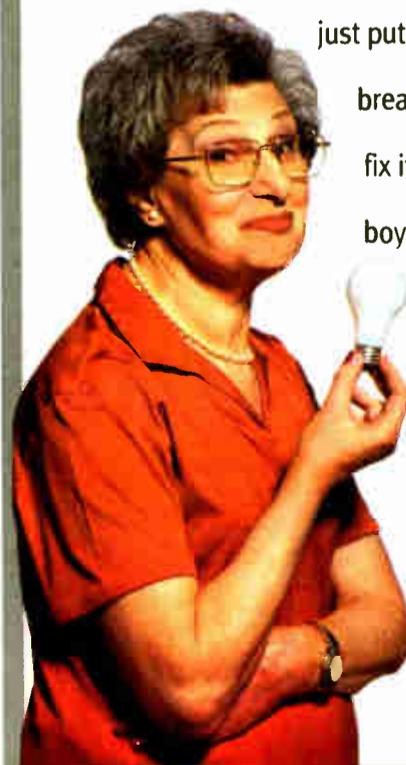


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mother once

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# Turro

► Continued from page 1

The case took a big step in July when the commission released its latest decision on the case, essentially upholding an earlier decision by an administrative law judge who had granted Turro's FM translator license renewal applications for W276AQ(FM), Fort Lee N.J., and W232AL(FM), Pomona, N.Y.

A decision not to revoke the construction permit of Monticello Mountaintop Broadcasting Inc. for WJUX(FM), Monticello, N.Y., was also upheld.

## Bergen County dream

The commission authorized FM translators in order to provide FM service to areas unable to receive satisfactory FM reception.

Turro's 34.5-watt translator, W276AQ, reaches more potential listeners than many primary stations. From its antenna atop the Mediterranean Towers apartments overlooking the Hudson River, the station's 1 mV/m contour extends over Manhattan's Central Park, covering just shy of 1 million people, according to Turro.

While there are plenty of New York-based stations that cover that audience, Turro decided in the early 1990s that W276AQ could do more than just relay out-of-market commercial stations. Until then, it had rebroadcast WALK-FM from Long Island and WPST(FM) and WKXW(FM) from Trenton.

"Being born and raised and educated

in Bergen County, my dream was to bring FM radio back to Bergen County," Turro said.

His first version of that dream involved a tiny noncommercial station in Franklin Lakes, N.J. Purchased from a local school district, the renamed WJUX(FM) began playing big-band tunes in 1993, rebroadcast some 40 miles away on W276AQ with the help of a microwave inter-city relay.

## We knew when we left the courtroom that we had won this thing.

— Gerry Turro

A year later, Turro found a way to switch from a noncommercial primary station to a fully commercial operation.

Turro asked the FCC in 1991 whether an FM translator could purchase air time on the FM station it rebroadcasts if four conditions were met: 1) the translator operates outside the primary contour of the originating station; 2) the primary station does not reimburse the translator for air time or financially support it; 3) the translator complies with the commission rules regarding the purchase of brokered air time and 4) the translator may sell advertising during the brokered time.

At the time, Turro's plan for Jukebox Radio was not fully formed, according to his attorney Charles Naftalin of Holland & Knight LLP and other sources.

The FCC said, in general, the proposal was fine. The Mass Media Bureau's 1991 response contained this phrase: "The issue presented ... is whether the licensee of a translator is permitted to enter into a time-brokerage contractual arrangement with its primary station, provided the pri-

mary station does not either reimburse the translator station licensee for the purchase of the brokered time or provide financial support for the translator station's operation.

"An FM translator station whose coverage contour extends beyond the protected contour of the primary station cannot receive any financial support, before or after construction, either directly or indirectly, from the primary station."

What Turro proposed was just the opposite.

"He was going to financially support the commercial FM station," said Turro's attorney, Charles Naftalin, Holland &

Based on the commission's ruling, Turro's colleague Wesley Weis purchased the construction permit for WXTM(FM), Monticello, N.Y., in the Catskill Mountains 100 miles from Fort Lee.

By October 1994, Weis had put WXTM on the air — and leased virtually all of its schedule to Turro and Jukebox Radio, which began programming the station from its own studios in Dumont, N.J.

Up on the roof in Fort Lee, W276AQ promptly changed primaries, from the noncom in Franklin Lakes (which then went dark), to the Monticello station, which took over the WJUX calls.

Then, Universal Broadcasting of New York, owner of Bergen County's only commercial full-power radio station, WVNJ(AM), Oakland, N.J., questioned how Turro was pulling the WJUX signal over the air from 100 miles away — with a full-class B signal, WBAI(FM), on a first-adjacent channel just across the river in New York.

Universal alleged that Turro was not receiving the WJUX signal off the air and rebroadcasting it via his translators, but was sending Jukebox Radio programming directly from his Dumont studios to the Fort Lee translator over his microwave relay station, WMG-499.

If true, this would have been a violation of the FCC's rules. The ALJ eventually ruled this was not the case.

But in 1996, the FCC revised its 1991 decision, and said Turro had to stop the time brokerage arrangement with the Monticello station.

See TURRO, page 7 ►

## One Question, Three Answers

An actual email thread, June 8-11, 2000 on broadcast.net

Thursday, June 8, 2000  
To: bsi-i@broadcast.net  
Subject: BSI Experiences?

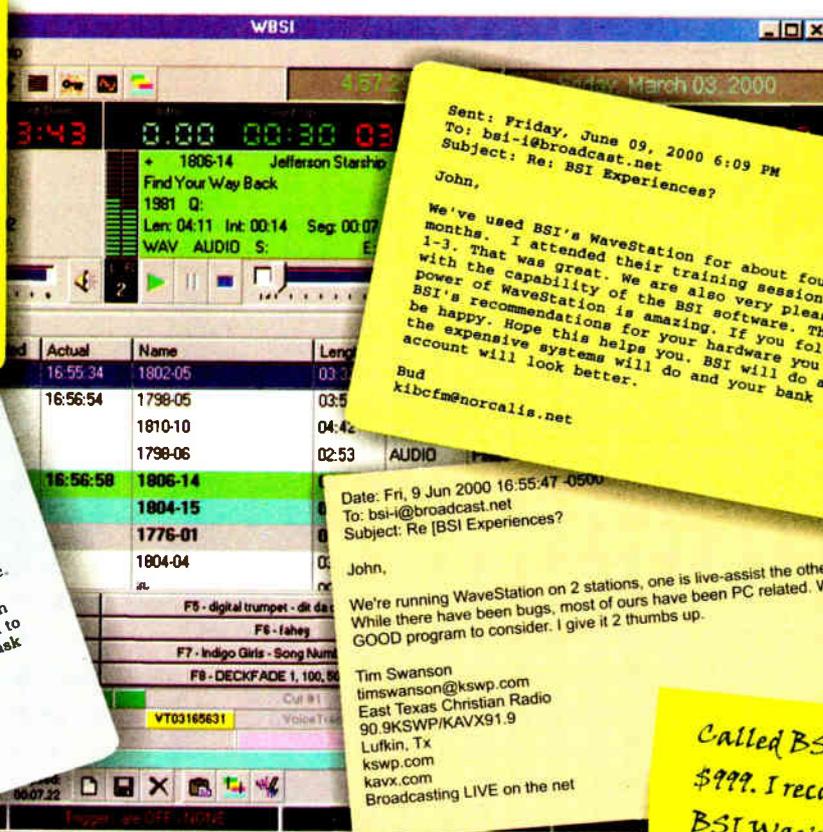
We are a small AM station considering implementing BSI software to automate our station. It seems to have all the functionality that we would need. Is this a good solution? Thanks for your input.

- John

Sent: Sunday, June 11, 2000  
To: bsi-i@broadcast.net  
Subject: Re: BSI Experiences?

John,  
We started using WaveStation in January and are extremely pleased with it. It's been running glitch free.  
We use it weekdays in live assist to play our spots, PSA's, etc. and on weekends in full-automation. At 1p.m. both days, we lock the door and leave. WaveStation plays programs recorded earlier, picks up some programs live from satellite...Joins news live at the top of the hour...records a couple of sports updates for playback a few minutes later...fades programs out...runs fill music...fades fill music, etc.  
We currently have only one computer set up for WaveStation. We will probably purchase a second one in the not too distant future.  
Perhaps it's a sad commentary on life, but WaveStation is much more reliable and dependable than the human beings we used to use...and "Wave Station", as we call the system here, doesn't ask for vacations or pay raises.  
By the way, we are a small town AM station also.

Bob Ketchersid  
WYXI, Athens, TN



Sent: Friday, June 09, 2000 6:09 PM  
To: bsi-i@broadcast.net  
Subject: Re: BSI Experiences?

John,  
We've used BSI's WaveStation for about four months. I attended their training session June 1-3. That was great. We are also very pleased with the capability of the BSI software. The power of WaveStation is amazing. If you follow BSI's recommendations for your hardware you will be happy. Hope this helps you. BSI will do all the expensive systems will do and your bank account will look better.  
Bud  
kibcfm@norcalis.net

Date: Fri, 9 Jun 2000 16:55:47 -0500  
To: bsi-i@broadcast.net  
Subject: Re: [BSI Experiences?]

John,  
We're running WaveStation on 2 stations, one is live-assist the other fully auto. While there have been bugs, most of ours have been PC related. WaveStation is a GOOD program to consider. I give it 2 thumbs up.

Tim Swanson  
timswanson@kswp.com  
East Texas Christian Radio  
90.9KSWP/KAVX91.9  
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# Turro

► Continued from page 6

"In 1991, the view was that full-power stations could not provide economic support to translators," said Naftalin. "They (the FCC) hadn't thought of it the other way. But in 1996, the bureau said any financial arrangement was improper."

In the recent decision, the FCC said its 1991 letter detailed "governing financial support of translators by primary stations, but did not cite subsection (d) of the rule, prohibiting any connection between persons owning translators and primary stations."

## In Turro's favor

Universal argued that "Turro departed from the letter of the bureau's (1991) ruling because Turro's relationship with Weis was not a bona fide, arm's-length arrangement," according to the July decision.

The ALJ ruled in Turro's favor.

Neither the FCC nor Universal would comment on the case.

Universal's complaints to the FCC sent inspectors to Fort Lee, but despite their initial doubts that Turro's claimed "sweet spot" really existed on the roof, he was able to persuade Administrative Law Judge Arthur Steinberg that he was indeed receiving a clean mono signal from Monticello.

"You should see this thing," Turro said of his apparatus on the Fort Lee rooftop, in the shadow of a heating vent that blocks the line of sight to Manhattan. "We put up this cheap Sony car radio, with a 12-volt battery duct-taped to it, and it sounded great," Turro said.

At the other end of the signal, Weis was also the subject of a different complaint from Universal, alleging that the WJUX main studio near Liberty, N.Y., failed to meet the FCC rules for program origination capability and staffing. (Weis rented space from WVOX-AM-FM in Liberty, hired two WVOX staffers to work part-time for WJUX as well, and rebroadcast WVOX' public affairs shows on WJUX.)

Again, the administrative law judge sided with Jukebox, ruling in early 1999 that the studios and staffing at WJUX met the letter of the FCC regulations.

Universal and the Mass Media Bureau appealed the ALJ's decisions. This summer, four FCC commissioners heard the Turro case. Chairman Bill Kennard recused himself.

The FCC concluded that neither Turro nor Weis engaged in unauthorized transfer of control of WJUX, that Weis complied with the main studio rules regarding WJUX, that Turro and Weis were truthful to the commission.

"We knew when we left the courtroom that we had won this thing," Turro said.

Almost six years after it went on the air, WJUX now holds a license to cover its construction permit. As for W276AQ, Turro is following through with a 1996 plan to sell it, along with a second translator in Pomona, N.Y., to Press Broadcasting Inc., which owns WKXW(FM), Trenton, N.J.

"At this point," Turro said, "what the FCC is asking us to do is to transfer the translators involved to an independent party."

The commissioners agreed with the Mass Media Bureau that the 1991 letter "was not so broad as to authorize what is now known to be the relationship between WJUX and the translators," according to the July decision.

Turro and Naftalin said Press is willing to pay \$1.5 million for the translators.

Sources said normally, translators do not command such prices.

While Turro will continue providing programming to WJUX, the sale includes no guarantee that Jukebox will continue to be heard on the translators. Still, Turro said the outcome is a victory for local radio.

"Was it a success? Absolutely! We served the community, generated revenue, gave people jobs, and paid taxes," Turro said.

As for interference concerns, Turro believes W276AQ provides a helpful model: Go high.

"If you put the antenna up high enough, the interference never touches the ground," Turro said, noting that even with 2nd-adjacent stations across the river in New York on 102.7 MHz and 103.5 MHz, he's never

received an interference complaint about his Fort Lee translator.

There was no set date for closing the sale to Press at press time. Once that happens, Turro plans to turn his interests from station ownership to syndication, where he's testing the waters now with a Jukebox talk show featuring "Mayflower Madam" Sydney Biddle Barrows.

"This has been learning a lesson about government," Turro said of his long fight.

Is the saga over?

There are four possible outcomes: If no one contests this latest decision, it will become final. Universal and the MMB

could ask the full commission to reconsider the decision, or Universal and the MMB could seek an appeal of the case by a circuit court. Universal could also seek appeal on its own.



Turro stands with the station promotional vehicle

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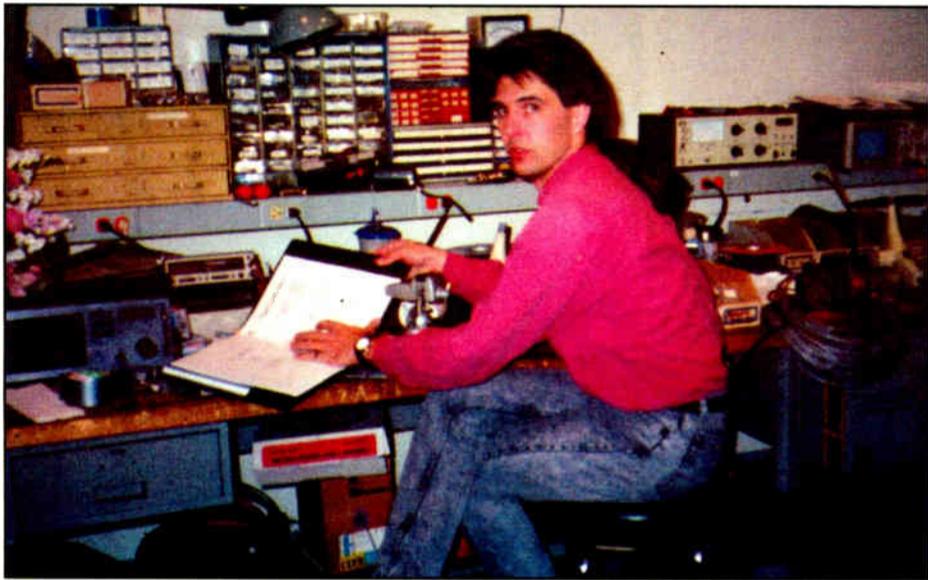
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**COMREX**

# Thomas

► Continued from page 5

Media's KYLD(FM) in 1996 where he faced an unusual engineering challenge — a frequency swap from 107.7 MHz to 94.9 MHz. Thomas also had to oversee a



Thomas at WHK(AM) and WMMS-AM-FM, Cleveland, November, 1994

move to new studios.

"Let's just say my plate was full for quite some time. There were some long days and some even longer nights. It was going 100 percent," Thomas said. It was during this time that Evergreen merged with Chancellor Media.

"To make a long story short, because of leases expiring, I had to throw together radio studios for KYLD in

## A Few Words About Barry Thomas

Barry is the antithesis of the stereotypical broadcast engineer. You might catch him after he has spent hours in front of a computer, but never will you see him with a disheveled, pocket protector/Diet Coke/Cheetos combination. He dresses like and looks like any other businessman and that has gone a long way toward generating respect for those of our ilk in the eyes of corporate management.

— Doug Irwin  
Director of Engineering Services  
AMFM Inc., San Francisco

Barry Thomas has been an active member of the Society of Broadcast Engineers for 14 years and has been active in every market he's been in. He has brought a new and fresh perspective as a member of SBE's national board of directors and as a member of the joint SBE/NAB committee.

— John Poray  
Executive Director, SBE

It's pretty tough to find just a few words to honor Barry. He is truly one of the best. Barry is one of the few who can see the bigger picture beyond today's technology and understand where it can lead us.

— Doug Howland  
Former Broadcast Engineer  
Account Executive, KNX(AM), L.A.

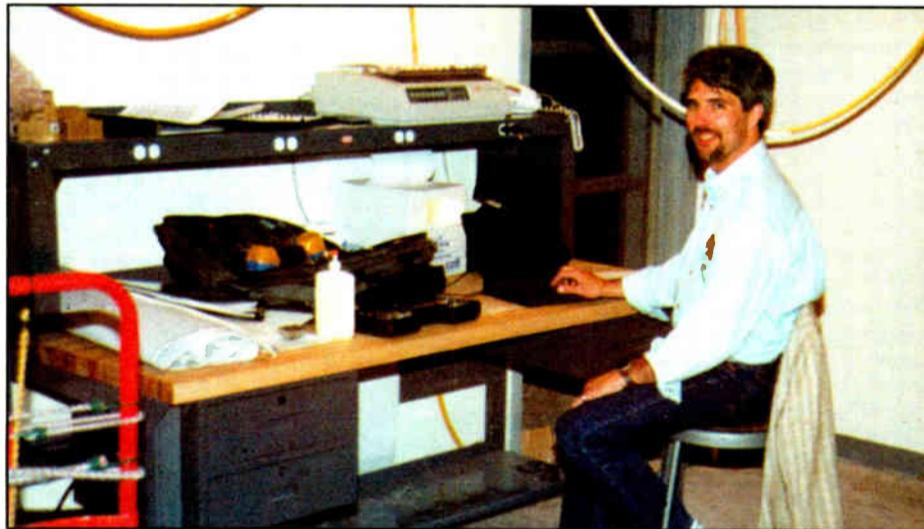
about 16 days on \$120,000. And start planning the frequency swap. The logistics of that were daunting."

The first step to the swap was coordinating the move with fellow engineers at Susquehanna Broadcasting's former KSAN(FM) in San Francisco, the station with which KYLD was switching.

"Technically, everything was flawless.

A swap like that is much more complicated than it seems. I love it when you can get a group of engineers working together on a project like that," Thomas said.

Thomas' previous stop before Comedy World Network was CE at KCMG(FM) in Los Angeles for AMFM Inc. in 1998. He designed a new studio facility for the former Pirate Radio, an L.A. rocker.



Thomas at San Francisco's KYLD(FM) and KKSJ(FM) in 1996

Thomas is secretary of the Society of Broadcast Engineers and has been active in the SBE throughout his career. He also serves on the NAB/SBE Engineering Conference Committee.

"SBE is very important because it brings engineers together. That's a lot of brainpower," Thomas said. "I see the SBE as a way to maintain not only my own future, but the future of the industry."

### Spelled 'respect'

Thomas is outspoken when it comes to the lack of respect some broadcast engineers garner from their employers.

"Throughout my career it seems as if engineers have gone from being in critical positions to being a station's handyman. At one time (engineers) ruled the roost," Thomas said.

He compares a broadcast engineer to "being the bottleneck of the radio station" in that every department within a radio station depends on the engineer in some way.

"Actually, the amount a radio station depends on its engineer has gone up over the years. The engineer is the guy who really makes the place run as a single unit, no matter how many stations you have in the cluster."

That lack of respect and low salaries are what is driving some broadcast engineers into jobs in the cellular and Internet industries, Thomas said.

"It really is a morale issue. Engineers are treated better in those other fields and by companies like XM (Satellite Radio) and Sirius (Satellite Radio). They understand what is at stake — millions of dollars. They have to hire good people and pay them what they are worth," Thomas said.

Another key issue facing radio broadcasters is increased competition from satellite and Web radio. Thomas said terrestrial radio is about to lose the one advantage it has always had — mobility.

"We are a short time away from high-speed wireless Internet connectivity. Average listeners will be able to receive a huge amount of streaming information. (Comedy World) is at the leading edge of a wholesale change in the way people listen to the radio. Palm devices will be able to access the Internet from anywhere. People will listen on headphones and in the office. Sprint already has a Web phone that can access MP3 files for music. It's all going to change in five years."

Thomas said the one thing holding back wireless Internet's popularity is its lack of speed.

"It's slow right now, in the 14.4 to 19.2 kilobits-per-second range. We really need 250 and 324 kbps to make it work. But, with an entire industry working on it, that

will happen."

Thomas compares the arrival of wireless Internet to the advent of television and the way radio used the opportunity to re-invent itself.

"Radio is really close to a total re-evaluation of what it is and where it's going. What's it going to be? I think it has to change somehow to remain competitive," Thomas said.

As for terrestrial radio broadcasters hoping in-band, on-channel digital audio broadcasting will be the answer to those competitive concerns, Thomas does not figure it will be.

"With the world so close to wireless Internet, I don't see digital delivery as being fundamental to radio's success or failure. Instead, programming is what will keep radio successful. By that, I mean local programming.

"That is why LPFM has come about. Too many people are disenfranchised right now with the state of radio. They want a voice."

## NEWSWATCH

► Continued from page 2

hundreds or thousands of new LPFM stations will cause," Fritts said.

The LPFM legislation would authorize the FCC to impose punitive damages if the commission finds out an interference complaint against an LPFM is "frivolous and without any merit or purpose other than to impede ... LPFM service."

The bill, called the "Low Power Radio Act of 2000," calls for the commission to take an LPFM off the air if that station is interfering with a full-power station. It does not call for changes in interference protections.

NAB believes further testing should be conducted before interference standards are changed.

The FCC has said it's okay to eliminate third-adjacent protection channels to LPFM stations in order to fit more of them on the FM band.

## FCC Gets More Low-Power FM Requests

**WASHINGTON** Sept. 1 was to be the last day the FCC would accept the second batch of low-power FM applications. The filing window began Aug. 28.

The commission said it would accept applications from qualified non-profits or governmental entities in the states of Connecticut, Illinois, Kansas, Michigan, Minnesota, Mississippi, Nevada, New Hampshire, Puerto Rico, Virginia and Wyoming.

During the first filing window, the FCC received more than 700 applications for LP100 stations.

Filing windows for the remaining three groups of states are expected to be held in November of this year, and in February and May of 2001.

## Florida Pirate Ham Charged

**JUPITER, Fla.** A Florida man has been arrested for illegally operating a ham radio station. The Federal Communications Commission said its investigation led to the arrest of William Flippo of Jupiter, Fla.

Responding to interference complaints from ham operators, the FCC reviewed the case and fined Flippo \$20,000 for operating an unlicensed station on amateur frequencies.

Flippo, the commission said, did not stop the broadcasts and that's why he was arrested and his equipment seized with help from the U.S. Marshals Service. He's been charged with four counts of operating an unlicensed station and four counts of interfering with licensed stations.

If convicted, he could receive a year in prison and a fine of up to \$10,000.

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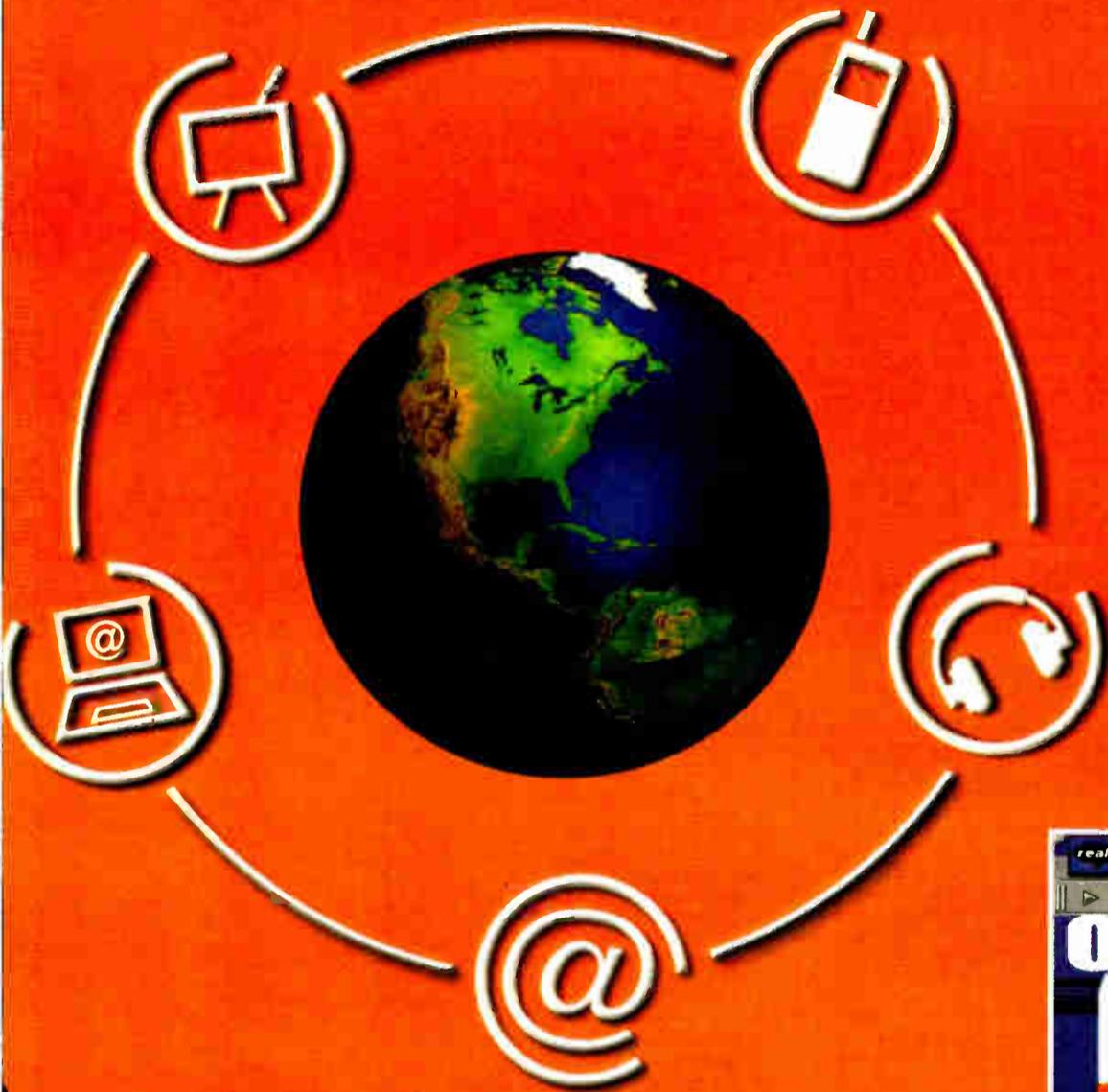
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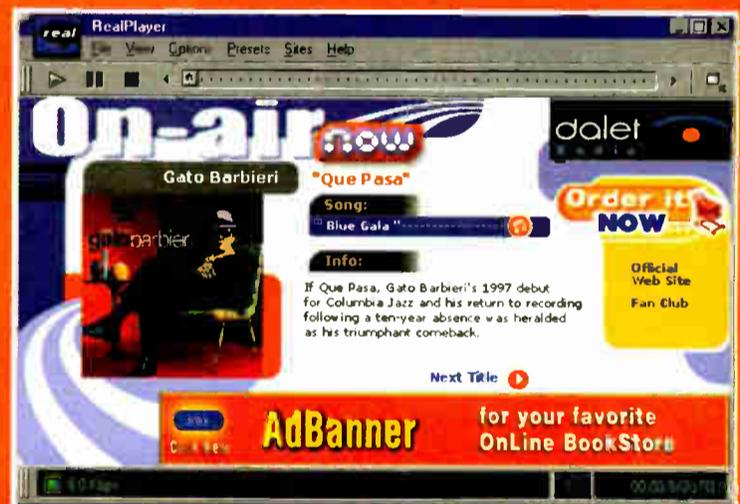
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ARTWORK GRAPHIC

GUEST COMMENTARY

# State-of-the-Cart Chunk

*Radio's Open Standards Audio File Interchange Format Continues to Pick Up Fans and Proponents*

**Geoff Steadman  
and Dick Pierce**

In early 1999, the "Cart Chunk" was proposed as a new audio file interchange standard to the Audio Engineering Society by the authors of this article. The need was obvious to anyone who ever tried to make two digital products interface: our industry needed a way for a piece of audio to go from one platform to another, accompanied by what amounts to a "digital cart label."

A year and a half, hundreds of volunteer man-hours and one RW "Cool Stuff" Award later, it is time to take a look at where this standard sits, who has adopted it, where we go next and, most important, where you can find out more about this open standard.

First, some history.

**Starting the idea**

Wouldn't it be great if all broadcast computer equipment actually worked together?

During our involvement with the DSE 7000 and Audicy workstation projects for Orban, we had implemented direct audio file transfer connections to several on-air playback systems at the behest of our customers. Our users wanted the ability to send a finished spot from the production room to the on-air system, complete with data such as title, start and end dates, out cue, tag text and timer marks. Each connection we created presented a unique set of challenges.

Only pieces of what were learned for one connection were useful in making others, because no standard intercon-

nection method existed among system vendors. We were operating in the private territory of these on-air systems internal structures, so we were vulnerable to breakage caused by changes in each vendor's private rules, while they evolved and upgraded their own systems. This is the nature of trying to deal with proprietary systems through "back-door" interfaces.

The result was an expensive, lengthy development cycle and potentially unstable performance as a result of new software releases. While direct connectivity between radio production systems, traffic systems and on-air systems makes perfect sense, it is expensive when custom engineering efforts are required. Moreover, if this was our experience, it was likewise the experience for anyone else in the industry attempting to build such connections.

When the directive came from our former managers to build a connection from Audicy to an on-air system running a QNX operating system, we engaged in a quiet revolt.

**Getting the connection right**

We created an architecture which would be extensible to other systems: one that we could recycle as generic, the next time one of these projects came up. It had occurred to us, despite differences between all the on-air systems, a set of primary sound file attributes was common to all systems. Second, more and more vendors had migrated their platforms and connections to industry standards such as

Ethernet, TCP/IP and WAV files.

As the WAV file format has been in widespread use throughout radio, it has become a de-facto interchange standard for swapping audio among diverse applications. In essence, the WAV file is the digital world's equivalent of 1/2-inch magnetic tape. We knew that WAV files, in reality, are nothing but wrappers for digital audio data — any digital audio data, linear or compressed. WAV files present the advantage that one can easily embed arbitrary metadata in the files for associated purposes, placing it in so-called "chunks" — self-contained units of data within the WAV wrapper.

This is precisely the path chosen by the European Broadcast Union when it formulated the Broadcast Extension or "bext" chunk to include information like originator, reference data, time-code information and a history of the coding process, all within the file.

Knowing these facts, and using the EBU bext chunk as a model, we developed the first straw-man proposal for Cart Chunk that would hold the common "label" elements, specifically tuned to the needs of radio (EG; cut name, identifier, class/category, start and end dates, timers, out cue, etc). We created what we saw as an interchange medium, a way of exporting and importing audio with its associated traffic information together in a single package. Nothing in this spec was intended to mandate how any vendor should represent their data internally; this was simply a way to get it in and out in a standard form.



But it was when participants from other companies came to the table that our straw man turned into a consensus.

In fact, our brainchild is an obvious derivative of the groundbreaking work done by the EBU in the bext chunk. In our case, the Cart Chunk was intended to deal with the bread and butter data of commercial radio: traffic data. It really is, in essence, a digital cart label.

**The elements of progress**

Some key elements helped get us here. For starters, the Cart Chunk has been a public service to our industry from the beginning. It is not owned by any single company and, therefore, is

See CART CHUNK, page 17 ▶

## Cart Chunk Participants

The following companies have informed the authors that their products listed are compliant with Cart Chunk as noted. Companies can add their names to the list; see story for details.

**Broadcast Electronics**

AudioVault Xpress and AV100  
Compliant in Xpress V8.0 as of April 2000; in AV100 V8.2 as of August 2000

**BSI**

WaveStation and WaveCart  
Compliant in current versions

**BTSG Software**

ProRadio  
Plans to be compliant Q4 2000

**CBSI**

Digital Universe  
Plans to release compliant version Q1 2001

**Enco Systems**

DADPRO32, DAD Dropbox  
Compliant as of 3.1b release, March 2000

**Hardata**

DiNeSAT V4.5  
Compliant as of April 2000

**Orban**

Audicy  
Plans to release compliant version Q4 2000-Q1 2001

**Pristine Systems**

RapidFire / NuWave2000  
Plans to release compliant version Q1, 2001

**Prophet Systems**

NexGen  
Compliant in NexGen Ver 2.0

**Radio Free Asia**

R-Boss  
Plans to use Cart Chunk as native format; release Q3 2001

**RCS**

Master Control NT, Player 14.3.x;  
RadioShow  
Compliant as of February 2000

**SADiE**

SADiE 4.0  
Compliant as of August 2000

**Scott Studios**

SS32 / AXS 3 / TLC  
Compliant in current versions

**SpotTaxi.com**

SpotTaxi Downloader/Decoder  
Compliant as of July 2000

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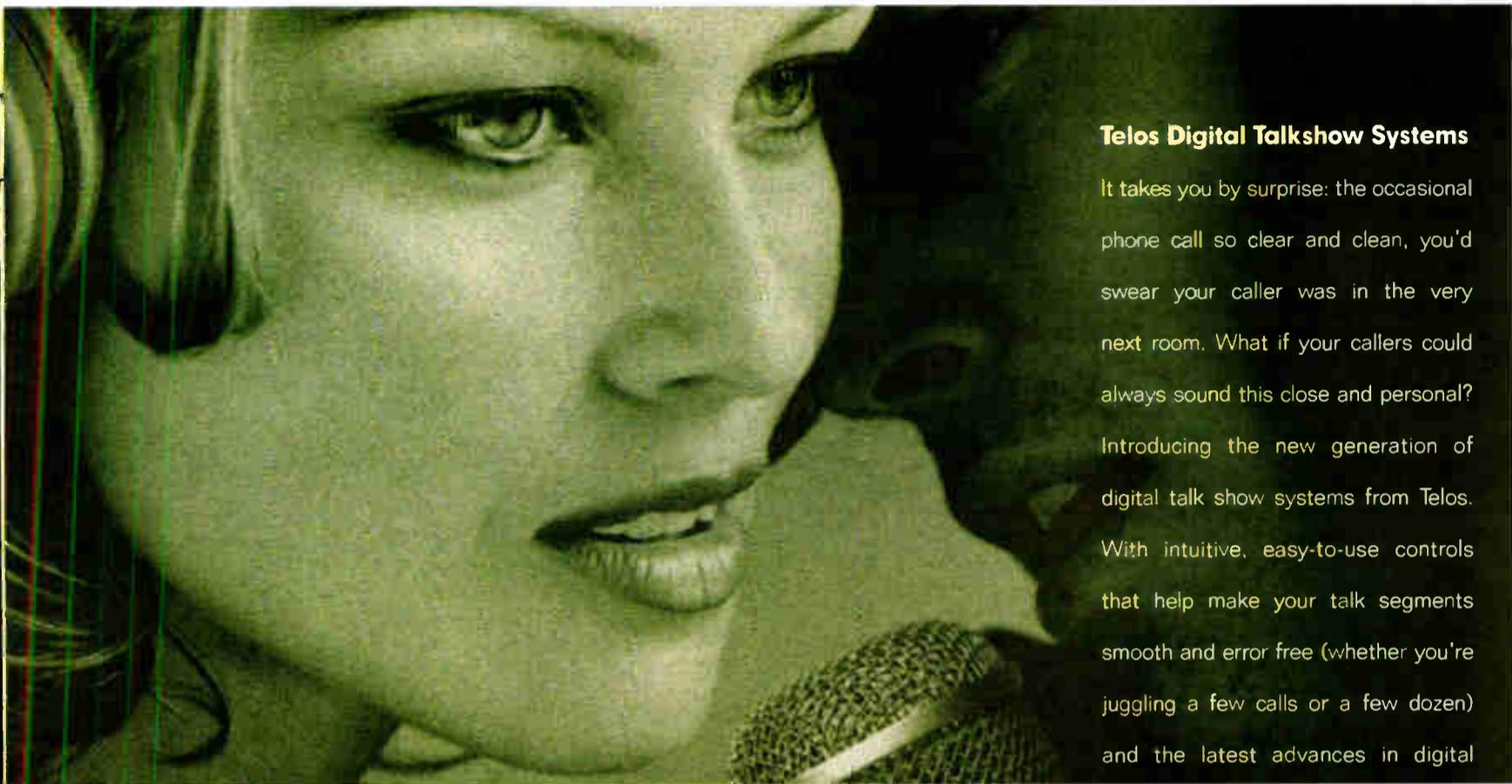
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Casey Fuller - Assistant Audio Engineer  
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# Workbench

Radio World, September 1, 2000

## Keep Projects Running Smoothly

John Bisset

Mounting RF equipment takes some skill and some ingenuity.

If you are planning an RF plant upgrade, be sure to visit your local electrical contractor for assistance. Ask the contractor for a Kindorf catalog or reference book. This free booklet shows every type of bracket and connector imaginable.

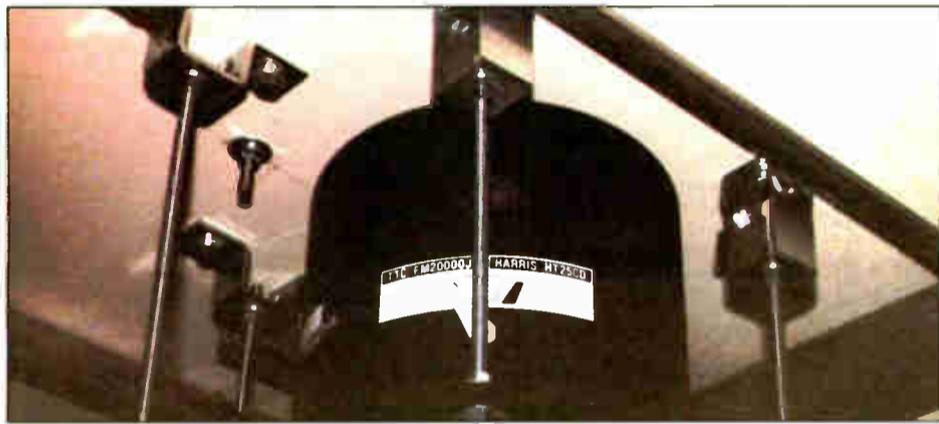


Fig. 1: Hardware mounts, and supports, a transfer switch

Figure 1 shows the brackets installed to mount an RF transfer switch. As you plan your layout, keep in mind that rigid line (as well as Heliac) must be supported.

Figure 2 shows the support bracket affixed to a dummy load, using a rigid line support bracket. Use the rubber insulator inside the clamp assembly of the bracket to prevent over-tightening. This is particularly true of the semi-flexible Heliac lines, which can be damaged by over-tightening and improper support.

Don't attempt this project alone. Ask someone to hold line while you measure lengths to be cut or even support heavy transfer switches while they are being mounted. Use a bubble level to ensure that lines are level and not crooked or

forced to fit.

If you need specific elbows, buy anchored inner elbows. The time you avoid aligning and seating un-anchored inners is worth the cost.

When it comes to elbows, the worst part is you can't see inside the elbow to determine if an inner has slipped and not properly mated once it is put together. Take it from my personal experience; you

will find out when you hit Plate On – not a pretty picture. It's worth the extra money to make sure everything fits right the first time.

\*\*\*

A few months back, we informed readers about an inexpensive manual generator transfer switch that an engineer used to permit switching to a small "consumer-type" generator at his studio.

Since that mention, Gen-Tran sent a nice package of information that engineers should find useful. In addition to a catalog listing their models of switches, there are reprint articles with good tips for connecting small portable generators.

Visit the company's Web site at [www.gen-tran.com](http://www.gen-tran.com) or send a fax on your company's letterhead requesting a literature pack.

The fax number is (770) 552-7756.

\*\*\*

Speaking of generators and backup power, another company caught my eye. Aura Systems Inc., of El Sugundo, Calif., provides a mobile generator with a twist.

The AuraGen System can turn your vehicle into a 5 kW generator. The system is a patented mobile generator that is maintenance-free. The engine-mounted, belt-driven AuraGen produces 5 kW of 120/240VAC power at any engine speed, whether the vehicle is parked or while driving.

field equipment, from the most sensitive digital apparatus and computers to radios, fans/blowers, power tools or lighting devices.

The AuraGen sounds like it would be ideal for the remote vehicle, providing remote equipment power, or to inflate the station mascot at a remote site. Contract engineers may find the system useful for providing power for lighting the base of a tower.

If you'd like to take a look at the AuraGen, their Web site is [www.aurasystems.com](http://www.aurasystems.com) or contact Allan Lavut at Aura Systems in California at (310) 643-5300.

\*\*\*

It's probably appropriate to call Y2K the year of the MiniDisc!

Its flexibility led it to the grueling broadcasting studio environment. For news-gathering, you can't beat its portability.

John Graham, chief engineer at WCPE(FM) in Wake Forest, N.C., discovered a discrepancy regarding the out-

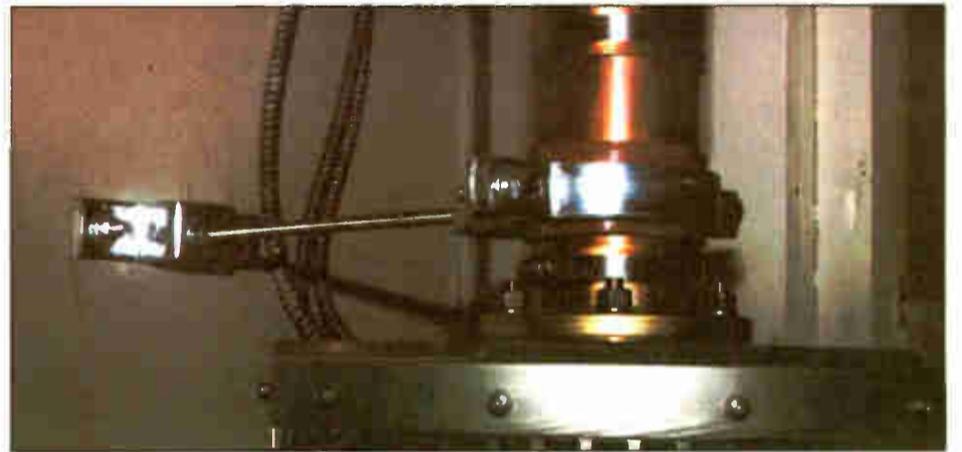


Fig. 2: Supporting a dummy load with hardware

The AuraGen has mounting brackets not only for Ford, GMC and Dodge vehicles, but also International and a Cummins M11. Providing high-quality, consistent voltage, the AuraGen will power a variety of on-board or in-the-

put ports of the Sony MDS-E11 and wants to share the information with *Workbench* readers.

On Page 33 of the Sony operating instructions, the remote start operating See *WORKBENCH*, page 16 ▶

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# Generators: The Power You Need

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 at [www.rwonline.com](http://www.rwonline.com)*

Our review and analysis of the NEC for the broadcaster brings us to generators. In these discussions we will cover three areas: generator installations under the NEC; a closer look at emergency power distribution in your studio or transmitter plant, starting at the main panel or main transfer switch; and generator selection details including types, fuels and co-generation.

## Give us the juice

The NEC treats the specific installation of standby power generation in two parts because it views the emergency supply of power under two drastically different criteria. The first is "Legally Required Standby Systems," described hereafter as *mandatory*. The second is "Optional Standby Systems," which we will call *optional*. The details and caveats for each are covered in NEC articles 701 and 702 respectively.

The NEC assumes that the rest of the system will comply with the balance of the applicable code sections and these two articles deal only with just the unique aspects of the standby generator installation. While you're reading these parts of the NEC, it's not a bad idea to scan article 700, which details emergency systems overall.

Mandatory generator power plants have to start, have to run and have to supply, so they have to be very well maintained. Additionally they must supply power for a guaranteed minimum length of time noted at 701-11(b)(2) as no less than two hours. Normally these mandatory power plants are involved in life safety circumstances.

Simply put and by way of contrast, no one's life should be hanging on the problematic performance of an optional system.

Unless you have emergency lighting in your owned building attached to the generator, or unless you are required by law or regulation to have a mandatory generator, most station systems are

viewed as optional.

Most mandatory systems supply life-critical areas of hospitals, clinics, public safety command centers and the important life safety systems of buildings such as back-up power for fire water pumps, elevators, lighting in fire stairs and the like. The powering of all of these and similar loads is a serious matter.

Many stations move into new rented quarters and either assume or, quite often, are told that their station operation can be connected to the emergency building generator. A rueful awakening comes when they find out that the building's system is a mandatory one and a "study" must be done to see how great a part of the station's power load, if any, can be attached.

In my own distant past I had a typical experience with a major building where my TV station had a "microwave" house. That building had only a mandatory generation system where, after a complete study, we were allotted something like 325 watts.

## Where's the power?

Further, the "emergency panel" breaker that fed the most important pieces of our equipment was fixed by the engineer who did the study at 10 amps so that we could not draw more than 1,200 watts under any circumstance.

That 325 watts was just enough to run STL, ICR and terminal gear located there. The waveguide pressurizer and even the lights could not be supplied by the generator.

Worse, their big 250 kW diesel unit was limited to only its day tank for fuel such that an extended run was out of the question. All the building owners and the city wanted it to do was to cover the clearing of the building whenever a power failure occurred and that was it.

We eventually floated long run gel cells charged from the terminal room in our station on the ground floor of an adjacent building across the street to handle extended outages. At that studio location we had our own power plant with three days of fuel.

Similarly a radio client of mine got just 3 kW of power allotted after their study which was just enough to run the air studio and the business system. A series of battery powered lights got them through the live breaks.

There are two important aspects of this situation that you should take away from this reading.

The first is that before you commit to any new space or location, you should know what your allotment on any existing generator is along with run time available.

The second is if you find out you can't go on an existing supply, determine if you can have your own generator. If so, then

See NEC, page 17 ▶



NEC 1999

National Electrical Code



## Workbench

▶ Continued from page 15

parameters of 20V withstand and 100mZ sink are listed. John designed his remote start circuitry around these parameters. When connected, the machine delivered a partial "on" state, which stopped them in their tracks.

Sue Hammond of the Sony regional service center came to John's rescue, faxing schematic sheets from the service manual. They clearly showed 6.8V zener diodes across the output collectors. The diodes limited the voltage to 5VDC TTL logic.

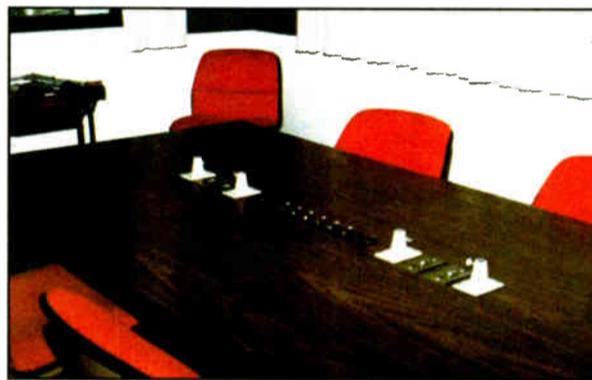


Fig. 3: Convert your conference table into a group studio

Because the output transistor part number was not available, the current sink capacity could not be obtained. The solution was to use a 5VDC opto-isolator to handle the remote control functions for this model.

John's suggestion if you are hooking up the remote controls of this device is to consider his suggestion before considering the equipment defective. Consider it suggested!

★★★

As more stations attempt to combine facilities to take advantage of duplicate services, one of the largest space gobblers is the conference room.

Bruce Blanchard, director of engineering for Salisbury State University station WSCL(FM), turned a studio into a conference room — or vice versa.

Figure 3 shows the conference room table that was modified to permit microphone and headphone connections.

Typically, the room is used for conferences. However, within a few minutes, the mics and booms can be installed and,

when you add a few headphones, a public affairs talk show can commence.

The look is clean for meetings. Given the low profile of the connectors, there is no equipment to distract participants. A wiring umbilical, running through a carpet cover mates to a wall panel, where everything has sockets. If the conference table needs to be removed, separate mics can be run from the wall to mike a small band or combo if necessary.

■■■

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is a district sales manager for Harris Corp. Reach him at (703) 323-8011.

Submissions for this column are encouraged, and qualify for SBE recertification credit. Fax your submission to (703) 323-8044, or send e-mail to [jbisset@harris.com](mailto:jbisset@harris.com)

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# NEC

► Continued from page 16

have all the details of your generator requirements worked out and agreed to in advance.

A quick but appropriate example is the location of your generator. If you're near the ground floor but the generator has to go on the roof, there may be 30 floors of feeder, control lines, conduit and, most expensive, fire stop treatment on each and every floor.

These added items could raise the expense of installation to three or four times the cost of the generator alone, not to mention complicating its maintenance immensely.

Your connection to any mandatory system will almost always require a third-party engineering study. In fact, because of the associated safety concerns, you should insist on one. If it can be shown or merely surmised that the last connection of your system or that a higher demand then allotted drawn by your system caused the mandatory generator to fail,

you and your station are in deep guano.

With a complete connection study, you can begin to defend yourself from the blame vultures.

Because connection to a mandatory system requires a study and most likely a connection design by others, we'll focus on optional installations, where most of the decisions are yours.

The specific installation caveats for engine-driven generators are located in NEC article 445. The two most important items for your station in this article are that the supply phase conductors' ampacity has to be 115 percent of the generator's output current rating and you need a disconnect or shut down arrangement for the generator at the generator.

## Get equipped

Most major generator manufacturers have comprehensive software on their Web sites to help you make a selection from their product line. One of the best is KatoLight's software, at the Web site [www.katolight.com/ag/worldwid.htm](http://www.katolight.com/ag/worldwid.htm)

Often, drawings of products including dimensions are available at these sites, giving you a head start on planning. At

the end, put your final generator selection out to bid quickly, because many engines are not stock and the delivery cycle can be months.

Next episode, we will continue our NEC generator review and get into details with a case study of a transmitter standby generator in a challenging location.

■ ■ ■

*Charles S. Fitch, W21PI, 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 DoFE of WTIC-TV and WSHH-TV. He has been a FCC licensed commercial and amateur operator for more than 40 years.*

# Cart Chunk

► Continued from page 11

regarded as fair and for the good of the community by key participants, many of whom are arch-rivals.

Also, Cart Chunk was never intended as an edict of how anyone should represent data internal to their own system. It is simply a prescription for getting broadcast specific audio and metadata in and out of various closed systems.

## Rules

Third, moving this spec through an internationally recognized standards body means participants follow rules and procedures, and the outcome is not subject to a single company changing its mind. If anyone needs to be reminded, Microsoft is not a standards body; it is a software monopoly (at least, so says the Justice Department).

Currently, the Cart Chunk standard proposal is at the close of the discussion phase, as Project AES-X87 under the auspices of the SC-06-01 Subcommittee on File Formats. The EBU has said it will follow the AES in its standards adoption process.

As important as being sanctioned by an official standard organization is, the Cart Chunk is already in use by a number of manufacturers. Standards, contrary to the view of many, are not articles of law imposed on an industry; that has been shown not to work.

Rather, a standard is a codified description of what an industry is doing, codified in a way that other members of a community can join in and be assured of compatibility and connectivity. And so it is with the Cart Chunk. (See table of participants.)

The Cart Chunk spec has always been a public service to our industry. We, and members of other companies (and non-vendor organizations like *broadcast.net*), have served as the stewards and info sources since this project began.

To now better serve our industry, a Web site is being launched at [www.cartchunk.org](http://www.cartchunk.org). This site is slated to go live Sept. 1. The purpose is to provide a repository for the specification, address frequently asked questions, provide a list of vendors/users and links, and provide utilities like a downloadable chunk reader so that creators of Cart Chunk files can verify that their implementations actually meet the spec. (Thus, users can use this tool to test claims of manufacturers.)

Readers should note that not all Cart Chunk participants had responded to our queries in time to meet the publication deadline for this article, thus, not all active vendors and participants are listed here. Vendor claims have not been verified by any independent testing but are a public statement of each company's position. We encourage users to test these claims. A current list of vendors will be maintained on the [www.cartchunk.org](http://www.cartchunk.org) site. We hope to see new participants online. The editors of *RW* have also invited companies to send announcements of their participation to [radioworld@imaspub.com](mailto:radioworld@imaspub.com)

## Up next?

Where the Cart Chunk will go next, and how it can be utilized to benefit broadcasters, are subjects for later writings and inventions. But interest in this and other open standards continues to pick up momentum.

Enco's automated "drop box" file injection utility was released in late 1999. Central Media's announced that the Spot Taxi distribution service would allow stations to download commercials as Cart Chunk files. And BE adopted Cart Chunk as the native representation for its VaultXpress product line. These are but a few examples of our industry moving forward with the Cart Chunk spec.

*Geoff Steadman and Dick Pierce are broadcast consultants and principal authors of the Cart Chunk specification. They can be reached at [geoffsteadman@compuserve.com](mailto:geoffsteadman@compuserve.com) and [dpierce@world.std.com](mailto:dpierce@world.std.com)*

## The Breakdown

The NEC dictates minimums of how to install the system. But before we get to those standard details, we must decide what we're going to do in bold strokes.

We need to make some decisions, most preferably in the following chain:

- What are the loads we are going to support?
- What are these loads in watts: basic consumption plus additional current flow for power factor and starting/magnetizing currents, etc.?
- Total loads considering all support factors plus a margin for bad fuel, dirty air cleaners, excessive heat or extended running, etc.?
- What fuel can we or should we use: gasoline, LP, propane, diesel, wind, solar?
- Hygiene factors: How quiet does it need to be, how clean, how smelly, how cool?
- Engine speed: 1800 RPM long run or 3600 RPM short run?
- Engine and generator combination sizes available?
- Economy of fuel vs. the amount we can keep on hand vs. the run time needed?
- Make tentative selection of generator that satisfies the above criterion.
- Subtract total projected load number from that generator's normal output.

If you have a little power left over, consider it a bonus on margin. If you have more than 25 percent left over, consider putting your site tenants or similar good use on the generator. If you have 50 percent left over and no reason for additional capacity, go back through. The engine will not be fuel economical as it needs to be well up its power curve (greater than 65 percent load) to come into its best consumption window.

If you are short of power and this is all you can afford or "fit in," determine which of the original loads can be shed and start over.

— Buc Fitch

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## PRODUCT EVALUATION

# Remote Mix Sport Hits the Road

Paul Kaminski

Though its name suggests otherwise, the Remote Mix Sport from JK Audio is a serious news mixer/telephone interface and production tool.

I put serial number 1005 off Joe Klinger's assembly line and into what most would describe as rough service, covering sports and news from coast to coast and points between.

The Remote Mix Sport builds on the reputation and footprint of the Remote Mix 3 series. The new Sport model makes some changes requested by customers.

The mixer has three XLR microphone inputs, one of which switches to a line level input (Input/Mic 1). On the first of the Remote Mix 3 series units, the line input was a RCA female jack. There is an LED to indicate a ring so there is no audible signal that might detract from a broadcast.

Gone is the RCA jack for the line-level output. In its place is an XLR connector at line level that is switchable between a clean mixer feed (the sum of the three inputs) and a mix of the mixer and telephone line — just what's needed to record telephone conversations.

All you need is the same connector you would use to connect a professional

XLR mic to an MD. Connect that to the line input of a MiniDisc and you can easily record the conversation.

Of course, the XLR line-level connector will connect to any ISDN or POTS codec, RPU or other XLR line-level device. This facilitates a hot backup for those feeds that simply must stay nailed up.

The system maintains belt-and-suspenders redundancy with the ability to feed an RJ-11 standard POTS telephone line or an RJ-9 handset jack while feeding the XLR line output.

We used the handset interface to connect the Remote Mix to a hotel courtesy phone in Port Clinton, Ohio,

## Product Capsule:

JK Audio

Remote Mix Sport



### Thumbs Up

- ✓ 80 Hz - 15 kHz response
- ✓ XLR I/O connectors
- ✓ RJ-11 telephone and RJ-9 handset interfaces for POTS
- ✓ Facilitates hot backups with ISDN/POTS codec/RPU
- ✓ Three headphone outputs
- ✓ Cue Input for spotter
- ✓ Ability to record both sides of a telephone conversation



### Thumbs Down

- ✓ Missing an interface for a handheld cell phone

For more information contact

JK Audio Inc. in Illinois at (800) JK-AUDIO, fax (815) 786-2929 or visit the Web site at [www.jkaudio.com](http://www.jkaudio.com)

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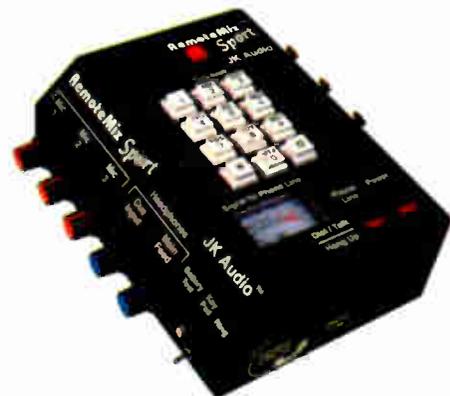
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to transmit a wrapped report and actuality about the Lonz's Winery terrace collapse to CBS News.

We also used the unit to replace a regular telephone when we reported on the death of NASCAR driver Kenny Irwin from New Hampshire International Speedway.

The system will connect easily to a cellphone with an analog FAX jack connector (RJ-11, usually seen on bag phones). For the more common handheld phone, you would have to improvise your own interface.



We had thought a solution using the handset jack would be the right way to go, simply because telephone handsets now come with electret condenser microphones. The unit allows you to choose the level going to the handset interface.

The Remote Mix Sport also has three 1/4-inch headphone jacks. So if you are equipping a sports broadcast, you can connect the two play-by-play headsets, perhaps three, without any additional equipment.

It has a -10 dB 1/4-inch jack for a cue input for a spotter or for your off-air radio feed. There are headphone controls on the front panel for the cue input and the main feed, so the operator can balance the level of the cue input and main feed.

The unit has a wall transformer for its main power and two 9V batteries for battery power. The battery power came in handy at Port Clinton. I was literally moving cuts on a MiniDisc with one hand and setting up the Remote Mix Sport with the other so I could feed the material minutes before the broadcast.

Joe Klinger again raised the bar for the do-it-all class of remote broadcast tools with the Remote Mix Sport. It is worth every penny of the \$995 list price (we suspect dealers will offer a discount, but no promises).

The only thing that would make it a perfect news/sports and production machine would be an interface for a handheld cell phone.



## 1200 Console

- NEW - redesigned in 1999
- 5, 10, or 15 channel models
- Fully DC controlled for reliability
- Ultra high audio performance
- Easy connectorized installation
- Modular internal electronics
- Mix minus phone interface



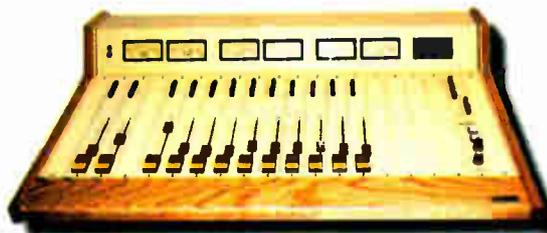
A rugged design with heavy aluminum panels, solid oak trim, 5M operation On/Off switches and full DC control, the 1200 is ideal for On Air, Production, or News applications.

### Standard Configurations

1200 - 5S	5 channels	\$2,295
1200 - 10S	10 channels	\$3,495
1200 - 15S	15 channels	\$4,495
(call factory for options)		

## 12,000 Console

- NEW - redesigned in 1999
- 8, 18, or 28 channel models
- Fully modular design
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- VCAs remove audio from faders
- Telephone talkshow module option
- Monitor for control room & 2 studios



Modular, reliable, flexible, and powerful, the 12,000 is found around the world from Tokyo to Paris to New York. The 12,000 is perfect for any size market or any radio application.

### Standard Configurations

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12K18 - 12	12 channels	\$7,075
12K18 - 18	18 channels	\$8,755
(call factory for options)		

## Digital Console

- NEW - Revolution Series
- Digital & Analog Radio Console
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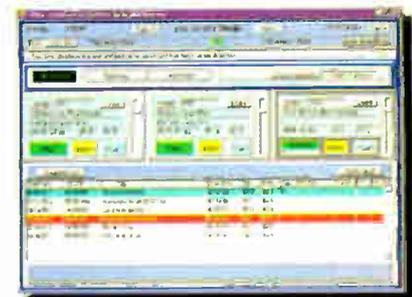
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ROOTS OF RADIO

# In 1961, a Clear-Channel Setback

Mark Durenberger

This is one in a series of articles about the history of clear-channel radio stations in the U.S. The previous part appeared Aug. 2.

Once past the 1941 North American Regional Broadcasting Agreement, or NARBA, the FCC began to focus on ways to provide better nighttime radio coverage of underserved "white areas."

The choice seemed simple but dramatic: Add duplicate stations on the AM clear channels, or authorize existing 1-A stations to operate with power in excess of 50 kW in an attempt to provide solid service over wider areas. (The FCC still refused to include FM in its coverage calculations.)

Imagine the hullabaloo in Washington! In one ring, communications engineers and lobbyists asserting that additional stations on the clears would create interference that would "destroy a national asset."

On the other side were the folks who wanted an end to what they called the "monopoly" and "unfair advantage" held by clear-channel broadcasters. In the middle were beleaguered commissioners who, in the view of many staffers, weren't tuned into the issues but were noted for being responsive to political pressure.

Absent the hard data needed to make a defensible decision, the FCC continued its "trial balloon" approach to resolving the clear-channel matter. In 1958 the FCC proposed new Class II stations on 23 of the clear channels (660 and 770 were already considered duplicated). At this same time, the FCC asked the 1-A stations to make their case for super-power in excess of 50 kW "if it were authorized."

Report and Order authorized duplication on 13 of the 1-A frequencies, assigning one new Class II station to each channel, to operate with a minimum of 10 and a maximum of 50 kW at night.

660: Because 660 was duplicated in Fairbanks, it was "protected for now against further duplication." While 660 might be available for super-power, such a station would not be authorized in New

750: This had been assigned to Alaska for duplication, to allow Anchorage to surrender 730 to the Mexicans. WSB, citing the distance to Alaska, asked the FCC to protect 750 as a U.S. super-power channel. This request was denied at first, but in response to a Petition for Reconsideration, in 1965 the commission granted the protection, making it clear that this did not imply higher power would in fact be authorized.

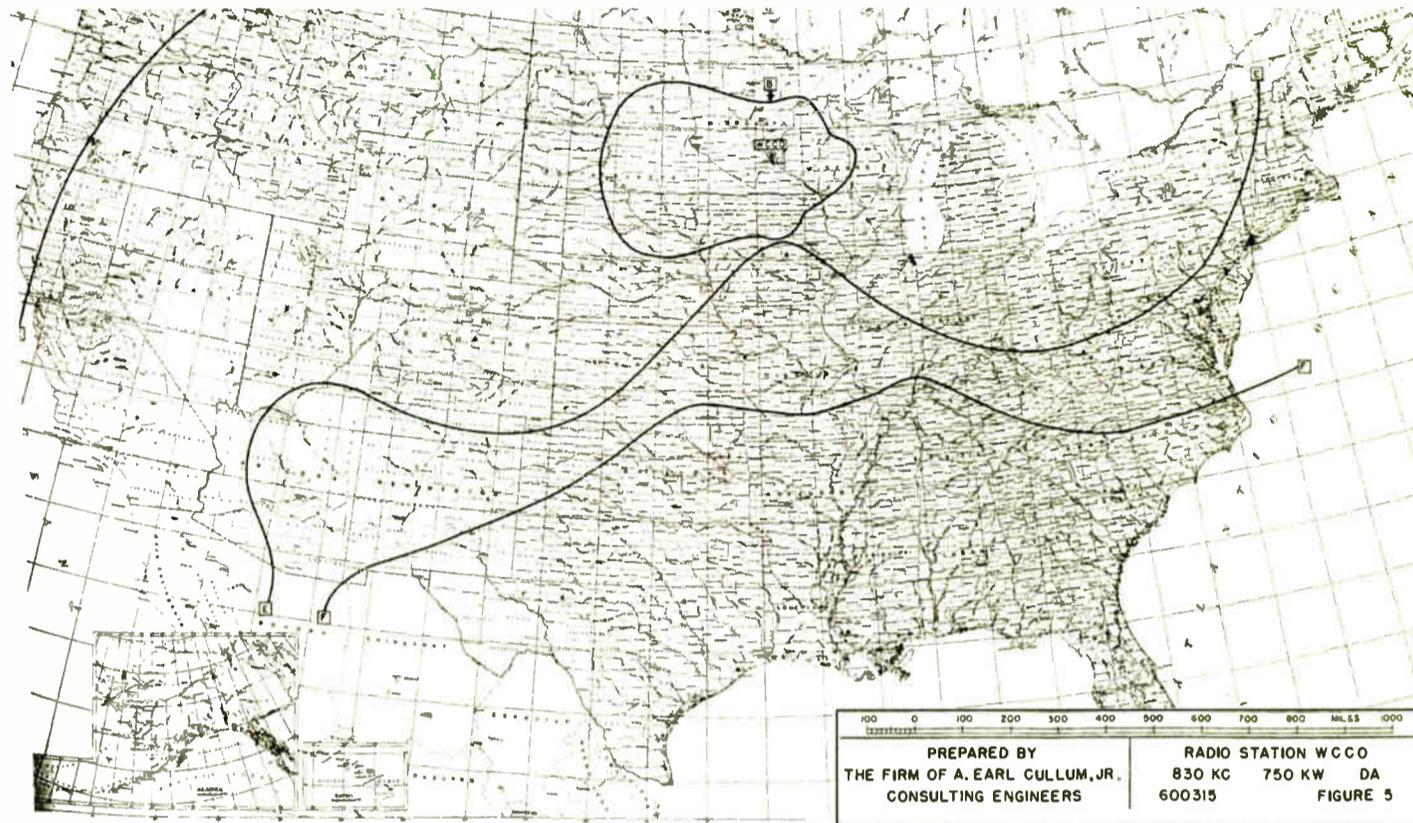


Fig. 1: WCCO's filing for super-power

(Interestingly, in some cases, Class II stations operated with lower power during the day, to protect existing adjacent-channel daytime services.)

These new Class II stations would be

York, because it would need to protect 650 and 670, requiring directionalizing north and southeast, into areas already well-served.

820: "Serves the West; super-power could cover a lot of white area." The FCC said WBAP could operate 750 kW DA-N at 270 degrees.

700: "Super-power could cover a lot of under-served area in the Southeast." WLW could operate 750 kW DA-1 at 180 degrees. Interestingly, the FCC also said 700 might be available for both super-power in Cincinnati and duplication in Utah.

830: "Super-power could expand service in the Midwest." But this channel too was already partly duplicated. WNYC had been on the air in New York City since 1943, under limited nighttime authority. The 1961 Report and Order made the

See CLEARs, page 23 ▶

## Asset or monopoly? Things came to a head with a commission Report and Order in 1961. It was a landmark edict.

Among those responding was WCCO, which filed comments and a complete engineering exhibit in support of 750 kW. They planned to directionalize west from Minneapolis on 830, and said this would provide significant white-area coverage gain not available through the FCC's other proposed solutions.

(WCCO believed so strongly in the value and logic of its engineering data that it purchased land for a four-tower array to include a true Franklin antenna and began negotiating for the necessary usage permits).

### 1961 Report and Order

The matter came to a head in 1961, with the publication of a "Report and Order: In the Matter of Clear-Channel Broadcasting in the Standard Broadcast Band." It was a landmark edict.

Until then, with two exceptions, only one station operated at night in the contiguous 48 states on each of 24 1-A channels (the 1961 rule making would add 1030 as the 25th 1-A channel). That

allocated to western states, to serve the white areas. The initial duplication table is shown in Fig 1.

The 1961 Report and Order contains some interesting language. In an intriguing way of hinting at the inevitable, instead of explaining how they chose which channels to duplicate, the commissioners chose to describe instead why they had spared the remaining 12.

Here, in the FCC's words, which are italicized, are their reasons for protecting those 12 1-A channels as potential super-power candidates:

640: "Serves the West; super-power could cover a lot of white area." KFI might operate 750 kW as a DA-1, oriented 22 degrees. But since 1944, 640 had been duplicated in Ames, Iowa, by WOI, under a series of STAs permitting nighttime operation.

650: "Super-power could cover a lot of under-served area in the Southeast." The commission said WSM might operate 750 kW, DA-N at 135 degrees.

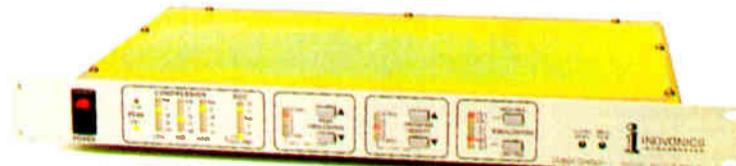
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# Clears

► Continued from page 21

New York authorization "permanent." This meant that in a super-power application, WCCO would have to limit its nighttime power to the east.

840: "Super-power could cover a lot of under-served areas in the Southeast." WHAS could operate 750 kW DA-N at 135 degrees.

870: "Super-power could cover a lot of under-served area in the Southeast." The FCC said WWL could operate 750 kW DA-1 at 0 degrees.

sion didn't buy that one. 760 had been assigned for use in San Diego, to allow KFMB to vacate 540 for use by Mexico. In this instance, the FCC displayed its pragmatic side by granting itself some waivers; most notably reducing the protection criteria for KBIG/740 Avalon, for the interference that would result from a San Diego operation on 760.

- The commissioners also reviewed an ill-timed proposal by KBIG that 830 be duplicated in Southern California. The idea was that if KFMB were given 830 instead of 760, this would resolve the KFMB/KBIG interference problem (while also solving WJR's concerns about a domestic co-channel operation on 760).

**DUPLICATION**

**TWO LOUD VOICES DON'T MAKE ONE CLEAR VOICE**

A 1-A CLEAR CHANNEL means just that. It is a channel in the air that is used by only one station at night.

Put more than one AM station on the same channel at night (duplication) and their signals interfere with each other. This is why Local and Regional channels, which have many stations operating therein, do not provide any skywave service and provide groundwave service to relatively small areas.

This is why the "duplication" process progressively substitutes a "garbled hash" or "crosstalk" for listenable service to remote areas.

CCBS makes its case against 1-A duplication

1040: "Super-power could expand service in the Midwest." WHO could operate 750 kW DA-1 at 270 degrees. But if 1040 was good for the Midwest, why not 1120? Because KMOX at super-power on 1120 would cause unacceptable interference to adjacent-channel 1110 and 1130 stations.

1160: "Serves the West; super-power could cover a lot of white area." The FCC suggested KSL could operate 750 kW, non-directional.

1200: "Serves the West; super-power could cover a lot of white area." WOAI could operate 750 kW DA-N at 337 degrees.

Had these stations been granted super-power, directionalized on the bearings suggested, imagine how the AM band might have sounded!

The Clear Channel Broadcasting Service had been doing yeoman's work in assessing the various technical proposals before the FCC and ensuring that its own position was understood.

Led by WSM's Jack DeWitt, the small but enterprising CCBS technical group filed comments proposing a "gang of 20" channels for 750 kW operation.

These included 640-650, 680, 700, 720, 750, 810-850, 870, 890, 1020-1040, 1160, 1180, 1200 and 1210. In being specific by frequency in its comments, the FCC may have been responding to this CCBS proposal.

The 1961 Report and Order provided other information of interest:

- To protect itself on 760, WJR had suggested to the commission that 760 be duplicated only in Hawaii. The commis-

Alternatively, KBIG said, "if KFMB were to be assigned 760, why not move KBIG from 740 to 830?" That too would resolve the 760/740 interference problem. The commission said "no dice," and stuck to its earlier ruling that 760 would come alive in San Diego. 830 would continue to operate from Minneapolis (with the secondary operation in New York

## THE 1961 1-A DUPLICATIONS

Frequency	New Status	New (Existing) Assignment
640	Protected, but:	(Duplication in Iowa)
650	Protected	
660	Protected, but:	(Alaska existing)
670	Duplicated	Idaho NEW
700	Protected	
720	Duplicated	Nevada NEW
750	Protected, but:	(Alaska existing)
760	Duplicated	San Diego for KFMB move
770	Duplicated	("The KOB Case")
780	Duplicated	Nevada NEW
820	Protected	
830	Protected, but:	(Duplication in New York)
840	Protected	
870	Protected	
880	Duplicated	Nebraska NEW
890	Duplicated	Utah NEW
1020	Duplicated	New Mexico NEW
1030	Duplicated	Wyoming move of KTWO ("KOB case")
1040	Protected	
1100	Duplicated	Colorado NEW
1120	Duplicated	California or Oregon NEW
1160	Protected	
1180	Duplicated	Montana NEW
1200	Protected	
1210	Duplicated	Oklahoma NEW

City), and 830 would suffer no further duplication at this time.

The FCC also carried over without resolution the long-standing "WCCO-WNYC 830 fight" and other related stories will be the subject of follow-up reports.)

- 1030, which had been a 1-B channel reserved for duplication in New Mexico, would now become a duplicated 1-A channel and opened to operation in Wyoming, pending resolution of the famous "KOB Case." (That story, the "WCCO-WNYC 830 fight" and other related stories will be the subject of follow-up reports.)

- The commissioners also cut through a myriad of pleadings and population statistics to reaffirm that super-power on the Chicago 1-A stations "was not needed to provide new national night-time service." They said

"additional stations in the West on the 4 Chicago frequencies (670, 720, 780 and 890) would better serve Western listeners."

Ironically, in the ultimate resolution of the clear-channel matter, the Chicago stations, by virtue of their central location, probably ended up with more protected land coverage area than many of the 1-A stations located near either coast.

That 1961 Report and Order was a major milestone and a significant victory for the opponents of clear-channel authority. But the clear-channel operators weren't about to capitulate.

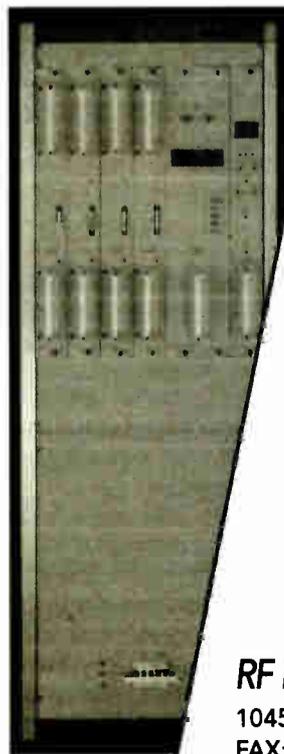
Next time: Congress gets into the act.

Mark Durenberger is GM of Group W Network Services in Minneapolis and an occasional RW contributor. He welcomes questions and comments via e-mail to durenberger@teleportmn.com

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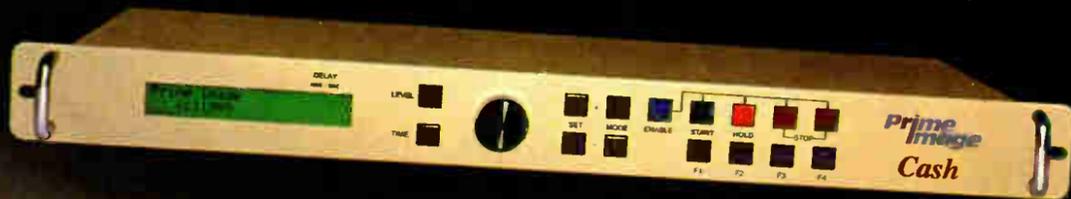
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## RTNDA Returns to Its Radio Roots

Peter King

"We're putting the radio back into RTNDA!"

That might be the theme of this year's convention of the Radio-Television News Directors Association, with no fewer than 15 events designed to appeal to radio types at the group's convention in Minneapolis, Sept. 13-16.

Convention chairman and incoming RTNDA Chairman Mark Millage, news director at KELO-TV, Sioux Fall, S.D., is a TV guy, but he said he's attuned to radio's needs.

"It may sound cliché," he said, "but 'radio' is the first word in RTNDA's name, and it's still at the forefront of what we're trying to focus on."

At least two sessions will deal with the Internet: "Lifting the Cyber Curtain ...

the Mouse, the Remote and the Future of Local News," and "Radio News Takes Flight Online."

Millage said these sessions are opportunities to learn about success stories regarding radio and the Net and how stations are partnering with other organizations to make it happen.

There will be emphasis on product — and on the business aspect.

"First we have to grow revenue, which ties together with audience, advertisers and all of that. There are practical opportunities for news organizations that focus on how to get involved with the Internet or how to (better) operate what they're already doing," Millage said.

### The future of radio

"Radio Evangelism" is RTNDA's "come to Jesus" meeting on the future of radio. It's all about spreading the gospel to students, managers, headhunters, consultants and talent scouts on the positives of working in radio.

Millage laments that radio has become a forgotten element in many universities and colleges with communications programs. He said many students get their first taste of broadcasting in radio, only to abandon it for "sexier" media, such as TV or the dot-coms.

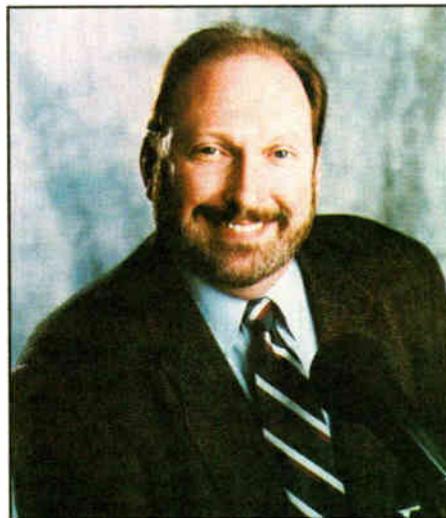
Millage said the "Radio Evangelism" session is more of "a student session to spread the word that there are a lot of good jobs out there in radio, and there's a real future in the growth of radio news. If you get even a couple of students thinking about it, at least you've made some inroads."

The "evangelist" who will lead this session is Westwood One talk host Jim Bohannon, who said he's had a life-long love affair with radio. He has been on the air at the local or network level for 40 years.

"This is going to be sort of a rah-rah session, I think every industry needs it,

particularly one whose obituary has been written so many times," Bohannon said. "This session will reaffirm the Mark Twain principle that rumors of (radio's) death have been highly exaggerated."

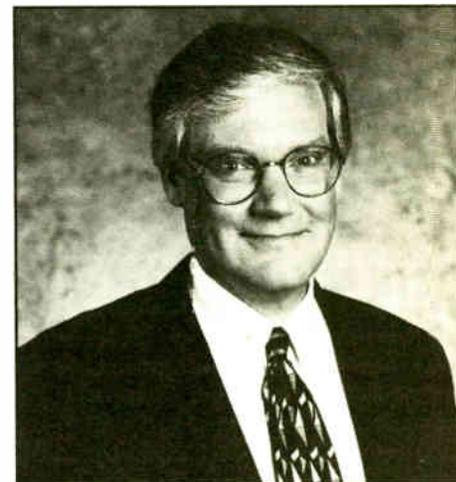
Bohannon said the session will explore opportunities in broadcast and satellite radio. "Radio obviously remains a money-maker, otherwise companies wouldn't be trading like stations were slots on a Monopoly board."



Jim Bohannon

Bohannon said he finds radio's "theater of the mind" quality is one of the medium's most appealing characteristics. He mentioned a classic Stan Freburg promo in which Lake Erie is filled with hot chocolate, then topped with a mountain-sized chunk of whipped cream and a 10-ton maraschino cherry dropped by the Canadian Air Force. Try doing that on TV!

Bohannon concedes prospective broadcasters may find more fame and fortune in TV, but he thinks the creative process is much more satisfying in radio, where reporters, production people, and personalities survive on their own merits,



Bob Dotson

as opposed to TV, where there are many more gatekeepers.

"There are opportunities," he said, "and if you want them, you can find them."

In many cases, Bohannon said "we've gutted our local farm system." He said there may be fewer opportunities at the local level, but there may be more jobs available with syndicators or program packagers.

The vanishing radio newsroom and smaller newsroom salaries are of concern to RTNDA.

Consolidation in the radio industry is a significant factor in the shrinking newsrooms, according to Millage.

"Newsrooms at smaller stations have disappeared steadily since the beginning of deregulation in the early 1980s, and radio news salaries have not kept pace with the rest of the world, Millage said. "We haven't seen a growth in salaries, especially in radio, especially in smaller markets, for many years."

Radio news is disappearing from major markets too. According to the RTNDA, one recent example of the is Infinity's WMAQ(AM), Chicago, which bailed out of the news format July 31 leaving about 40 people in the dust.

See RTNDA, page 26 ▶

### RTNDA Registration Information

The RTNDA2000 International Conference and Exhibition will be held Sept. 13-16, with exhibits Sept. 13-15, at the Minneapolis Convention Center.

You can register onsite in Exhibit Halls 1 and 2.

Registration fees vary.

A full convention pass for an association member journalist or educator is \$565, and \$695 for nonmembers. Suppliers and PR folks pay more; spouses, students and retired members pay less. An exhibits-only badge is \$125.

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# RTNDA

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Millage said with fewer opportunities, radio news people face increasingly difficult career choices.

"Salaries are driven by competition. As the market starts to shrink in some areas, there are more available people out there, and certainly that's not going to drive the salaries up," Millage said.

Adaptability, he said, is going to be a key to anyone's future in radio news, whether it be the ability to run or work for a small Network of stations, such as the Clear Channel "AM" clusters in Ohio and upstate New York, or to tailor a presentation for an Internet Web site.

Millage stresses that many of today's TV news techniques were born in radio: the immediacy of news coverage,

**'Radio' is the first word in RTNDA's name. It's at the forefront of what we're trying to focus on.**

— Mark Millage

extended coverage on big stories, taking over the airwaves in a huge story to tell the whole story.

"Communicating the story remains the most important part," he said, "and the

core of that is good writing and good storytelling."

In that vein, there will be several writing sessions, including "News Writing in a Radio World," "Story-telling Strategies," and "Yes I Want to Write Like Bob Dotson This Year, Too," featuring the award-winning NBC correspondent and wordsmith for the third year in a row.

Dotson is best known for his TV work, but like many TV journalists, he got his start in radio. He began as a University of Kansas student in Lawrence, Kan., and worked later at KMBC(AM) in Kansas City.

There will be plenty for radio writers to digest in his popular session. Dotson said the basics of writing haven't changed since "Jesus wept. You don't need to (write) long and involved in order to make it work. I try to approach every story as if it were an onion; it has many layers. On the surface, there's the straight 'who did what, where, etc.' but on the other hand, you're also trying to address the larger issues."

Dotson said a good story has to pass the "so what?" test. A reporter's job, in his view, is to make the story understandable — and to make the listener care.

Dotson said "people come to (the news) because they want something from your writing; they want understanding, they want to be involved, so when you think in those terms, (writing) becomes more than just 'who, what, when, where and why;' what radio people do is probably the most difficult kind of writing.

"If you can still get the essence of what you need to say, and engage and hook a listener in 35 seconds, you're doing a wonderful job," Dotson said.

"It's so important in radio, where stories come to us as fast as boxcars on a railroad train, kind of like a verbal hose or a sausage grinder," Dotson said.

"Anything you can do to use a storyteller's technique to give people understanding, not just bare facts, and to engage them emotionally, even in two or three lines, means you've done the job."

Dotson said it's not just the writing, it's knowing how to use natural sound and other elements.

Dotson will talk about how to use all of these elements in a logical manner to create a visual image for the listener.

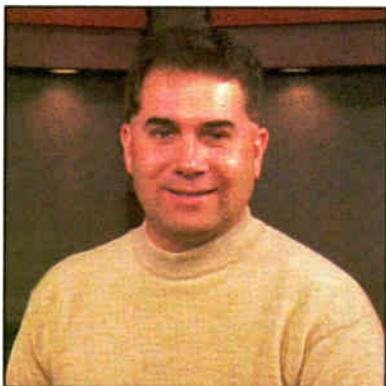
"They have to make sense," he said. "We have to be able to explain it all in one sentence. What does it all mean?"

He will discuss good writing under deadline pressure, story construction and ways to make your writing memorable while getting your point across.

A writing clinic "News Writing in a Radio World" is geared specifically to radio journalists.

Radio managers, reporters and anchors alike will want to pay attention to "The News Battlefield for Morning Drive," a look at how radio can combat the ever-expanding early morning television newscasts which permeate every market. Radio news managers will talk about their successful strategies for fighting back and winning.

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Mark Millage

## Murrow Awards Honor Excellence

The Radio-Television News Directors Association 2000 Edward R. Murrow Awards for excellence in electronic journalism will be presented at a black-tie dinner ceremony in Minneapolis on Sept. 13. CNN's Christiane Amanpour will host the event, which opens the RTNDA's International Conference and Exhibition.

Forty-five news organizations won 65 awards out of an initial pool of 2,008 entries from 461 news organizations.

To receive the sought-after Overall Excellence Award, a station or network must consistently demonstrate depth and scope in its coverage.

The WNOX(AM-FM) team, of Knoxville, Tenn., winner of the Overall Excellence Award for small-market radio, is pictured at right.

The large-market Overall Excellence winner, KCBS(AM) of San Francisco, is pictured below at newsman Al Hart's retirement party in July.

Hart, who retired after 34 years at "All News 74" to care for his wife, who was recently diagnosed with ALS or Lou Gehrig's Disease. (That's Al in the front row — he's the tall, elegant gentleman who looks aglow.)

And only about a third of the CNNRadio news team were able to pose, according to News Director Harley Hotchkiss. CNNRadio, of Atlanta, is the network radio winner of Overall Excellence Murrow Award.

"The winning entries encompass the very best work being done today in electronic journalism," said Barbara Cochran, RTNDA president. "They run the gamut from excellent breaking news coverage to distinctive and compelling documentary work."

— Laura Dely



The WNOX(AM) news team, front row, from left: Sam Brown and Sarah Jennings. Back row: David Foulk, Ensley Hagan, Channing Smith.



The KCBS(AM) radio news team (partial), front row, from left: Angela Corral, Arleen Bolton, Maria Wise, Barb Blum, Jane Riley, Rebecca Corral, Al Hart, Susan Leigh Taylor, Narsai David, Betsy Rosenberg, Terry Conway, Cynthia Louie. Second row: Fred Wayne, Bob Melrose, Ron Lyons, Jenny Glick, Stan Bungler, Steve Little, Hal Ramey, Bob Price, Barbara Taylor, Mike Pulsipher, Frni Beyer, Todd Smoot. Back row: Dan Dibley, Elz Cuya, Robert Foote, Paul Hosley, Ed Cavagnaro, Mike Colgan, Jerry Wilcox, Doug Sovern, Mike Pechner.



The CNNRadio news team, in part: From left, holding the banner, are Ken Pauli, Tim Nelson, Meg Cronham and Eric Edwards. Back row: Mary Ellen Hopkins, John Lisk, Harry Beadle, Robert Garcia, Ed McCarthy, David Hull, Bob Witkin, Harley Hotchkiss.

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WEB WATCH

# The Web and Summertime Blues

Carl Lindemann

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

While there's not much of a track record to go on, it seems that the new media business boil slows down to a simmer in the summer. The constant torrent of announcements of acquisitions, initiatives and innovations has slowed.

But in the midst of this, two "landmark" cases have come to court.



artists against piracy

The long drawn-out drama over Napster continues to drag on.

The initial July showdown in court looked to be a winner for the Recording

hour reprieve on appeal.

The Napster swapfest will continue till both parties get their day in court, which is now on an expedited track to resolution. A decision from the Ninth U.S. Circuit Court of Appeals could render a decision in the case as soon as late September or early October.

In the meantime, the Senate Judiciary Committee's hearing in mid-July was an opportunity for both sides to air their opinions.

Sen. Orrin Hatch, R-Utah, took time off from his Christian Music ([www.HatchMusic.com](http://www.HatchMusic.com)) career to hear the plight of fellow musicians both for and against Napster.

Artists Against Piracy, a recently formed group of 70-plus musicians including headliners like Garth Brooks and Sarah McLachlan, pressed the case for bringing those responsible for Napster's purported Crimes Against the Humanities to justice.

The organization, funded by (surprise!) the recording industry, will be running an ad campaign to discourage college students from making illegal downloads. This is sure to be as much a

others at the hearing raised doubts about claims that Napster takes money from artists. Sixties icon Roger McGuinn testified that despite making 25-plus albums, he's never seen a dime of royalties from the record companies.

His work with the Byrds created such classic rock radio staples as "Mr. Tambourine Man" and "Turn, Turn, Turn." But the best he's been able to do is to use the albums and airplay to draw crowds for his concerts.

The upshot? What's left to steal when you've already been robbed blind? Or, as Muddy Waters puts it "You can't lose what you never had."



Muddy Waters

Meanwhile, indications are that Napster use is still on the upswing despite summer vacation. Altogether, more than 20 million have logged on to the site trade files. During the hearing, committee members received over 70,000 e-mails indicating support for Napster.

Also, despite a new study that shows that Napster use is likely to increase CD sales, the RIAA's Hillary Rosen has declared that wrong is wrong. Even if Napster is good for business, it is immoral, illegal and socially uncouth.

Despite Rosen's high moral standards, I won't be surprised if and when the industry creates its own "Napster" knock-off. In the meantime, the record companies are finally putting their catalogs on sale online.

With all the publicity that the Napster case has generated, a case with potentially far more implications for both intellectual-property law and freedom of speech has been overshadowed.

The so-called "DVD" case brought by eight of the major movie studios against Emmanuel Goldstein, editor and publisher of "2600: The Hacker Quarterly" went to court on July 17 in New York City.

The case revolves around the embarrassing ease with which computer "hackers" broke the Contents Scrambling System developed by the motion picture industry. CSS, it was hoped, would prevent a Napsteresque nightmare with DVD content.

However, a couple of underage overseas computer geeks unlocked the code and created a free DVD decoder called DeCSS. Where Goldstein ran afoul of the movie moguls was in offering the rogue code online as well as posting links on his publication's Web site to places to download DeCSS.

The case will test one of the more con-



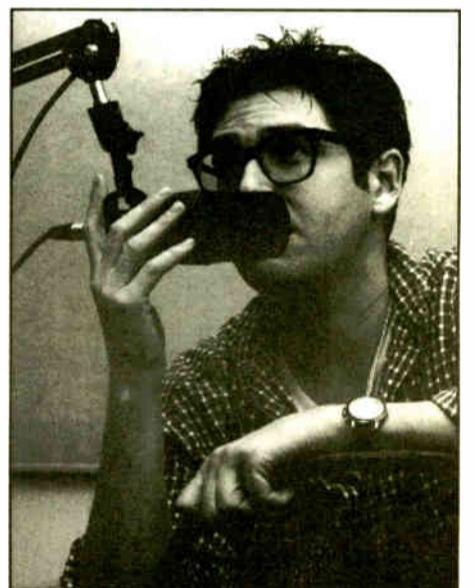
troversial aspects of the Digital Millennium Copyright Act of 1998 (DMCA). The law forbids offering access to tools designed to disable copyright protection technology. The movie industry says that's what DeCSS is — and so what the company offers on its Web site violates the statute.

Goldstein, with legal support from the Electronic Frontier Foundation, argues that, in fact, DeCSS allows users of the Linux operating system a chance to play DVDs. Without it, they are forced to use one of the commercial computer operating systems.

How the legal issues are resolved may shape the understanding of intellectual property in the digital age. Perhaps as important, the First Amendment implications may be enormous. It may be as bad to just point online to where such illegal material can be found as it is to offer it personally. Adopting a "Don't ask, don't tell" policy in the media is, well, unspeakable.

Outside of the courtroom, some new media people seem to have forgone lengthy summer vacations to maintain a manic work ethic.

Audible.com continues to add content to its collection of downloadable content available by subscription. Materials from C-SPAN as well as Public Radio International's "This American Life" are available for listening on computers or portable MP3-style players.



Ira Glass, host of 'This American Life'

National Public Radio's "Morning Edition" and "All Things Considered" are also being added. It is not clear how NPR's traditional relationship with its member stations might suffer with such online distribution. As the stations lose local listeners due to such arrangements, it's likely to rearrange public radio.

But getting rearranged — or even disarranged — is just part of the business.

See WEB WATCH, page 29 ▶

You can't lose what you never had.

— Muddy Waters

Industry Association of America. Initially, a judge issued an injunction that was to shut down the music "sharing" Web site. But Napster received an 11th-

hit with Gen Y as former First Lady Nancy Reagan's "Just Say No" sloganeering was with Gen X.

While industry forces made their point,

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# Web Watch

► Continued from page 28  
Long-loved NYC DJ Vin Scelsa is taking his act online to [artistent.com](http://artistent.com)

For Scelsa, the Web is the only place where he can practice the free-form radio that he pioneered at station WPLJ(FM) in the '70s.

Scelsa is still on the airwaves at WNEW(FM), but apparently revels in life online without playlists, commercials or the FCC looking over his shoulder.

The only thing actually missed online are the large on-air audiences. But give it time.



Vince Scelsa

Maybe the PR guys cooking up these pronouncements should get together and create an agency called "Ubrandit."

Ananova, the first automated online announcer, has discovered the pitfalls of

Mecca, i.e. to BroadcastAmerica.com's headquarters in Portland, Me.

I arrived ready to scoff at what some see as a rehash of the dated Broadcast.com concept.

## Vin Scelsa has left the airwaves for the Web.

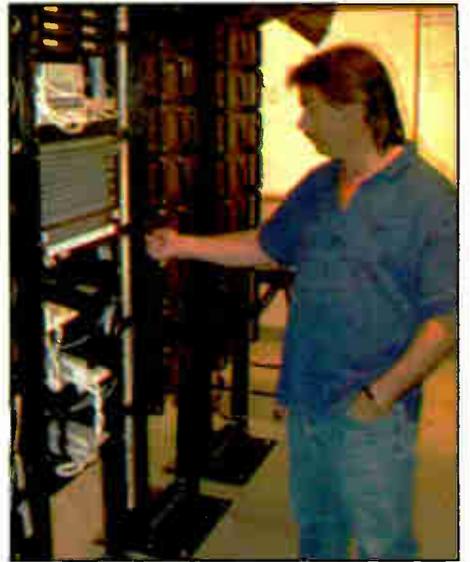
success in the media business.

Orange Plc from the British Press Association acquired her for \$143 million. It is unclear whether Ananova herself will see any of the swag. She may have to follow Roger McGuinn's lead and go on tour to capitalize on her newfound fame.

As promised, I have made the trip to

After spending an afternoon with John Brier, president and COO and Robert Flagg, vice president of engineering, I came away cautiously optimistic about their chances in the coming smack-down shakeout in the industry.

Look for a full report on my visit in these pages soon



Bob Flagg

### Wireless goes wild

Bluetooth is not the result of poor dental hygiene. It's the soon-to-be-adopted worldwide standard for wireless online communications.

By the end of the year, large numbers of laptops, cell phones, palm pilots and the like will all include Bluetooth technology.

Webcasters, too, are set to send their signals to untethered listeners. If this happens as fast as leading proponents claim, IBOC may be stillborn. Why drop a few hundred for a new IBOC-capable receiver in the car when you can spend the same dough to get a different gizmo that will add e-mail and Web surfing capabilities?

### A few updates ...

3Com has bought Kerbango, the Internet radio player manufacturer, for \$80 million. It is unclear as to whether the public will actually buy the \$300 Web appliance when full-blown PCs are available for just a few dollars more.

Yahoo! is following the lead of AltaVista and Barnes & Noble by offering a free player to allow visitors to access audio and video online.



Jeffrey Phillips

Ubrandit.com has signed on Citadel to provide its 183 station's Web sites with eCommerce services.

Jefferey Phillips, chairman, CEO and president of Ubrandit.com, offered the usual

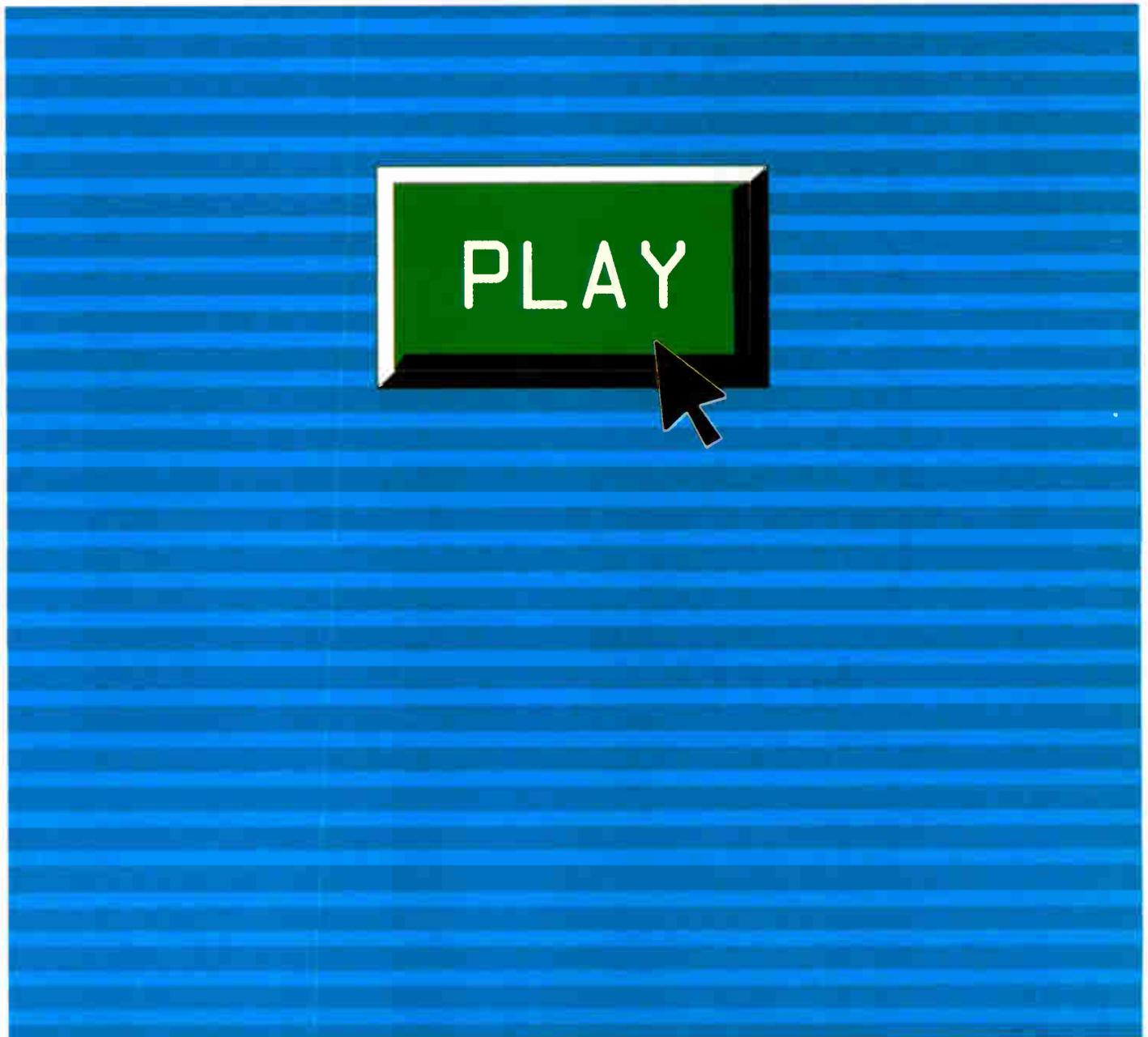
schpiel that seems to be in vogue these days.

Sayeth Chairman Phillips: "We are excited to be developing a media-based eCommerce relationship with one of the premier media companies in North America. This agreement brings certain



Ananova

economies of scale to our e-Commerce Branding Affiliate program. We believe that our branding platform potentially creates one of the lowest cost-per-new-customer-acquisition models in the Internet industry in both the eCommerce and ISP business sectors."



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# Stations Mark, Downplay Birthdays

Robert Rusk

Legendary station WCCO(AM) in Minneapolis, which is nearly as old as commercial radio itself, recently turned 75 — an important milestone in any

famous personalities from years past (such as Charlie Boone and Steve Cannon) — was vetoed by station management.

The case brings to light a decision that many radio managers must make about celebrating station anniversaries as their licenses hit the 75 and 80-year marks. In an age that values youth and new media, does it help or hurt a station to play up its long life?

## Corporate decision

WCCO's decision stirred the ire of Brian Lambert, media critic at a St. Paul, Minn., daily newspaper. Under the headline "Management Nixes CCO Birthday Party," Lambert wrote: "The resounding silence you hear this morning is WCCO radio *not* celebrating its 75th anniversary."

Lambert continued, "Lacking an explanation from current CCO management, we are left to assume the reluctance to showcase their stars of old — for even a measly hour on a Saturday afternoon, no less — has everything to do with a fear of reminding listeners how good the station used to be."

WCCO Operations Manager Chuck Dickemann told RW that presenting such a showcase "was never part of the plan."

"That's not a slight toward all those people who made wonderful contributions to WCCO. But part of the baggage that

comes with the heritage is a stigma," said Dickemann. It's a stigma for the demographic you desire to attract, because of the advertisers' desires to talk to them.

"We had to assault that type of stigma," said Dickemann. "We had to modernize the station so people would say, 'my parents listened to you, and now I listen too. There's something for me in it, and there will probably be something for my kids in it.'"

"Most people would say that about a rock or CHR station. Music evolves and changes. WCCO needed to and has been evolving as well."

WCCO previously had a live adult standards music format, but switched to news/talk in the 1980s.

Stations handle big anniversaries in different ways.

All-news outlet KNX(AM) in Los Angeles celebrated its 75th anniversary in 1995. KNX has been under the leadership of VP and GM George Nicholaw since 1967, shortly before the station switched to its current format.

Nicholaw said that how each station chooses to celebrate its heritage on the air and at public events should remain "an individual thing," based on format and market preferences.

On the air, KNX features the popular "Drama Hour" each night at 9 p.m. Such classic shows as "The Lone Ranger," "Lux Radio Theater" and "The Jack Benny Show" are broadcast. KNX's shows are available online to listeners worldwide.

The station is still located in the historic 1930s building known as Columbia Square, located prominently on Sunset Boulevard in Hollywood. A time capsule, placed in the forecourt of Columbia Square 40 years ago, will be opened in September.

KNX, also owned by Infinity, has a Web site at [www.KNX1070.com](http://www.KNX1070.com) that chronicles the station's fascinating history.

In San Francisco, perennially top-rated KGO(AM) not only talked on the air about the news/talk station's recent 75th anniversary, but also put on a free, public celebration last March at the Concourse Exhibition Center.

"Expo KGO" was held to "celebrate 75 years of KGO." The all-day event gave listeners the chance to meet former and current KGO personalities, including Ronn Owens, Jim Dunbar and Rosie Allen.

But WCCO management was unwilling to hold such a celebration for a couple of reasons: As the station has changed and evolved over the years to meet today's listener expectations, things now

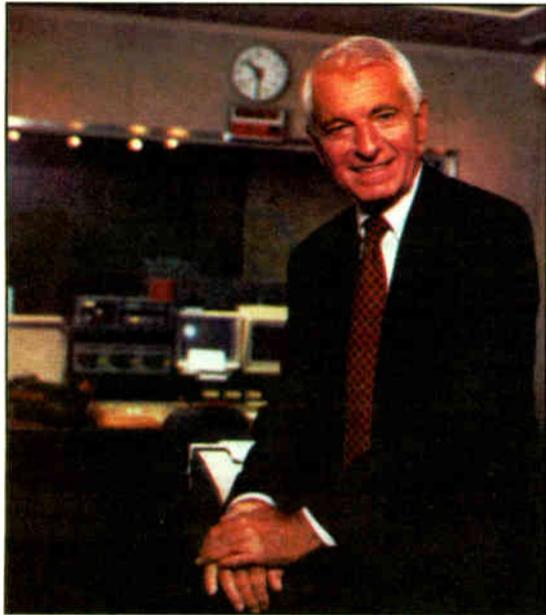
are far different than what an older listener expects of AM radio; and it may not be relevant to younger and newer listeners to have a reunion.

Fears of a backlash, it seems, are what kept WCCO from celebrating.

"What we found ourselves doing, in order to satisfy advertisers' desires for a particular demographic, was to look at that demographic," said WCCO's Dickemann. "The desired demographic for our advertisers (persons 25 to 54) for the most part developed their radio listening habits in the 1970s."

## Not your parents' station

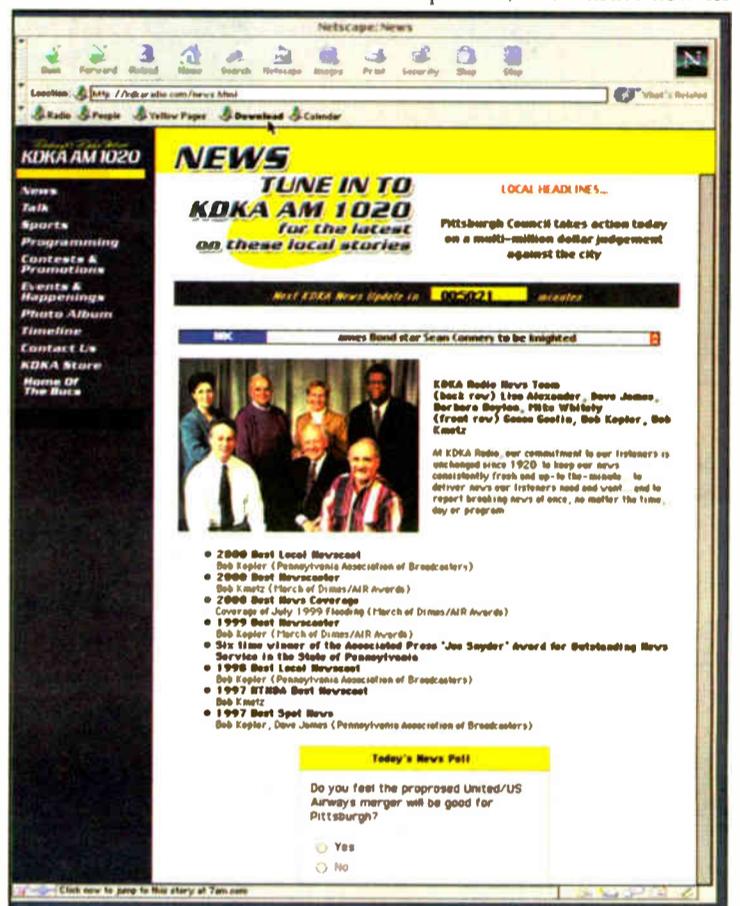
And therein lies the problem. The onslaught of FM radio listening began in the '70s, when kids started saying: "AM — that's something my parents listen to." Today those kids are grown up — with kids of their own — and are a perfect match with WCCO's key demo. But in order to keep them, and attract new lis-



George Nicholaw

industry. But instead of celebrating the occasion, there was only a whisper of it on the air at the Infinity station.

A celebration to commemorate the anniversary last year — an hour-long, on-air reunion of some of WCCO's most



KDKA Web site

teners as well, WCCO was forced to tweak its aging format.

Dickemann, who previously worked at news/talk station KDKA(AM) in Pittsburgh, said, "One of the research questions we began asking was: When you think of WCCO, is that station for someone younger than you, someone your age, or someone older than you?"

"Nine times out of 10 people would say, 'someone older than me. That was my parents' radio station.'"

Dickemann said, "No, we didn't make a big hoopla about it, but we did acknowledge our 75th — and we were proud to do so. In our newscasts at the top and bottom of every hour, we aired bits called '75 Seconds of 75 Years.' They started off with an announcer saying, 'For over seven decades, WCCO has been the voice Minnesotans have turned to for the latest breaking news and information.'"

"Then we went into an archival piece of tape, such as school closings and snow reports from the 1950s. Then we went to the recent coverage of a story like the tornadoes that destroyed a couple of towns

See ANNIVERSARIES, page 31

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# Anniversaries

▶ Continued from page 30

south of the Twin Cities this past spring.”

When news/talk station WOR(AM) in New York celebrated its 75th anniversary in 1997, “We did a three-hour Saturday broadcast,” said Program Director David Bernstein.

“We brought in some of the former members of the WOR air staff, and the show was hosted by (legendary WOR personality) John A. Gambling and current host, his son John R. Gambling.”

The morning drive show “Rambling With Gambling” has aired for more than 65 years. It is the longest-running show in American radio history, and John R. is the third-generation Gambling to host.

In 2002, Bernstein said, there will be an on-air celebration acknowledging WOR’s 80 years of service.

“It’s something to be proud of and we’ll definitely acknowledge it,” he said, “but we won’t dwell on it.” He said, “it’s nice” for newer listeners to know the station’s history, “but if we spend too much time celebrating the past it would be out of context with today.”

Instead, the Buckley Broadcasting station uses its Web site ([www.wor710.com](http://www.wor710.com)) to chronicle its history. A click to one link on the site shows a photograph of the chief engineer in the station’s first studio, in the radio department of the L. Bamberger department store in 1922.

In addition, WOR proudly refers to itself as a heritage radio station on the Web site.

Bernstein said that heritage remains important in this age of consolidation and the Internet.

“There’s no doubt that we’re living in a new communications age, where people have greater access to information than ever before,” said Bernstein. “The Internet is most notable, (and) television runs round-the-clock news and discussion programs — but that doesn’t change what’s already been in place, which is built on the original heritage radio stations that existed long before these other things.”

“People don’t forget that. In the world of credibility, people will come back to what they believe is credible and familiar — and heritage stations are champions in both of those areas.”

## Heritage first

No report on the status of radio station heritage in this age of consolidation and the Internet would be complete without the inclusion of KDKA(AM) in Pittsburgh — the world’s first commercially licensed radio station.

Today the Infinity news/talk station uses its Web site at [www.KDKAradio.com](http://www.KDKAradio.com) to showcase its impressive history. There is a large, colorful banner on the site that proclaims, “Presenting News on the Radio Isn’t the Only Thing We Did First!”

Indeed. There is a list of firsts on the KDKA(AM) site that includes the date, Nov. 2, 1920 — the day the world’s first broadcast by a commercially licensed radio station occurred, on KDKA. The event broadcast was the Harding-Cox presidential election returns. Announcer Leo Rosenberg delivered the results starting at 6 p.m. The site also features a photograph of the event, showing Rosenberg, Engineer William Thomas, and others.

Some other KDKA(AM) “firsts”

include the first broadcast of a scheduled church service in January of 1921, the first broadcast of a professional baseball

stereo on July 23, 1982.

Last year, when the station turned 79, “we talked about it (on the air) all day,”

**Heritage still is extremely important in this age of consolidation and the Internet.**

— David Bernstein

game in August of that year (the Pirates beat the Phillies), and the first radio station in the world to broadcast in AM

said KDKA(AM) Vice President and General Manager Michael Young.

“I do think heritage still means some-

thing — and I think it’s the relationship that the community has with the radio station. That transcends whomever owns the station, because your average listener isn’t caught up in who owns what.”

Young said, “Heritage is alive and well with hundreds of radio stations across the country. No station — whether you’re music, news/talk, or whatever — is going to have the same sound of a generation ago. But it can still mean the same to people.

“A station may sound more high-tech today, but people are still listening for the same reasons as always: credibility, trustworthiness, and dependability. That will never change.”

■■■

*How does your station handle the question of acknowledging its heritage? Tell us via e-mail to [radioworld@imaspub.com](mailto:radioworld@imaspub.com)*



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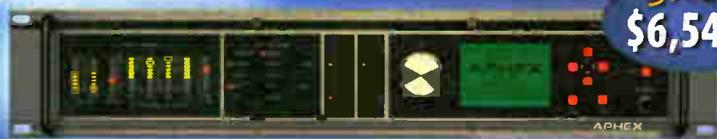
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## COLE'S LAW

# FCC Auctions Lose Public Interest

Harry F. Cole

The comparative broadcast hearing process, long a fixture of the Federal Communications Commission's regulatory system, passed away in June. It was 54 years old, possibly older.

The process had been used by the commission when more than one competing applicant filed for a particular broadcast authorization in a particular area. Applicants in such situations were deemed to be "mutually exclusive," because only one of the competing applications could be granted.

## Comparative hearings

Through comparative hearings pitting the mutually exclusive applicants against one another, the FCC sought to identify the applicant whose operation of the proposed station would best advance the public interest.

The comparative process was born of necessity early in the history of the broadcast industry. It received a major boost when, in the renowned Ashbacker decision in 1945, the Supreme Court ordered the FCC to hold comparative hearings before acting on any mutually exclusive application.

As the process matured over the years,

it developed two primary components, one that ultimately led to its demise.

To resolve comparative hearings, the commission first focused on whether any of the competing applicants would increase diversity of ownership — that is, did any of the applicants hold fewer broadcast authorizations than their competitors in the hearing.

## The new auction process places exclusive reliance on the amount of an applicant's bid for the authorization in question.

The theory was that an applicant who didn't own any stations at all, or owned fewer than his or her competitors, would automatically increase program diversity. This came to be known as the "diversification" criterion.

Second, the commission checked to see whether any of the applicant's voting principals proposed to be involved,

or "integrated," in the day-to-day management of the proposed station. This came to be known as the "integration" criterion.

The commission believed that daily involvement by a station's owners in the station's operation would result in programming more attuned to the particular needs and interests of the station's ser-

vice area.

The "integration" criterion, however, led to significant practical problems, as the FCC struggled to apply that criterion in some meaningful manner. That effort was made difficult by the fact that applicants often structured themselves so as to appear to be able to claim maximum "integration" credit, even if that appearance ultimately proved to be purely illusory (and in some cases, fraudulent).

It was made even more difficult by the simultaneous development of other FCC policies that seemed to encourage such illusory integration structures. And perhaps, because of its own limited resources, the FCC never sought to determine whether the "integration" criterion ever made any difference at all in the public interest quality of any station's operation. This failure raised questions about the FCC's own claims of reliance on the criterion.

The comparative hearing process was a dominant aspect of the broadcast application process through the 1970s and 1980s. In the latter part of the 1980s, it possibly reached a pinnacle when the comparative hearing process was used to resolve hundreds of FM proceedings arising from the new channel allotments adopted in Docket No. 80-90.

But as the number of applications subject to the comparative hearing process grew, so did complaints about the seemingly arbitrary and capricious nature of that process in general, and the "integration" criterion in particular.

## Undoing

The comparative hearing process suffered a serious blow in early 1992, when a federal court of appeals held that the FCC had not adequately explained its reliance on the "integration" criterion. The case leading to that ruling was brought by the firm of Bechtel & Cole, home of Team Cole's Law.

The court gave the FCC an opportunity to explain its reliance on "integration." While the commission issued an opinion in response to the court's instruction, the court held in December 1993 that even in light of that later explanation, the "integration" criterion was arbitrary and capricious.

In that 1993 ruling, the court forbade the commission to rely on the "integration" criterion as part of the comparative

hearing process.

That was the beginning of the end for the process.

Within two months of the court's 1993 decision, the commission "froze" all then-pending mutually exclusive applications, refusing to process them at all until the comparative hearing process could be re-formed in a manner consistent with the court's ruling. That placed the comparative hearing process in a life-support mode from which it was never revived.

## Taps

Despite reports that the FCC was seeking to develop some suitable variation of the comparative hearing policy, no such variation was ever announced. As years passed and applicants caught in the "freeze" (some for more than a decade) protested more loudly, the pressure to adopt some mechanism to "unfreeze" those applications increased.

Finally, in 1997, Congress stepped in, instructing the commission to use auctions to resolve mutually exclusive broadcast situations. That action represented the death sentence for the comparative hearing process.

The process remained on death row for three years, as the commission set about to implement its newly authorized auction approach, and as a number of applicants appealed the abandonment of the comparative hearing process.

Those appellants included applicants who had filed their applications in the early and mid-1980s, who had been caught in the "freeze" in 1994. These were the applicants who believed it unfair that they in particular should be subjected to auction processes adopted long after they began the application process.

By late 1999, however, broadcast auctions were in place, and in June 2000, the court of appeals rejected the appeals, effectively eliminating any possibility that the comparative hearing process would be preserved in any form.

Future students of broadcast regulation may choose to overlook the egregious examples of excess that characterized the comparative process in its later years, and may instead recognize the process as an earnest attempt by the FCC to advance the public interest by focusing on the nature and quality of the programming service each applicant was likely to provide.

While that goal was elusive and perhaps even unattainable, the comparative hearing process was nevertheless a well-intentioned mechanism consistent with the public interest mandate of the Communications Act.

The sole survivor of the comparative hearing process is an auction process in which its predecessor's "public interest" search has been abandoned and the nature of an applicant's proposed operation deemed irrelevant.

Instead, the auction process places exclusive reliance on the amount of money, which an applicant is willing to bid for the authorization, in question. The public interest is now believed to be maximally advanced by a maximum payment to the government in return for a broadcast authorization.

■ ■ ■

Harry Cole is a principal in the Washington-based law firm of Bechtel & Cole, Chartered. Reach him at (202) 833-4190 or on the Internet at hfc@bechtel-cole.com

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# Pay for Play: A Short History

Ken R.

The Monorail, flavored catsup, the Ford Edsel: These were all ideas that must have sounded promising to someone, but all landed with the embarrassing thud of failure.

Such is also the case for a concept in record promotion known as "pay for play," or what some people in 2000

terms call a marketing agreement.

But let's take a step backward so that we can put this practice into historical context.

## Payola

In the late 1950s, a number of disk jockeys in markets all over the country were caught up in a phenomenon known as "payola." In those days

announcers had a lot more influence on what music was played on the air, and in fact they often selected and supplied their own records. With only a handful of AM and almost no FM stations in each market, their individual power was tremendous.

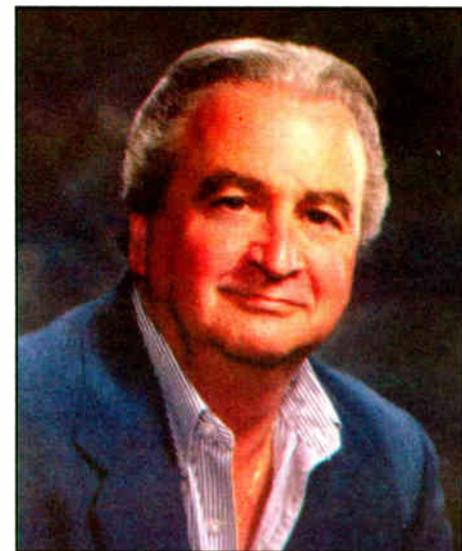
Although he is now known primarily as a producer and sometimes-pitchman for a magazine lottery, Dick Clark at that time partially owned some of the record labels of the artists heard on his radio show. Obviously it was in his best interest to play those artists more often.

The problem was that this financial arrangement was not disclosed over the air or on station logs. A scandal broke and Congress investigated. Clark quickly ceased his participation in ownership of the record labels and his career recovered quite nicely.

Alan Freed's story, however, had a much sadder ending.

## Dark days

In 1959 WABC(AM) in New York asked "Moondog" Freed to sign a



Bruce Nelson Stratton

years later a broken man.

In those dark days after the congressional hearings, managers made their radio air personalities sign papers agreeing to refuse income from any record-related sources. For a number of years the topic of payola went into hibernation.

In the 1970s and '80s, a small whiff of payola was picked up in another form. Record labels and their in-house

## L.A. Jock Eats Crow

Humble pudding is the dish that was served to KXTA(AM) host Arnie Spanier after Spanier promised to "wash cars if the Los Angeles Lakers bring home the NBA title."

Take a close look at the station logo on the SUV behind Spanier in the photo (that's him in the Laker's uniform with the towel covering his face). You can just make out "One on One Sports" — as in rival to Clear Channel's L.A. sports/talker KXTA(AM).

Spanier didn't count on his cross-town competition showing up with its station's vehicle for the car wash that was Spanier's for a day.

What may have made this situation even more excruciating for Spanier is the fact that he used to work for the One on One's L.A. station, KMPC(AM).

— Laura Dely



KXTA(AM) personality Arnie Spanier takes a moment after washing the station vehicle of rival station KMPC(AM)

Pay for play would be a great way to say goodbye to your ratings.

— Bruce Nelson Stratton

statement confirming that he never received money for playing records on the air. Freed refused and was fired.

While Freed maintained he "never played a record he didn't like," his career was over and he died a few

and independent promoters found other creative ways to influence music directors.

It was not unusual for gifts such as recreational drugs, concert tickets, See PAY, page 36 ▶

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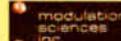
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# Pay

► Continued from page 35

free albums and occasionally rented cars to find their way discreetly to key decision-makers.

"Layola," the creative use of willing females to cater to program directors, was very difficult to prove and hard to trace. But it happened in many cities, according to several sources on this subject. Indeed, many national best-selling books described the relationship between radio and record promoters in rather unflattering terms.

## DJ's demise

In today's radio universe, national program directors and consultants control much of the airplay, and a corporate climate within many station groups makes it almost impossible for individual disk jockeys to jiggle the songs they play.

Computer rotation and automatic logging provide accurate documentation of music aired. But when there is money involved, parties can find ways to exchange it.

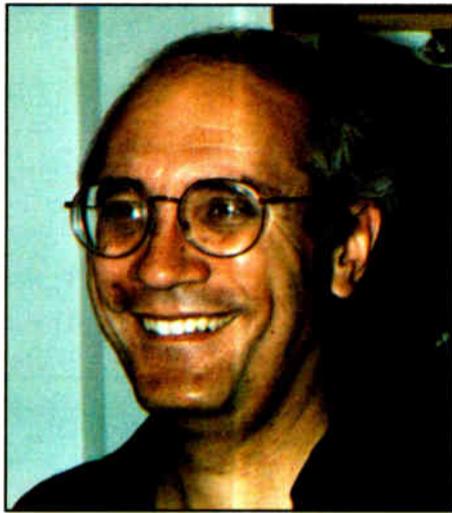
In the late 1990s, several bold pioneers tried to develop a form of "legal" payola.

"In the old days, payola was bad because it wasn't disclosed to the public," said Harry Cole, *RW* columnist and member of Bechtel and Cole, a Washington, D.C., law firm.

"Alan Freed was taking copyright

credits on Chuck Berry songs, for example ... so Freed was paid royalties for tunes he didn't actually write."

But that was then, and this is now. Within the last year, record labels



Harry Cole

experimented with an above-board version of payola, known as "pay for play," or simply a "marketing agreement." Money was paid to stations to play particular songs by particular artists. The stations logged the entire transaction as a commercial and a disclaimer was made on the air at the end of the song that identified who paid for its play.

"My own preference would be that programming decisions be made independently of commercial considerations," said Cole, "but that's a personal feeling rather than a legal one. Good

commercial radio has nothing to do with taste; it's all about grabbing ears and keeping ears."

## Roles reversed

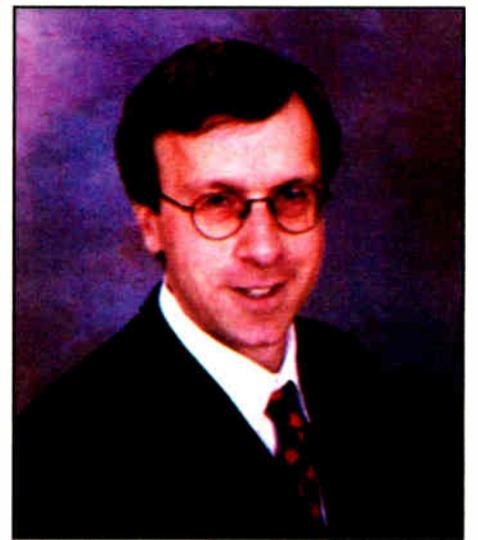
Mike Wilson, vice president of promotion for RCA Records, is also against this "pay for play" practice.

"We don't do it, and we don't think many programmers would allow it anyway. Most stations have very strict rules about accepting gifts, and in fact we usually have to let the music directors buy us lunch."

Pennsylvania-based Consultant Joel Raab adds to the consensus.

"If it's compromising the integrity of the programming, it's a bad idea. I think the station should choose music that fits its sound and it doesn't help to play music that is deemed not to be strong."

Bruce Nelson Stratton, program director of KFTX(FM) in Corpus Christi, Texas, said, "Pay for play would be a great way to say goodbye to your ratings. It's just a way to take some quick bucks to play inferior product that couldn't get played on its own merits."



Joel Raab

moter who wished to remain nameless, said, "Pay for play was an experiment done mostly in the country format within the last year or so. It didn't work and I don't know of anyone doing it now."

So chalk up another entry in the loser column. Personal jet packs and hovercraft for commuting to work, self-

**Good commercial radio has nothing to do with taste; it's all about grabbing ears and keeping ears.**

— Harry Cole

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The topic is still very sensitive to many in the industry. Several corporate and independent promotion people refused to be quoted on the subject when *RW* called to discuss "payola." Others even refused to answer questions even off the record.

One woman, an independent pro-

cleaning bathrooms and "pay for play" — these are all ideas whose time, apparently, hasn't come.

■ ■ ■

Ken R. is a former disk jockey, TV director and jingle producer who is spending the second half of his life as a full-time free-lance writer.

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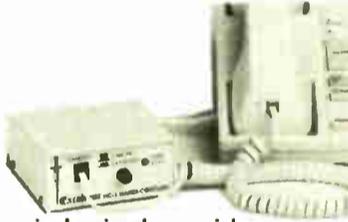
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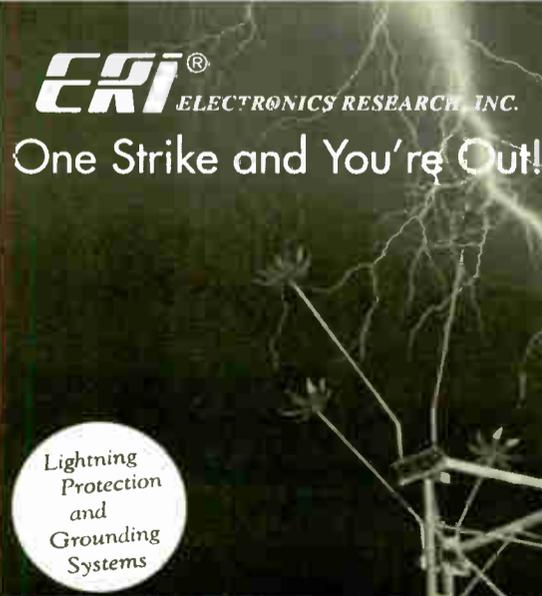
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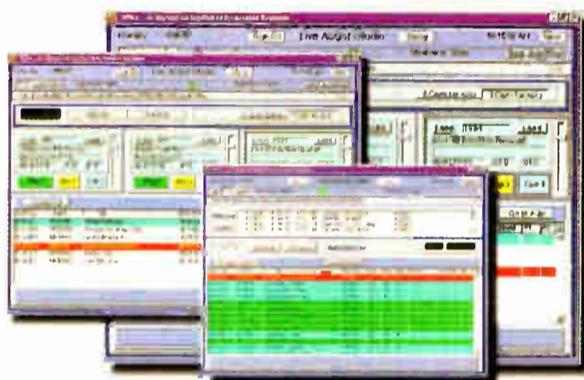
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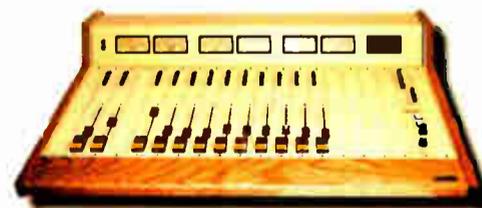
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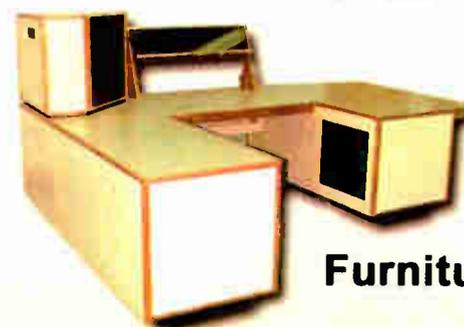
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# Studio Sessions

Mini Board,  
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Page 42

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## Aloha Spirit Guides Campuspos

Ken R.

While bronzed beauties dance the hula in gentle Hawaiian breezes, Ryan Campuspos keeps busy overseeing production for KCCN-AM-FM and KINE-FM in Honolulu.

"It's a laid back atmosphere here and we try to have fun, but pressure builds around ratings time," said Campuspos. "Everyone looks for an excuse to party once in a while and it carries over into our workplace."

KCCN-FM plays a blend of Hawaiian, reggae and urban music and the station has rested comfortably at the top of the ratings for the last year. Its AM counterpart is an ESPN affiliate carrying University of Hawaii football and baseball as well as local talk shows.

KINE-FM lists its format as Hawaiian, but Campuspos describes it as more of an adult contemporary sound.

One difference between this station cluster and many on the mainland is staffing levels.

"We have about 50 people here at the three stations," said Campuspos. "That includes a big sales staff and the rest are administrative, promotion and air talents."

### Long and winding road

Campuspos is Filipino, but was born in the United States. His father was in the military and moved his family from Connecticut to the Pearl Harbor area.

Campuspos worked at several stations including Hawaii Public Radio, which consisted of KHPR(FM), KIPO-FM and a translator for KIPO on the AM band.

At one point he was working for that trio plus KGU(AM) where he ran the board and read surf reports, and KCCN where he assisted in the traffic office. Eventually he cut back his schedule, at

least somewhat.

"I now handle production for the Cox stations, but on Tuesday and Wednesday nights I still host a jazz show on Hawaii Public Radio from 8 p.m. until 10 p.m. I learned my production skills from Kale Imua who really took me under his wing at KCCN."

### Mentor

Another mentor was Mercury Award winner Cliff Richards, a former creative director at KCCN who recently passed away from leukemia.



Ryan Campuspos creates spots in the 'Aloha' spirit at KCCN-FM

"He showed me how to smile while I was on mic because the audience can tell when you're not doing it," said Campuspos. "That's when you start sounding like a robot."

Campuspos does not like to go back and listen to spots he created in his earlier days at the station.

"They are very cringe-inducing," Campuspos said. "Some of those old

spots make me wonder why management didn't haul my butt out on the street or demote me to coffee maker."

"I approach commercials like the director of a 30-second movie," said Campuspos. "While the script is written by others, it's not carved in stone. I bring my vision to it and do whatever is needed to make it work."

The stations use production libraries from mainland companies such as Toby Arnold & Associates Inc. and Sound Ideas, but occasionally that local touch is called for.

"One of our salesmen, Michael Lowe, is a slack key guitar player," said Campuspos.

"He makes his own CDs and we get permission from his record company to use those, as well as the work of other local instrumentalists."

### Spots

Campuspos only concerns himself with commercial production, leaving station imaging chores to "Radical Rob" Onekea, an independent local

music producer.

"We get liners via ISDN from JJ McKay Productions Inc. in Lewisville, Texas," said Campuspos. "From there, Radical Rob adds effects and music and puts it all together."

All the announcers in the building either contribute voices or in some cases, production work.

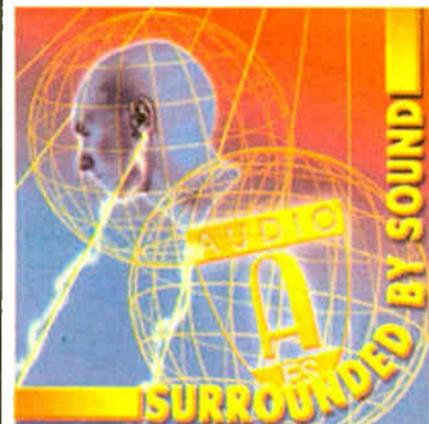
See KCCN, page 48 ▶

## AES Show Surrounds L.A. in Sound

Alan R. Peterson

The 109th Audio Engineering Society convention convenes in Los Angeles Sept. 22-25. If you are an audio pro, you will want to be at the Los Angeles Convention Center.

### 109th AES Convention



September 22-25, 2000  
Los Angeles

The AES was formed in 1948 to encourage the development of new audio techniques, and for the exchange and dissemination of technical information in the audio industry.

More than 12,000 members are located in the United States, Latin America, Europe, Japan and the Far East. Two conventions are held each year, one in the United States and another abroad.

The theme of this year's gathering See AES, page 40 ▶

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# AES

► Continued from page 39

is "Surrounded by Sound," with lots of emphasis on the products and technologies that wrap our daily lives in music, spoken information and larger-than-life soundtracks for TV and movies.

There is plenty for the broadcast professional and production specialist (see accompanying list of workshops), along with enough local diversions and special workshops to keep an attendee busy.

## Famous faces

A famous face or two will be bound to cross your path. In recent years, synthesizer innovator Robert Moog

and musician Stevie Wonder have been among those strolling the exhibit floor.

Another notable musician, Herbie Hancock, will provide the keynote address at the opening ceremonies to be held at 11 a.m. on Friday, Sept. 22.

Hancock is a Grammy and Oscar award-winning composer and keyboardist, best known in contemporary radio circles as the performer of "Rockit," a 1983 single that won a Grammy for Best R&B Instrumental. Hancock will discuss his experiences in recording in 5.1 surround sound production.

The field of surround sound will be a significant topic at the convention, with a special panel discussion titled "Mixing Surround Live," another paper on automotive audio and the design of car sound systems, and yet

another on the interaction between speakers and the rooms they are in.

While not particularly useful for radio, many production pros agree that a working knowledge of surround sound can only make one more marketable in an expanding job field.

More big names in recording will be in attendance, with some of those big names participating in the "Platinum Producer's Panel." Audio producers Phil Ramone, George Massenburg, Alan Parsons and Geoff Emerick are slated to be on this panel to be held on Sunday, Sept. 24.



Herbie Hancock

## Education

"Education is a vital component of every AES convention," said Roy Pritts, AES convention co-chair. "The programs chosen are particularly dynamic and informative."

A student delegation assembly is slated for Friday, Sept. 22, and is open to students and educators. Here, the issues and opportunities most critical to audio education will be explored.

Also during the assembly, entries for a recording competition in classical and jazz/pop categories will be presented to the judging teams. The education events are enhanced by the AES Education Fair and a jobs forum, both offering information on available scholastic programs and the state of the job market.

## Save your hearing

A special event scheduled for the convention will be "Hearing Protection Solutions for Music Performance and Audio Production Professionals."

The workshop has been created to familiarize pros with methods of reducing sound exposure and protecting the hearing they still have.

"We are especially pleased to be addressing the critical area of hearing loss," said AES Secretary and Convention Co-chair Ron Streicher. "This is of paramount concern to many audio professionals."

Because almost all broadcast professionals monitor their performance through headphones, the degree of audio exposure is greater than one normally experiences in other occupations. Several methods exist that can protect hearing while still allowing the radio performer or producer to monitor their program.

Finally, continuing the tradition of grand organ recitals begun in 1993, Graham Blyth, technical director of Soundcraft, will perform a recital on a 98-rank Aeolian-Skinner organ at Pasadena Presbyterian Church.

Registration information can be found at [www.aes.org](http://www.aes.org)

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## PRODUCT GUIDE

### Systembase Debuts Codec

The C450xr codec from Systembase is designed for studio-transmitter links on dedicated digital telephone circuits — either T1 (U.S.), E1 (European) or ATM (Asynchronous Transfer Mode).

Operating at speeds up to 384 kbps, it features 22 kHz stereo frequency response and sub-band ADPCM compression.



Also incorporated in the Systembase C450xr are dual ISDN ports that will automatically dial and reestablish connection in the event of a primary circuit failure.

Designed for the international market, it supports 11 ISDN standards for operating in different parts of the world.

For more information contact Systembase in the United Kingdom at +44 1256-882797 or visit the Web site at [www.systembase.com](http://www.systembase.com)

# Topics, Papers Fly At AES L.A. Show

Alan R. Peterson

While it is tempting to spend all of one's time with the toys in the exhibit hall, the 109th AES Convention is also a place to learn about the latest in audio research and how it applies to radio broadcast and production.

Numerous audio professionals from around the world will present papers and workshops devoted to new technologies and ongoing research.

Some subjects to be presented still are lab projects and are not ready for general release, while others are already in commercially available products. Many hold important information for audio professionals dedicated to radio.

All sessions will be held in the Los Angeles Convention Center, in conference rooms adjacent to the main hall.

## Friday, Sept. 22

Among the hot topics in audio: music piracy and MPEG compression, notably the popularity of MP3 files. The first session, "Digital Signal Processing, Part 1" at 9 a.m., addresses several of these concerns.

Part of that session includes the paper "Advanced Watermarking and Its Applications," presented by Christian Neubauer and Jürgen Herre of the Fraunhofer Institute for Integrated Circuits in Germany. The Fraunhofer Institute is a major name in MPEG compression for audio — many of today's MP3 products utilize licensed algorithms and other technology from Fraunhofer.

Watermarking buries a type of data "signature" into an audio file, allowing one to see the source of the original recording and to follow its path along multiple digital copies.

**Among the hot topics in audio are music piracy and MPEG compression, notably the popularity of MP3 files.**

As MP3s will give way to MP4 technology in the future, another don't-miss paper is "Speeding Up HILN — MPEG-4 Parametric Audio Encoding with Reduced Complexity," presented by Heiko Purnhagen, Nikolaus Meine and Bernd Edler from the University of Hannover in Germany.

While this portion of the session may contain more information than is necessary to understand the technology, it does offer a working understanding of MP4s and a way to follow the encoding process.

If your interests lie in the recording of fine music for broadcast or other applications using high-end mics, then "Session B: Microphones" at 9:30 a.m. may be of use. Chaired by David Josephson, namesake of Josephson Engineering in San Jose, Calif., the session will feature a talk on "The Unique Directional Properties of Dual-Diaphragm Microphones," presented by Guy Torio and Jeff Segota of Shure Inc.

Even though today's radio plant is

heavily digitized, some spots still come in on tape and audio still reverts to analog for monitoring purposes. At 2 p.m., John Vanderkooy from the University of Waterloo in Ontario, will chair a session on "Analog Signal Processing."

One paper to be presented touches on the topic of "A Novel Audio Power Amplifier Topology with High Efficiency and State-of-the-Art Performance," presented by representatives of the Bang & Olufsen company, a manufacturer of high-fidelity audio equipment.

## Saturday, Sept. 23

Loudspeakers drive the studio, so "Session E: Loudspeakers, Part 1" at 9 a.m. is a must-attend for engineers and production pros.

Here you will understand how rooms and monitors will work together in the coming years, with "The Acoustics and Psychoacoustics of Loudspeakers and Rooms: The Stereo Past and the Multichannel Future," presented by Floyd E. Toole of Harman International Industries Inc. in Northridge, Calif.

Ever wonder why speakers that sound so good elsewhere sound inadequate in your own studio? Find out why at "Session H: Perception and Psychoacoustics," at 2 p.m.

Sheila Flanagan and Brian C. J. Moore of the University of Cambridge, U.K., address "The Influence of Loudspeaker Type on Timbre Perception."

## Sunday, Sept. 24

Keep your Saturday notes nearby, as they will come in handy at "Session I: Room Acoustics" at 9 a.m.

If your thoughts are leaning toward improving your acoustic space, pay attention to the "Effect of Room Acoustics on Subwoofer Performance and Level Setting,"

by Eric Benjamin and Benjamin Gannon of Dolby Laboratories in San Francisco, and "Predictability of a Room Impulse Response," with members of the Kobe University of Japan and the Nanyang Technological University of Singapore.

Also part of Session I is "Double Wall and Double Floor Constructions for Obtaining Permitted Noise Levels in Studios," presented by researchers from the IAB Institut für Akustik und Bauphysik in Germany and "Architectural Acoustic Design of a Sound Effect Studio for Multi-Channel Recording," presented by researchers and technicians from NHK (Japan Broadcasting Corp.) of Tokyo.

Later, at 2 p.m., "Session K: Networking And PC Audio" gets underway. Broadcasters familiar with FireWire digital technology will appreciate "A 1394-Based Architecture for Professional Audio Production," presented by Rob Laubscher and Bob Moses of Digital

Harmony Technologies in Seattle, and Richard Foss of Rhodes University in Grahamstown, South Africa.

Also in Session K, RW columnist Stephen H. Lampen of Belden Electronics discusses "Transporting Audio Signals on Category 5 UTP," a cable type once thought more of for data transmission rather than audio; while researchers from Motorola present "A PC-Based Graphic

User Interface and Control Engine for an Audio Processing System."

Send a co-worker next door to cover "Session L: Recording and Reproduction," also scheduled for 2 p.m. The topic for broadcasters to watch for should be "On-the-Fly Multitrack Mixing," presented by Francois Pachet and Olivier Delerue of the Sony Computer Science Laboratory in Paris.

## Care to Join AES?

Membership in the Audio Engineering Society is open to anyone with more than a passing interest in audio engineering. Member classifications and rates are as follows.

A *Member*, with an \$80 annual fee, is for anyone active in audio engineering or acoustics. A degree or equivalent with scientific or pro experience in audio engineering is mandatory. It is also necessary to be familiar with the application of engineering principles and data in those fields.

It is easier for most broadcasters to become *Associate Members*, also with an \$80 annual fee. This refers to anyone with an interest in audio engineering but does not have a degree or the professional experience required of a full member. Associate membership gives you all the goods except voting, holding office or chairmanships.

A third classification, *Student Members*, with a \$40 annual fee, is for anyone interested in audio and is enrolled in a recognized school, college or university. Student Members also may not vote or serve on committees, except in a local chapter.

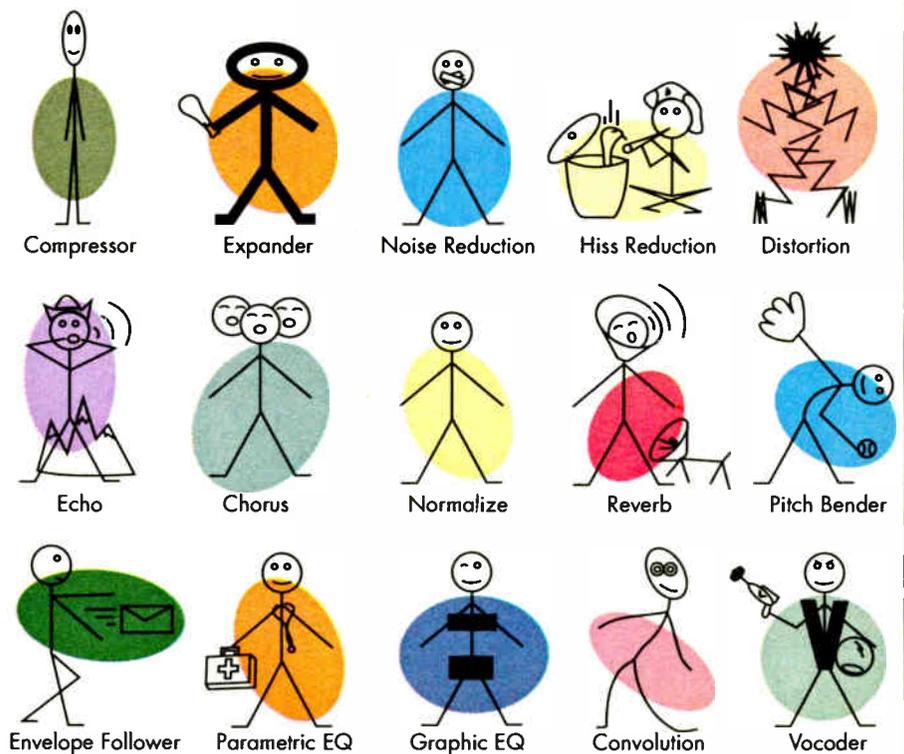
Organizations can go in under *Sustaining Membership*, for an \$800 annual fee, providing they are in communications, manufacturing, research and allied areas of the audio and acoustic fields. Sustaining Members support the society through contributions and get their names in lights, or at least in print, in the Society Journal and at all AES technical meetings.

All members receive 10 issues of the Journal each year, get discounted prices on publications and reduced admissions at the conventions, and can participate in an active awards program recognizing contributions to the industry.

For more information contact AES in New York at (212) 66-8528 or go to the Web site to obtain an application at [www.aes.org](http://www.aes.org)

— Alan R. Peterson

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\*No stick-figures were hurt in the making of this advertisement.

PRODUCT EVALUATION

# Tiny Board Helps Fix Problems

Carl Lindemann

What new mixing console is available for around \$100?

The Behringer Eurorack MX602A squeezes a lot of audio quality into an amazingly low price. However, this is strictly a quality, not quantity deal.



The Behringer Eurorack MX602A mixing console

The arrangement of two mic preamps, two stereo channels plus tape I/O does not give much room for connecting a

bunch of gear. But for a basic board in a satellite studio or controlling the audio into a sound card, this board is quiet and compact.

The MX602A is petite — two CD jewel boxes will just about cover it. The smallest board Mackie has, the 1202, seems huge compared to this. In fact, the MX602A is something like what you might get by cutting a 1202 in half. It has half the inputs of a 1202 and takes up about 40 percent of the space.

**Jacks on top**

All the jacks are on the top, except for the AC power jack. Two XLR connectors coupled with quarter-inch jacks are used for the mic inputs. Two pairs of 1/4-inch TRS jacks make up the additional two stereo channels.

Outputs are 1/4-inch TRS jacks for the main out, control room out and headphones. An auxiliary send and stereo return jacks allow for adding external effects. The only other connector is for the external 17-volt power supply.

Given the limited amount of space, levels are set by knobs, not sliders. A basic three-range high-, mid- and low-EQ, with the pan pot helps shape the sound.

**Levels**

There is a master aux return level control, but the individual channel pots are the only ways to set the aux send levels. This is only a factor if your external effects processor does not have an input gain.

Two separate pots set both the headphone levels and the main mix.

The only corner that has been seriously cut is the metering. The four LED marks -20 dB, 0 dB, +6 dB and clipping.



The 602 is considerably smaller than a 1202

There is a lot of room between -20 dB and 0 dB. But to find them with this is a matter of "playing it by ear."

**Small board, big sound**

What the MX602A has given up as far as connections and controls to maintain its compact size is easily forgotten, given the first-rate audio quality.

Behringer claims this baby board sounds as good as its full-sized studio Eurorack consoles.

Recording and playing audio in and out of a Digital Audio Labs CardDeluxe confirmed that this is a first-rate board.

Listening on headphones and a pair of HNB Circle 3 powered monitors was pleasing, as the noise levels were minimal. The only drawback was using a TRS-to-XLR cable for connecting the balanced inputs on the monitors.

This might not be the board of choice for mixing and mastering musicians, but it is capable of producing audio that is at least broadcast quality.

I also found the MX602A to be fairly resistant to RF interference. Switching the computer monitor on and off did not pollute the signal with the usual pops and ticks that can enter through a mixer.

The power connector is an odd proprietary plug reminiscent of a PS/2 keyboard or mouse connector. It leads out to a transformer that then connects to a standard two-prong electrical plug.

Having an external power supply is something of a mixed bag. I suspect it allows for a quieter board, but this is easy to lose on the road. In fact, it caused a major trauma after I misplaced it. Radio Shack was not much help while I waited for a replacement from the company.

One addition that would increase its

**Product Capsule:**  
Behringer Eurorack MX602A  
Mixing Console

**Thumbs Up**

- ✓ Excellent audio quality
- ✓ Low noise
- ✓ Tiny size
- ✓ Incredible price

**Thumbs Down**

- ✓ Inadequate metering
- ✓ No XLR outs
- ✓ Unusual power supply

For more information contact the U.S. distributor in Washington state at (425) 672-0816 or visit the Web site at [www.behringer.com](http://www.behringer.com)

versatility would be the capability for battery-powered operation.

With a list price of \$119, I have seen the MX602A selling for as low as \$80. I am still in shock at what an incredible value this is.

Even better, it does not take up much valuable real estate on my already cramped production desktop. Combined with a laptop equipped with a professional sound-card, this makes for a tremendously powerful production setup that can fit in an attaché case.

Carl Lindemann is a frequent contributor to Radio World.

**Specifications**

*Mono input channels:*

Balanced mic and line inputs  
Bandwidth 10 Hz to 60 kHz, ± 3 dB  
Mic gain range +10 dB to +60 dB  
Line-level range +10 dBu to -40 dBu  
Signal-to-noise ratio 113.6 dB

*Stereo inputs:*

Unbalanced line input  
Bandwidth 10 Hz to 55 kHz, ± 3 dB

*Equalization:*

Hi Shelving 12 kHz ± 15 dB  
Mid Range 2.5 kHz ± 15 dB  
Lo Shelving 80 Hz ± 15 dB

*Main mix section:*

Max output +22 dBu unbalanced  
Aux send max out +22 dBu unbalanced  
Control room out +22 dBu unbalanced  
Signal-to-noise ratio 112 dB  
Equivalent input noise -90 dBu with all channels open at unity gain

*Power supply:*

U.S./Canada 115 V ~, 60 Hz, power supply unit MXUL3  
(Units for U.K./Australia, Europe and Japan can be ordered separately)

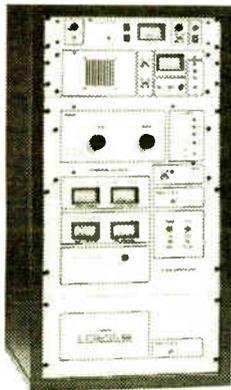
*Physical:*

Dimensions (H x W x D) 1.46 inches to 1.89 inches by 7.4 inches by 8.35 inches  
Net weight 1.3 kg (not including PSU)  
Shipping weight 2.8 kg

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Email: [sbp@pulse.net](mailto:sbp@pulse.net) web site: [www.sbpj.com](http://www.sbpj.com)

## Industry Changes

Three senior executives have been promoted at ABC Radio Networks — Traug Keller has been named president, Darryl Brown was picked as executive vice president and general manager and Jennifer L. Purtan has been named senior vice president, sales.

Scott C. McCarthy is the new senior vice president of ABC Broadcast Group.



Ann Compton

ABC News Radio veteran Ann Compton has been named national correspondent for the network.

Clear Channel Communications named William P. Suffa to the newly created position of senior vice president of capital management.

AMFM Inc. has named Steve Smith executive vice president, programming, western operations and Tom Poleman vice president, programming,

eastern operations.

Joel Fosbrook has been named director of operations for consulting firm Research Director Inc.

Max Turner has been promoted to the post of regional engineering manager for Susquehanna Radio Corp.

Robert Garcia has been promoted to the post of vice president of CNN Radio Network.

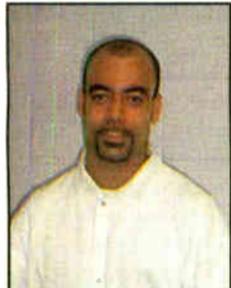
Thomas P. Callahan has been appointed to the post of general manager of the Associated Press radio division.

NBG Radio Network Inc. has appointed Dean Gavoni as the new executive vice president of the network and Steve Summers director of operations.



Thomas Callahan

TC Electronic has appointed Stephan Israel as the new international marketing manager.



Don Hannah

Don Hannah is a new sales engineer for HHB Communications, while Ruth Spencer has been appointed east coast sales executive.

Mitch Montgomery has been named regional manager for the southeastern states for Dielectric Communications while W.D. (Dan) Ozley has



Dan Ozley

been picked as VP of broadcast sales and marketing.

Solid State Logic appointed Claire Hall as national sales manager, broadcast products for the United States.

Furman Sound Inc. added three top managers: Margarita Gorokhovskiy has been named vice president of operations, Steve Rose is the new vice president of marketing and Bruce Seifried is the director of new market development.

Michael McCully has joined Klotz Digital America as technical support and warehouse manager.

Itelco appointed Gianpiero Scrascia as the company's new technical director. Miles Roberts has been named managing director for Euphonix Europe Ltd.



Claire Hall

AudioScience Inc. announced a pair of new appointments: Kea Ross was named director of operations while Eliot Blennerhassett was named senior design engineer.

BroadcastAMERICA.com has named Vincent Ciampi vice president of sales.

Barry Honel is a new member of the sales team at Crown Broadcast.

The Arbitron Co. has promoted Brad Bedford to vice president of Asian marketing, while appointing David Forr as manager of encoding operations for the Arbitron Portable People Meter.

Andrew Corp. has appointed a trio of new vice presidents — Dr. Rolf Bergmann will serve as vice



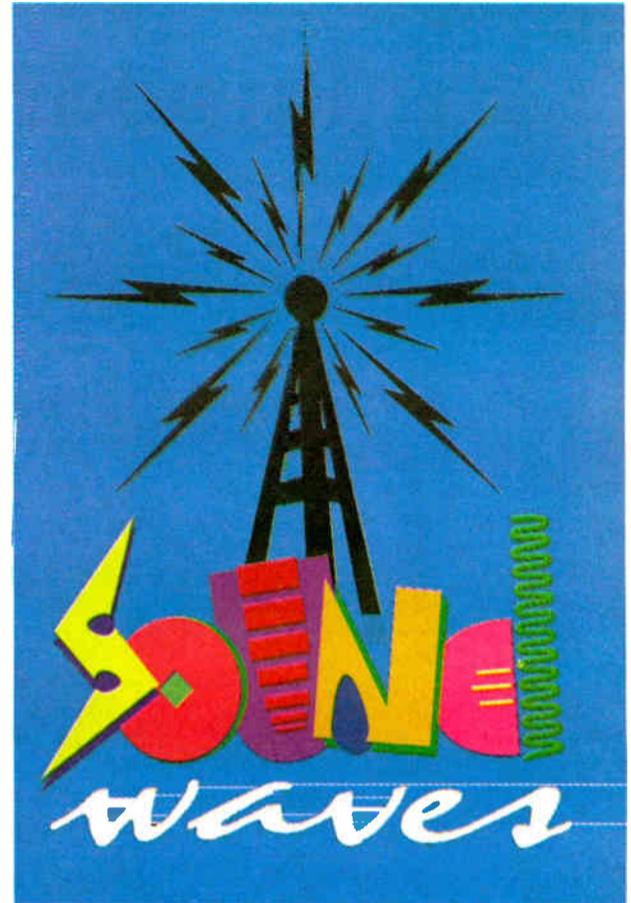
Rolf Bergmann

president, Europe, Africa, Middle East, South Asia and C.I.S.; Jim McIlvain has been promoted to the position of vice president, Asia Pacific and global OEM sales and Donn Peterson has been promoted to the post of vice president of Wireless Infrastructure sales for the U.S. and Canada.



Donn Peterson

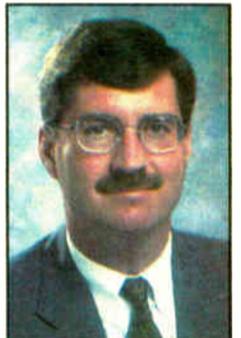
Ted Laverty has been



appointed general manager, North America for Audio Processing Technology.

Maxell Corp. of America has appointed Dave Brune district sales manager for the Midwest region and Dan Richards as the new western regional manager.

The Sweetwater team has announced several new hires —



Jim McIlvain

Alexander Jenkins, Greg McDougald, Steve Goodale, Robert Rebeck, Donnie Christian, Michael Manning and Paul Lunde will serve as sales engineers.



Ted Laverty

Does your company have personnel changes to announce? Send press releases and photos to RW Managing Editor, 5827 Columbia Pike, 1st Floor, Falls Church, VA 22041 or via e-mail to srae@imaspub.com

Our Internet spot delivery system comes with these letters of

# RECOMMENDATION:

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KLTH-AM KIEV-AM KCMG KKGO KGIL KMZT XBACH WSM-AM WSM-FM WWTN-FM KXL KXJM

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## DIGITAL DOMAIN

# Is Net Broadcasting an Oxymoron?

Mel Lambert

After almost a century, the radio business is going through some dramatic changes. Of course, I am speaking about the Internet — an entity that is affecting just about every aspect of our consumer and professional lives.

Just as the Internet represents a paradigm change in the way we access information and communicate with one another, radio broadcasting needs to catch up with the new millennium.

Some are protesting and pretending that you can hold off the inevitable; others, for reasons that are just starting to make sense,

are embracing the opportunity. Laggards are playing ostrich, while visionaries are streaming their content via Windows Media or RealAudio, or encouraging new

**Broadcasters now need to justify the use of valuable spectrum space or it will be lost to other applications.**

following one of two routes.

In the short term, visionaries are

organizations to carry their signals.

Those of us with clearer visual acuity are

looking further to the mist-laden horizon and realizing that over-the-air broadcasting is probably doomed.

There will always exist network-based radio services that are carried on the current AM and FM channels, provided the FCC and similar regulatory bodies do not discover more lucrative uses for the spectrum, as is the case with UHF TV channels not earmarked for migration to digital transmissions.

Use it or lose it — broadcasters now need to justify the use of valuable spectrum space or it will be lost to other applications.

## High mobile kbps

As more capacity becomes available for wireless transmissions, the cell phone and its successors will become more all-encompassing PDA-like devices.

I expect within five years that an increasing amount of sound-related programming will be carried on such services, including news and general entertainment services. What we are currently accessing by our desktop PCs will soon be delivered to a mobile audience.

Because that is the direction in which we are heading. Current streaming media and related techniques are just the tip of the iceberg.

I envisage a range of service that follow the listener across county and state boundaries, adjusting what is streamed to a portable device according to preset listing criteria and availability of interrelated programming. It should also offer instant feedback of audience comments, in addition to the ability to purchase any of the products currently being advertised.

Advertisements? What do you think is going to pay for this comprehensive service?

Of course, most of this is off in the medium-term future. I suggest that broadcasters take a long, hard look at the ways in which broadcasters are currently reaching their local market, and determine if there are other ways in which they can reach listeners. Also look at countrywide entities that might be capable of stealing their current audience.

Even rural audiences are becoming more sophisticated in their information needs. Just because the signal presence is based away from a large urban audience does not mean that a revitalized, interactive service cannot be implemented to capture an information-hungry audience.

While I admire the innovations of such companies as Kerbango, I wonder if their offerings are more a case of picking pockets at a prizefight. While our attention is being diverted to the main action, we are being offered the opportunity to use parallel channels to access our audiences.

## Local incentives?

But, if the current programming is tailored for a local audience, what interest is there from an advertiser who can only supply products and services to closely defined regions? Sure, the larger brands can benefit from programming carried on the Internet, but most of the audience is interested because of its specificity not its broad appeal.

A press release from Kerbango stated that radio is being completely reinvented by the Internet. Just as the emergence of FM dramatically transformed radio in the 1960s, radio is again transforming as traditional radio stations and Internet-only stations go online to reach new audiences around the world.

But how long can we expect radio  
See DIGITAL, page 45 ▶

## Introducing AXS 3: Scott Studios' Affordable New Digital System

With AXS (pronounced ax'-cess) 3, the 3 tells you this is the *third generation* of one of the most popular digital studio systems in radio! AXS is in its *second decade* as radio's premier satellite automation and digital cart replacement deck.

**Triple Overlap:** The 3 also indicates that AXS 3 is the first affordable digital system that plays *three* stereo audio recordings out to *three separate console faders* for music on hard drive. AXS 3 gives your announcers the ultimate in level control and mixing ability.

**Air Studio Production Bonus:** AXS 3 also has *another* stereo production output and record input. You can record and edit phone calls or spots and auto-delay news and audition them in a cue speaker while playing triple overlap on the air!

**Premium SCSI LVD Hard Drives:** The 3 also tells you that AXS 3 gives you a *3 year limited warranty* on hard drives. AXS 3 uses *exceptionally reliable and fast SCSI LVD 18GB hard drives* from quality manufacturers (like IBM, Seagate, and others you trust) to keep your precious commercials, jingles and other recordings *always* at your fingertips. Some other systems cut corners with slower and less reliable IDE hard drives that sometimes choke and sputter with triple overlap and music on hard drive. They also jeopardize your cash flow with less reliable drives more likely to crash.

**Awesome Sound Quality:** With AXS 3, your station will sound superb. AXS 3 uses only the best *non-proprietary +4 balanced 4 output* digital audio cards by Audio Science. These are also sold by most of the major brands of digital systems, but only in their top-of-the-line models costing *lots more* than AXS 3.

**Easy to Use:** AXS 3 was *designed by jocks*, for jocks. It's 100% intuitive. AXS 3's big on-screen intro timer and separate countdown timers on every deck make pacing a snap.

If you know how to work cart decks, you know how to work AXS 3. It's so simple, everyone can run it! AXS 3 has *big* buttons. Other systems use complex multi-step mouse mazes. AXS 3 gets things done with one simple touch.

**Flexibility:** AXS 3 seamlessly mixes uncompressed (linear) audio and all popular MPEG II compression ratios. AXS 3 can also play MP3 songs and spots you get from other sources, but if you do this you must stay with one bit rate for all. (It's a limitation of MP3, not AXS 3.)

**The Music's Easy:** AXS 3 is delivered with *your* music library already pre-recorded for you either in MPEG II or uncompressed at no extra charge.



**Jocks love AXS 3! Scott Studios' AXS 3 works with three cart players on the right side of the AXS 3 screen. The program log (at left) automatically loads the decks, or you can insert anything from pick lists. The far left of AXS 3 has 12 Hot Keys that can play instantly at a touch.**

AXS 3 comes with Scott's time-saving TLC (Trim, Label & Convert) CD Ripper software for your Program Director's computer. TLC uses a CD ROM drive to transfer 5 minute songs to hard drive digitally in 15-30 seconds.

**The Best Air Studio Recording:** AXS 3's built-in recorder has a *graphic waveform editor* for easy recording and editing of phone calls, spots, news or announcer lines. AXS 3's log editor lets you add new items to your schedule.

**The Best Voice Tracking:** AXS 3 works with Scott's optional *Voice Trax*, which you can add to your production room or air studio. Announcers will be able to hear surrounding music and spots in their headphones to match their voice to the moods and tempos of the music. During Scott Voice Trax, the level of your music is automatically lowered by AXS 3.

**Quality Hardware:** AXS 3 uses an industrial quality Pentium III rack mount Windows computer. Jocks can use a keyboard or mouse, or optional button box or touch screen for fast control.

**The Best Tech Support:** Toll-free emergency phone support is available 24 hours a day, 7 days a week (including holidays). Software updates with new features are available for AXS 3 customers several times per year to stations on our annual support plan.

**Easiest to Install:** AXS 3 comes with a pre-wired connections to CAT5 LAN cables for snap-in installation on the AXS3 end of the wiring. Satellite control logic is also a snap with a plug-in connector. Your first two satellite audio connections for music format and news network, as well as another for your production console, are all built into AXS 3. For most music formats, there are no satellite interface cards or external switchers required. Basic connections are built into AXS 3.

**LAN and WAN:** AXS 3 and other MPEG and uncompressed WAVE Scott Systems use the same recordings. You don't have to dub the same spot several times for several stations.

**The Best Production Studios:** AXS 3 is compatible with popular multi-track systems you may already have, like Sound Forge, Vegas Pro, Cool Edit Pro, Fast Edit and others. Simply add our time-saving \$500 no-dub instant LAN spot upload option.

**AXS 3 is Affordable:** Satellite AXS 2 systems start at \$7,995 with computer, double overlap audio card, satellite inputs, switcher and production recorder-player. Triple overlap AXS 3 adds 18GB of music on hard drive for only \$9,995 delivered. For details, check [scottstudios.com](http://scottstudios.com), [axs3.com](http://axs3.com) or call 800-SCOTT-77.

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# Digital

► Continued from page 44

stations to offer free streaming media services that make its money from the sale of application-specific hardware, now available from such brand-leaders as RCA/Thompson?

My short-time advice is: If you can't beat them, join them.

At least, learn how to process your station's current output so that it sounds good via low- and medium-bandwidth Internet connections.

Consider offering streaming media in more than one, lowest-common-denominator format at around 20 kbps as more and more listeners have access to faster DSL and cable modems.

It is quite stunning how good bit streams of 28, 56, 100 and 300 kbps can sound if the audio is compressed and leveled before it hits a data-reduction system. Don't assume that a heavily compressed signal will sound better than one that has a few spikes.

Remember that most data-reduction algorithms make use of loud signals that mask lower-level material when the process calculates what can be lost from the signal and deemed unneces-

sary. This is similar to how an algorithm can lose material from less critical bands without us noticing it or at least not noticing too much.

Finally, I suggest the station's Web site offers more than just promotion for the current profile.

Currently, radio has a loyal audience, which in the long term will migrate to other media. But, if you continue offering high-quality material in your chosen format, streamed to reach the audience where they are located, you stand a better chance of surviving the tempestuous years ahead than the ostrich.



*Mel Lambert founded Media & Marketing more than 12 years ago to provide communication and consulting services for pro audio firms and facilities. Reach him via e-mail at [www.mel-lambert.com](http://www.mel-lambert.com)*



The Kerbango radio may look old-fashioned, but it represents the way listeners will tune in radio

**PRODUCT GUIDE**

## Network Exchanges Audio Production Content

The X4P Network from Klotz Digital allows users to distribute audio signals and graphic and video images via the Internet.

An X4P Network subscriber who has been authorized by the producer can access media data stored on servers on a secure private network. For secure storage and transmission, the X4P Network scrambles the signal, enabling pre-listening at lower-quality levels.



Audio and multimedia contents are coded with MPEG-4/AAC algorithms.

Producers can track the distribution chain by a unique watermark identifying the producer and the receiver at all times. Producers can send content information from point to multipoint and enable their customers to download from the server.

To download program content, the user purchases a soft key from the producer or e-commerce agent. Then the content can be implemented into the transmitted program or saved in a private archive.

For more information contact Klotz Digital America Inc. in Georgia at (678) 966-9903 or check out the Web site at [www.X4P.net](http://www.X4P.net)

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PRODUCT EVALUATION

# Crown Quiets Noisy Broadcasts

Ty Ford

RW published a review of the CM-311HS in the July 12, 1995, issue. A more recent version is the CM-311AHS, with redesigned belt-pack for easier removal. Here's an updated look at this head-worn mic, designed for use with a popular Sony headphone.

An odd solution for noisy situations might be the Crown CM-311AHS head-worn Differoid condenser mic. This is a similar mic that you might have seen Garth Brooks or Britney Spears use.

For example, the on-air staff could be doing a live show at the local cow palace, competing with crowd noise, the ferris wheel and Bobo the Dunking Clown who

makes rude comments to passers by to incite them to trying to knock him into the water. Maybe the staff is doing play-by-play and the booth is much too close to the overzealous crowd.

Straining to hear the commentary through the noise can get tiring after 45 seconds and can spoil an otherwise normal remote broadcast.

Or, maybe the morning show talent is a very active morning show crew and keeping them on-mic is a problem.

**Trade secrets**

The CM-311AHS Differoid mic uses a 3/4-inch cardioid condenser element. Crown apparently spent some time developing this technology and is not particularly open to talking about it.

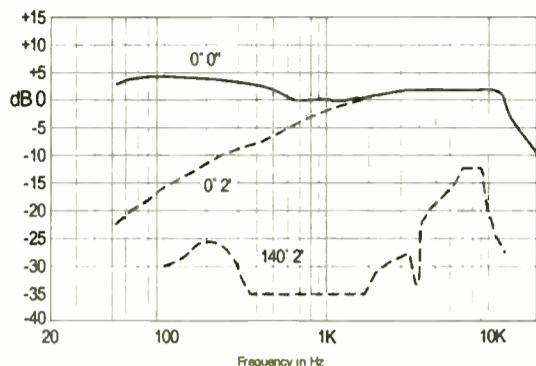
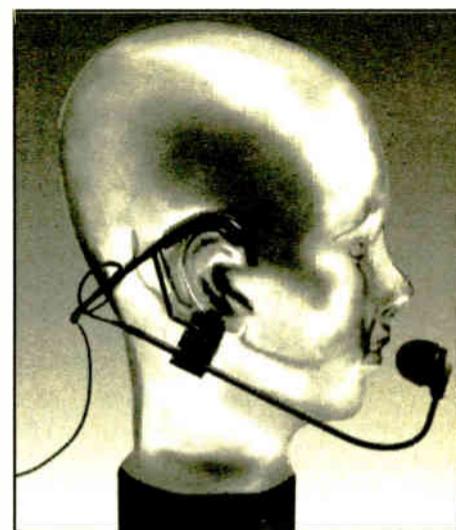


Fig. 1: Frequency response



How the mic looks attached to a pair of Sony headphones

Steve Dupaix, microphone product line manager at Crown, did say the element is ported to give phase cancellation to both near-field and far-field sound.

For sound approaching the mic in front, it discriminates against sounds that are more than about three inches away. Also, the mic rejects sounds from the rear by 15 to 40 dB. It is designed as a close-talking mic and the button should be right at the center of the mouth.

Notable specs on the mic include 26 dB-A self-noise. While this is high by most studio standards, it is usually overridden by the high SPL of the voice. If the problem is high ambient noise, you probably will not hear the self noise.

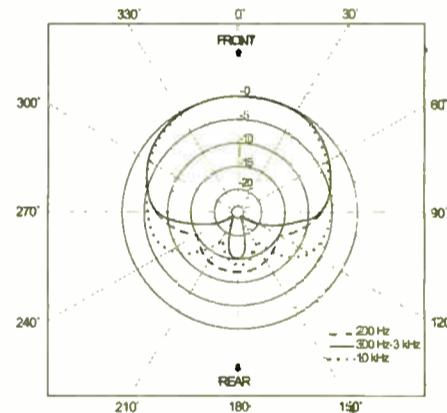


Fig. 2: Polar response

The S/N is 68 dB at 94 dB SPL. Specs indicate the mic can handle 148 dB SPL, which should accommodate highly excited play-by-play talent.

The 3/4-inch condenser element has a slight rising response after a 3 dB dip at 1 kHz on axis. Specs show the mic is flat from 50 Hz to 15 kHz, ±1.5 dB. The response above 12 kHz dies as it crosses the zero line. Low frequency off-axis response is -35 to -40 dB down, to 15 dB down at 10 kHz.

The CM-311AHS can only be used with a Sony MDR-7506 or MDR-V6 headsets. A version for David Clark headsets can be made on a custom basis.

It is designed so that its bracket slips over and attaches to the earpiece yoke. Crown provides the smallest Allen wrench I have ever used to tighten two slugs, which hold the CM-311AHS firmly on the yoke.

The mic boom can be adjusted for length and angle. Crown includes several types of small but effective pop filters that slip over the mic element.

The condenser mic element requires either phantom power or a 9-volt battery. The cable from the mic terminates in a

See CROWN, page 50 ▶

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# Net Brings V/O Opportunities

## Travis

If you paid attention to the hype toward the end of last year, it seemed like everything was going to be different in 2000 and the ensuing new millennium. While not much has changed in my personal life, a great deal has changed in my profession this year.

The greatest force in creating changes has been the emergence of the high-speed Internet. Not long ago, my office got a DSL Internet connection. Suddenly, I can send and receive high-quality audio to and from anywhere in the world.

The price is only \$39.95 a month — only \$15 a month more than my old dialup connection.

In addition to high-quality audio, I can now watch video programs with a picture quality almost good enough to enjoy.

While only a small percentage of the population currently has a high-speed Internet connection, it is expected to increase. Then more Web surfers could receive quality media on the Internet.

### Everybody's a star

Finally, the concept of "narrowcasting" has a real application. Anyone can create the most obscure TV or radio program and make it available to anyone who wants to watch or listen.

Many with media skills think this will lead to a lot more work.

Recently, I attended a lecture by the CEO of one of Southern California's top Internet design firms. He said, in the next few years, his company would be in great need of video producers, directors, camera people and especially voice-over talent.

While streaming media is beginning to get a foothold on the Internet, it is still unusual to hear a voice-over on a Web site.

However, in a couple of years, the Internet is expected to explode with audio and video material — commercials, music, comedy, drama, documentaries, instructional material, news, sports and other types of programming not even considered. Many of these programs will need voice-overs.

The first change for my career as a result of the new millennium is the promise of more work in the near future.

### Less work

The last few years have not been kind to the voice-over business. While the economic boom has created a moderate increase in the amount of work, the trend toward corporate mergers has considerably reduced the amount of commercial production that would otherwise be done.

Where I live, in Southern California, just a few years ago there were seven major banks and nine major supermarket chains. They all needed commercials to be produced and aired in order to stay competitive. Now, there are two major banks and three primary supermarket chains.

This move toward media consolidation has also reduced the amount of commercial production work. Fewer sponsors are buying bigger blocks of broadcast time. A single spot goes much further, which means fewer spots for voice-over talent to record.

Another trend that concerns voice-over talent is the increased use of celebrities in commercials. Motion picture and television stars often voice non-endorsed radio commercials even when the talent is not identified.

Therefore, I see the upcoming changes in Internet media as a redeeming trend.

The Internet has also caused serious changes in my weekly schedule. Increased use of e-mail results in a much higher percentage of last-minute changes in scripting and scheduling.

In the last few months, three corporate recording sessions started with only the first page of copy in our possession. The rest of the script was being revised and re-written, then e-mailed one page at a time during the session.

I am convinced that while e-mail is a great convenience, it frequently increases procrastination on the part of producers and clients.

Not long ago, a script had to be completed and approved at least two days before recording. Today, a script does not need to be completed when the recording session starts.

Production and broadcast-quality audio sent over the Net is creating as many problems as solutions. Because a script was written, scheduled and recorded at the last minute, the client also does not have to wait for next day air service. The client needs their audio now, and they get it via the Internet immediately.

Then, a video editor works all night to get the production completed by the next morning so the CEO, who was supposed to review the script before recording, can view the video and determine that the script was all wrong in the first place. Then I have to re-record the corrected script the following afternoon. The upshot is that projects take longer, which can lead to extra pay.



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Until recently, most of the recording studios I have used do not have high-speed Internet connections. Because I am an avid Internet hobbyist, I am frequently the informal "tech and Internet guru" for these studios.

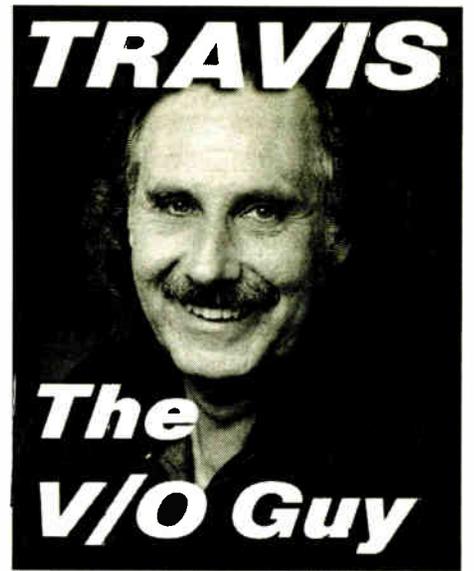
Even though most audio engineers are technically competent, they tend to wait for a technology to be proven before they make changes in the way they operate. Two of the studios I use did most of the recording on reel-to-reel machines until last year.

Unfortunately, I was frequently asked to help get audio from the recording studio to the client through the Internet. I would receive a reel-to-reel tape, sometimes with other voice-over talent, and as a favor, I would digitize it and put it on the Net. Thankfully, I have convinced nearly everyone to get a high-speed Internet connection.

### Home recording

The prevailing just-in-time mentality is creating a problem with clients asking me to record in my own studio when things get too last minute and it is difficult to find an available recording studio. This also gives the over-worked director an excuse not to be present at the recording session, which is also a big problem for me.

While several voice-over artists I know prefer to work out of their own studio, I find that the quality of my



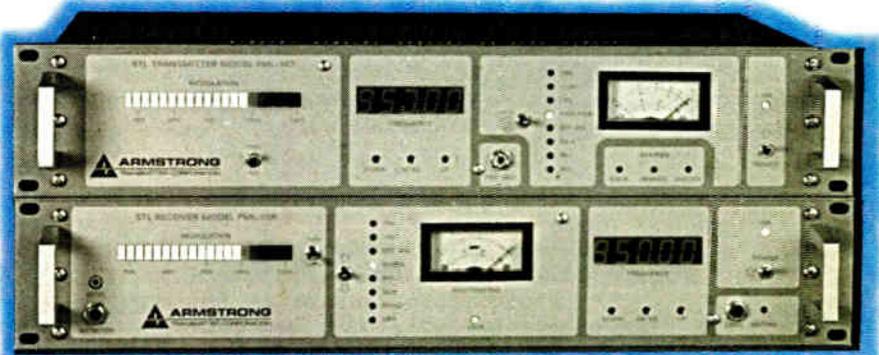
work suffers. I prefer to concentrate on my performance rather than the technical aspects of recording.

Also, the acoustics in my mini-studio are not acceptable. It is set up for doing demos and for having fun with audio. Plus, working without an engineer is time consuming. I have to listen to every page I record, evaluate it, then fix whatever I find wrong. Many headaches can be eliminated with an engineer and director present.

While technical progress creates new problems, I am excited about the changes occurring the voice-over industry as we begin the new millennium.

Travis the V/O guy is a veteran voice-over artist writing from California. Send e-mail to [travis@voice-guy.com](mailto:travis@voice-guy.com)

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# KCCN

► continued from page 39

"We sometimes crank out 15 to 20 spots in a single day," said Campuspos. "That number includes agency dubs, simple tags, donut fill-ins and full-blown spots."

The stations have two fully functional production rooms. The morning team often uses one of the workstations to prepare their "bits" for the next day's show.

## Production tips

KCCN uses the Prophet Innovations AudioWizard, a four-track stereo digital workstation, as the main production tool.

"I can bounce everything freely without losing any quality," said Campuspos.

"Everything is stored on the hard drive and all the songs, commercials and effects are accessible at any of our seven workstations throughout the building."

Campuspos swears by the Yamaha SPX900 for effects.

"I use it for high-energy, harder-edged spots to give that industrial, modern sound," said Campuspos. "But if you use it too much it'll sound like a big mess on the air and that can get tiring real quick. The unit also has some nice reverb effects, too."

The Sennheiser 421 mics in the production room are run through Symetrix 528E preamps.

"And I record with medium compression," said Campuspos, "but I don't use it during the mix to avoid double compression. It's important for the voice to poke out of the mix."

The usual method of creating commercials at KCCN and KINE involves laying down a voice track first, then selecting music and sound effects. Because the AudioWizard has only four stereo tracks, which can't be split into mono, Campuspos has to mix down, then erase or save existing work parts to free up more tracks for additional effects and music if needed.

## Radio odor

One of the more embarrassing moments for Campuspos came when



The second production room at KCCN-FM

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he was asked to voice some first-person testimonials for a product called Body Mint, an all-natural dietary supplement designed to get rid of body odor.

"One of the radio spots had me talking lovingly about a beautiful airline stewardess who was reaching up to close my overhead compartment," said Campuspos.

"Then I had to say 'Oh my God, my beautiful angel in the air's got B.O.' I certainly got a bad ribbing from my friends, family and co-workers. But it definitely made people aware of the product."

KCCN airs commercials you would never hear on the mainland.

"We sponsor entertainment at local clubs like the Pipeline Café and Don Ho's Island Grill," said Campuspos. "There are also a lot of specialty shops around here selling surfboards, gear and attire."

Some of the verbiage used in our See KCCN, page 49 ►

## KCCN-AM-FM and KINE-FM Equipment List

### Production Room One (Main room):

Audiotronics 2500 Series with 12 inputs console  
Mackie 1402-VLZ PRO mixer  
Yamaha SPX900 multi effects processor  
Sony MDS-JE530 MiniDisc deck  
Sony CDP-XE400 CD player  
Tascam 302 dual cassette deck  
Panasonic SV-3700 DAT machine  
Otari MX-5050 analog two-track machine  
Yamaha NS-10M studio monitors  
(2) Symetrix 528E (voice processor/compressor/mic preamp)  
(2) Sennheiser 421 mics  
DCI (digital transmission)  
PSi AudioWizard workstation with 17-inch Sony monitor

### Production Room Two (Auxiliary):

Audioarts Engineering R-17 console  
Mackie 1402-VLZ PRO mixer  
Tascam 302 dual cassette deck  
Tascam CD-450 CD player  
Panasonic SV-3800 DAT machine  
Otari MX-5050 analog two-track machine  
Yamaha NS-10M studio monitors  
(2) Sennheiser 421 mics  
(2) Symetrix 528E (voice processor/compressor/mic preamp)  
PSi AudioWizard workstation with 17-inch Sony monitor  
Pentium II CPU (for burning CDs)

PRODUCT GUIDE

**Syntrillium Announces Contest Winners, Cool Edit Updated**

Syntrillium Software announced the winners for its Thatsa.CoolEdit.com online composition contest.

In the music category, first place went to "Too Blue" with Drew Daniels, producer, and Jimmy Guitar Smith, artist. Second place went to "My Way" with Marvin Hays, producer and Jamies Party, artist.

**Winners**

In the radio category, first place honors were earned by "Alt\_Ctrl\_X imaging" with Robert Ruggeri, engineer, and Kevin Ware, artist. Second place went to "102.5 KISS-FM Imaging" with Stephen Lawrence, engineer and artist.

First prize in each category was a Diamond Rio 500 personal MP3 player, while the second prize was an MXL 2001 mic from Marshall Electronics.

Radio judge John Pellegrini stated, "The Spin Alt\_Ctrl\_X sweeper mix was one of the best examples of sweepers I've heard in a long time — well-thought-out, well-produced and just plain well-done."

Music judge Audley Freed of the Black Crowes stated of "Too Blue"



that "They did a good job setting the environment for the composition. You could really hear the air in the track."

To hear the winning entries and those awarded honorable mention, visit <http://thatsa.cooledit.com>

Meantime, Syntrillium Software has released updates to two products.

Cool Edit 2000 version 1.1 now has real-time preview for most DSP effects, faster MP3 encoding with variable bit rate support and up to 200-percent faster noise reduction.

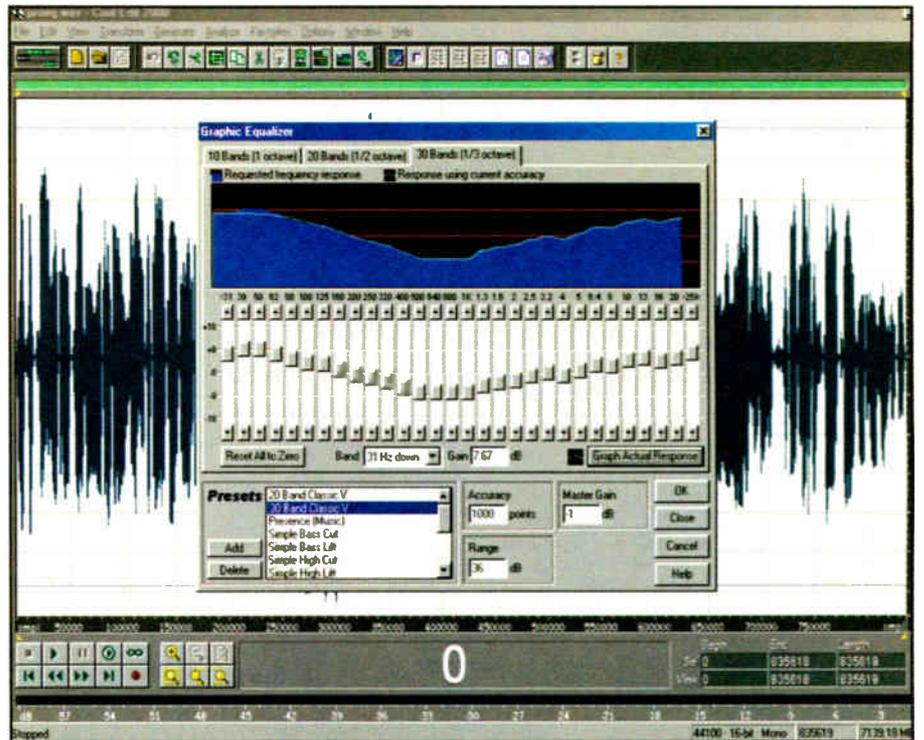
Cool Edit Pro version 1.2a has up to 300-percent faster noise reduction, enhanced hard-disk management and enhanced Windows 2000 multi-user support.

Current Cool Edit owners can download patches for both products from Syntrillium's Web site at [www.syntrillium.com](http://www.syntrillium.com)

**Syntrillium's Cool EQ**

Syntrillium Software released the Pro EQ plug-in for \$49. It adds equalization and filtering tools to Cool Edit 2000.

With the plug-in, Cool Edit users can apply frequency bias with the 10-, 20- or 30-band graphic EQ. Users can also boost or cut up to five bands with adjustable widths and center frequencies with the parametric EQ.



In addition, the EQ can remove a hum or tone with the notch filter or apply low-pass, high-pass and other sophisticated IIR filters with the scientific filters.

A functional demonstration version can be downloaded from Syntrillium's Web site at [www.syntrillium.com/cooledit](http://www.syntrillium.com/cooledit)

**KCCN**

► Continued from page 48  
50th state also would likely not be heard on the mainland.

"One word is 'brah' as in 'hey, brah, can you lend me a quartah?' It's like 'dude' or 'man' and pops up in a lot of copy here to reflect the local tastes," said Campuspos.

"One pet peeve of mine is late copy," said Campuspos. "The sales people sometimes bring a script late



to finesse these situations.

"I'm well-liked because I'm very accommodating, but I never want to do a disservice to the client," said Campuspos. "I just know that I can do a better job if I have more time."

"I think a trait of a good production director is the ability to mediate," said Campuspos. "You have to understand the needs of the radio station, the needs of the client,

the sales people and the program directors."

Campuspos said he had to learn to say "no" at the right moments and how to bend over backward and be open to suggestions.

"Each person has to determine what's good and what's bad, and learn to deal with people," said Campuspos. "It's like a constant juggling act, but it's important to keep everyone happy."



Ken R. is a former broadcaster who has visited the Hawaiian Islands five times.

His wife would like to drag him there again very soon.



The palm trees and boat harbor are nice distractions from work

in the day that starts tomorrow and I would rather have the morning spots scrapped than do a shoddy job on it."

Campuspos uses his "Aloha" spirit



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Leaders Look to BE

# ◆ PRODUCT GUIDE ◆

## Products for Radio Air & Production Studios

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

### Merging Card and Software Technologies

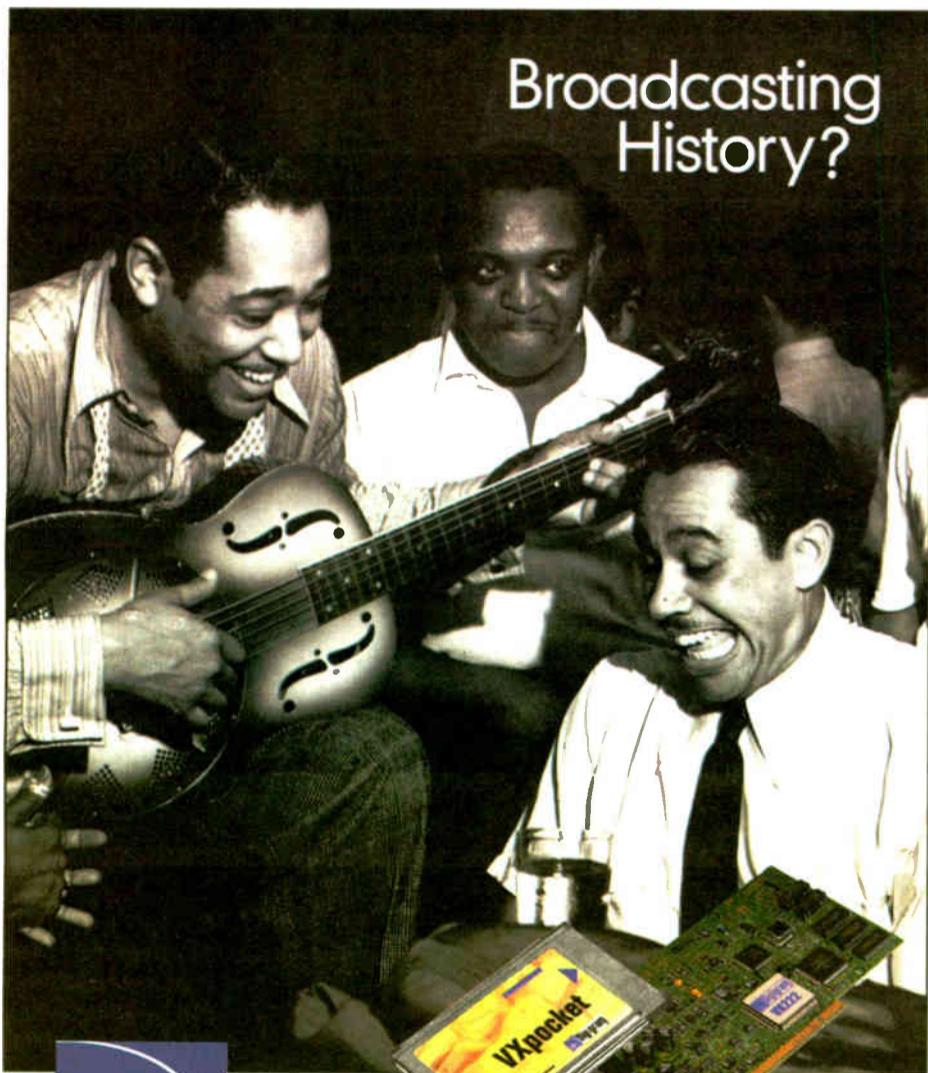
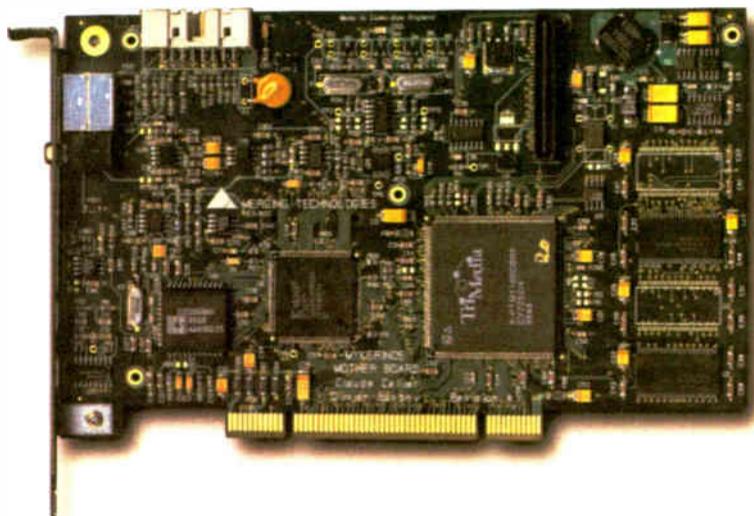
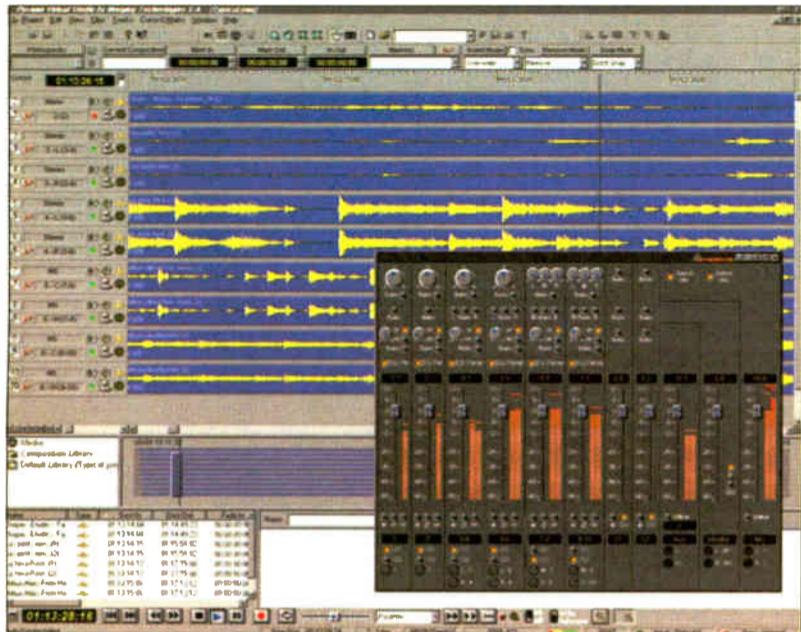
Merging Technologies is featuring the Mykerinos PCI audio card and Pyramix 3.1 software. The card can handle up to 64 tracks of playback with up to 64 tracks of simultaneous recording, sample rates up to 192 kHz and up to 32-bit word lengths, depending on the speed of the computer.

Pyramix software is NT4/Win2000-based, with real-time mixing and audio effects. It includes dynamic processing on up to 16 channels and real-time reverb on up to eight channels.

DirectX plug-ins are also supported.

The editor with graphical and list-based views can play back an unlimited number of tracks and can mix file formats.

For more information contact the company in Illinois at (847) 272-0500 or visit the company Web site at [www.merging.com](http://www.merging.com)



## Broadcasting History?

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## Crown

► Continued from page 46  
belt-pack box the size of a cigarette pack that also houses the battery.

A red LED lights to show battery or phantom. There is a pushbutton on the belt pack that can be programmed for either push on/push off, push to talk or as a cough switch.

### Up against EV

I set the CM-311AHS up alongside an Electro-Voice RE27N/D to get a handle on how much noise cancellation was occurring. The frequency response of the two mics can be very similar if the right distances from mouth to mic are observed.

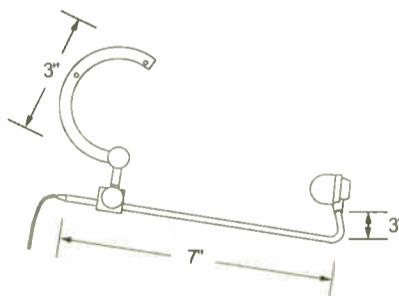


Fig. 3: Dimensions

I found that the noise cancellation of both mics was about the same. Compared to the RE27N/D, the self-noise of the CM-311AHS was very noticeable in the quiet of the studio and not as apparent in noisier environments.

The key to the success of the CM-311AHS is that the mic remains positioned directly in front of the mouth, keeping the user "on-mic" all the time. The 148 dB, 3-percent THD, SPL rat-

### Product Capsule: Crown CM-311AHS Head-Worn Mic

▲ **Thumbs Up**  
✓ Keeps talent on-mic  
✓ Filters out crowd noise

▼ **Thumbs Down**  
✓ High self-noise

For more information contact Crown in Indiana at (800) 342-6939 or visit the Web site at [www.crownaudio.com](http://www.crownaudio.com)

ing means talent can pretty much shout into it without overloading it.

At \$299 list and with those attributes, it a good solution for sports, remote broadcasts and any application where the talent moves around a lot. My only suggestion would be for a reduction of the self noise.

Bruce Bartlett, microphone engineer at Crown and RW columnist, commented that an 8 dB pad follows the mic capsule to prevent overload of the mic electronics by talent who is yelling. The self noise is 8 dB less without the pad, which can be removed by special request to improve the S/N.

Technique Inc. Copyright 2000. Ty Ford does narration, production and location audio. He can be reached at [www.jagunet.com/~tford](http://www.jagunet.com/~tford) Equipment reviews and V/O files can be found at that address as well.

For more information contact Crown in Indiana at (800) 342-6939 or visit the Web site at [www.crownaudio.com](http://www.crownaudio.com)

# Buyer's Guide

Tech Updates



Inside

Radio World

STL & RPU

September 1, 2000

USER REPORT

## Harris Helps Rogers Meet Deadline

by Wayne Young  
Chief Engineer  
Rogers Media-Broadcasting

**TORONTO** Rogers Media-Broadcasting is one of Canada's largest broadcast enterprises with ownership of both television and radio stations throughout the country.

When the company purchased CISS-FM in 1999 to add to its existing Toronto stations, CHFI-FM and CFTR(AM), it became apparent to us that more studio and corporate office space would be needed for the group.

### STL solution

But the move also meant finding an STL solution that could be deployed quickly, while supporting our group's digital broadcasting plans. That's what led us to our relationship with Harris Intraplex Transmission Solutions.

The good news was that we were lucky in that two entire floors, totaling



45,000 square feet, were available on the Rogers campus in Toronto. The bad news was that we needed to make the entire move, from raw space to a completely equipped facility, in just 12 months.

To meet this fast-track schedule, we

faced a number of STL issues in linking the new studio to our transmitter site about three miles away. First, like many metro areas, there is significant frequency congestion in Toronto and the frequency coordination required with regulatory agencies was unlikely to meet our tight deadlines.

In addition, we wanted more than the normal four-channel capacity available on standard RF solutions.

The Harris Intraplex combination of Aurora dual E1 spread-spectrum radios and the Intraplex AudioLink PLUS provided a solution that could accommodate our immediate and future needs.

We chose the Aurora 5800, which provides 2xE1 (4.096 Mbps) capacity over a

line-of-site link. These spread-spectrum radios eliminate the need for time-consuming frequency coordination and licensing procedures because the units use unlicensed 5.8 Ghz frequencies.

### Making the marriage

We paired the Aurora radios' Intraplex AudioLink PLUS multiplexers, using program audio cards with J.41 compression. This allowed us to increase transmission efficiency further, while maintaining audio quality.

A benefit for Rogers is the scalability of this combination to support the growing needs of our three Toronto stations.

In the future, we'll be looking to migrate toward all-digital audio broadcasting. The Intraplex/Aurora digital platforms will allow us to transmit DAB audio directly over E1 with just the addition of new multiplexer channel cards.

In addition, we're thinking about adding backhaul and back-up capabilities at some stage in the future. With the Intraplex solution, our equipment investment is protected and these upgrades are relatively simple.

Most important, these solutions have allowed us to move quickly. Last September, we had just begun discussion of the new facilities. With a conventional STL solution, we'd still be involved in the paperwork for frequency clearance. Instead, we're expecting to be on the air by the end of September.

For more information contact Harris Intraplex Transmission Solutions in Massachusetts at (978) 486-9000, fax (978) 486-0660 or visit the Web site at [www.harris.com](http://www.harris.com)

TECH UPDATE

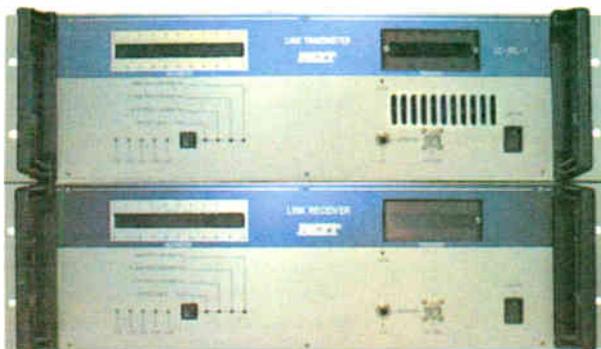
### Bext STLs Show Versatility

Designed for the station using subcarriers to broadcast local paging, background music or other specialized programming, Bext STLs enable the engineer to adjust each of three SCAs separately. The LC STLs contain a dedicated 100-200 kHz data/subcarrier port for remote-control SCA uplinks.

The LC can be set for frequencies from 200 to 1,000 MHz, in power levels from 1.5 to 15 watts. All STLs are provided with 12 VDC inputs, along with direct front-panel frequency selection. The units also feature a signal-to-noise ratio of 85 dB, total harmonic distortion of 0.02-percent and stereo separation above 65 dB.

Individually shielded modular construction allows each module to be changed without replacing the whole box. The added RF immunity enables performance in RF-hostile environments found in densely populated areas. In addition, the Bext STLs use off-the-shelf components to ensure serviceability.

Receiver selectivity presents a ratio of adjacent-channel interfering signal to desired signal. Adjacent signals as close as 300 kHz from the desired frequency can be 12 dB above the strength of the desired signal without interference; adjacent signals up to 600 kHz away can be 50 dB stronger without adverse effect.



Bext's HPT STL incorporates an STL-band receiver and an FM exciter of 20 watts output power in one chassis. Since no cabling exists between the output of the receiver and the input of the exciter, audio quality is preserved. A separate amplifier section is designed to allow easier repair or replacement for

the user by being able to swap the module and stay on the air.

Digital transmission is available through the use of optional digital encoders/decoders from Bext.

Customers must specify option "Digital" for the STLs.

All units come with a two-year warranty and access to a 24-hour English/Spanish emergency engineering hotline.

For more information contact Bext Inc. in California at (619) 239-8462, fax (619) 239-8474 or visit the Web site at [www.bext.com](http://www.bext.com)

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air signal is not altered in any way  
optional rack mount panel available

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variable outgoing message format  
inactive or defective line indicator  
resettable incoming call counter  
temperature in Fahrenheit or Celsius  
battery backed AC synchronized clock  
low cost system - no leased equipment

model tas-1



### Message Board Controller

converts status inputs to LED display data  
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momentary or maintained signal inputs  
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pre-programmed "starter" messages  
multiple displays from one controller  
(display device shown not included)

model mbc-1

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## USER REPORT

# Moseley Links for DAB Demos

by Pat Malley  
Field Testing Manager  
USA Digital Radio

**COLUMBIA, Md.** They said it could not be done.

Black Mountain in Henderson, Nev., is legendary as a hotbed of RF hostility. According to local engineers experienced in the art of getting the latest digital equipment to function there, the chances of getting a wideband digital STL to work

reliably at Black Mountain were slim.

Every STL channel is occupied and aimed at receive antennae that are mounted on top of or on the side of the mountain top transmitter buildings, most of them within a hundred feet of FM, TV, paging, cellular and two-way transmit antenna systems (some much closer). The few attempts at installing wideband, uncompressed digital STL systems were met with dreadful results. Earlier in the year, trying to massage an existing composite analog STL into carrying the digital DSP-6000 system from Moseley Associates over the 12-mile path to the Black Mountain receive antenna was a ticklish enough process.

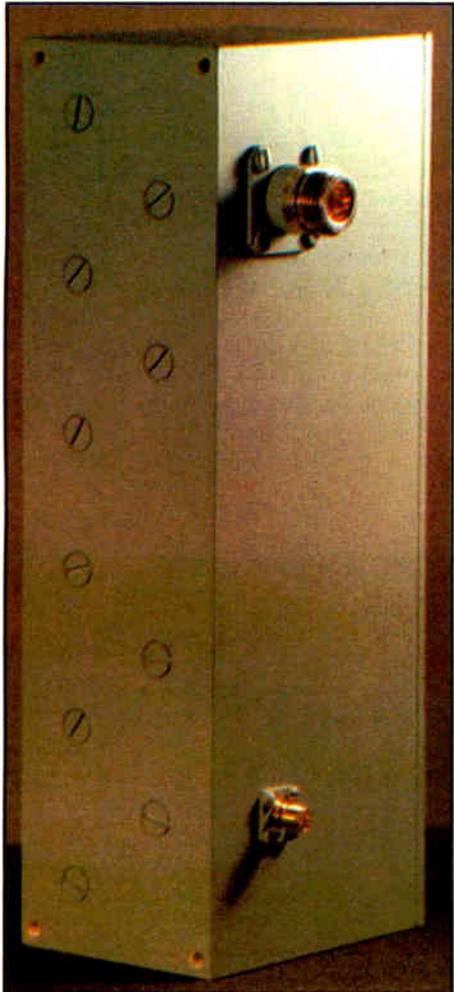
In preparing for DAB demonstrations at the April NAB2000 convention, Dave Chancey of Moseley was confident that the Starlink SL9003Q system could be tweaked into error-free operation without too much difficulty, so a system was sent out a week ahead of the convention.

## Helping hand

Dave, working double duty as sales-guy and technical support guru, worked with us to get the system closer to working with as few noticeable errors as possible. Luckily, he had some experience in setting up the Starlink system to work in the presence of strong interference.

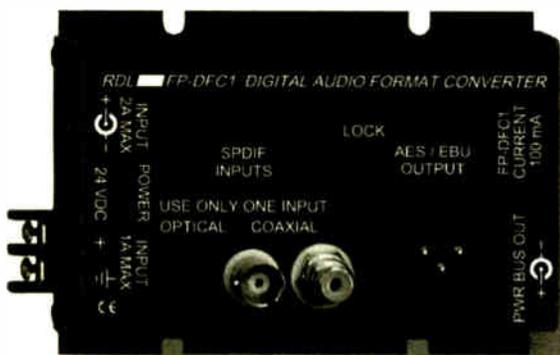
We lengthened the interleaver, added receiver attenuation and played with a variety of cavity-type filters that were on hand at the station. After some "fine tuning" involving a crescent wrench, it was apparent that we had exhausted our resources.

The receiver was still taking major hits from a very strong interferer. Looking at the receiver input spectrum, measured after a Celwave cavity, the interferer turned out to be a paging transmitter 16 MHz below the STL channel at 35 dB above the desired STL signal. This was causing lots of errors, some of which resulted in a muting of the station's program audio briefly.



Starlink band-pass filter

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"Not to worry," Dave assured me. "The new Starlink filter is on its way. The first batch of filters will soon be done and you will get the first one."

It did, indeed, arrive just in time to install during the last overnight before the convention started.

## Adjustments

The unit is not at all like the usual cylindrical cavity that seems to haunt many STL receiver racks. The blue brick has no adjustments, so put that crescent wrench away. Actually, there are 19 adjusting screws visible but are painted over and, as a result, they are not supposed to be adjusted.

The filter has an N-connector on one end and a TNC connector on the side. A short (blue) adaptor cable is included, bringing us back to N-male.

After installation, the Starlink system worked flawlessly. The post-correction BER was zero and the pre-corrected BER

was two powers of 10 better than with the cavity-type. Again, peeking at the RF input on a spectrum analyzer, the paging interferer was now 20 dB below desired.

Any signal outside the 950 MHz STL band was way down. It should be noted that this filter will pass the entire STL passband, so it won't do anything to alleviate interference from a strong interferer within the STL band (the Wacom is better suited for that).

By the way, while sniffing around for the source of the interference, we didn't have to go far. The STL receive antenna (a Scala PR-450U) was mounted on a short mast on the roof of the transmitter building.

An omni-directional paging antenna, fed by a 300-watt transmitter, is mounted on the mast six feet in front of the Scala. That is about as close to a worst-case scenario as it gets. Not a problem for the filter that made life good high atop Black Mountain. So, it's time to chill out and enjoy the view.

For more information contact Moseley Associates Inc. in California at (805) 968-9621, fax (805) 685-9638 or visit the Web site at www.moselysb.com

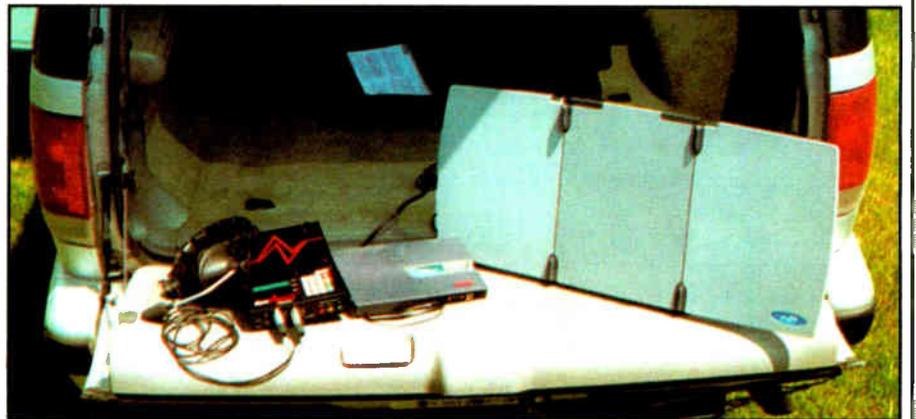
## TECH UPDATE

### Comrex Teams Up With Satphones

Thrane & Thrane from Denmark and Nera from Norway are offering portable satellite phones that can simulate a 64 kbps BRI ISDN channel. These phones use Inmarsat's Global Area Network Service (M4) at a cost of roughly \$8 per minute and the satphones list around \$10,000.

These uplink terminals have an S/T interface, so a codec or terminal adapter that presents a U interface (like the Nexus and most U.S. codecs) can't be used.

Comrex recently tested the Nera WorldCommunicator. The Nera was loaned to Comrex by GMPCS, a U.S. dealer.



Nera WorldCommunicator

To perform the test, the Comrex ISDN test line was called up from the EuroNexus, establishing a 64 kbps link, up to the AOR-W satellite, back down to French Telecom and finally to the Nexus in a demo rack via ISDN. A link was established for the 10-minute call, which was ended by pressing the hang-up key on the EuroNexus.

A mix-minus return feed will be necessary because the delay time through the satellite system is around a half second each way. As a result the normal 6 mS G.722 delay is considerably lengthened.

The Matrix codec will also suffice, since it supports the Euro S/T standard and the ISO/MPEG Layer III featured will deliver 15 kHz on the available 64 kbps channel.

For more information contact Comrex in Massachusetts at (800) 237-1776 or (978) 263-1800, fax (978) 635-0401 or visit the Web site at www.comrex.com

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## TECH UPDATES

## Marti Revamps STL Line

Marti offers STL products in frequency ranges from 100 MHz up to the 950 MHz band.

Transmitter and receiver combinations are available in mono, composite

operating characteristics.

For information contact Marti at (817) 645-9163, fax (817) 641-3869 or visit [www.martielelectronics.com](http://www.martielelectronics.com)



and digital. Complete systems are available from Marti including transmitter and receiver switchers, sub-carrier modulators and demodulators, and composite demodulators.

A new RF amplifier and new synthesizer debut this fall at the Texas Association of Broadcasters, NAB Radio and IBC shows.

The company also has enhanced the performance of its STL-15C/R-15C and the STL-10/R-10 combinations. New power levels for transmitters will be introduced and these units will have little or no tuning involved in setup.

The composite performance for the systems will be 75 dB or better S/N, 55 dB or better stereo separation and will feature spurious and harmonic emission at more than 70 dB below carrier level.

Marti plans to use the new RF amplifier technology in other Marti remote and STL products with an increased level of commonality between modules and parts, as well as sharing similar

## Audio Processing Technology

Audio Processing Technology's BCF384 Broadcast Communications Frame was designed for the delivery of audio in inter-studio networking, remote/outside broadcasts and STL/TSL applications.

The unit is suitable for use in AM, FM, DAB and other broadcast environments. The audio bandwidths available range from 7.5 kHz to 22 kHz for both mono and stereo applications.

This full duplex codec, incorporating apt-X 4:1 data compression technology, operates in either X21 or ISDN configurations. The audio bandwidths delivered will depend on the digital network and the bit rate being used.

The three operational modes are software-driven and are controlled and monitored through the front-panel keyboard and LCD display. The audio I/Os can be either analog or digital and, if required, the digital output can be synchronized and/or locked to an external digital reference.

For more information contact Audio Processing Technology in Belfast, Northern Ireland at 44-1232-371-110, fax 44-1232-371-137 or visit the Web site at [www.aptx.com](http://www.aptx.com)

## FML10 First Step in Move to Digital

Armstrong Transmitter's FML10 STL system is designed with a building-block approach that allows stations to grow from the basic analog STL system into a single or dual digital STL system.

The basic system is a frequency-agile, 10-watt STL system with bar graph metering and full metering of all system parameters, which can be monitored via remote control. It features composite audio with three SCA inputs as well as remote hook-up. Frequency change takes about 30 seconds, making it useful as a backup for multiple station owners.

The FML10, as a basic analog system, has a list price \$5,550. When stations are ready to move to digital, Armstrong's DTX 2 two-channel or DTX 4 four-channel digital encoder and decoder can be added.

For information call (315) 673-1269, fax (315) 673-9972 or visit [www.armstrongtx.com](http://www.armstrongtx.com)



**Drive this...**

Just as a car needs a reliable driver, so does every radio broadcast transmitter. The Crown FM series exciters, drivers and low power transmitters offer reliability unsurpassed throughout the world. Incorporating standard features as an integral part of all power levels, the quality in workmanship standard is consistent for all of Crown Broadcast products.

The exciter/driver model offers high reliability as an RF driver while maintaining the audio purity associated with FM broadcasting today. The internal low pass filter allows the exciter to be placed directly on-air in the event of a main transmitter failure.

Crown transmitters are stand alone low power units and can be configured with optional stereo generator and audio processor. Thousands of broadcasters around the world have come to appreciate the rugged, reliability of the Crown Broadcast line of transmitters.

So when making your decision on a new exciter, RF driver or low power transmitter, reliability should be at the top of your list. Crown Broadcast builds reliable transmitters from 1 watt to 2 kilowatts.

Contact Crown for reliable, efficient broadcast transmitters.

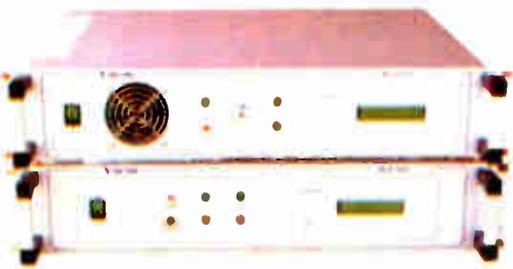
**Get in the driver's seat**

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## TECH UPDATES

## Nicom Upgrades STL



Nicom's NLS 910/NLR 900 10-watt composite aural STL system has been upgraded.

It features smaller construction, external adjustability in frequency and front-end filter retuning. The LCD multimeter display alerts users to their frequency, forward and reflected power and modulation levels.

Once the parameters are set, the unit can't be used without the controller's password. The system is wide-band and can be ordered for use with external digital encoders and decoders. It has three SCA inputs, optional 24 VDC power supply and can be ordered in several different frequency ranges from 200-960 MHz.

The NLS 910/NLR 900 is priced at approximately \$5,200.

For information call (619) 477-6298 or visit [www.nicomUSA.com](http://www.nicomUSA.com)

## TFT Announces STL Enhancements

TFT said its design for the 8300G 1.4-1.7 GHz STL is in response to growing markets throughout the world where other, lower-frequency bands are either too crowded or unavailable.



The Model 8301G companion receiver, like the transmitter, can be used in either analog or digital formats with the addition of an optional modem/multiplexer.

The 8300G family of products features a patented IF repeater option,

which improves signal-to-noise characteristics of a multi-hop STL system. Hot standby configurations and wideband operation are available.

The Model 9873 Automatic Switchover was designed in response to the need to switch pairs of analog or AES/EBU digital signals in a digital STL system. Based on the analog composite Model 7773 and Model 940A units, the Model 9873 switches inputs on fault signals from either receivers or digital modems. It features high isolation and easy installation and connectivity.

For more information contact TFT Inc. in California at (408) 727-7272, ext. 302, fax (408) 727-5942 or visit the Web site at [www.tftinc.com](http://www.tftinc.com)

# Flex-Studio



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## QEI Offers Flexible Audio Transport

The QEI Corp. CAT-Link system is designed to utilize T-1 telco circuits provided by the local exchange carrier.

The system comprises two mainframes, located at each end of the circuit, typically one at the studio and the other at the transmitter. It has an assortment of encoder and decoder modules capable of accepting composite or discrete analog audio signals, AES/EBU digital audio or telemetry signals.



The unit can also be used with an 18 or 23 GHz video or T-1 microwave, optical fiber (with an optional converter), an ISDN line or over a directly connected twisted pair.

The CAT-Link's real-time encoding/decoding, without compression, enables it to send composite and discrete audio with more transparency than a typical composite 950 MHz

STL system. The system is bi-directional so that audio backhaul and telemetry and control signals can all share a single circuit.

For more information contact QEI Corp. in New Jersey at (800) 334-9154, fax (856) 629-1751 or visit the Web site at [www.qei-broadcast.com](http://www.qei-broadcast.com)

## QEI Makes Quick-Link to RPU

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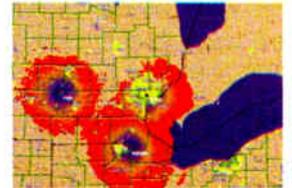
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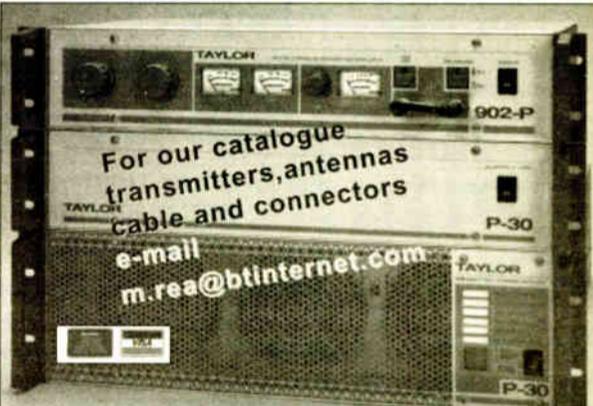
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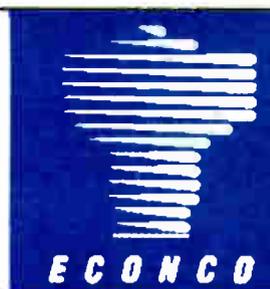
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Harris MW10A, out of service in March, needs TLC, good box, BO over 5K. Mike Ginter, WZNO, 2070 N Palafox, Pensacola FL 32501. 850-434-1230.

Harris MW-50-C 50,000W AM, used daytime only since 1983, in excel cond & ready to ship immed, \$20,000 FOB. B Edwards, New World Radio, 2131 Crimmins Ln, Falls Church VA 22043. 703-532-0400.

Jones/Tepco J-316 M, rated for 10W of output, input currently on 94.7FM & output on 95.9FM, \$1000. Gary Croniser, Black River Valley Gospel Radio, 5564 Woodlawn Ave, Lowville NY 13367. 315-376-6518.

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Radio World

## Radio World

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| Monitors                | Employment             |

Classified Advertising Rates Effective January 1, 2000

	1x	6x	13x	26x
1-9 col inch (per inch)	\$83	81	79	76
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Blind Box Ad	\$15 additional			
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Radio World's Broadcast Equipment Exchange provides a FREE listing service for radio stations and recording studios only. All other end users will be charged. This FREE service does not apply to Employment Help Wanted ads or Stations For Sale ads. These are published on a paid basis only. Send your listings to us by filling out the form below. Please be aware that it takes one month for listings to appear. The listings run for two consecutive issues and must be resubmitted in order to run again. Thank you.

Please print and include all information:

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Signature \_\_\_\_\_ Date \_\_\_\_\_

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Title \_\_\_\_\_

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Brief Description: \_\_\_\_\_

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

**Broadcast Equipment Exchange**

PO BOX 1214, Falls Church, VA 22041 • Tel: 800-336-3045 • Fax: 703-998-2966

## ADVERTISER INDEX

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

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47	Armstrong Transmitters	www.armstrongtx.com
19	Arrakis	www.arrakis-systems.com
38	Arrakis	www.arrakis-systems.com
54	Arrakis	www.arrakis-systems.com
37	ATI	www.atiguys.com
2	Auditronics/Wheatstone	sales@wheatstone.com
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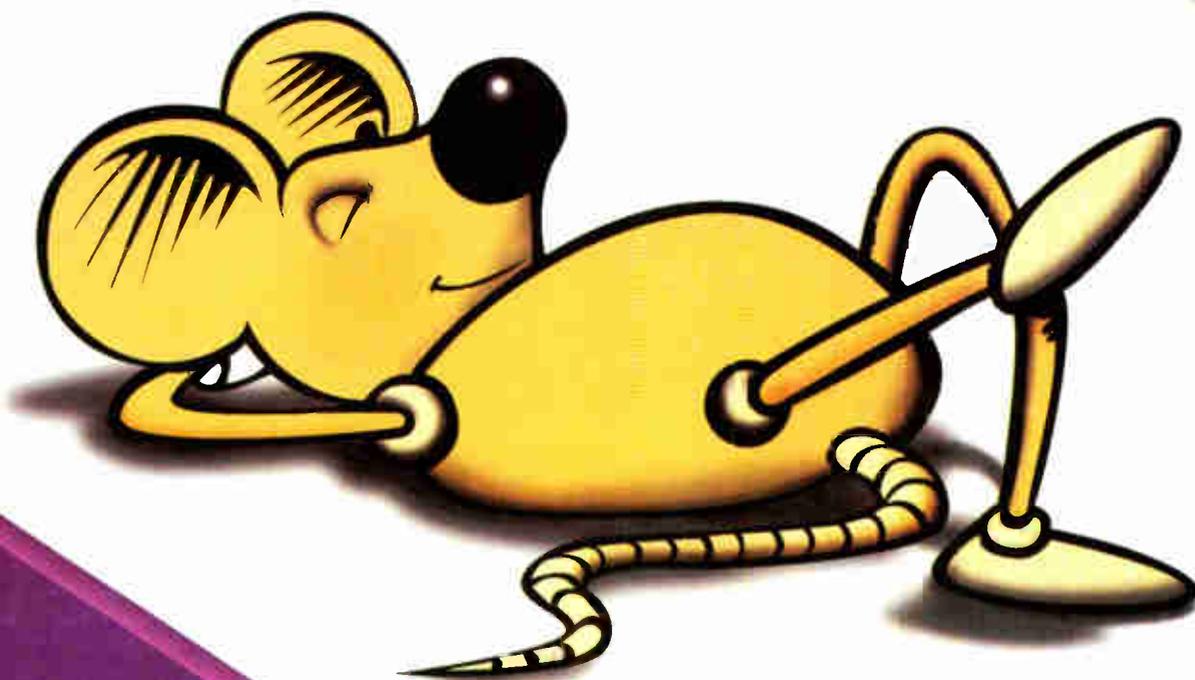
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[www.broadcastmarket.com](http://www.broadcastmarket.com)



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World Radio History

## ◆ READER'S FORUM ◆

**Oops**

Dear RW,

Your April 12 feature article, "When You Have a DA Line Problem," by W.C. Alexander, contains the following: " $\theta_{SC}$  is the angle of the open-circuit impedance." It should read: " $\theta_{SC}$  is the angle of the short-circuit impedance."

Keep up the fine articles and news reports.

Carl Zelich  
Oviedo, Fla.

## I commend Lyle (Henry) for his efforts and accomplishments, and you for publishing the story.

**Henry commended**

Dear RW,

Thank you for publishing my article in the July 5 RW ("Belden Does the Media Twist"). It is amazing stuff.

Thank you, also, for Editor Paul McLane's comments in the July 5 editorial. I met Lyle Henry for the first time at NAB2000. I commend Lyle for his efforts and accomplishments, and you for publishing the story.

As a broadcast engineer and also a student of theology, I find it so good to have RW as a champion of decency and understanding in our industry.

Jeff Johnson  
Network Engineer  
WVXU(FM)/X-Star Radio Network  
Cincinnati

**SESAC coverage**

Dear RW,

I'm surprised to read so little about the licensing of radio stations through SESAC. Several years ago, they recorded our station playing one of their songs (a DJ had brought in his own record and played it).

SESAC offered us a blanket license for a nominal fee and we agreed. These fees have continued to increase until they now surpass those of BMI and ASCAP (by a

considerable margin) for our station.

Repeated letters to SESAC have garnered no response — except for another bill. I understand stations are to negotiate with SESAC on an individual basis but we do not have any facts or know any laws with which to bargain.

What is dual licensing in which two agencies have rights to a single song? How can we get a song list from each agency so we can refrain playing certain songs? Is there a regulatory body we can contact? Can they charge any amount

they choose? What percent of songs does each agency control? I understand SESAC has about 5 percent. At this point any information would be appreciated.

S. P. Ritchy  
Owner  
WGOS(AM)  
High Point, N.C.

**Comrex replies to Aeta**

Dear RW,

I am sorry that Alvin Sookoo, general manager of Aeta Audio, was "shocked and disappointed" when he learned that our new Matrix POTS/ISDN/GSM codec received RW's "Cool Stuff" Award at NAB2000.

It is nice that Mr. Sookoo has the "utmost respect and admiration" for Comrex. I feel the same way about Aeta, but am compelled to address some points in Mr. Sookoo's letter to the editor in RW's July 19 issue.

Mr. Sookoo wrote "to my knowledge, the unit (Matrix) on display was not a 'working' unit." I would like to assure RW readers that the two live Matrix demos that Comrex had at NAB were real, working Matrixes, with actual calls being placed to a variety of locations around the world.

Mr. Sookoo also said "the unit (Matrix)

## For RIAA, Worse to Come

The Recording Industry Association of America wants to build a bottle and stuff the Internet genie back in.

The genie is Napster. But even if the RIAA can shut down the wildly popular music-downloading site for good, others like it will be far more formidable. New services like Gnutella and Freenet allow users to share files directly, without signing into a central directory like Napster. This approach makes it impossible to sue anyone, except maybe the users.

But as the band Metallica discovered, going after Internet "pirates" — Napster users — requires naming each perpetrator. According to one account, Metallica's compliance required 13 cartons holding 300,000 names of people who had downloaded its songs using Napster software, and a large van to deliver them.

Some see this as another case of a behemoth vs. the Lilliputians. Just as in Gulliver's Travels, the little people, led by 19-year-old computer-science student Shawn Fanning, have shot an arrow up the RIAA's nose.

Fanning wrote the software that allows users to download free, high-quality copies of music from the Internet. And this has been happening with wild abandon on college campuses and elsewhere across the country for months.

The recording industry is beginning to use the Net to sell music directly to consumers, using security features to ensure no downloading or sharing will occur without payment. But according to many reviewers, the major labels' sites are slow, expensive and likely targets of hackers.

Maybe the industry should hire teenagers to design its security systems. These should include methods to "grandfather in" music recorded in the halcyon days before Napster and its ilk.

While radio has been slow to embrace the potential of the Net, it has been spared the indignity that has the music industry so flustered. But with satellite radio, non-computer online and wireless devices about to launch, now is the time for radio to take its place more firmly in the new world of the multimedia Internet.

We believe music belongs to its creators. But put aside the intellectual property question for a moment. Radio, long a partner in the marketing of music to consumers, can learn a larger lesson: online successes will come from services that are easy to use, compelling and buzzy. How does *your* online presence hold up?

— RW

is not available until September, if that." At NAB time, the Matrix had already been over one year in development and we felt that an NAB announcement date was appropriate. It is our policy not to

## Letters to SESAC have garnered no response — except for another bill.

— S.P. Ritchy

announce new products until we believe we have a very good fix on actual delivery dates. Our track record speaks for itself and so far the Matrix is on schedule.

Finally, Mr. Sookoo refers to the Matrix ISDN module as an "upgrade," which misses the point of this product.

The whole concept of the Matrix is to provide a flexible, future-proof coding engine that can interface with a broad range of existing and yet-to-be-deployed communications circuits. The accessory modules are an integral part of this concept, allowing users to customize the Matrix to their individual requirements, now and years from now.

Needless to say, we at Comrex are very proud of our RW "Cool Stuff" Award.

Lynn Distler  
President  
Comrex Corp.  
Acton, Mass.

## Write to Us

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## DIGITAL AUDIO CONSOLE

**HIGH TECH** — FOR LESS!



***This new D-5000 audio console from WHEATSTONE gives you our top-of-the-line D-600 digital technology—at a modest price!***

- Totally modular design lets you hot-swap all modules for on-air servicing; even DSP and CPU functions reside on easily changed modules.
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- Choice of 32, 44.1 or 48KHz console clock rates (can be synced externally).
- Serial port allows true integration with routers and automation systems.
- Dedicated phone module with DSP generated MXM—two modules can be combined for up to 4 MXM sends.
- 8-character alphanumeric source displays above each fader.
- All channel fader, display and switch settings are addressable via the serial port for remote control and router/automation communication.
- Exclusive VDIP™ software lets you configure console with a laptop PC (no pulling modules, installing jumpers or setting dipswitches). Once configured console runs standalone.

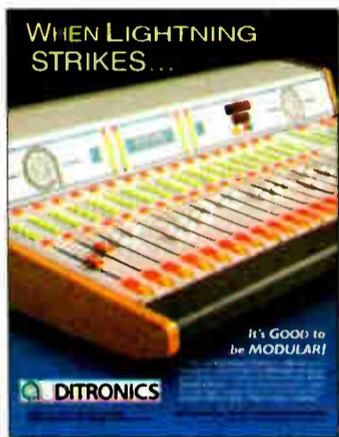


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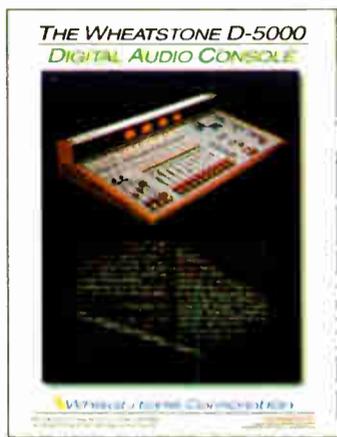


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Modular, easy to install, serial control standard to work with most automation systems. Auditrronics quality at a price to keep you under budget.

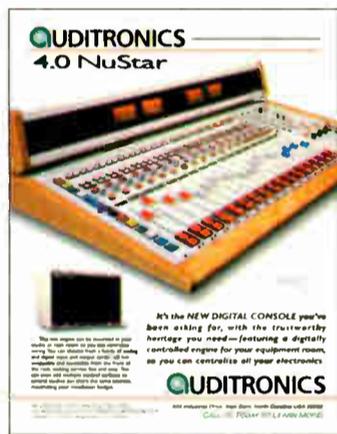
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Virtual Dipswitch Software lets you configure our consoles with a laptop computer. There's no pulling cards, setting dipswitches or installing jumpers. Once configured the consoles run standalone.



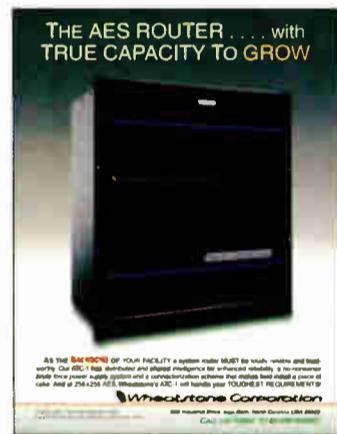
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A digital AES router with all the routing capability you need today—plus the expansion you'll definitely need tomorrow. Handles up to 256 AES inputs and routes them to 256 outputs. All switching done in the digital domain, with sample rate converters on every digital input, plus a complete family of X-Y and input controllers for every need.



**TEAM PLAYERS** — Wheatstone D-600 and D-700 CONSOLES command the ATC-1 digital router; the ROUTER talks to the 8-character console channel displays. Station AUTOMATION can talk to BOTH.

## WHEATSTONE'S D-700

Serial protocol is only part of the story! Each input channel can also have two stereo aux sends, four bands of EQ, compression, assignable ducking, and digital input gain control, panning and HPF—with all settings stored and recalled in up to ninety-nine security protected presets—so your talent can be up and running in just seconds. Presets can even recall bus assigns, source selection, mode, channel ON/OFF and fader settings—all through simple front panel control.

