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Radio World



\$2.50

The Newspaper for Radio Managers and Engineers

October 9, 2002

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NEWS ANALYSIS

Groups Inch Up to IBOC

by Leslie Stimson

SEATTLE At many NAB Radio Shows, the industry has heard that IBOC digital radio was almost ready. Not at this one.

Based on interviews with group owners, engineers and Ibiqity Digital Corp. during the convention in September, it's clear the major radio group investors with stations in large markets plan to transition some stations in key rollout markets this year.

Radio One Inc. became the first group owner to sign on the dotted line and plans to convert stations in five markets this year. Director of Engineering John Mathews said, "The company has a lot of confidence in the technology. Radio One is in radio for the long haul. We know that the next step for broadcasting is digital."

Ibiqity and some additional large groups confirmed they were in the final stages of negotiations about which stations to transition. Citing proprietary concerns, they did not disclose details.

To light a fire under the effort, IBOC developer Ibiqity has waived licensing fees for those who commit to the transition this

See DAB, page 6 ▶

Ownership, Digital Are on Radio's Mind

by Leslie Stimson

SEATTLE Possibly the most notable thing about the NAB Radio Show besides the heavy digital component was the space. There was lots of it, in the hallways and on the exhibit floor. At just under 4,000 attendees, it was a smaller show than years past. The show drew about 5,200 last year and almost 7,700 the year before.

Some vendors appreciated the smaller aspect of the show, saying they saw serious buyers in their booths. The number of vendors was down: 112 booths, compared

to about 160 last year.

NAB said sessions were packed.

"We're very pleased with the turnout, given the economy, 9/11, travel fears, 'Code Oranges' and the demise of the X-Stream component of the show," an NAB spokesman said.

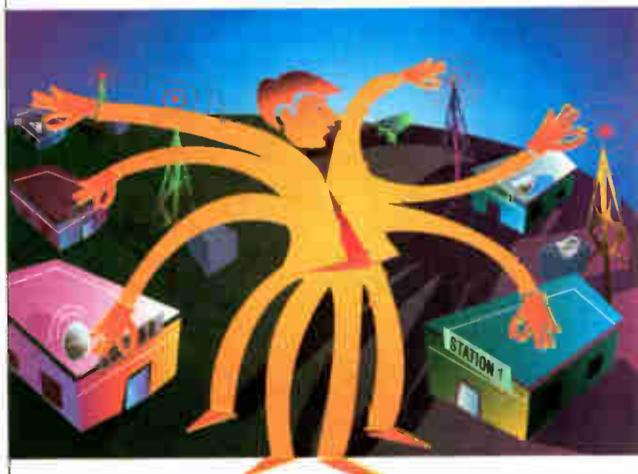
NAB President/CEO Eddie Fritts praised broadcasters for helping the country get through Sept. 11, 2001, particularly in their public service efforts. He also said NAB would continue pushing for passage of the Amber Alert Act, a measure to create a national alert system for

See NAB, page 10 ▶



Visteon showed the first in-dash HD Radio in this 2003 Lincoln Navigator.

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◆ NEWSWATCH ◆

15 Months for Ham Interference

JUPITER, Fla. William Flippo has been sentenced to 15 months in prison and fined \$25,000 after his conviction on eight counts including unlicensed operation and intentionally interfering with amateur radio communications.

The FCC said the court action was the result of an Enforcement Bureau probe that began in 1998. Complaints from a ham group, the Jupiter-Tequesta Florida Repeater Group, sparked the investigation. After serving time, Flippo will be required to serve a year of supervised release.

Arbitron, Nielsen Delay PPM Decision

NEW YORK All bets are off on when Arbitron and Nielsen Media Research will have an agreement on whether to go further together with Portable People Meter development in the United States.

Originally, the companies said they would know by this summer; then that was changed to the end of the year. Now, they're saying negotiations continue, with details to be released "at the appropriate time," according to Arbitron President/CEO Steve Morris.

"Our two companies are looking at the possibility of defining one or more additional phases of research and development that would precede any decision to form a joint venture to deploy the Portable People Meter in the United States," said Morris.

"The outcome of this discussion, along with the results of this enhanced R&D program and acceptance of our efforts in the marketplace, would determine whether Nielsen will commit to the formation of the joint venture and the commercial deployment of the Portable People Meter."

IEEE to Emphasize Digital, Security

WASHINGTON Digital radio and information security will be among the topics at the IEEE annual Broadcast Symposium this fall in Washington. The organization has posted a preliminary agenda for the October event that includes papers about broadcast and satellite transmission, digital television transmission and radio broadcast engineering.

Consultant Clarence Beverage will speak about compact medium-wave antennas; David Baden of Radio Free Asia will address information security architecture. Two papers will focus on the Digital Radio Mondiale system.

Ibiquity Digital Corp. President/CEO Bob Struble will address the IEEE/BTS Awards Luncheon on Oct. 11.

For information visit www.ieee.org/organizations/society/bt/Program.html.

Pennington Re-Elected SBE President

INDIANAPOLIS Troy Pennington has been re-elected SBE president. He is a veteran broadcast engineer with Birmingham, Ala. stations WZZK(FM), WODL(FM) and WBPT(FM). He previously served SBE at the national level as a member of the board from 1991 through 1999 as a director, treasurer and vice president. He is a senior member and is certified at the senior radio engineer level and as a certified broadcast networking technologist.

See NEWSWATCH, page 8 ▶

THE AMAZING LITTLE MIXER



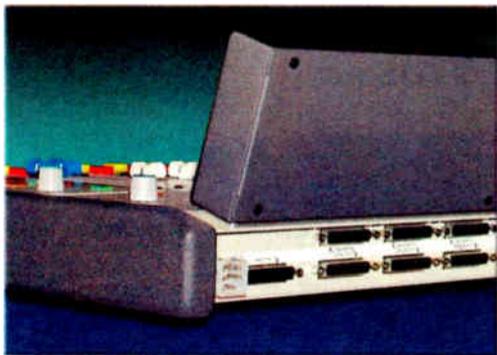
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From left: FCC staff Peter Doyle, Nina Shafran, Keith Larson and Ed De La Hunt discussed IBOC, vacant FM allotments and new filing requirements.



CEAs Dave Wilson mans the NRSC booth. It was the first time the standard-setting group has exhibited.



David O'Neil of Manatt Phelps & Phillips and Brian Madden of Leventhal Senter & Lerman share a laugh during the FCC rule enforcement panel.



Armstrong's Ernie Belanger is enjoying this particular giveaway.



A protestor wears paper shackles to represent the 'bondage' of corporate media.



Protestors marred this Clear Channel billboard near the convention center. It was wiped clean by the end of the show.

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FROM THE EDITOR

IBOC Fees and Show Attendance

by Paul J. McLane

Ibiquity Digital's new incentive program — waiving audio license fees for station owners who make a commitment by the end of the year to adopt HD Radio/IBOC — helps clear the way for radio to implement the technology.

It's not a perfect solution to the fee headaches; see the opinion piece on page 54 for more on that. Nevertheless, the digital radio football is moving down the field.

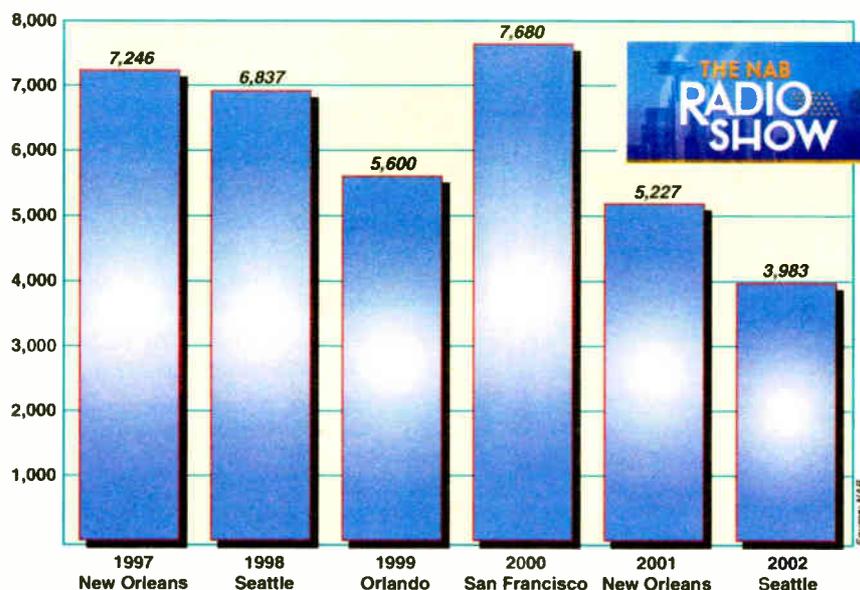
Real momentum was evident at the NAB Radio Show. Many broadcasters are budgeting for IBOC and hoping for a fast-track STA approach from the FCC so stations can light it up for real. RF manufacturers are excited; Harris for instance said it has geared up in expectation of a rollout; it said it can accommodate 80 to 100 customers in the last three months of this year, and opted to educate customers through a series of traveling IBOC educational workshops. That's a good decision that benefits everyone in those markets.

At a digital radio panel that I moderated, representatives of Kenwood, which makes receivers, and Good Guys, which sells them, expressed support for the concept. IBOC

receivers will be in abundance at the upcoming CES convention.

Radio managers in all markets now must stop thinking about IBOC as something that

may happen down the road, and treat it as an issue at hand. Learn about the Ibiquity fee waiver. Talk to your transmission suppliers about how and whether to place an order.



Robert Lipscomb, chief engineer for Moody Bible Institute's WAFS(AM), WMBW(FM) and WMKW(FM) in Atlanta, wins a next-generation transmitter remote control system in our Reader's Choice Sweepstakes, worth almost \$5,600.

The ARC Plus from Burk Technology is suitable for multi-site or dial-up operation for consolidated groups or single sites. It connects to 16 sites with up to 256 channels each. And it's made by Burk, the fine company that has sponsored the editor's page in Radio World for many years.

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We have six issues' worth of super prizes left to give out this year. You can sign up too at www.rwonline.com.



Start thinking about how you would present digital radio to your listeners.

After a decade of fits and starts, IBOC is about to happen.

A different kind of numbers game is playing out on spreadsheets at the NAB.

As the chart shows, attendance at the Radio Show is trending downward. Overall attendance this year was down 48 percent compared to two years ago.

The NAB said this show drew 3,983 people. The association won't tell me how many were fully paid, as opposed to exhibitors, speakers, journalists and exhibit-only passes. But if past ratios hold, it's reasonable to assume that 1,500 attendees were fully paid.

The number of exhibitors also dropped precipitously; by my count it is down roughly one-third from last year. It's not just Internet companies that are missing. Gone from the booth roster were familiar names like Telos Systems, Klotz Digital and BSW. Wheatstone

Cindy Edwards' regional show is back.

Edwards is an equipment saleswoman with Broadcasters General Store who coordinated similar events in past years for other vendors. After a two-year hiatus, she is again arranging a trade show, this one in Charlotte, N.C.

"The response from manufacturers as well as the local engineers gives us a feeling that this show will be a big one," she said. Thirty-five exhibitors are expected.

It takes place on Oct. 31; three free meals will be served. Register at www.broadcastdealer.com or call (866) 697-6296.

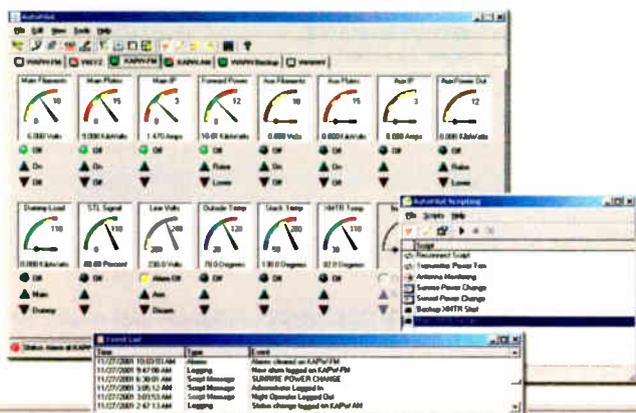
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GUEST COMMENTARY

'Craig, Donna' Plan Criticized

by R. Sparks Scott

So the National Weather Service and National Oceanic and Atmospheric Administration are shelving "Perfect Paul" and replacing it (him?) with Perfect Donna and Perfect Craig? Oh happy day, let's celebrate. (Not!)

For a better perspective of what the NWS is serving up these days and into the future, it's necessary to go back 10 years to the halcyon days when forecasts and alerts on our local weather stations were written, compiled and voiced "locally" by living, breathing humans.

Weather conditions

For many years, the forecasts originated at the nearby airport NOAA office.

At the beginning of each forecast cycle, the forecaster identified him or herself by name and presented the current weather conditions, forecasts, river levels, daily weather statistics and any weather watches, warnings or advisories as necessary. Weather conditions could be verified and adjusted as needed, based on observation through the office window.

The old, tape-based playback system did have its drawbacks, to be sure — dragging carts and missed cue tones — but the information imparted was accurate, timely and above all personal. NWS employees were involved and available to ascertain the quality of the broadcasts and make corrections/repairs as necessary.

With the advent of the "Console Replacement System," my local NWS office was closed, and all duties of the weather service radio were transferred to the largest nearby city, Portland, Ore.

Gone were all of the familiar voices, but worse, the quality of the service deteriorated dramatically in terms of content, accuracy and audio quality. The hard-disk audio system that feeds the NWS VHF broadcast transmitter receives its audio via dial-up telephone service, with the attendant loss of audio bandwidth, introduction of distortion, hum, and handset handling noise.

Ambient noise frequently was evident, including loud conversations, background music, doors slamming and other distracting noise. The NOAA employees voicing the information were variously bored, sleepy, sick, disinterested or aggressive. In one case, the speaker had a strong regional accent and consistently mispronounced area place names.

Added to this was the fact that the forecasts and conditions were coming from an office more than 100 miles away, which meant that the information was sometimes incorrect and/or out of date.

For the first two weeks of operation from PDX (Portland), the call sign at the beginning of the cycle was incorrect! Information that had no reason to be broadcast in this area would frequently pop up and just as quickly disappear. The system occasionally would get caught in a loop, repeating one part of a forecast cycle endlessly.

If the job of the previous local staff was to forecast, observe and report, providing programming content for just one weather service radio transmitter, the Portland office employees' involvement was reduced to rip-and-read, disseminat-



The author is shown with KEC42, the NWR transmitter for Eugene, Ore., operating on 162.40 MHz.

ing pre-formatted information to scores of WSR transmitters in two states. No wonder some of them sound stressed.

Enter "Perfect Paul."

At first, I was really irritated by this robot's droning delivery, but soon began to find that it was at least consistent, and had fewer problems and idiosyncrasies than the distant NWS employees exhibited.

Actualities voiced by the human employees still exhibit the gamut of problems, not the least of which is inconsistent audio levels, ranging from nearly inaudible to grossly distorted by too-loud delivery. Our friend "Paul" tends to raise the pitch of his voice and get whiny when asked to enunciate an extended sentence without taking a breath.

Whiny?

Now we're expected to believe that the "Craig" and "Donna" replacements are going to make it all very acceptable again.

Sorry, I listened to the online examples, and they don't come close to the polished delivery of Rick Wagner and the rest of the local NWS crew back in the days when the broadcasts were live.

I also doubt that some of the problems that still plague the "Perfect Paul" system will be much modified in the new system. Odd characters, misspellings or abbreviations typed into the text of the speech synthesis computer make for some interesting, yet unintelligible strings of words, numbers and spoken punctuations.

Lately, the local NWS office has begun airing a portion of the forecasts using the "Craig" voice. I was prepared to describe the vocalizations as dead flat, but after enduring a few weeks of the updated system, I have to say that a return to Perfect Paul would be an improvement.

"Craig's" inflection and cadence are all over the map. I'm having an interesting time understanding the speech, finding that it actually takes mental "work" to decipher the rapid-fire delivery of the concocted spoken words, many of which seem to have no pause before the next, running otherwise familiar words into new and different contractions.

In the event of several consecutive misunderstood phrases, I find myself barely able to keep up with the continu-

ing forecast while trying to understand the previous sentence. This is exercise even without additional "munged" or corrupted dialog to further confuse the message being delivered.

Ultimately, the consolidation of the NWS service to regional offices has resulted in an on-air product that completely lacks the feedback loop necessary

to ensure the quality of the information and its delivery. That loop is concerned local staff members who listen to the broadcasts and corrects anomalies on an ongoing basis.

Would I air NWS audio services on a broadcast station? Fortunately, I'm not in a position to have to make that call, but on a personal level, I'd have to say no, I would have a station staff member transcribe the information and voice it locally as long as the advisory was not urgent.

Live, human voice

The sudden switch of broadcast station programming to an unfamiliar and obviously canned synthesis of vocalized words strung together is likely to confuse the average listener, and cause him or her to discount any immediate warning or advisory. Nothing compares to a live human voice, particularly a familiar one, to convey urgency of an alert or warning.

Will the NWS be in a position to bring greater public and broadcast professional acceptance of its services via the Weather Service Radio by using "Craig" and "Donna"? Not likely. One might just as soon hope for a return to the pre-console replacement service days programming content. It's always comforting to have expectations, however unrealistic.

R. Sparks Scott is a broadcast engineer in Eugene, Ore. Reach him via e-mail to sharkey@mrsharkey.com.

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DAB

► Continued from page 1

calendar year. Ibiqity wants to see proof of commitment, such as an equipment order.

The waiver is only for those stations that an owner plans to convert in 2002, not for all the stations an entity may own.

Some engineers expressed concern about having to purchase, take delivery on and install equipment for multiple stations by Dec. 31. But Ibiqity said an owner would not miss out on the waiver if a station cannot actually get all of the equipment installed by then.

"It's a function of what delivery date they have from their equipment manufacturer," said Ibiqity Senior Vice President Jeffrey Jury. "It's got to be a reasonable attempt to get it on this year. That may flow to the first few weeks of next year."

But an owner who says it plans to commit yet doesn't actually purchase equipment until next year would not qualify.

"The waiver is not for people who say, 'I'm going digital someday,'" Jury said.

Those who do get a fee waiver from the licensing agreement still must sign such a document with Ibiqity, the company said. The licensing fees are separate from the money broadcasters must pay suppliers to purchase IBOC equipment. The fees are calculated as a multiple of a station's annual FCC regulatory fee.

It remained to be seen whether the

promise of a waiver is enough to spur other groups into purchasing IBOC equipment this year. One major radio group owner said privately the waiver was not enough; he only intends to convert one station this year.



An early production model of a Visteon in-dash HD Radio. Visteon is developing HD Radio-capable OEM receivers for the 2004 model year.

Radio One ordered new digital equipment — Harris Z-HD solid-state digital DAB transmitters and Dexstar AM/FM IBOC excitors — for KKB(T) in Los Angeles, KBFB(FM) in Dallas, WBOT(FM) in Boston, WDMK(FM) in

Detroit and WHTA(FM) in Atlanta.

Mathews said the Los Angeles and Detroit stations would be transmitting analog and digital signals by the end of the year and the remaining three markets would be ready in January. He estimates

Z-HD FM lines. Harris also announced an IBOC certification program. Training programs, consisting of five days, are due to begin in November.

Mendenhall said broadcasters don't seem too worried that the FCC has not yet set an IBOC standard. At a Harris-sponsored IBOC implementation seminar in Seattle two days before the show, Harris staffers said, many attendees were focused on the return on investment from IBOC's data possibilities.

Ibiqity was low-key about a second fee waiver it's offering. The company is waiving its portion of the revenues stations would make off IBOC data services until 2005.

"We re-thought that and will come up with a different model," said Broadcast Business Manager Scott Stull. He said broadcasters do not want a formula based on a percentage of revenue, and Ibiqity doesn't think a flat fee would be fair.

Originally, the company planned to take a small portion of the revenue broadcasters make from the data services. Language in the agreement would have given Ibiqity the right to inspect broadcasters' accounting books twice a year to make sure they were not hiding revenue. This aspect of the original plan galled some groups who did not plan to open their books to Ibiqity, especially on a long-term basis.

A Clear Channel executive, in a previous interview, raised the possibility of not doing data at all, to make its point.

Several engineering and business sources said Ibiqity is charging the licensing fees on its software only to recover its research and development costs; backing off on this aspect won't hurt Ibiqity financially that much, they said. Ibiqity has stated it expects to make the bulk of its money on its portion of receiver sales but wanted to recoup some costs in the meantime.

While Ibiqity is talking to owners of all sizes, it wants to get on 76 stations to reach its goal of covering at least 50 percent of listeners in early rollout markets. The goal is to make consumers aware of HD Radio, the brand name they will encounter for terrestrial digital radio, and entice them to buy receivers.

Several small-market attendees at the Radio Show expressed anxiety about this aspect, fearing the waiver will expire before they can afford to commit to HD Radio. Some other attendees predicted the fees eventually would go away altogether.

For example, three attendees approached by Radio World during the show said digital

See DAB, page 7 ►

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the waiver saved his company \$300,000.

Another major radio group engineer expects to shave roughly \$1 million off his conversion price due to the waiver. He termed the waiver "a good start," and said his company was close to coming to terms with Ibiqity.

IBOC vendors were pleased about Ibiqity's waiver. Fees were prominent among broadcaster concerns at the spring NAB convention, along with possible nighttime AM interference.

"The amount of money they can save in royalties will help them pay for IBOC within two years," said Harris Corp.'s Geoff Mendenhall.

One vendor said, "The licensing issue was more of an impediment than we thought."

Harris, Nautel and Broadcast Electronics representatives were upbeat about the IBOC interest shown on the exhibit floor. BE's Tim Bealor said the company has definite conversion timeframes, including specific power levels, from some customers.

Harris said it could build and ship 80 IBOC systems by the end of the year. The company also introduced an IBOC-ready, low-power AM transmitter line called DAX. This family of 1 kW AM transmitters joins the 3DX AM and

NRSC to Begin IBOC Standard-Setting

SEATTLE In the past, when questioned about standards-setting for IBOC, the National Radio Systems Committee said it was soon to tell whether that would happen. No more.

The NRSC has begun a formal standards-setting process for IBOC. At the NAB Radio Show last month, the NRSC DAB Subcommittee formed a working group with the goal of drafting and adopting voluntary industry transmission standards for AM and FM IBOC. Receiver manufacturers will be part of the group, but it's unclear if there will be a receiver standard as well.

Ibiqity asked the NRSC to set a transmission standard for AM and FM IBOC, stating in a letter that the NRSC has provided the IBOC developer "an invaluable leadership role" for testing and evaluating its AM and FM IBOC systems, and that setting a formal standard would be a natural extension of that effort.

DAB Subcommittee Chairman Milford Smith of Greater Media said the group would likely begin with FM.

A leader of the working group was to be chosen in October. Ibiqity hopes the NRSC can set a standard by January.

— Leslie Stimson

DAB

► Continued from page 6

is not yet a priority for them. Based in Montana and Colorado, they said their agriculturally based economies have seen a tough year, with crop prices down and farm operating prices up.

"Only one TV station in town is digital and he's the only one who can receive the signal," said one.

Yet others say beginning in the large markets is a natural progression for intro-

Motorola Asks: Why IBOC? Just Make the Radio Sound Better

AUSTIN, Texas Another type of digital radio was alluded to at the NAB Radio Show. Motorola didn't want to discuss its new radio chipset publicly and place a damper on its product debut at AES, but the company did share some specifics with reporters.

Motorola has designed a radio platform that it says will make a radio sound better than analog and enlarge a station's coverage area. The company is calling its invention "a disruptive technology" that "raises the bar as to whether IBOC makes sense," said John Hansen, Motorola's director of marketing for driver information systems.

The Motorola Symphony Digital Radio uses a chipset approach for an Intermediate Frequency radio. It combines digital signal processors with an RF front-end and intermediate frequency analog interface.

The radio uses software algorithms to tune, filter and improve the signal in place of analog circuits. Motorola says the software helps the listener tune to more stations than is possible with analog receivers.

Symphony's Channel Effects Equalizer allows listeners to "hold on" to a clear signal longer, farther than listeners now can hear analog stations, said Hansen. How much farther was difficult to quantify.

"The Variable IF Filter algorithm used in Symphony automatically and dynamically adjusts itself to both 100 kHz and 200 kHz band channel spacing, which allows it to react to any changes," according to Motorola.

The FM demodulator algorithm used in Symphony separates the FM signal from the carrier. The company claims this algorithm provides a wider listening range and improved signal-to-noise ratio under weak signal conditions.

Motorola is offering the platform to its customers, particularly automobile manufacturers, to get aftermarket Symphony Digital Radios to consumers by late next year and in-dash models ready for automakers in the same time frame for 2005 car models.

Hansen estimated the retail cost of a Symphony radio would be between \$10 to \$5 more than current analog radios.

Several radio group engineers at the Radio Show said the concept has been tried, unsuccessfully. Ibiqity does not see Symphony as a competitor to HD Radio.

— Leslie Stimson

duction of a new technology.

"Ibiqity's not wrong to target the big guys," said Bud Walters, president of the Cromwell Group. He believes IBOC will succeed and the industry will embrace it, because it meets radio's long-term needs.

Commission hints

Where does the FCC stand in radio's digital transition?

FCC Commissioner Kathleen Abernathy said she hoped colleagues soon would approve an initial endorsement of IBOC as the digital radio standard in the United States. She told attendees a Report and Order is likely to come out this fall.

The timing of the endorsement and a mechanism for allowing early adopters to go on the air may be approved in October or November, with final rules in early 2003. Audio Division Chief Engineer

Keith Larson said the commission could approve "interim permits" so transmissions could be on air for the introduction of the first receivers by the 2003 Consumer Electronics Show in January.

Some engineers expected the commission would approve some form of blanket Special Temporary Authorizations for this purpose.

Audio Service Division Chief Peter Doyle, however, cautioned that the commission would be hesitant to take any shortcuts. "Technical waivers will face a high hurdle," he said.

While the FCC has data in hand from the National Radio Systems Committee on FM and daytime AM digital transmissions, work on nighttime AM still has to be undertaken, Associate Chief Edward De La Hunt said. Reports are expected from Ibiqity this fall.

"We're not going to do anything to undermine the technical integrity of the service," De La Hunt said.

Several regulatory sources told Radio World before the convention that they expect the IBOC proceeding to be handled publicly, rather than voted on privately by the commissioners. They hoped IBOC could be voted on at the commission's Oct. 10 public meeting.

Before any stations begin broadcasting digital signals, the FCC must decide how to authorize AM. A dispute has emerged between some owners of clear-channel stations operating on skywaves at night and those that don't.

The owners of clear-channel stations fear that implementing AM IBOC at night at full power may cause interference to some stations; they have lobbied for AM to

See DAB, page 8 ►

Last-minute remotes?

No stress for John Kennedy of Entercom Boston.

The Patriots win the Superbowl! A major cause for celebration in Boston. And potentially major stress for John Kennedy, Engineering Director for Entercom Boston. With no advance warning, John had less than 24 hours to orchestrate coverage of the festivities on numerous stations — including live remotes along the Patriots' parade route. Fortunately, John knew he could count on Comrex Matrix to deliver — even last-minute. With Comrex in your toolbox, last-minute remotes are successful, not stressful.

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John Kennedy,
Engineering Director
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DIGITAL NEWS

DRM Demos Receiver at IBC

AMSTERDAM The Digital Radio Mondiale Consortium has unveiled a production-ready world-band digital consumer receiver, developed by Coding Technologies, the BBC and German device manufacturer AFG.

The receiver is an original equipment receiver integrated in a commercially available multiband radio to pick up DRM signals on shortwave, medium-wave and long-wave used overseas.

The digital radio technology developer also previewed its first publicly-

available receiver, the DRM Software Radio, made by Fraunhofer IIS-A. The radio is actually software for a conventional PC; it will pick up the DRM digital AM system for the broadcast bands below 30 MHz.

The DRM Software Radio is designed for consumer use. The unit is a down-scaled version of an existing, professional Fraunhofer receiver. Coding Technologies provided the radio's codec using *aacPlusT*, a combination of MPEG AAC with Coding Technologies' Spectral Band Replication bandwidth extension algorithm.

DRM is a group of broadcasters, network operators, manufacturers and researchers who have created a digital AM system for shortwave, medium-wave and long-wave. DRM hopes to launch the technology overseas in 2003.

WorldDAB Forum Seeks More L-Band

LONDON L-Band spectrum in Europe should be earmarked for terrestrial digital radio until satellite digital radio begins in 2005.

So says a report commissioned by the WorldDAB Forum, an international body promoting the Eureka-147 DAB technology.

"Perhaps the most significant conclusion the report reaches is that T-DAB and SDR are both competitive as well as complementary to each other," said WorldDAB President Annika Nyberg.

Among the conclusions in the report:

"The marketing success of terrestrial DAB in Europe will be decided in the next few years and spectrum for satellite DAB should not be given priority over terrestrial DAB before satellite's expected launch in 2005;

"Terrestrial DAB is an improvement on present analog radio and seems likely to provide mobile and substantially free-to-air audio and data services, while satellite DAB proposes a novel type of content likely to offer personalized music and data subscription services. The two systems are therefore not mutually exclusive;

"Satellite DAB should not be considered

a replacement transmission system for analog radio or terrestrial DAB broadcasting;

"Radio needs to go digital to for broadcasters to retain audiences and increase advertising revenue with improved targeting."

The report was conducted by PrognosAG, an economic research firm based in Switzerland. The report was to be presented at the IBC.

DAB Around the World

The WorldDAB Forum reports that Australia plans DAB trials in Sydney comparing Eureka-147 on VHF Band III to L-band. Australia is still looking for receiver manufacturers to develop radios that can handle the data capabilities associated with DAB.

In Switzerland, Radio DAB Network hopes to become that country's first commercial DAB multiplex operator. The consortium intends to apply for a block of allocated frequencies in L-Band.

The BBC has launched its third new digital station, 1Xtra. The format is urban contemporary music.

— Leslie Stimson

NEWS WATCH

► Continued from page 2

Pennington is a member of the SBE Certification Committee and member of Chapter 68 in Birmingham, having twice served as its chairman. He is co-chair of the Alabama Emergency Communications Committee and a member of the President's National Advisory Council to the National Emergency Alert System.

Other officers elected to one-year terms include: Vice President — Raymond Benedict, director spectrum management of Viacom, Inc.; Secretary — Sam Garfield, vice president of Technical Broadcast Consultants; Treasurer — John Batson, regional engineering manager, of Sinclair Broadcast Group, Birmingham, Ala.

These members were elected to two-year terms on the national board: Ted Hand, director of engineering for WTKR(TV);

Mark Humphrey, chief engineer of WPLY(FM)/Radio One; Keith Kintner, assistant director of technology for WILL(AM-FM-TV); Vincent Lopez, systems technician for WSYT/WNYS(TV); Thomas Ray III, corporate director of engineering for Buckley Broadcasting/WOR Radio; and Barry Thomas, president of Thomas Media Systems & Design.

Those elected will join six other members of the board who begin the second year of their two-year terms. Ralph Beaver, William Denne, Donald Driskell, Clay Freinwald, Robert "R.J." Russell and Conrad Trautmann III.

The newly elected officers and directors will be inducted on Oct. 17 during the SBE national meeting in Phoenix, held in conjunction with the SBE Chapter 9 Regional Convention.

DAB

► Continued from page 7

be operated initially at lower power. Some regulatory sources indicated this would be a conservative approach for the agency to take, before all the AM nighttime test results are evaluated.

Opponents fear that if AM IBOC were implemented in this fashion, AM stations would face resistance to returning to full power at night and may never get it back.

Ibiquity has begun AM nighttime tests including subjective listening tests and a comprehensive AM propagation study of all AMs in the country.

Ibiquity conducted groundwave tests on WOR in New York and skywave tests on WLW in Cincinnati. WLW is at 700 kHz and WOR is at 710. While WLW turned its digital signal on and off, testers listened to WOR to see if there was interference. Ibiquity Vice President Broadcast Engineering Glynn Walden said no one listening in the test group

could hear interference. Ibiquity plans to reverse the test this fall and compare the results to previous tests.

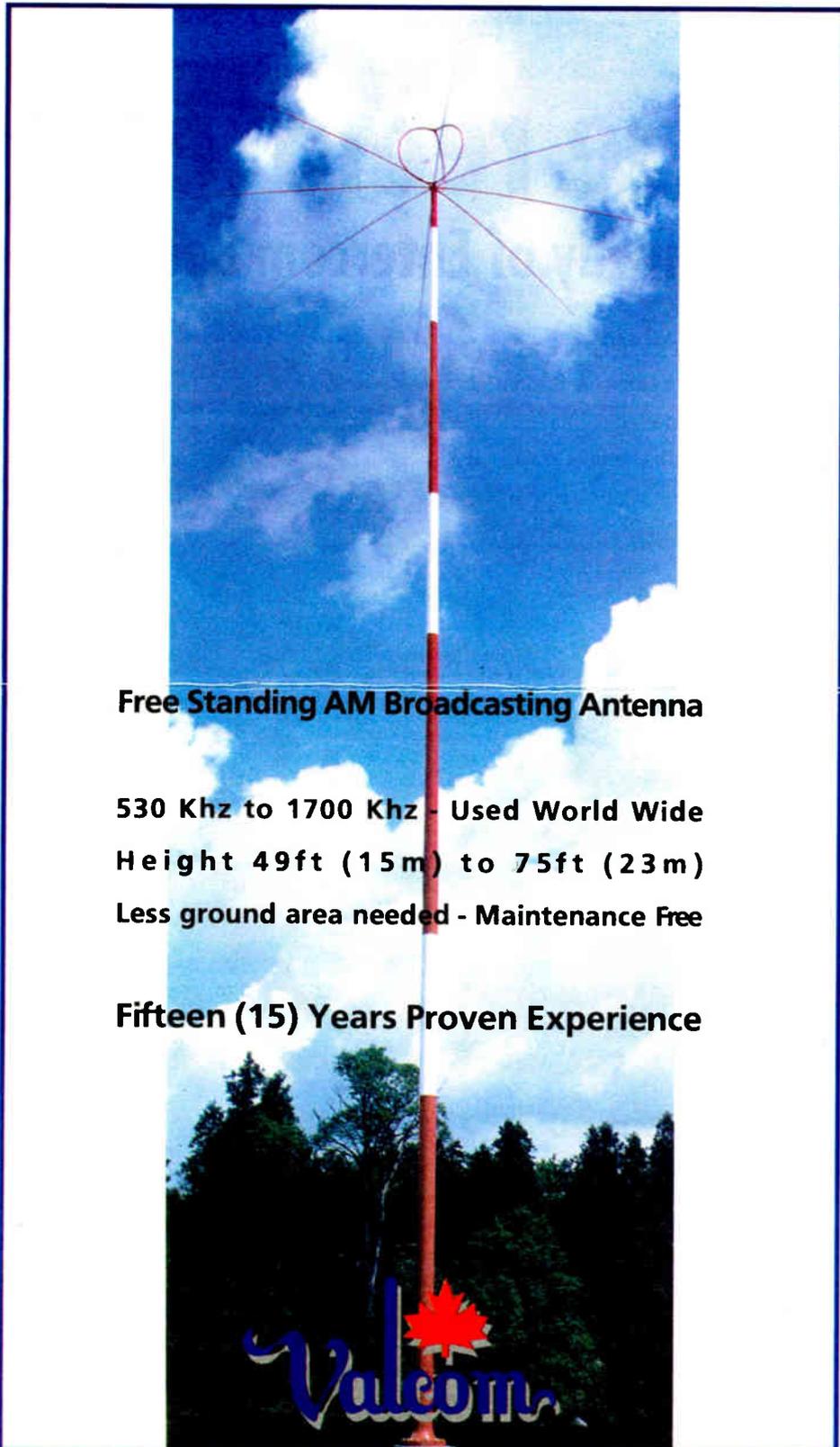
For the first time, Ibiquity showed an in-dash HD Radio. Previously, it has displayed prototype receivers and chipsets.

Meanwhile, Lincoln Mercury, Visteon Corp. and Ibiquity developed and equipped a 2003 Lincoln Navigator with a Visteon prototype HD Radio receiver in the dash for the convention. Visteon is developing HD Radio-capable OEM receivers for the 2004 model year.

At an HD Radio listening event at a Good Guys retail store near Seattle, 75 to 100 people came to hear a live HD Radio signal on Infinity station KBKS(FM).

"People expect digital technology in this day and age," said Mark McDougall of Good Guys. "HD Radio will provide the listener with an improved listening experience, just as XM and Sirius do, while keeping the familiar station that the consumer is attuned to."

Sandusky's KIXI(AM) and Entercom's KISW(FM) also aired digital signals during the show. 🌐



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o m n i a a u d i o . c o m

NAB

► Continued from page 1

child abductions. A \$25 million bill passed the U.S. Senate the day before the show began.

The economy and media ownership were foremost on attendees' minds, as radio crawls out from the recession. Executives at a session of radio group heads said consolidation has allowed radio to grow and offer diversity of programming to consumers, even in the face of less ad revenue.

Radio is big

Regent Chairman/CEO Terry Jacobs called radio a growth industry. Radio One COO Mary Catherine Sneed agreed.

"Radio is big business now. It's important now," she said. "Consolidation has helped make it more important."

Several presenters said that, despite its critics, radio is not highly consolidated compared to other industries. As an example, Clear Channel Radio President Mark Mays said, in the recording industry, five labels control 85 percent of the business. Rep. Greg Walden, R-Ore., new member of the House subcommittee on telecommunications, agreed. He said radio is "far less concentrated" than other media, but that the industry hears the concentration argument a lot because there's 25 percent fewer owners since 1996.

Back in Washington, as the show began on Sept. 12, the FCC initiated the third biennial regulatory review of broadcast ownership rules. Affected radio rules are local radio ownership limits and the radio/TV cross-ownership restriction. Attendees at the convention said it was too soon to tell if the local ownership limits, allowing one company to own up to eight stations in a market, might change.

The 1996 Telecom Act requires the agency to review the rules every two years and make changes where necessary.

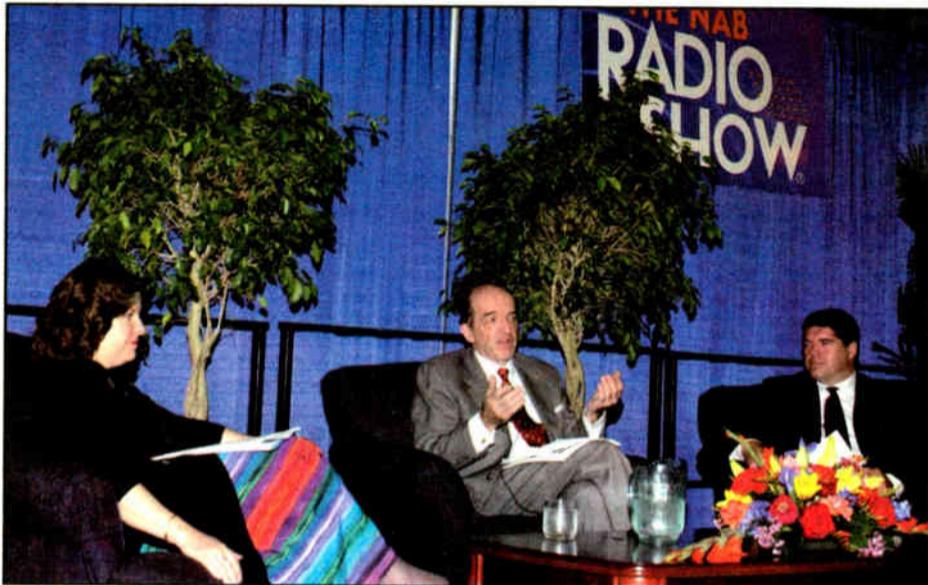
Commissioner Kathleen Abernathy said, "We need to make sure the rules adequately represent the marketplace." The agency seeks comment on whether the ownership rules still work or if they

drive up costs to consumers.

Fellow Commissioner Michael Copps said media has consolidated "on a scale unimaginable a few years ago." He stressed the need for a national dialogue on the topic.

Discussion of the "Opie & Anthony" sex contest stunt in St. Patrick's Cathedral was a hot topic in several regulatory panels.

Copps hopes the requirement that a complainant in an indecency or obscenity case has to provide the commission with a tape or transcript of a disputed program is changed. He reiterated his call for the return of the old broadcast programming code. "People are sick about this," he said.



From left, FCC Commissioners Kathleen Abernathy and Michael Copps discuss ownership and indecency laws with moderator Steve Newberry of the NAB Radio Board and Commonwealth Broadcasting.

Yet attorneys in another panel said they would be hard pressed to prove that the Opie & Anthony stunt was indecent.

Abernathy said just because she finds something offensive doesn't mean she "goes to the next level and say it's indecent."

Also pending before the commission are rules governing the use of terrestrial repeaters for satellite digital radio. Broadcasters fear if business models for Sirius Satellite Radio and XM Satellite Radio don't succeed, the satcasters may

use their terrestrial repeaters as their real delivery system.

When questioned, Copps said, "I'm all for satellite radio. We're (the FCC) for new technology." Yet, when told XM patented a way to insert program material to be transmitted via repeaters, he said he believes the remaining questions about their specific repeater use need to be resolved.

Rep. Walden agreed and added, "Whether they have a good business model, we'll see."

Fritts said, "You know, our satellite friends, XM and Sirius, have been trying to build their business by criticizing local radio. They say they will do for radio what cable did for television. I say if you like

cable radio, you'll love satellite radio."

Later in the show, attendees heard the FCC has stepped up its enforcement efforts in the areas of EAS, RF safety and unlicensed operators. FCC Enforcement Bureau Assistant Bureau Chief Lisa Fowlkes said making sure stations comply with main studio rules and maintain their public inspection files is vital as well.

Panelist David O'Neil, a partner at Manatt, Phelps & Phillips, told attendees always to cooperate with a surprise inspection by FCC personnel.

"Do not lie to them. Just give them what you have," O'Neil said. He said one of his clients hid from an FCC field agent because the agent asked to see the station's public file and no one at the station at the time of the inspection knew where it was.

Panelists suggested stations keep a framed statement handy that explains where the public file is stored so that no matter who has to find it, the file can be easily located.

The most common thing the Enforcement Bureau hears from stations after being notified of a fine is: "We're such a good company. You should reduce this (fine)." The No. 1 way to get a license revoked? Lie to the commission, Fowlkes said.

John Garziglia, of Womble Carlyle Sandridge & Rice, said to avoid fines for RF radiation, owners must provide diagrams of problem spaces on their towers so that climbers can ensure their safety.

FCC Audio Division Chief Peter Doyle told another session there are about 600 new FM allotments pending for processing but said the commission is about 18 months away from turning those into construction permits.

Because a federal court in Washington ruled that noncoms can't participate in auctions for new spectrum, the agency has to

develop rules to govern new authorizations for both commercial and public broadcasters. Doyle hopes those rules will be out by the end of the year, but anticipates that the issue will end up in court, with the result a delay in finalizing the FM allotments.

Testing was to begin in late September for new LPFMs.

Allow time

Audio Division Deputy Chief Nina Shafran addressed concerns surrounding the application change process regarding cross-ownership rules and local ownership rules, among others.

She warned broadcasters not to put strict drop-dead deadlines on station transaction proposals, in case the application process takes longer because of further scrutiny, or "red-flagging," due to additional competition analysis.

Rep. Walden raised the possibility of studying the red-flagging process, saying he thinks the oversight of business deals for possible anti-competitive behavior is more the purview of the Federal Trade Commission than the FCC.

Of the free airtime proposal before Congress, Walden doesn't think it will pass. Even if a mandate to give federal candidates airtime did pass, the result wouldn't be savings for candidates, he said; they would simply shift money to other fundraising avenues.

During a session on independent promotion, Rick Cummings, the president of the radio division of Emmis Communications, said, "What this is really about is fear — fear on the part of the music industry, on the part of the record labels, who have a history of looking for a scapegoat when they've had a bad year. They've had two bad years in a row, and they're headed for a third one."

Recording Industry Association of America spokesman Mitch Glazier said the RIAA would like the FCC to develop rules governing indy promotion, because consolidation has changed the game.

Rick Bernthal of Latham & Watkins said consolidation has given portions of the radio industry "equal bargaining power with the record industry," and now the labels are asking the government to intervene. He said the government has no role in deciding how stations decide to play music. See related story, page 32.

Another issue affecting radio's pocketbook in the months to come is Arbitron's Portable People Meter. Broadcasters still want to know how much more than the diaries the PPM will cost, and Arbitron still has given no answer.

Owen Charlebois, Arbitron's president of U.S. media services, said the PPM will cost more than diaries, but how much more Arbitron couldn't say because the decision is not only under the rating company's control. Arbitron and Nielsen Media Research are still negotiating about possible future U.S. development of the PPM, and Arbitron doesn't know its portion of those costs, according to Charlebois.

He said the radio industry will want a high level of response, and that sample size will drive PPM costs to broadcasters.

Members of the Cascadia Media Alliance protested what they called the FCC's slowness in allocating low-power FM signals. Unlike the group's previous appearance two years ago in San Francisco, no sessions were disrupted in Seattle.

A group of about 15 protesters waved placards and posed in front of the center Friday morning, watched by police.

Next year, the radio show will be held in Philadelphia Oct. 1-3. 

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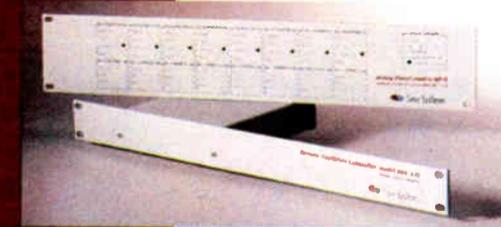
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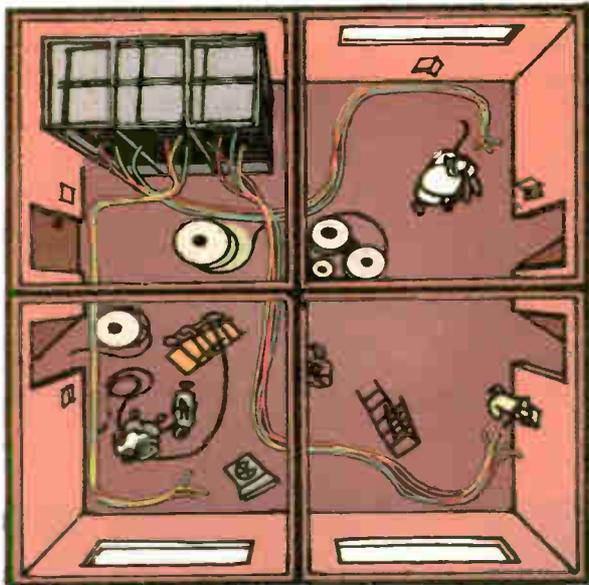
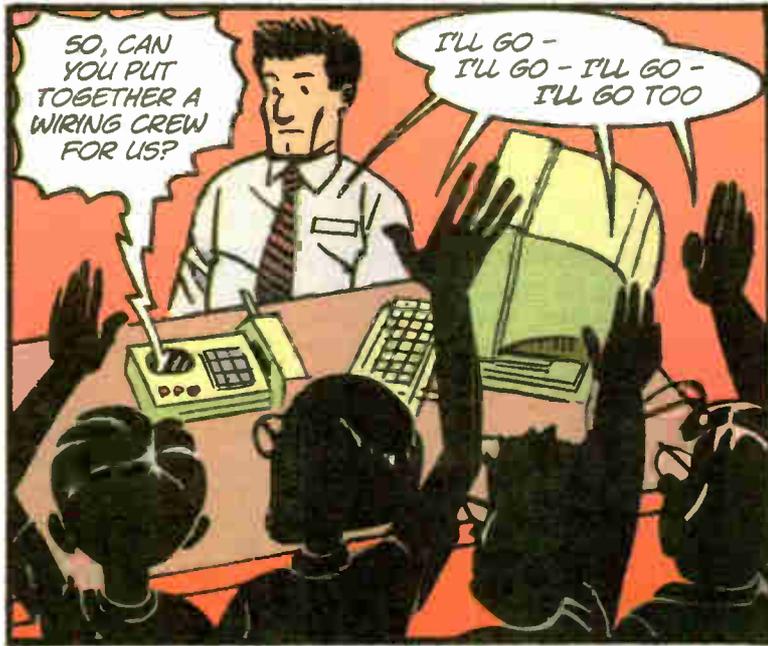
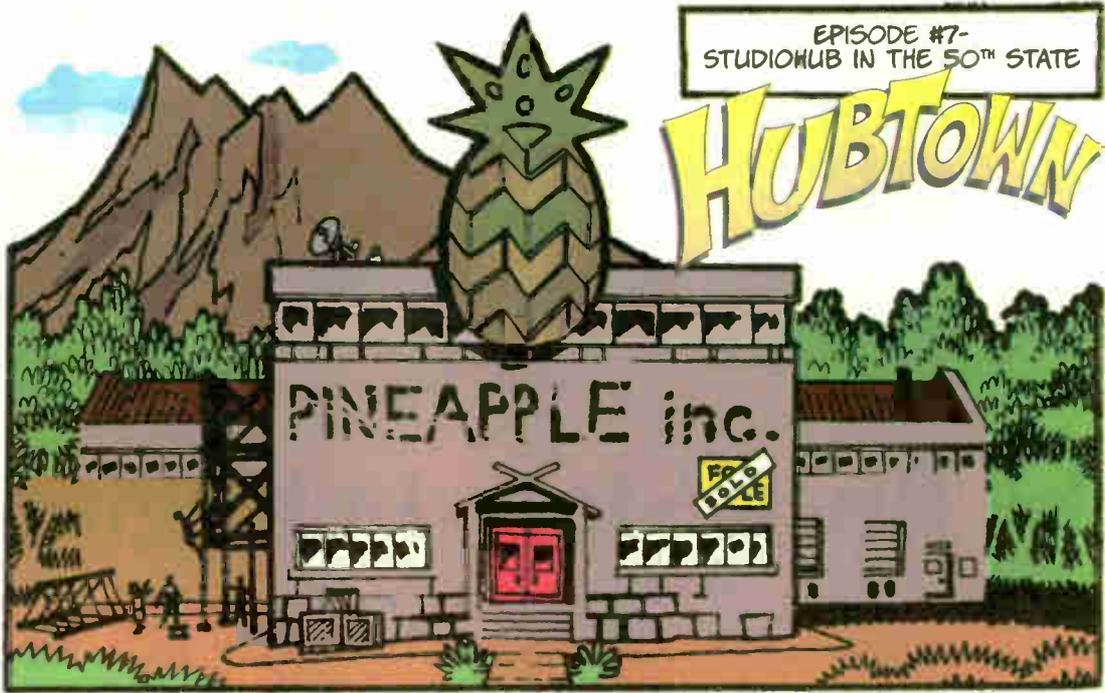
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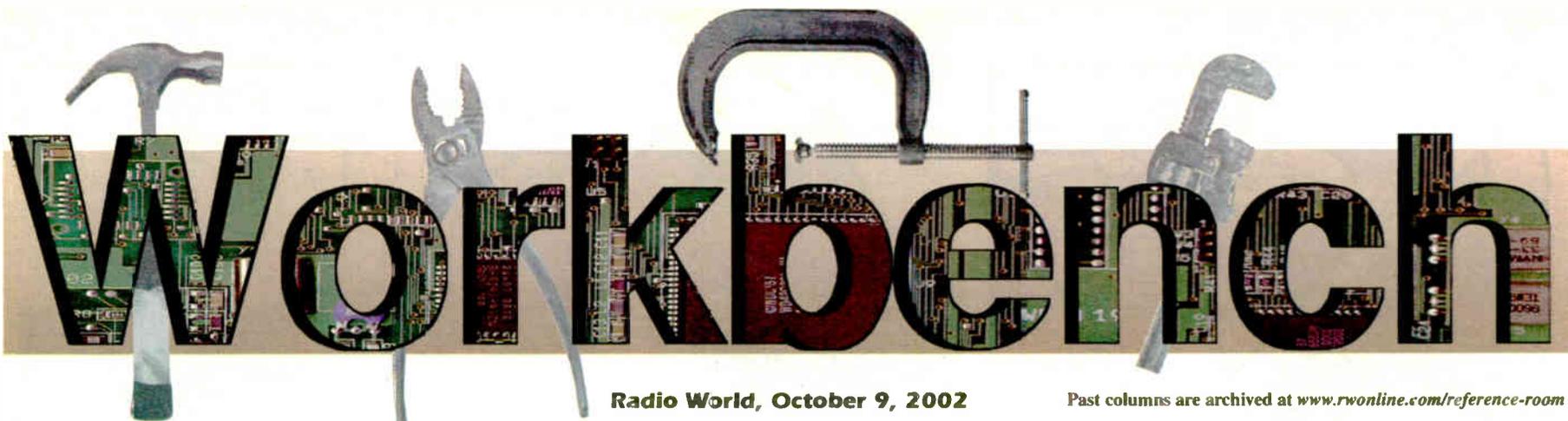


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Radio World, October 9, 2002

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The Buck Stops in Engineering

by John Bisset

Budgeting; doing more with less; saving money.

These are the "new" rules of radio engineering, and they require a fresh mindset. I've spoken to a number of engineers who are thinking out the box when it comes to their 2003 budget. If you've worn your eraser to a nub, figuring and re-figuring your technical budget, here are some suggestions that will make you look great.

★ ★ ★

Do you have tenants renting space on your tower? Depending on the number of tenants and their power usage, you might consider splitting their AC feed from yours.

Fig. 1 shows a "kilowatt-hour meter" that

you can purchase from any electric supply.

Even if you don't have tower tenants, this kind of meter can save you money. In this station's case, the meter monitors the tower light power usage. The station is the only tenant at the site, but they don't own the tower, and the tower owner is responsible for keeping the tower lit.

★ ★ ★

Consider a phone audit. Especially in the case of consolidated stations, you may have no idea what the phone company is charging your stations each month.

In my own case, when I was a chief, we had lines and loops that were supposed to have been disconnected 10 years earlier but had not been. We pressed the phone company, and got a check for

\$10,000 for the over-charges.

My only mistake was being stupid enough to think I'd get some kind of bonus for my efforts.

One station did an audit of its telco services and discovered that it had also been paying the phone bill of a Chinese restaurant.

Don't make my mistake; before you even approach the research, talk with your general manager. Explain that you'd like a bonus of 10 percent for the savings you find. Get it in writing, and summarize it in a brief memo to him, outlining the terms. If he balks, point out that he, the program director and the sales manager get bonuses for hitting goals. If you can provide the station with some savings, why shouldn't you share too?

If he still doesn't get it, maybe you ought to look around for another gig. Plenty of GMs do get it, and are realizing that their engineers are a precious commodity.

You can also point out that there are companies that perform this service for 15 to 20 percent of the savings, so he's getting a break if you do the work for only 10 percent. It's time you put some money in your pocket for all the extra things you do for the station.

Remember my plight. I didn't ask for it, so I didn't get it. Ten grand in the 1980s was a lot of money; it still is. Consider it mining for gold.

Once you get the ground rules established, it's time to tackle the phone company.

Usually grudgingly, they will do a complete billing audit, showing every line, circuit and loop that makes up your monthly bill. Remember, sometimes there are several telephone bills: one for the studios, another for the transmitter sites,

maybe even permanent remote loops.

Buy the phone company person lunch to review what they found. This is an important step. These audits use a lot of telco lingo that you'll never figure out on your own. Having the telco person go over the bill with you will save you time.

If you find circuits that are no longer in use, keep quiet, just review the entire bill(s), jotting down any pertinent notes. When you get back to the station, the fun begins. In the case of POTS circuits (Plain Old Telephone Service), start dialing unfamiliar numbers.

One engineer called this the "dialing for dollars" phase. As he dialed, he found a number for a Chinese restaurant. Yes, the radio station was paying for the phone at this Chinese restaurant. I can hear the owner now: "Ain't America great? I got a phone, someone else gets the bill!"

In the case of consolidations, you'll be amazed at what you find. Don't get overzealous, though. One engineer confided that he mistakenly took down the entire

See WORKBENCH, page 16 ▶



Fig. 1: A kilowatt-hour meter can save you money, particularly if you have tenants on your tower.

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Zephyr Xstream has what it takes to make remotes smooth and trouble-free — like complete Web-based remote control and a graphic user interface so simple and intuitive even an intern can use it. Portable models include a four-input stereo mixer with smooth, effective DSP audio processing by Omnia and easy to use local + mix-minus monitoring capability. The Ethernet port prepares you for IP-based connections.

With thousands of Zephyrs installed around the world, you can count on your new Zephyr Xstream to be The Best Way To Hear From There.

Pots only?

You can't always get ISDN at your remote. The new Zephyr Xport connects to ordinary analog (POTS) phone lines in the field and connects with your Zephyr Xstream back at the studio. Rock-solid connection reliability, built-in mixer and monitor, sweetening by Omnia, Ethernet for a convenient audio connection to your laptop, and more. Updating your Zephyr Xstream to work with Xport is a simple (and free) software update. And an ISDN option ensures that you're ready for anything on your remotes.

Breathtaking audio quality takes POTS codec performance to a new level.



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WHAT IT'S LIKE

Congestion Is Their Business

by Craig Johnston

One in a series of occasional articles on life in radio.

Angela Kirby could be compared to a chef who rarely tastes the food she prepares.

Driving Seattle's freeways to arrive at work by 4:30 a.m., the radio traffic reporter sees few other cars on the road.

Kirby is one of 25 full- and part-time Metro Networks traffic reporters serving 27 radio stations and the cable news channel in the Seattle-Tacoma market. In a recent report by the Texas Traffic Institute, Seattle's rush hour traffic ranked fourth-worst in the nation.

Though her drive to work may be docile, making 13 to 15 traffic reports an hour during a bad traffic day can be hectic. Traffic reporters even use the lingo of the commute to describe the hazards of their own work, referring to one station's delayed report running into another station's scheduled update as a "crash."

Up high

Radio personalities' legendary lack of clock-discipline contributes heavily to the problem.

"Nobody ever hits their break on time," said Kirby. "Wait, I take that back. One of my stations is always two minutes late, so I guess they're always on time, in their own way."

When two stations' reports are going to "crash," she has to pre-record one of them.

"It's easy to decide which one. One of them doesn't have a recorder, so I have to record for one of the other two."

Metro brings a number of resources to bear to collect the latest information on the commute: the Internet, police scanners, phones, a helicopter and small plane, and tips from motorists. And then there's Metro's perch: the 73rd floor of Seattle's Bank of America Building, the city's tallest.

traffic information available to Metro. By inputting to the Metro Source computer what he can glean from phone calls, scanners, the aircraft and what he sees out the window, the latest information is available on each traffic reporter's workstation.



Angela Kirby delivers 13 to 15 traffic reports every hour, spread over three radio stations.

"We're really lucky here to have a helpful State Patrol here," said Kirby, "because some areas do not see the value in the service we provide."

But even the State Patrol can get overloaded. "If it's a snow day or something, they might be too busy to talk with us."

For a quick overview of the area's traffic, the Department of Transportation's Web pages give a color-coded look at results from traffic flow monitors: green for normal flow, yellow for building volumes, red for stop and go. Often, the conditions change right up to (and during) the traffic report itself.

The DOT Web site also offers Kirby her choice of traffic cameras along the region's freeways.

from I-5 eastbound out to the water. And northbound 5 is not so great from Boeing Field to downtown."

That's the nuts and bolts of a traffic report, but there can be much more.

"I'm really lucky right now, because I

have three live stations that want my input, that want me to participate," Kirby said. "I've had it where everything was pretty straightforward, and it was so boring. Now it's a lot more fun."

She tries to monitor the stations before her report so knows what topic they're on.

"If they're talking about something, I'll look it up on the Internet so I have whatever to add to the conversation." She says sometimes she fits in so well that the audience thinks she's actually in the radio station studio.

Kirby has found radio personalities she doesn't like to work with; they're too demeaning. Of one in particular, she said: "(He) has made four or five traffic reports here cry ... I won't work with him." At present, a male Metro staffer handles that program's reports.

She describes Ron Upshaw and Don O'Neill, the morning drive hosts she works with on KQBZ, as doing "boys radio by boys."

"Ron and Don are racy, okay, but I feel like I can trust them."

"Angela provides a couple of things to Ron and Don," said KQBZ General Manager and Program Director Clark Ryan. "Obviously she gives us valuable traffic information. She's also a bit of a foil for them. She can interact and help them get from one topic to another."

Kirby shifts gears quickly for Christian contemporary KCMS.

"They know I have a cat, so this morning we talked about it getting its stitches out."

Kirby's boss Gina Tuttle, director of operations at Metro Networks Seattle, says staying interested and focused is what makes a good traffic reporter.

"They need to sound like they're interested, they're really there, in person. For traffic in particular, it's very easy to become kind of bored; you're saying the same thing over and over, traffic back-ups are all the same.

"The other part is the ability to ad-lib, because there's no way to write it all out and be extremely prepared. It's changing

right before your eyes."

If everyday traffic in Seattle is a mess, snow brings the hilly city to its knees. During the city's last big snowstorm, even Metro's traffic reporters were trapped: at work. The company put them up at a hotel rather than having them try to get to and from home.

And then there was Seattle's 7.0 earthquake, a year February, experienced from their 73rd-floor offices.

"It went back and forth for what seemed like forever, but according to the engineers, it wasn't that long," said Kirby. "I just kind of stayed in the middle of the room with my chair."

Keeping up

"We didn't lose any of our communications here during the earthquake. Luckily, we weren't on the air at the time. The phones went crazy. And then after it was over we were on the air non-stop for the next hour or so."

Being in a tall building was, of course, a concern on Sept. 11, 2001.

"We were watching everything on television. The second building gets hit, and we're discussing in the studio, 'Are they going to evacuate the building? What are they going to do?' We called the building people downstairs and they go, 'Oh no.'"

"On TV they were talking about evacuating the Sears Tower in Chicago, so we were kind of ants-in-our-pants over here. It was weird. When they did evacuate the building, it was after one of the (World Trade Center) buildings had collapsed, it was clear the planes were hijacked. So when we finally got out of the building, we grabbed our cell phones and our copy books ... and some people went to stations."

But traffic was a secondary matter that day. Most stations stuck with national feeds on the crisis.

When Kirby's quitting time hits at 12-noon, she says she enjoys the finality it brings.

"Some days it's really nutty, accident after accident after accident. You can't even keep up with them. But when you're done, you're done! I like that a lot."

Except she's not really done with traffic. She has to drive home through the noon-hour rush. 



Metro Source studios look down on the nation's fourth-worst traffic.

Standing up from her microphone, she can see Interstate Highway 5 stretching south, a frequent morning problem-area for northbound commuters. Walking around the building's observation deck that surrounds Metro's studios, she can see most of the city's downtown streets.

Information Coordinator Chuck Mefferd brings order to the avalanche of

Her three stations during morning drive are talk station KOMO(AM); "hot" talker KQBZ(FM); and KCMS(FM), Christian contemporary. At 10 a.m., she keeps KQBZ and does reports for KJR(AM), sports talk, and Northwest Cable News.

"There is an accident, it's northbound 5 at 54th ... expect delays," Kirby reports on KOMO. "5-20 stinks now, everybody,

BUSINESS DIGEST

SCMS Adds Field Offices

Broadcast equipment supplier SCMS has added two field sales offices.

Mary Schnelle is located in the Cincinnati area, and Tyler Callis is based in Ft. Worth, Texas.

Schnelle is a former sales coordinator for Harris Broadcast who was responsible for accounts such as Infinity, ABC and NextMedia, specializing in studio projects.

Callis has worked for Richardson Electronics, Continental Electronics and Crouse-Kimzey in equipment and software sales.

The company is based in North Carolina; it also has field offices in Tennessee, Maryland, New York, Alabama and California.

For information contact SCMS in North Carolina at (800) 438-6040 or visit www.scmsinc.com.

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At IBC, New Directions for DAB

European Developments Address Slow Growth Of Digital With New, Non-Audio Services

by Skip Pizzi

The United States isn't the only country in which digital radio has been struggling. Even though the Eureka-147 DAB system has been well-established in the European market, and digital radio broadcasts have been available for some time in several countries, the service largely has been considered a dismal failure to date.

This assessment applies to other countries outside of Europe where DAB has been deployed, such as Canada, Israel, South Africa, Singapore, Taiwan, Turkey and China. In fact, in Sweden, where the world's largest single-frequency network DAB system has been deployed for a six-channel national broadcast service, Swedish Radio already has begun shutting down parts of the network due to lack of consumer interest. Other countries also have scaled back or delayed planned deployments.

Duplicate services

There are several reasons for this, one of which is the lack of widely available and affordable receivers. This issue seems to be slowly dissipating, as an increasingly broad range of DAB receivers are being introduced in the European market, both for home and car use. There are even a few portables coming to market soon.

Cost and battery life still are likely to limit the appeal of the latter, but a few of the fixed units seem to be getting into competitive price territory, including a few tabletop, boombox and clock radio designs, the cheapest of which is priced at around \$175.

Nevertheless, the bulk of the offerings still fall in the \$500 to \$1,000 range, which most analysts still consider prohibitive to mainstream acceptance. Many of these receivers were on display at last month's International Broadcasting Convention in Amsterdam, and there was particular attention paid to the new, lower-priced models. Also drawing notice were some new form factors for DAB radios, such as add-ons to the Compaq iPAQ PocketPC.

But there is another, probably more influential, factor to the lack of interest in DAB to date. In almost all cases, the services offered on DAB also are available via analog radio, often on the FM band. This makes the primary differentiation for the DAB service purely one of audio fidelity, which apparently is not compelling enough to cause large appeal — at least not with the current price differential between analog and digital receivers.

Therefore it was with some interest to broadcasters at IBC 2002 that a number of new and highly differentiating services for DAB were demonstrated.

The data transmission elements of the EU147 specification are now well-established, and a few broadcasters have initiated experimental services of this type.

The way the service works is elegant and straightforward. Data services are considered in two main categories: Program-Associated Data (PAD) and the so-called Packet Mode. (The latter formerly was known as N-PAD, for Non-

Program Associated Data, but system architects apparently didn't like the negative tone of this label.)

PAD can include a number of data types. The two main formats are Dynamic Label Segment (DLS), a text-based system used like RDS text, typically for artist and song-title information, and the Multimedia Object Transport (MOT), used for graphics and other media transmission to DAB receivers, as the title implies.

All PAD content is carried inside the Main Service Channel frames of the EU147 format, which includes all the standard radio audio and data services of the ensemble. These are standard MPEG-1 Audio Layer II frames that are extended in the EU147 format to carry DAB-specific elements. (The audio in these extended frames can still be recognized and decoded by a standard Layer II decoder, which will simply ignore the DAB-specific bits.)

In terms of transport, PAD is subdivided in these MSC frames into Short PAD (4 bytes per frame, used for the most critical information) and Extended PAD (X-PAD, up to 44 bytes/frame, used for more

in-depth information that only certain receivers may be able to display, and transmitted with less robustness than Short PAD).

EU147's MSC frames are 24 ms in length, meaning that the equivalent payload rate for Short PAD is 1.3 kilobits per second (similar to RDS), while X-PAD can provide up to an additional 14.4 kbps.

New directions

Meanwhile, Packet Mode data is transmitted on its own, independent of the MPEG frames of the MSC. Packet Mode data can be allocated however much of the full EU147 ensemble (1.5 Mbps total) that a broadcaster desires, but typically 64 to 128 kbps is used. Of course, whatever bits are allocated to Packet Mode are no longer available for MSC services, so the number and quality of audio channels in the MSC are traded off to accommodate Packet Mode data carriage.

There is no limitation to the data types than can be carried via DAB Packet Mode. At present, HTML is most commonly used, allowing broadcasters to provide a Web-like service to widely deployed browsers via the radio. A variant of the well-established European Teletext format also is in use.

New developments shown along these lines at IBC 2002 included a PC-based

The Big Picture

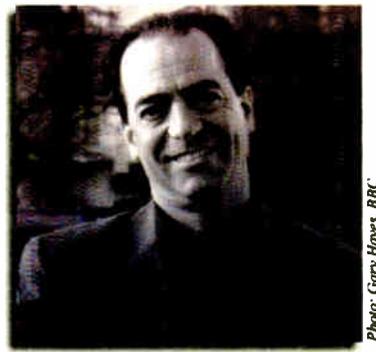


Photo: Garry Hayes, BBC

by Skip Pizzi

peripheral encoder card for Windows platforms, which allows insertion of up to four simultaneous data services, for a total data rate of 256 kbps. Developed by the well-known German R&D entity, the Institut für Rundfunktechnik or IRT, the device, called PacketMUX, also offers monitoring of the received data services.

Another product making its debut was the TMC-611 DAB receiver from Taiwan Microwave Communication. In a very small form factor, about the same footprint as a PC mouse, this device provides full Eureka-147 receiving and decoding, for both VHF and L-band applications, with on-board digital and analog audio outputs, and a USB 1.1 port for DAB data display on a PC. (It also supports the Canadian channelization map for L-band DAB, which differs from the European

See PIZZI, page 20 ►

Workbench

► Continued from page 12

key service at a remote location, thinking the lines were no longer used. The lines were used for a weekend call-in show. The phones were unplugged during the week, hence no answer when he called.

Tabulate your findings. Does the newsroom really need three fax lines? Ditto for sales. The audit also should show you the cost of "private" lines. It's amazing how the GM will make these go away when he sees the real cost and what it's doing to his bottom line.

You'll find this adventure will really bond you to the GM and business manager. You are seen as saving money, instead of spending it all the time.

After you refine your list, it's time to meet with the phone company. Be advised, they'll try to get you to take the over-payment in the form of "bill credit." Press for a check. Get your telco analyst or local supervisor to deliver the check to the station, again, plan a lunch with the GM and perhaps the business manager.

Your last step is to guard against "amnesia." Make a copy of the check, attach the copy to your original memo to the GM, outlining your "bonus." Also include a calculation sheet, showing what the total of your bonus check should be. This ensures there will be no mistakes, no "amnesia."

★ ★ ★

Just in case you think I'm going a little overboard on all this documentation stuff, here's an example of why you have to watch out for yourself.

One engineer recently submitted an idea to *Workbench*. Radio World pays a modest honorarium for published submissions. I used his topic in a column, so Radio

World's home office mailed off the check.

The check arrived, and the station cashed it. They wouldn't give it to the engineer. We're talking about 25 bucks, folks!

One of the things that makes this column so valuable are the contributions by individual engineers. The submissions are not part of anyone's job; they are done on an engineer's own time, to help his peers.

Except for pictures of towers about to fall, the submissions reflect positively on the station and the engineer. It's my intention, and Radio World's, that this honorarium be a small token of appreciation to someone who desires to help others. It's certainly not intended as "income" to a radio station.

★ ★ ★

They're running a lot of "Miss Utility" spots on the stations here in the Washington area. We'll wrap up with

another reason why you want to supervise any work done at the transmitter site.

Buried in the rubble of Fig. 2 is a radial, a piece of coax and even part of a "caution" ribbon that was buried right above the cables.

If you're laying new line, consider the few dollars' investment in covering the line with about 6 inches of dirt, then laying the "caution" ribbon and filling in the rest of the trench.

One engineer posted a "no digging" sign at the entrance to his property, adding the station number for any inquiries.

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.

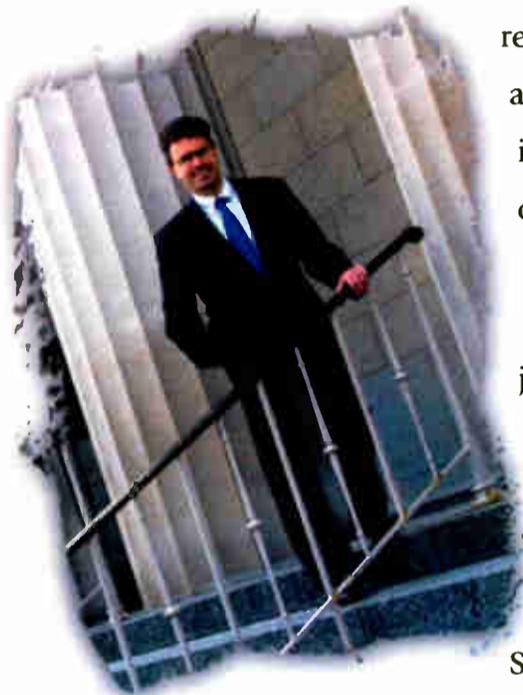
Submissions for this column are encouraged, and qualify for SBE recertification credit. Fax your submission to (703) 323-8044, or send e-mail to jbisset@harris.com. ☺



Fig. 2: Looks like a case for 'Radio Miss Utility.'

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SBE Looks to Expand Coordination

by Ralph Beaver

The author is chairman of the Society of Broadcast Engineers Frequency Coordination Committee. Radio World provides this space to the SBE as a service to the industry.

The SBE, with more than 5,200 members worldwide, is the voice of broadcast engineers on technical matters before the FCC. SBE also sponsors continuing education, has a certification program benefiting members and managers alike, spearheads frequency coordination around the country and offers a multitude of other services to its members.

Today's SBE focus is on frequency coordination.

My personal frequency coordination effort started in the summer of 1973 in Tampa, Fla. While building Q105, WRBQ(FM), the lack of information held by the FCC on existing broadcast auxiliary services (BAS) channels microwave paths was amazing.

Useful tool

It was necessary to contact each broadcaster, ascertain the operating channel, azimuth, location, path and power and make a list. Upon sharing this list with fellow broadcasters in the Tampa Bay market, frequency coordination in our area was born.

In 1982, Richard Rudman, CPBE, who had been working on frequency coordination in southern California for more than five years, became the first SBE Frequency Coordination Committee chairman. It was Rudman's idea, in fact, to include frequency coordination under the SBE banner as a "useful tool." Since this time, thousands of broadcasters have benefited from the coordination efforts of hundreds of dedicated broadcast engineers.

In 1983, Gerry Dalton, CBRE, of Dallas, began working on ideas for computer database administration of the program. The official SBE coordination software written by Dalton was distributed in 1990.

Today, almost 200 coordinators are listed in the SBE database. They track the frequency use of more than 18,000

broadcasters and countless film producers, Webcasters, commercial production units, churches and performing groups. Each coordinator uses the method appropriate for his or her area.

In a recent SBE survey, coordinators responded to a variety of questions about the software needed for frequency coordination. Almost half still use the DOS-based software issued in 1990. What an excellent compliment to Gerry Dalton.

SBE is examining updating this software, not because of its features, but because the DOS computer language is becoming less available to many SBE coordinators.

Over the years, the federal government has grown to depend on SBE frequency

casters. Other channel re-use efforts (PL tones, digital coding, shared channels) do not offer an interference-free environment.

Today's SBE frequency coordinators are people who use management skills to raise awareness levels and remain impartial while gathering a suitable group of decision-makers to solve problems. A variety of tools including Web sites, e-mails and even plain paper and pencil are used.

Outreach

SBE frequency coordinators, however, are not the frequency police. SBE coordinators need to accommodate every qualified user. Every broadcaster now can operate in the limited bands available, and no broadcaster is told the pool is already full.



A GDC frequency counter verifies proper wireless mic operation on 658.7506. It pays to check; frequency-agile units could be tuned to the wrong channel accidentally.

coordination to ease the pain of limited BAS channels in crowded broadcast markets. It does not matter if the service area is Harper, Kan., or Los Angeles. Exactly the same number of BAS channels is shared among broadcasters. All-encompassing federal laws do not work in the BAS environment, where each case is special.

Frequency re-use is necessary to allow the limited number of BAS channels to function "interference-free" for all broad-

BAS channels include "unused TV channels" that allow spectrum for wireless devices necessary for broadcasting — but our "unused TV channels" keep shrinking. The government has decided to share these limited channels with other services.

Now SBE coordination efforts expand outside the broadcast family. Each new phone call is an educational effort extended to users who do not understand the sharing



concept of these slices of spectrum.

There was a time when it seemed there were plenty of TV channels to go around for everyone to grab a spot in an unused channel for their wireless devices. But the pool has been shrinking.

- Our channel count, once at 82 (Channels 2 through 83), was reduced when the government reclaimed TV Channels 70 through 83 to sell at federal auction for non-broadcast uses. We now call these frequencies "cell phones."

- We lost TV Channel 37 to Astrological Satellite Service.

- BAS Channel 2.5 GHz 10 now belongs to Radiodetermination Satellite Service.

- BAS Channel 2.5 GHz 8 and 9 now are shared with law enforcement, who put up strange black and white signals from cheap cameras with a sync pulse "this tall" at unannounced times — and it is all "secret." How is a broadcaster supposed to cooperate with the police and share channels when the police can't tell them when or where they plan to use the channels?

- During the transition to HDTV, each analog channel user will be able to claim an additional unused TV channel for several years.

- The most recent government reclaim effort is the "700 MHz band" spanning Channels 60-69.

To keep up with these ever-increasing responsibilities and demands, SBE decided to reinforce its efforts in the frequency coordination arena by developing a national position.

Synergy

The frequency coordination director post is held by David Otey, CSTE, of Centennial, Colo. If local frequency coordinators need immediate help, Otey is there. If they need action by the board of directors, they can contact me, the Frequency Coordination Committee chair. Otey and I compare frequency coordination issues around the nation almost daily.

Beyond the day-to-day frequency coordination issues, in recent years SBE has found a new coordination arena, quite literally. Football season is that time of year when tons of visiting broadcasters converge at a single site to share these limited BAS channels with the locals. How is this done?

The first NFL Super Bowl played in Tampa was Jan. 22, 1984. Coordination was very interesting. It was not the overwhelming collection of wireless devices we track today, but enough.

Local TV stations searched me out to complain about the interference they were experiencing. I was so busy trying to run this down that I never saw the game. (It was a blowout: L.A. Raiders 38, Washington Redskins 9.)

See SBE, page 24 ►

SBE Honors Keeler, Fitch; Recognizes Chapters

Steve Keeler is SBE Educator of the Year. The Society of Broadcast Engineers announced its National Awards for 2002; winners will be honored during a national meeting in October in Phoenix.

Keeler is a professor of telecommunications and broadcasting at Cayuga Community College and coordinator of its telecommunications degree and distance learning programs.

Also honored was Charles "Buc" Fitch, recipient of the "Best Technical Article, Book or Program by an SBE Member Award" for a series of articles he wrote in Radio World about the National Electrical Code.

The Broadcast Engineer of the Year is television's Joseph Snelson Jr. Meanwhile, engineers in Madison, Wis., and Middle Tennessee must be doing something right. Those chapters took two honors each. The winners:

Best Regional Convention/Conference: Chapter 22, Central New York
Best Newsletter (Class B): Chapter 24, Madison, Wis.
Most Interactive Chapter: Chapter 59, Kansas City
Best Frequency Coordination Effort (Class B): Chapter 24, Madison, Wis.
Best Web site: Chapter 36, San Diego
Most Certified, Class A, Chapter 135, Middle Tennessee; *Class B,* Chapter 118, Montgomery, Ala.

Highest Member Attendance at Meetings, Class A, Chapter 135, Middle Tennessee; *Class B,* Chapter 113, Knoxville, Tenn.

Greatest Growth in New Members, Class A, Chapter 107, Charleston, S.C.; *Class B,* Chapter 131, Inland Empire, Calif.

Class A indicates chapters with membership less than the median; Class B chapters have more than the median membership.



Steve Keeler

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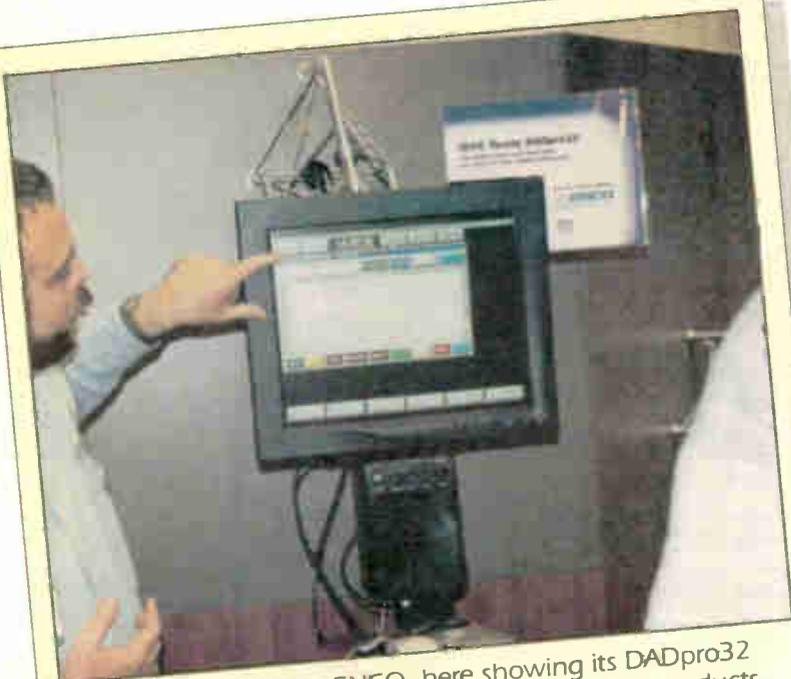
NAB RADIO SHOW PHOTO GALLERY



Booth traffic was heavy on Thursday night and Friday morning, then dropped off substantially for the second half of the show. Tieline America was among the exhibitors.



Steve Dahl works the mic at a booth promoting the new Alan Freed Radio Studio at the Rock and Roll Hall of Fame and Museum.



Manufacturers like ENCO, here showing its DADpro32 system, are touting the IBOC readiness of their products.



Bill O'Reilly, host of the new Westwood One radio program 'The Radio Factor With Bill O'Reilly,' delivered the keynote address.

Pizzi

► Continued from page 16
L-band standard used elsewhere.)

The unit is a plug-and-play PC device and is supplied with a Windows API and a controller user-interface for applications developers and broadcasters to use in creating and evaluating DAB data services.

Harris and Nagra Futuris premiered a solution for managing new businesses based on such DAB data delivery, via the integration of Nagra's Digital Radio Business Platform with Harris's D-AISY automated insertion system.

In perhaps the most interesting integration project, a Swedish company called Etheractive Solutions showed a prototype Compaq iPAC with a sleeve incorporating a DAB receiver and a GSM/GPRS phone, including its own battery, which would allow true interactive radio applications in a handheld device.

There were also several conference sessions that highlighted various appli-

cations for these new services and systems, ranging from enhanced commercial music programs incorporating integrated e-commerce, to personalized infotainment services, to distance learning.

Interestingly, all of the stand-alone DAB receivers shown included only small, monochrome text displays, with the advanced data services only showing up on PC- or PocketPC-based systems. It therefore seems likely that the personal computer may figure significantly in the consumer hardware and software landscape of radio's future, as the existing installed base of such displays is exploited for new applications.

It appears that the industry has begun to recognize the need for development of interesting new services provided by DAB. Without providing such unique value, DAB may be destined to languish as an unfulfilled promise across the world.

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



Impulse Radio promoted the promised data benefits of HD Radio/IBOC DAB, including a rear-seat visual display for vehicles.



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FEED LINE

Understanding FM Systems

We Begin a Series That Looks in Depth at FM Radio Transmission Systems

by **W.C. Alexander**

With this article, we begin an in-depth look at FM transmission systems.

As we were wrapping up a previous series on the shared use of AM sites, we asked engineers to list RF-related topics they would like to see covered at length in a technical series. The answer overwhelmingly was FM transmission systems.

In this series, we will cover everything from the transmitter to the receive antenna. As we progress, we welcome reader input; there is little reason why we could not dwell on or revisit certain areas of high interest.

As we begin, we will focus first on antenna site considerations. While few of us have much control over the location of our antenna sites, perhaps there is room for change in some situations. For the rest, the information that we present here will help us evaluate the performance of our radio stations as a function of site location and antenna height.

Sufficient amplitude

Location, location, location. Those are the three most important factors in real estate, and they are equally important for radio transmission systems. This applies to AM, FM, TV, MMDS, cellular, PCS, two-way, paging and other RF-based services.

Ideally, the antenna for an FM broadcast station would be situated at a location that presents a clear line of sight to the entire desired service area. The antenna would have uniform horizontal- and vertical-plane radiation patterns, with no reflections from natural or manmade objects.

Unfortunately, the real world is different, full of obstructions, manmade and natural, that partially or fully obstruct the path from the transmitting to receiving antenna.

Real-world transmitting antennas exhibit some non-uniformity in the horizontal plane, and in the vertical plane, half of the energy is radiated above the horizon into space, wasted. Reflections from objects produce amplitude variations in the received signal that cause noise and signal dropouts.

The variables that go into the performance of a particular antenna site are numerous, and many of these factors are beyond the broadcaster's control. Many can be mitigated, however, with good site selection, and it is on those that we must focus when searching for an antenna site.

The goal of the broadcaster is to produce a signal of sufficient amplitude to overcome noise and provide at least 20 dB of signal-to-noise ratio, at as many of the receiver locations within the desired service area as possible.

How much signal is sufficient to meet this goal depends largely upon the receiver and its antenna. In the absence of interference, a signal level of as low as 2 uV/m may be sufficient for many of today's automobile receivers. Portables may require as much as 500 uV/m. Interference from co- and adjacent-channel stations usually increases the amount of signal required for acceptable reception.

There is no substitute for a clear line

of sight between the transmit and receive antennas. This is one of the first rules in VHF transmission.

A transmitter site with a clear line of sight to virtually all the target service area thus is superior in most cases to one that is blocked by terrain or manmade obstructions to parts of the area. In some cases, simply having line of sight is not enough. In engineering our microwave and UHF STL paths, we always consider Fresnel zone clearance, knowing that a path with less than 60 percent first Fresnel zone clearance will be marginal. We often neglect this consideration in engineering our FM transmitting antenna locations.

Fresnel zone clearances are circular areas surrounding the direct line-of-sight path that vary with frequency and path length. The longer the path and lower the frequency, the larger the mid-path clearance required for clear-path reception. As mentioned, 60 percent first Fresnel zone clearance is all that is required to meet the clear-path reception objective; but that can be quite large at FM frequencies.

We asked engineers to list RF topics they would like covered. The answer overwhelmingly was FM transmission systems.

The first Fresnel zone radius can be computed using the formula $R=1140\sqrt{(d/f)}$, where R is the radius in feet, d is the path length in miles and f is the frequency in MHz.

A quick example of 60 percent first Fresnel zone radius for typical broadcast situations are 267 feet for a Class A, 378 feet for a Class B and 463 feet for a Class C1. Keep in mind that we're talking about terrain clearance at the mid-point between the transmitting and receiving antennas required to produce clear-path reception.

These translate to antenna heights above ground of 534 feet, 756 feet and 925 feet respectively. With the exception of the Class C, the antenna heights are well above the maximum height above average terrain (HAAT) values for the classes.

This brings us to the conclusion that height is a significant factor in most antenna site situations. As a rule, greater height is more useful than higher power in producing higher receive signal strength, all other factors being equal.

Multipath is a nasty word in the vocabulary of most radio engineers and station managers.

It is a good descriptor of the destructive effect that occurs when the same radio signal arrives at a receive point by multiple paths.

When these signals arrive in phase, for the most part all is well and the incident field strength is greater than it would be in the case of a single signal path. When they arrive out of phase, however, at least some degree of cancellation takes place, resulting in a reduced incident field strength, with complete cancellation (zero incident

signal) in the worst situations.

To make matters worse, sometimes complete cancellation can occur on frequencies close to carrier while less-than-complete cancellation takes place on sideband frequencies. In many cases, this results in a demodulated sound much more offensive to the listener than the quiet hiss of no signal. Motion in an automobile produces a constantly varying multipath situation, often causing picket-fencing (the effect of the slats in a picket fence alternately permitting and then blocking the signal), which is objectionable to the listener.

The worst-case multipath scenario occurs when the transmitting site is on one side of the service area and a range of mountains or high hills is located on the other. Receivers within the service area get the direct line-of-sight signal from the transmitting antenna, but they also get a reflected signal from the mountains or hills. In such a case, few locations within the service area are free of multipath effects.

Perhaps the best location for a transmitting antenna in such a geographic scenario, assuming that a mountaintop location is out of the question, is on a hill near the mountain range. A directional

antenna would be used to reduce radiation toward the mountains and maximize it toward the service area.

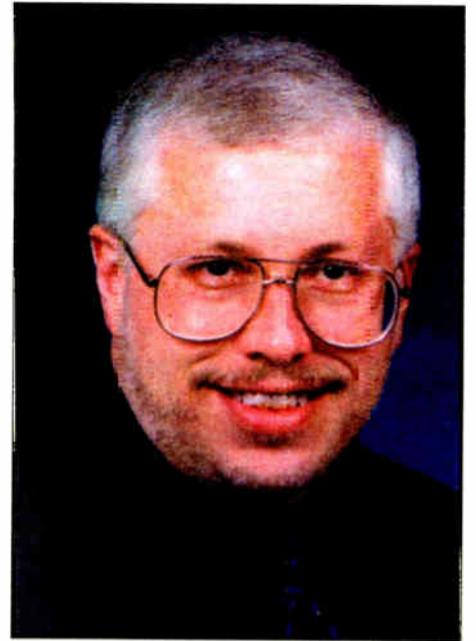
This will result in greatly reduced reflections. While it would be impossible to eliminate reflections completely, they could be reduced so that the ratio of direct-to-reflected signal at most locations throughout the service area is sufficiently high to nullify the effects of multipath.

Grazing and tilting

Ground reflections play a part in the overall propagation of FM signals, particularly the vertically-polarized component.

Almost all FM signal coverage lies between the horizon and 10 degrees below the horizon. This is called the *grazing angle*, and it lies between the horizontal plane from the transmitting antenna and the earth's surface. Vertically-polarized energy is attenuated considerably more than horizontally-polarized energy at angles greater than about 2 degrees. As a result, circularly-polarized signals tend to be reflected more as elliptical rather than circular. It is important in site selection to avoid grazing angles that are greater than about 2 degrees (the *Brewster angle*). Simple geometry would suggest that sites close in to the service area would be more prone to produce such high grazing angles, indicating that a more-distant site may be preferable.

We mentioned the vertical-plane radiation characteristics of real-world transmitting antennas. Some of these characteristics come into play when selecting a transmitting antenna site.



W.C. Alexander

If a transmitting antenna is at a considerable height above the target service area, the main elevation plane lobe may overshoot the target service area, with the energy being radiated out into space. The more bays an antenna has, the narrower the main elevation plane lobe will be. Antennas with a small number of bays (less than four) exhibit a broad elevation plane lobe, making such overshoot of the target service area less likely.

In those situations where a large number of bays is used and the antenna is high above the target service area, it may be desirable to employ *beam tilt* to lower the beam angle slightly. Typically, just enough beam tilt is used to center the main elevation plane lobe on the distant edge of the target service area or on the horizon, whichever is closer. We will discuss beam tilt in more detail, but we mention it here because it does affect site selection.

Null fill

Antennas with many bays exhibit elevation plane nulls. The more bays, the farther away from the antenna site that these elevation plane nulls hit the ground. If the area within a few miles of the antenna site is populated and you wish to provide service to this area, it may be desirable to employ *null fill*. A very small amount of null fill is all that is necessary to provide adequate service in these close-in areas. We will discuss null fill later as well.

When searching for a new antenna site location, consider these factors in addition to the permissible area to locate determined by the allocation. In areas where the allocation picture is tight, you may have few choices for an antenna location and you may have to compromise on one or more of these criteria. In areas where you have some breathing room, you may well have several choices. In nearly every situation, some compromise is necessary; trade-offs are inherent in site selection.

If you are evaluating your existing site, chances are that you are well acquainted with existing signal problems. Perhaps looking at your site in light of these site selection factors will help you understand the site's shortcomings.

In the next installment, we will deal with the question of transmitter power vs. antenna gain.

Cris Alexander is director of engineering for Crawford Broadcasting. Contact him via e-mail to crisa@crawfordbroadcasting.com. He welcomes suggestions for topics in this series.



Charles Swindoll is using **Neumann** microphones to air sermons for the radio ministry **Insight for Living**. Swindoll is senior pastor at **Stonebriar Community Church** in Frisco, Texas.

Two **Neumann KM150** microphones are used for sermons. **KM184s**, **185s** and **105s** are for miking instruments and choir. The broadcast goes to 13 continents in eight languages. ...

A consortium of news agencies and network news bureaus in the Washington area chose **Multidyne** as prime vendor for a collective purchase of 80 fiber-optic transport systems. The equipment is to be used to connect electronic news media and **ENG** vehicles to the local telco fiber-optic network.

The upgrade is part of a renovation and addition of the **Visitors Center** at the **United States Capitol**. The new center is to open in 2005. ...

Susquehanna Radio will use **MatrixPlus** in its radio stations. **Matrix Solutions** said. **MatrixPlus** enables broadcast sales organizations to develop structured sales strategies through forecasting, project analysis, salesperson review and account list management. ...

Sierra Automated Systems shipped two 64000 router switcher systems to **Clear Channel** clusters in **Tulsa** and **Oklahoma City**, serving a total of 14 stations.

The routers will provide distribution of audio sources and control-line routing. The engineers involved in those projects are **Clark Dixon** in **Tulsa** and **Brett Gilbert** in **Oklahoma City**. ...

KSJS(FM), a student-run, noncommercial station at **San Jose State University**, has gone on the air with **Wheatstone's D-5000** audio digital console and **Wiremax Studio Interface System**. **John Duncan** is chief engineer at **KSJS**, which celebrates its 40th anniversary in February.

Separately, **Wheatstone** said **Yfm Radio**, the fastest-growing station in **South Africa**, has relocated to new digital studios in the **Rosebank** section of greater **Johannesburg** and installed **Audioarts Engineering RID-20** digital audio consoles and **SDA-8400** stereo distribution amplifiers.

Yfm was one of the first stations to be granted a commercial license when **South Africa** opened the airwaves five years ago.

Telemedia, a **South African** systems integrator, supplied and installed the broadcast equipment in the new studio complex, which includes two air studios, a news-booth, two production studios, a news office and main control room. **Yfm** also is using **Broadcast Electronics AudioVault** workstations. ...

Also in **Africa**, **Broadcast Electronics** is a supplier in the expansion of the **Federal Radio Corp. of Nigeria** radio network, a project involving 32 new FM stations.

The first half-dozen or so of the new stations are up. Additional installations of **BE FM-20S** transmitters are continuing, with most stations to be on the air by the end of the year. The sites are intended to extend the coverage of **FRCN** beyond the two largest cities in the south, eventually to the northern sections of the country. ...

LifeNet.FM, an online contemporary Christian music service of the **Northwestern Media Group**, now is available via radio in eastern and south-eastern **Minnesota**.

It began broadcasting 12 hours per day on "Spirit FM" stations **WLKX(FM)** in **Forest Lake, Minn.**, and **KBGY(FM)** in **Faribault**.

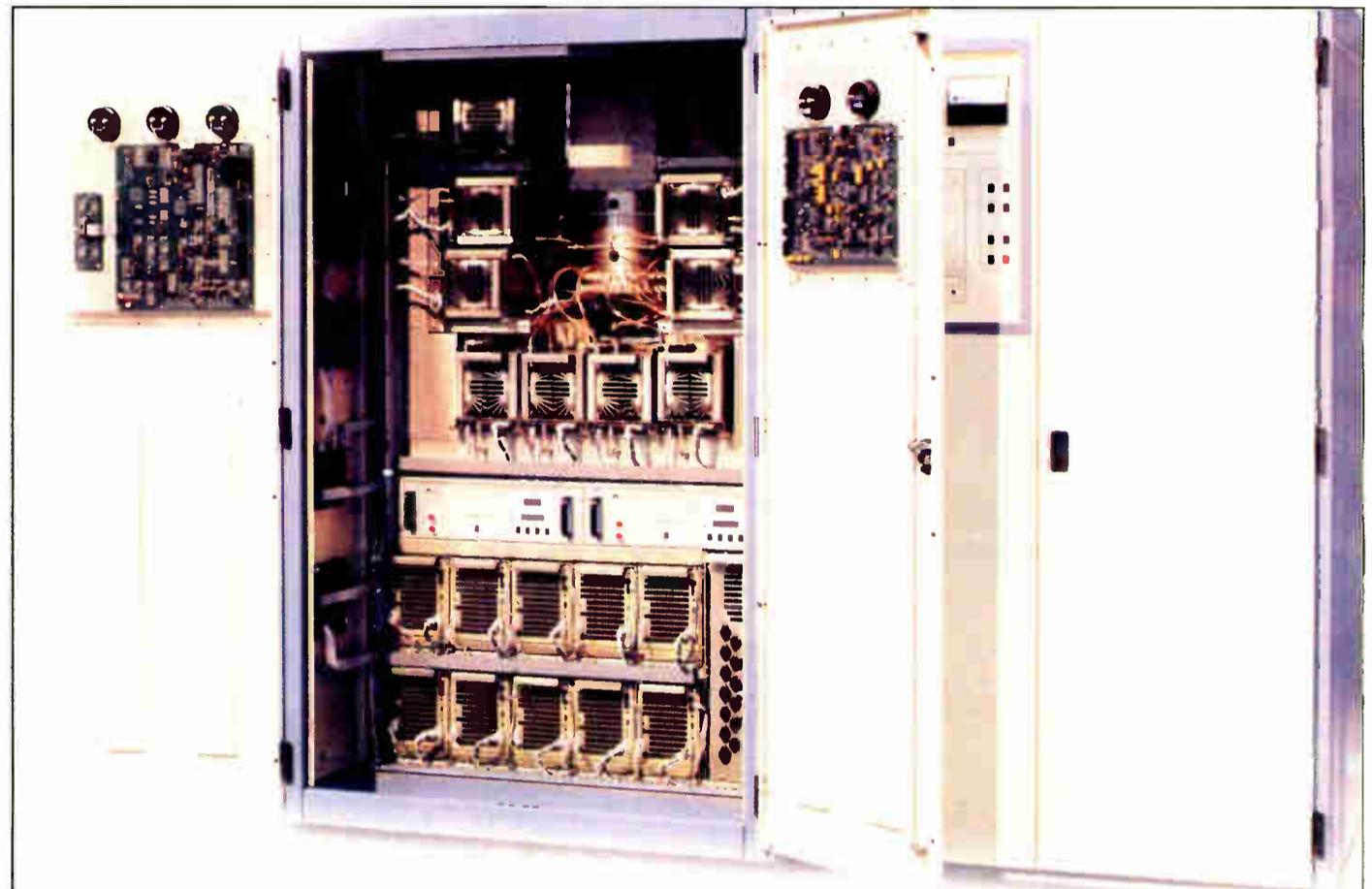
"We're thrilled for the opportunity to have a radio outlet in and around the **Twin Cities**," said **Kerry Liebelt**, **LifeNet** operations director.

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

Companies with news of unusual or prominent sales should e-mail information and photos to radioworld@imaspub.com.



KSJS(FM) has a new **Wheatstone D-5000** audio digital console and **Wiremax Studio Interface System**.



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MARKET PLACE

Strickland Establishes RF Safety Consultancy

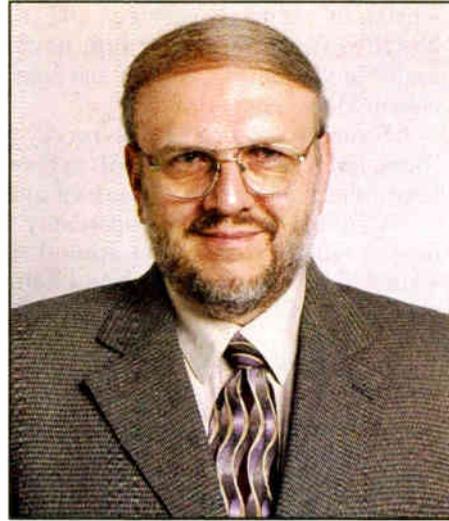
Richard Strickland, a former radio frequency safety expert with Narda, has established a consulting firm for organizations concerned with human exposure to radio frequency radiation. The company is called RF Safety Solutions.

He said the firm will provide training, tools and procedures to help companies minimize RF exposure risks, bring RF exposure levels into regulatory compliance and reduce corporate liability and risk.

According to the announcement, Strickland played a key role in developing the Nardalert XT RF personal monitor, recently named by a research magazine as one of the top 100 new scientific products in the world.

He has advised the FCC and scientific standards organizations on matters involving RF safety and has spoken at events held by the NAB, Radio Club of America and International Wireless Conference and Exposition.

For information contact the company in New York at (631) 698-6765 or visit www.rfsafetysolutions.com.



Richard Strickland

SBE

► Continued from page 18

The second Tampa Super Bowl was held Jan. 27, 1991, just 11 days into the Gulf War. The presence of security was obvious, as were the FBI sharpshooters. (My car was checked with mirrors, dogs and a personal search.)

Local broadcasters again were hit by non-coordinated users camping on "their" channels. The single highest number of mics-per-entity was Disney, for the half-time show. When I contacted them, I was informed they had already coordinated the wireless microphone system with Disney staff and all was "OK." Their concern was to avoid putting their own mics on channels too close to each other. It simply had not occurred to them that they would have to consider the rest of the world.

The Disney on-site people were very courteous and very busy. After the event, they were surprised to learn there was an SBE coordinator for BAS channels.

The NFL has recognized the need to coordinate frequencies during their Super Bowl games and has had a special coordination effort for those games since 1996. However, as times changed, demand for coordination at the regular season level increased.

Game Day

At the 1999 NAB convention, Rick Edwards, CPBE, then an SBE board member and the chair of the Frequency Coordination Committee, introduced Jay Gerber, CBT, from the NFL to the SBE group. They proposed an SBE/NFL joint program to coordinate the entire season of NFL games in each city. This program would be supported by the NFL with the necessary tools and operating space in the NFL press boxes.

The concept was endorsed enthusiastically by the assembled SBE board of directors. In four short months, the SBE/NFL Game Day Coordinator program was in operation.

The GDC program includes many channels not considered BAS. Food vendors, police, fire, team, league, security, stadium, cleaning company, music groups, parking and others share the frequency pool. This extra load required new custom software and systems. The NFL has supported the GDC program as promised, and more. The program now is legendary. It is a success beyond success.

Network producers depend on the coordination program to protect their wireless channels. Radio rights holders depend on the GDC for their sideline and interview mic systems. Local broadcasters depend on the GDC to protect the normal channels they need to conduct daily business. The NFL depends on us to protect their two-way communications channels, including the radio the quarterback wears. Equipment suppliers report more satisfaction with their rental products because they now have a "clear" channel in which to operate.

The NFL taught SBE how to "play ball," and SBE helped the NFL "clear the air."

With the success of the NFL/GDC program, SBE is looking at ways to expand its event coordination to help other venues. As the pool of frequencies shrinks and demand for them grows, SBE is ready and already on the move to help navigate the deep waters of frequency coordination.

Ralph Beaver, CBT, is SBE Frequency Coordination Committee chairman and president and CEO of Media Alert Inc.

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Comprehensive Connectivity

5 User Set-Ups

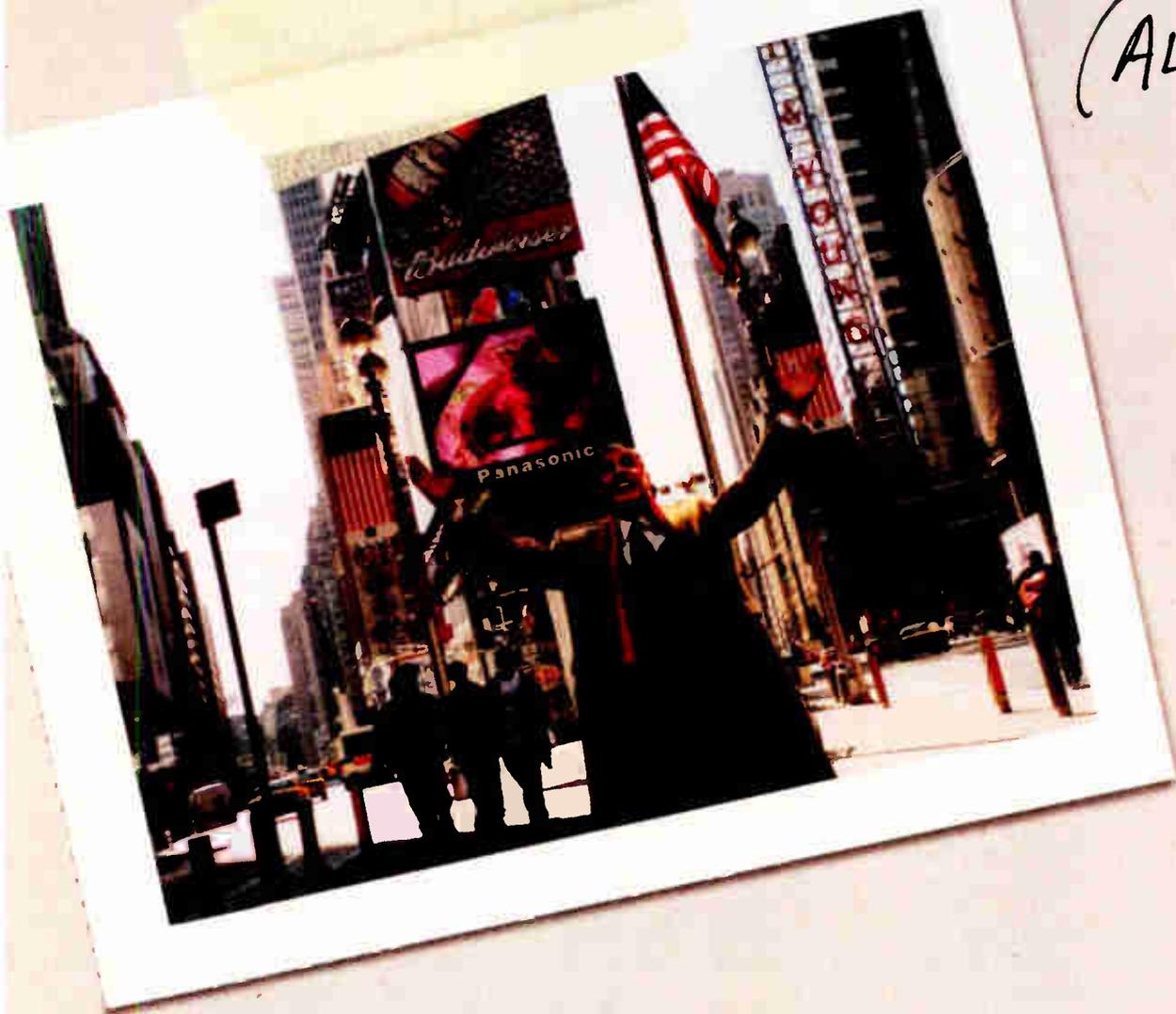
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NEWS ANALYSIS

Keeping an Eye on the Sky

For Radio Station Managers, the Impact of XM and Sirius Satellite Services Remains Uncertain

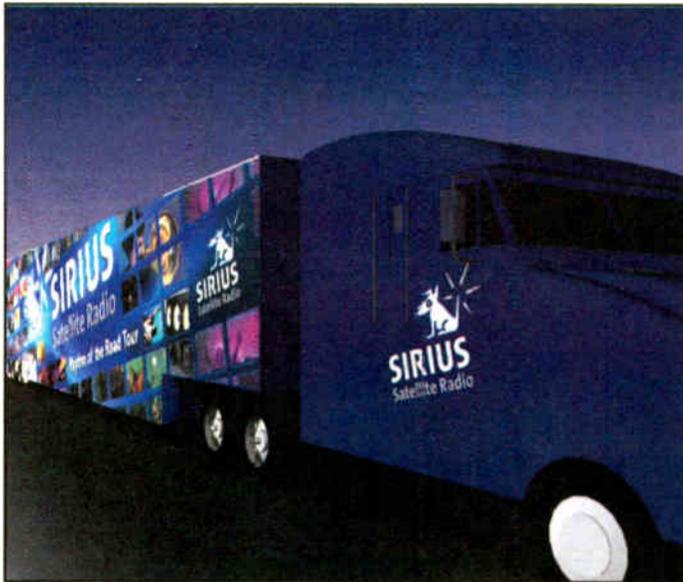
by Steve Sullivan

One afternoon a few years ago when I lived in Texas, the sky became an ominous shade of yellow. I stepped out on my front porch to watch as a funnel cloud developed. Instead of running for shelter, I stood there, mesmerized, and watched until a few minutes later the funnel dissipated.

I'm sharing that story because in many ways it reminds me of what's going on with the debut of the XM and Sirius satellite radio services.

Damage control

Conceptually, satellite radio has the potential to do great damage to the businesses of terrestrial radio broadcasters. But in its current state, it looks like the storm may blow over without doing any damage.



Sirius' 'Rhythm of the Road' Promotional Truck and Trailer

From an innovative standpoint, satellite radio is a good idea, perhaps even a great one. It offers hundreds of format-specific channels, with little or no commercial interruption, and it's available without pause from sea to shining sea.

I'm not alone in my enthusiasm about the concept. Clear Channel thought highly enough of XM Satellite Radio that it became a major investor.

However, these are not the blue-sky '90s we're operating in anymore. There are a few hard lessons we've learned over the past two or three years: Diversify your portfolio. Get to the airport early. Curb your enthusiasm about great ideas.

The question right now is not whether XM Satellite Radio or Sirius Satellite Radio will wind up pirating off listeners and advertisers from terrestrial broadcasters. The more relevant question at this stage is, will they be around long enough to have the opportunity?

Skip Weller is president and chief operating officer for NextMedia Group, which owns 56 stations in 14 mostly mid-sized markets. He is not overly concerned about XM or Sirius until they prove they can remain viable, and even if they do, he doesn't see them as a major competitive factor.

"I think that if they survive — and that's a huge question because of the amount of money they've already put into it —

See SATELLITE, page 35 ▶

Radio Hears Good News At Show

by Craig Johnston

Predictions of radio's business for the rest of the year were upbeat at the 2002 NAB Radio Show in Seattle.

During his State of the Industry speech at the convention, Radio Advertising Bureau President and CEO Gary Fries told the audience he foresees a 5 to 6 percent overall growth in radio sales for 2002.

**Radio is
alive and well.**

— Eddie Fritts,
NAB

That would mean a much stronger second half ahead, given that radio revenue was up only 2 percent in the first seven months of this year compared to the same period last year.

"Our industry is good, stable and strong, but my fear is that you will relax," Fries said. He recommended managers take advantage of the upward momentum to continue the gains.

The forecast uptick in radio business was in stark contrast to the outlook at the convention a year earlier. At that time, predictions were for radio sales to be flat to down, with no rebound in site.

See RADIO SHOW, page 27 ▶



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Radio Show

► Continued from page 26

NAB President and CEO Eddie Fritts echoed Fries' outlook, calling radio "alive and well - largely due to its greatest strength, localism."

Calling lack of localism a weakness of satellite radio, he vowed that the NAB will continue to watch XM and Sirius to make sure they are not allowed to use terrestrial repeaters for locally originated programming or advertising.

Fritts couldn't resist taking a potshot at satellite radio.

"The other day, someone told me he can drive all the way from New York to Los Angeles listening to satellite radio and never turn the dial. My response was, 'How many times have you done that?'"

Industry execs

At a super session with radio group executives, ownership consolidation generally was defended.

Entercom Communications Corp. President David Field said consolidation was "a completely false issue." He said other business and media are far more uniform and concentrated and less local than radio.

"We're the guys getting bashed for having cookie-cutter 'formats.'"

Clear Channel Communications CEO Mark Mays said consolidation has been "absolutely good for the listener." He said "there are more formats than there would be without consolidation."

Asked by moderator Sam Donaldson whether voicetracking from outside a market was "slightly dishonest," Mays said there is no intent to deceive. He said voicetracking gives listeners an opportunity to hear talent they otherwise could not. He said giving information about local issues and events is not deceptive as long as the talent does not actually claim to be someplace he or she is not.

The group heads took issue with charges that consolidation has led to a "homogenization" of radio across the country.

"There's more diversity now than there's ever been," said Mary Catherine Sneed, COO of Radio One Inc.

Ed Christian, CEO of Saga Communications, termed himself perhaps old-fashioned when he lamented what consolidation was doing to radio's jobs. In addition to reducing employment overall, he said he was worried about the disappearance of entry-level jobs to bring employees into the business.

A new entrant to the radio arena, talk show host Bill O'Reilly, gave radio an analysis of what works.

He said talk radio audiences "want the politics out of it," and promised his show will deal with matters of right and wrong. "It will be more of a morality play."

He mentioned his radio and television competitors by name, predicting that CNBC host Phil Donahue would soon be gone. O'Reilly also predicted that if any of the television network

anchors, Tom Brokaw, Dan Rather or Peter Jennings, were put on a radio talk show opposite him, "I guarantee you I will kick them all day long."

to one boss, Fox News Chairman and CEO Roger Ailes. He said his radio show has over 300 station owners and managers giving him advice. (See relat-

Internet radio products, and there was but a single session devoted to the subject. It was, however, the dominant topic at the Congressional Breakfast meeting featuring Rep. Greg Walden, R-Ore., and Rep. Jay Inslee, D-Wash. Walden is a radio station owner.

A noticeable police presence was maintained in the convention center throughout the Radio Show. Protesters outside were fewer than at the 2000 convention in San Francisco. In Seattle they demonstrated against industry consolidation, cross-ownership and, in particular, Clear Channel Communications.

"We don't want Clear Channel to own newspapers and we don't want Clear Channel to own more stations," said a protester from the Philadelphia-based Prometheus Radio Project. 🌐

Our industry is good, stable and strong, but my fear is that you will relax.

— Gary Fries, RAB

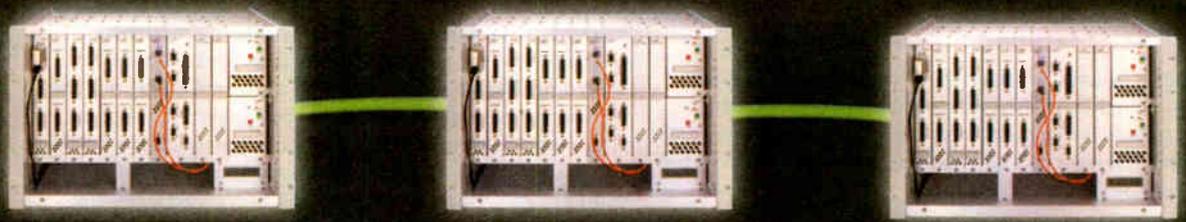
O'Reilly said his accountability for his radio show is quite a change from his successful TV show on Fox News Channel. On the TV show, he answers

ed facility profile, page 41.)

Notable by its general absence from the 2002 Radio Show was Internet radio.

Only a few exhibitors showed

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An all-time best-seller, the Shure SM7B dynamic cardioid microphone is known for its warm sound and unpronounced proximity effect. Features: classic cardioid polar pattern, uniform with frequency and symmetrical about axis, to provide maximum rejection and minimum coloration of off-axis sound; flat, wide-range frequency response; bass roll-off and mid-range emphasis (presence boost) controls with graphic display of response setting; improved rejection of electromagnetic hum, optimized for shielding against broadband interference emitted by computer monitors; internal "air suspension" shock isolation.

Designed for studio use, but rugged enough for live applications, the KSM27 side-address condenser has an externally biased, 1-inch diaphragm, extremely

FREE Stuff with Shure Products in October

low self-noise, and an extended frequency response specially tailored for vocal tracking and instrument recording. Features: cardioid polar pattern; Class A, discrete, transformerless preamplifier for transparency; subsonic filter eliminates rumble from mechanical vibration below 17 Hz; switchable 15 dB pad for handling extremely high sound pressure levels (SPLs); 3-position switchable low-frequency filter; integrated three-stage pop protection grill; internal shock mount.

The Shure VP64A dynamic omnidirectional interview mic sounds great and is extremely rugged. Its neodymium magnet provides increased output and improved clarity. A windscreens and stand clamp are included.

SM7B	List \$619.00	\$299⁰⁰
KSM27SL	List \$575.00	\$299⁰⁰
VP64A	List \$125.00	\$75⁰⁰



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The Tascam TU690 is an affordable, quality AM/FM rack mountable tuner. Features: quartz PLL synthesized tuning system; manual/auto/preset tuning; 30 FM and 30 AM station presets; multi-function florescent display; preset memory back-up; timer on/off and clock function; remote control.

TU690 List \$235.00 **\$189⁰⁰**



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320A List \$1,350.00 **\$999⁰⁰**



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TD61PKG \$89⁰⁰



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5 Interview Mics \$99⁰⁰

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HURRY, Sale Ends 10/31/02

More Growth Ahead for Spanish Radio

by Frank Montero

The Hispanic media market is hot, hot, hot! *Muy caliente!* In just the last few months, while other market segments have struggled, the Hispanic market has been humming along with some very high-profile transactions, and now Wall Street and the general market are taking notice.

A flurry of activity started late last year when NBC announced that it would purchase the No. 2 Spanish TV network, Telemundo, for a whopping \$1.98 billion in cash and stock, and the assumption by NBC of \$700 million in debt. But that was only the beginning.

In June, the radio group Spanish Broadcasting Systems announced that it was buying a Los Angeles FM for \$250 million. Then, that same month, Univision, the No. 1 Spanish television network, announced that it would be acquiring Hispanic Broadcasting Corp., a radio group, in a stock transaction valued at roughly \$3.5 billion.

Now there is speculation of more Spanish media mergers on the horizon. Likewise, Wall Street investment banking powerhouse Morgan Stanley announced in June that they would begin separately tracking the Spanish-language broadcasting industry for investors.

Changing demo

All this activity reflects rapid changes in the demographics of the United States. The Hispanic population is growing faster than the total U.S. population. Indeed, some have referred to the United States as the fastest-growing country in Latin America.

It is estimated that, by the latter half of this decade, the general Hispanic population will grow to become the largest ethnic minority in this country.

Hispanic Americans tend to be younger than the general population and are beginning to form new buying habits. Currently, the U.S. Hispanic population is estimated to be a \$458 billion consumer market. This makes the Hispanic audience very attractive.

With so much activity, there has been much speculation about Spanish broadcasting and media. Over the past 10 years, Spanish media has grown from a sleepy back road of the industry into a major national player. What was once a mom-and-pop business has turned into big business.

There are six major publicly traded Spanish broadcasting groups, including Univision and Telemundo in television, HBC, Spanish Broadcasting Systems and Radio Unica in radio, and Entravision, which owns both TV and radio stations, as well as billboards and print.

Shift to Spanish

Moreover, Big City Radio, which is traded on the New York Stock Exchange, has begun shifting the format of radio properties in New York, Chicago and Los Angeles to Spanish. Beyond that, there are several regional Spanish-language radio groups that have been looking to enter rapidly growing Hispanic markets such as Boston; Detroit; Charlotte, N.C.; Seattle and Portland, Ore.



Ingrid Otero-Smart

These smaller groups include Amigo Broadcasting in Texas, Moon Broadcasting on the west coast and Mega Communications on the east.

The rapid growth of the Hispanic population here and the increasing market share of Spanish media companies have attracted the attention of foreign interests that are eager to enter the U.S. market and get a piece of this market.

In fact, for the past several years, the NAB has held a specialty conference in Miami, "NAB Americas," which brings together broadcast groups from the United States and Latin America to discuss cross-border investment and expansion opportunities. Likewise, there has been increased interest in crossover markets such as Puerto Rico, which has nearly 120 radio stations.

Also, ratings organizations such as Arbitron and Neilson have upgraded their tracking of the Hispanic broadcast mar-

kets in order to keep up with demand.

Over the past year, Arbitron has introduced a newly expanded Spanish version of its Web site and has revised and improved the methods it uses to track Hispanic listeners.

Moreover, Arbitron has hosted summit meetings of Hispanic broadcasters, attended by the senior management of the leading Hispanic radio groups. The purpose of the meetings has been to discuss ways in which the ratings company could improve its coverage of the Hispanic radio market. Arbitron currently includes Mexico and Puerto Rico in its coverage areas.

Felipe Korzenny, a consultant who studies the Hispanic and multicultural market for the research and consulting company Cheskin, said, "The most popular radio station in many of the largest metropolitan areas in the United States is a Spanish-language radio station. That includes markets like Los Angeles, New York and Miami. With approximately 40 million Hispanics in the U.S. who love listening to music, talk shows and news on the radio, the Hispanic radio industry is booming."

More \$\$

This boom in listenership has translated into increased advertising dollars.

"The advertising pie in the Hispanic market has grown exponentially over the years," stated Gene Bryan, a Spanish radio veteran and CEO of HispanicAd.com, a trade journal for Hispanic advertising and media professionals.

"The 2000 Census has yet to kick in fully, but it helped thwart the advertising attrition that most mainstream broadcasters suffered this year and deliver double-digit growth in 2002."

Bryan also said, "The Hispanic market advertising pie is worth over \$2.8 billion — ±80 percent going to broadcasting — and is expected to reach \$5 billion by 2005, offering new opportunities for ad agencies, broadcasters and other media companies."

However, even with all this growth, the Hispanic advertising market may not be reaching its potential. According to a recent study titled "Missed Opportunities: Vast Corporate Underinvesting in the U.S. Hispanic Market," released by the Association of Hispanic Advertising Agencies, over the past three years nearly two-thirds (64 percent) of top companies targeting Hispanic consumers have invested less than 3.2 percent of their overall advertis-

WSJ: Battle Heats Up

In a sign of the increasing awareness and competitiveness of the Hispanic media market, the Wall Street Journal ran an article in September titled "For Hispanic Radio, a Feud Boils Over in Market on Fire."

It described a long-standing competitive battle between Spanish radio giants Spanish Broadcasting System and Hispanic Broadcasting Corp. and the differing management styles of each company.

The Journal reported that that as recently as last spring, the companies were discussing a merger, which would have ended the feuding and created a Spanish radio powerhouse. However, according to the Journal piece, the feud heated up in light of the proposed HBC-Univision merger and has led to litigation.

The paper observed that "with the surging U.S. Hispanic population and the boom in Spanish-language media, what had been a noisy sideshow has moved to the industry's center ring. At a time when growth in the radio audience generally is stagnant, media giants are circling the two leaders of this lucrative, fast-growing market."

"Of the 369 radio stations started between 1998 and 2001," it continued, "141, or 38 percent, were in Spanish. It's a testimony to the market's attractiveness that the rivalry between HBC and SBS, which already has affected a proposed merger and an acquisition, hasn't turned off suitors."

— Frank Montero

ing budgets in that market.

Horacio Gomes, a member and past president of the AHAA, said, "This study reveals that corporations that are serious about reaching Hispanic consumers must do more."

AHAA President Ingrid Otero-Smart said, "In order to be successful in this market, corporate marketing managers need to turn to Hispanic market experts for creative and strategic consultation and execution ... Hispanic advertising is not just about marketing in Spanish, it's about getting the right message out to the right audience, in the right language and with the right cultural insights."

The AHAA study, which can be viewed at www.ahaa.org, does note an upward trend.

"With heightened awareness on the value of the U.S. Hispanic market," the study states, "since 1999 leading advertisers have almost doubled their allocation of advertising resources to Hispanics from 1.8 percent of total advertising dollars in 1999."

Growth in Hispanic media and advertising may not be over and, as the U.S. Hispanic population and its buying power continue to grow, increased market activity may lie ahead.

Frank Montero is a communications attorney with the Washington office of Shaw Pittman, LLP. He was director of the FCC's Office of Communications Business Opportunities and co-chair of the Federal Communications Bar Association's Transactional Practice Committee. Contact him at (202) 663-8936 or e-mail to frank.montero@shawpittman.com.

RAB, Ad Industry Develops EDI

RAB has cracked the standard file format barrier. An RAB task force dedicated to establishing a standard file format so that members can exchange electronic data easier says it now has such a format ready. Members can gain access to the file format, known as EDI, on the RAB Web site: www.rab.com.

The industry-wide EDI Task Force agreed on a standard file format to allow the electronic exchange of data between advertisers, advertising agencies, national representatives and radio stations. The format will allow electronic exchange of avail requests, avail submissions, orders, offers, invoicing, discrepancy reports and broadcast instructions.

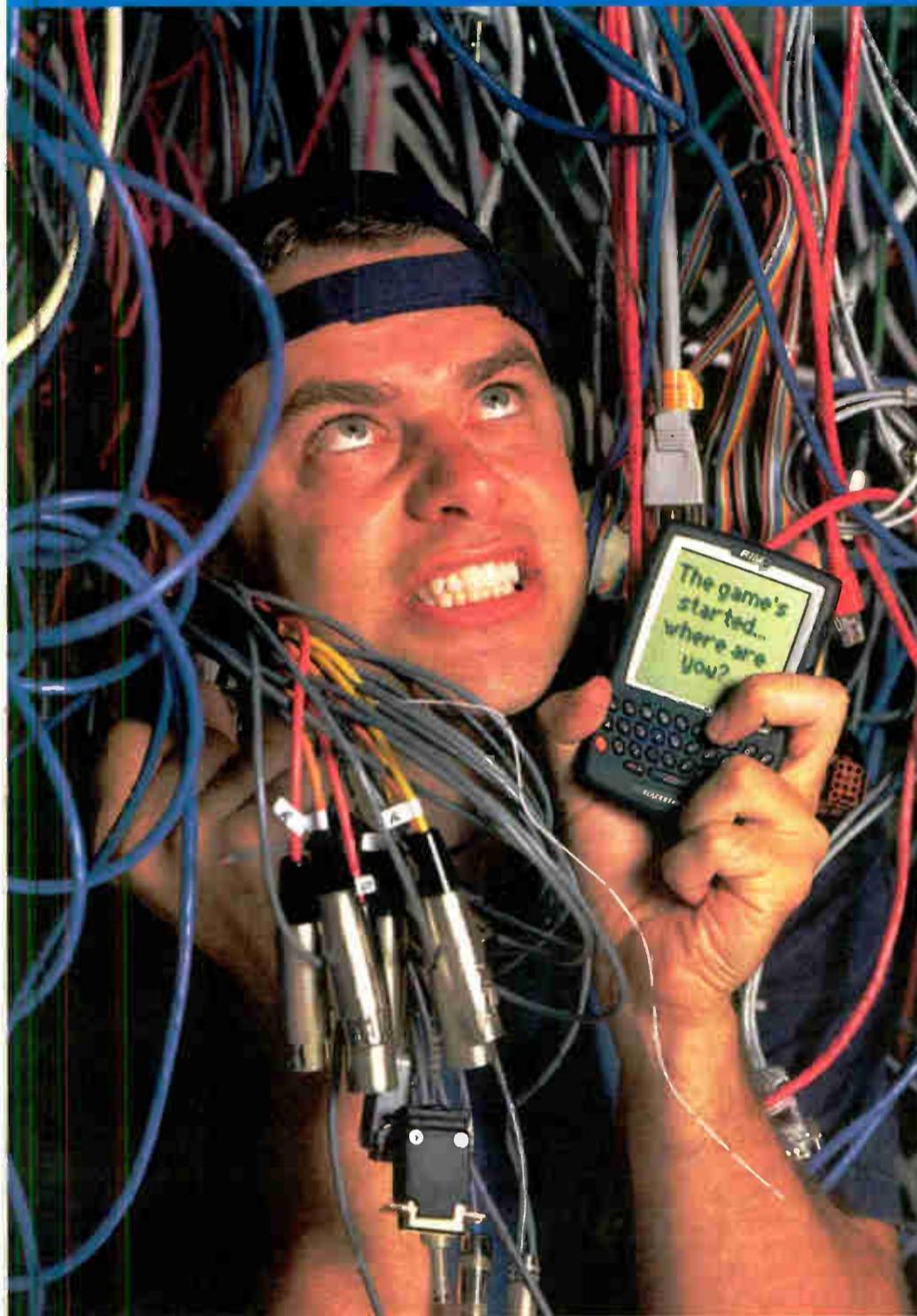
The File Format evolved from discussions with the American Association of Advertising Agencies and with input from the following radio industry vendors: Adware, Arbitron/Tapscan, Audio Audit, BuyMedia/Marketrone, Cam Systems, Datatech, Donovan Data Systems/Media Ocean, Mediaport, MSA/@media, ODAC/Encoda, SQAD, Strata, Verance, and Wicks Broadcast Solutions.

The File Formats were developed using the XML language, which is an open, Internet-based standard. This is intended to facilitate their general adoption by the industry system providers. Implications to business processes caused by the widespread use of electronic communication have been discussed with a cross section of trading partners, including broadcasters, rep firms and agencies.

Standards for the underlying technology infrastructure needed to support these standards are being developed in conjunction with the TVB EDI Taskforce, in order to ensure that there is conformity across different media platforms.

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Indie Promotion Defends Itself

by Craig Johnston

The practices of indie promotion — “legal payola” — continue to be a hot topic in radio.

At last month's NAB Radio Show, an independent record promoter and a station group faced off against the Recording Industry of America Association and a staff member from the House Judiciary Committee over whether new regulation of radio's pay-for-play practices is necessary.

Radio's representatives said Congress is misguided in targeting independent promoters, calling it an attempt to reduce the newfound bargaining strength of one group owner: Clear Channel Communications.

Pay for play

Panelist Rick Bernthal, managing partner of law firm Latham & Watkins, took pains to explain the difference between payola and paying for play, a mainstay of independent promotion.

“There's nothing illegal about paying for play; there's nothing illegal about a record manufacturer wanting to bring his product to market,” said Bernthal, reminding the audience of the requirement for sponsorship identification when music is played for pay.

“Payola is illegal,” he said. “Payola is actually a surreptitious payment made to an employee of a radio company.”

An independent promoter's “payment” to a radio station primarily is in the form of promotional support, said Tom Barsanti, senior vice president and general manager of Jeff McClusky and Associates.

“Everything from helping stations create and execute exciting on-air promotions, supporting them with ... giveaway items, various contests, all the sort of things and promotional support a station might need.

“In exchange for the promotional support that we provide a radio station, we ask for a couple of things in return,” said Barsanti. “One of those things, and to me the most important thing, is that we have really good access to the music decision-makers at the radio station.”

You're 'extracting' (payments) from an industry that has been paying willingly, voluntarily, happily, almost maniacally for 60 years.

— Rick Bernthal

Barsanti was quick to object to use of the word “payola” in connection with independent promotion during the panel. He emphasized that the activities of independent promoters are legal and above board.

Emmis Communications, which is in the top 10 groups as measured by revenue, barred its stations from working with independent promoters for the first 17 years of the company's existence. Rick Cummings, president of Emmis' Radio Division, said nothing much changed when the company finally allowed its stations to work with independent promoters.

“What I found out is that we did not

do business differently, we did not grow horns, nothing really changed in terms of the way we did business.”

Cummings said it's the duty of management to keep a careful eye and set boundaries on these relationships.

Kalo implored the radio industry to clean up independent promotion problems rather than waiting for Congress to get involved.

Record companies have been the ones turning up the heat on the independent promotion relationship with stations.

“The problem is when you have control, though exclusive relationships, of over 60 percent of rock stations all around the country, with very restrictive playlists,” said Mitch Glazier, senior vice president of government relations and legislative counsel for the RIAA.

“The power that you have to maybe not get a song added on a quid-pro-quo basis — (it can) prevent a new artist from being broken, if that exclusive relationship isn't honest.”

Cummings said Emmis does not use national playlists. Both he and Barsanti said they had never seen a national playlist and don't think any exist.

Rep. John Conyers, D-Mich., has been leading a charge in Congress to examine the independent promotion situation in the radio industry. Representing Conyers, Ted Kalo, minority deputy chief general counsel of the House Judiciary Committee, cited newspaper accounts that reported hundreds of millions of dollars being paid for radio record play without proper sponsorship identification.

“This pay for play disadvantages up-and-coming artists,” said Kalo.

Barsanti defended the practice.

“Without independent promotion, without a major record company backing

that artist, how in the world would they ever get that on the radio? If we didn't exist, what would they do with a thousand stations, call them all?”

One questioner from the audience said rap was born when its pioneer artists took their records to radio stations and asked them to play them. “Now, with play for pay, new artists in the streets are not being heard,” he said.

While ownership consolidation took its body blows in other sessions at this convention, large group owners were described here as part of the solution to keep pay for play honest.

“Consolidation has resulted in (the)

independent promotion industry being cleaner than it ever has been,” said Bernthal, “because large companies, like Emmis, aren't going to put up with it.”

Cummings said interest in independent

promotion boils down to fear over the bargaining strength of Clear Channel.

“It's the music industry being fearful that one giant company, many many times bigger than any other radio compa-

ny, can dictate terms like they've never been dictated before.”

Glazier said the problem with independent promotion is in its exclusive relationships. Those deals require the record companies to deal with stations through the independent promoter the station specifies.

He said the financial terms of the relationship become more important than showcasing the music to the station.

“In other words, the pitch of certain records isn't really part of the transaction anymore.”

Bernthal earned laughter and applause when he asked how the record industry could use the word “extracting” in describing radio stations' requirements of payments for record play.

“It's an interesting word, because you're extracting it from an industry that has been paying willingly, voluntarily, happily, almost maniacally for 60 years.”

Kalo implored the radio industry to clean up independent promotion problems rather than waiting for Congress to get involved.

“Do it for us, so we don't have to do it for you. You will do it better than we will do it, I concede that.”

RAB: 'Forward Pacing' Through 2002

Using the NAB Radio Show as a backdrop, Radio Advertising Bureau President and CEO Gary Fries announced the latest radio revenue figures.

Local and national combined sales figures for July were up 9 percent compared to a year earlier; local jumped by 7 percent for the month while national leapt 16 percent.

Total radio revenue was up 2 percent for the first seven months of this year. National figures were up 6 percent; local up 1 percent.

“We are noticing steady growth across all categories,” Fries stated. “A large number of categories are showing healthy increases, particularly concerts/tickets, financial services, appliances/electronics, automotive and restaurants.

“All indicators point to continued recovery as radio continues to deliver results for its advertisers. Forward pacing is very encouraging through the end of the year.”

WSB(AM) Tops Marconi Winners List

WSB(AM) in Atlanta is the NAB Marconi Radio Award Legendary Station of the Year.

The station went on the air in 1922 and remains a top ratings winner. It is owned by Cox Radio.

Marconi winners were announced in Seattle at the end of the NAB Radio Show. Paul Harvey was voted Network Syndicated Personality. KPWR in Los Angeles won two honors: CHR Station of the Year, and Major-Market Personality Award for Big Boy.

The honors recognize radio's outstanding stations and personalities in 20 categories. The list of winners:

Legendary Station of the Year
WSB(AM), Atlanta

Network Syndicated Personality of the Year
Paul Harvey, “Paul Harvey News and Comment,” ABC Radio Networks

Major-Market Station of the Year
WGN, Chicago

Large-Market Station of the Year
KIRO, Seattle

Medium-Market Station of the Year
WFMS, Indianapolis

Small-Market Station of the Year
WKDZ, Cadiz, Ky.

Major-Market Personality of the Year
Big Boy, KPWR

Large-Market Personality of the Year
Jim Scott, WLW

Medium-Market Personality of the Year
Cathy Blythe, KFOR, Lincoln, Neb.

Small-Market Personality of the Year
Al Caldwell, KLVI, Beaumont, Texas

AC Station of the Year
WLTW, New York

Adult Standards Station of the Year
KABL(AM), San Francisco

CHR Station of the Year
KPWR, Los Angeles

Country Station of the Year
WFMS, Indianapolis

News/Talk/Sports Station of the Year
KGO, San Francisco

Oldies Station of the Year
WMJI, Cleveland

Religious Station of the Year
KFSH(FM), Los Angeles

Rock Station of the Year
KOZT, Fort Bragg, CA

Spanish Station of the Year
KGBT(FM), McAllen, TX

Urban Station of the Year
WAMO(FM), Pittsburgh

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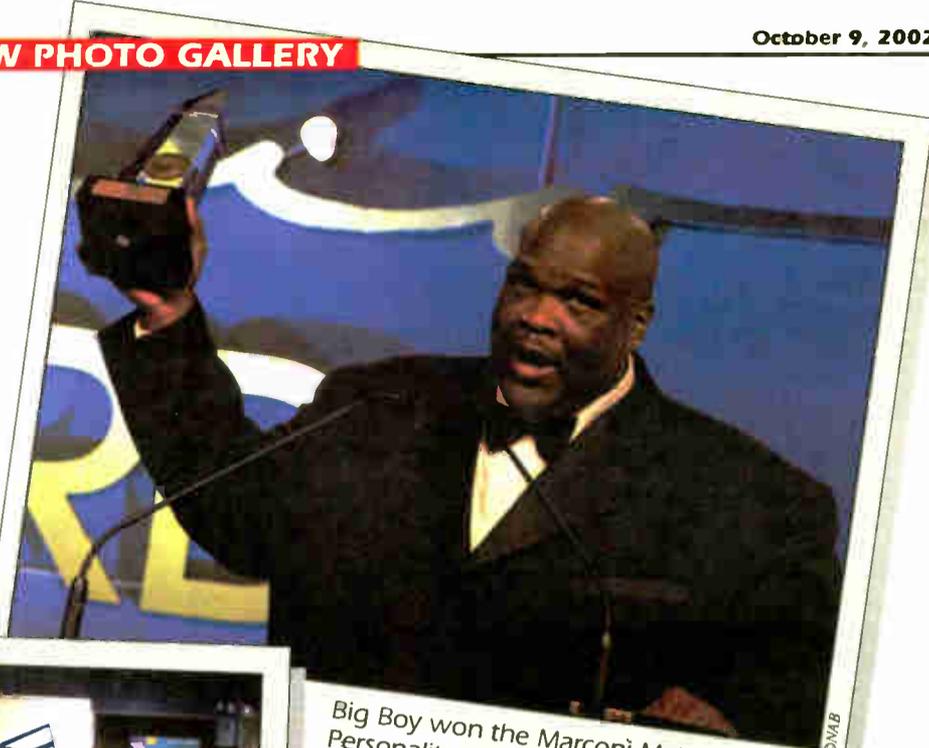
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Jennifer Thalhuber and Joan Gerberding pitched attendees on the NTR opportunities of Nassau Media Partners' dynamic digital displays at retail and commuter venues.



Big Boy won the Marconi Major-Market Personality Award. He's based at Emmis station KPWR(FM) in Los Angeles.



The exhibit floor attracted 112 companies, down from about 160 last year.



Doug 'Grease' Tracht, second from left, tours the show floor with women from Hooters who helped him promote his newly resyndicated program on AMF Radio Networks.

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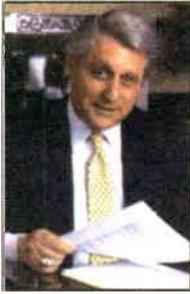
Sierra Automated Systems was among the exhibitors. Here, it demonstrates the 32KD Digital Audio Network.

Photos by Paul J. McLane except where noted

Satellite

► Continued from page 26 they'll have some impact. But it will be minimal," he said.

Gregg Skall, an attorney with Womble, Carlyle, Sandridge & Rice PLLC in Washington has worked with many clients in the broadcasting business and keeps his eye on emerging technologies. He points out that if the satellite services take hold, they will enjoy certain advantages that their terrestrial counterparts aren't allowed.



Gregg Skall

"Among the things that terrestrial broadcasters might say is that (satellite companies) have the ability to program a hundred-plus channels into any local community from a satellite, where the terrestrial broadcasters are limited to eight in any given community," he said.

year that satellite radio would follow an eight-year growth path in excess of what was seen with direct broadcast satellite. It predicts that satellite will have more than 24 million subscribers by year eight. That's 10 million more subscribers than DBS had in its first eight years.

On track

While XM maintains that it is on track to hit 350,000 subscribers by year's end, analysts recently reduced subscriber forecasts for Sirius from 100,000 to 78,000 for the year. Both companies have already issued warnings, which further crippled their already limping stocks.

XM Satellite Radio Holdings Inc. closed above \$19 a share last December, hit a low for this year of below \$3 in early August, and was trading around the \$5 mark in mid-September. Sirius Satellite Radio was



Skip Weller

cease operations. Sirius reported that it needs to come up with \$300 million by the middle of next year.

Gerry Boehme, senior vice president for strategic planning for Katz Media Group, said the low subscriber count could be devastating to the fundraising efforts.

"A considerable obstacle to raising the money is the slow adoption rates," he said. "There's no good track record to go back to see how acceptable this will be in the marketplace."

Among the considerable obstacles to signing up subscribers is that it's not just the service they have to sell to the marketplace — it's the entire concept. Not only do they have to entice people to listen to what they offer, but even before they can do that, they have to convince them to spend between \$300 and \$400 for the equipment needed to listen.

"I know the satellite folks are concerned about adoption coming quick enough," said Skall. "They're trying to find ways to get the cost of the aftermarket receiver acquisition down. The receiver market is heavily focused on automobiles and they have to quickly get into the portable market. The receiver used for that is less-desirable and pretty expensive."



Gerry Boehme

particular business model.

"In radio and in most media in general, the real money has been in advertiser-supported models instead of subscription-based models. We ran into this when we were talking to Internet broadcasters. Originally everybody was talking about targeted marketing and advertising. Then people started getting into subscription models," Boehme said.

"There isn't a track record of subscriber-based models in audio, so there isn't anything to compare it to. XM is certainly a more well-rounded model because it has both."

Boehme concedes the irony of having advertising on a subscription service.

"The argument would be 'why pay for XM and hear commercials when you can get that from local-market radio?'" he said.

Ultimate impact

Right now, traditional broadcasters are looking at the satellite services in much the same way I watched the Texas funnel cloud. They're intrigued, but not intimidated. Even as they struggle, XM will still be vying for advertising dollars and both services will be competing for the ears of listeners.

NextMedia's Weller said, "To the people who like to experiment; to the people who really like certain genres of music that you can't get everyday on a radio station, I think they're going to like this. But that's a small group of people. Can they support the capitalization of a company that's over a bil-

Conceptually, satellite radio has the potential to do great damage to the businesses of terrestrial radio broadcasters.

Yes, that's possible. But again, traditional radio programmers aren't losing any sleep over it. That's primarily because there's very little audience out there to date for these hundreds of channels to influence.

The initial projections for adoption of digital satellite radio are optimistic. Satellite Radio Investor, a publication of the Carmel Group, projected earlier this

above \$11 per share last December, but it closed as low as 76 cents in mid-August and was at \$1.28 in mid-September. Both trade on NASDAQ.

In August, the companies filed warnings about low-cash positions with the Securities Exchange Commission. XM alerted investors that unless new funding comes in, it would run out of cash in the first quarter of next year and have to



Unlike terrestrial radio, the costs don't stop with buying the listening equipment. Both services require subscriptions that add up to more than \$100 a year — a minimal expense, but an expense nonetheless to anyone watching his or her budget.

Curious business

Unlike XM, which depends on advertising for a considerable part of its overall revenue, Sirius runs commercials on very few of its channels, depending on subscriber fees for the bulk of its revenue.

Katz' Boehme said Sirius clearly is swimming against the current with this

lion dollars? I don't think they can."

So, will satellite radio have an impact on terrestrial radio? Probably. Eventually. But it's difficult to say if it will be either of the two current companies making the impact.

At this point, the only impact terrestrials are likely to feel could be a positive one as XM and Sirius spend money to advertise their services in an attempt to lure subscribers.

Steve Sullivan is executive news editor for multimedia at the Baltimore Sun and a co-founder of the Advanced Interactive Media Group LLC. Reach him at (410) 332-6503 or via e-mail to steve.sullivan@baltsun.com.



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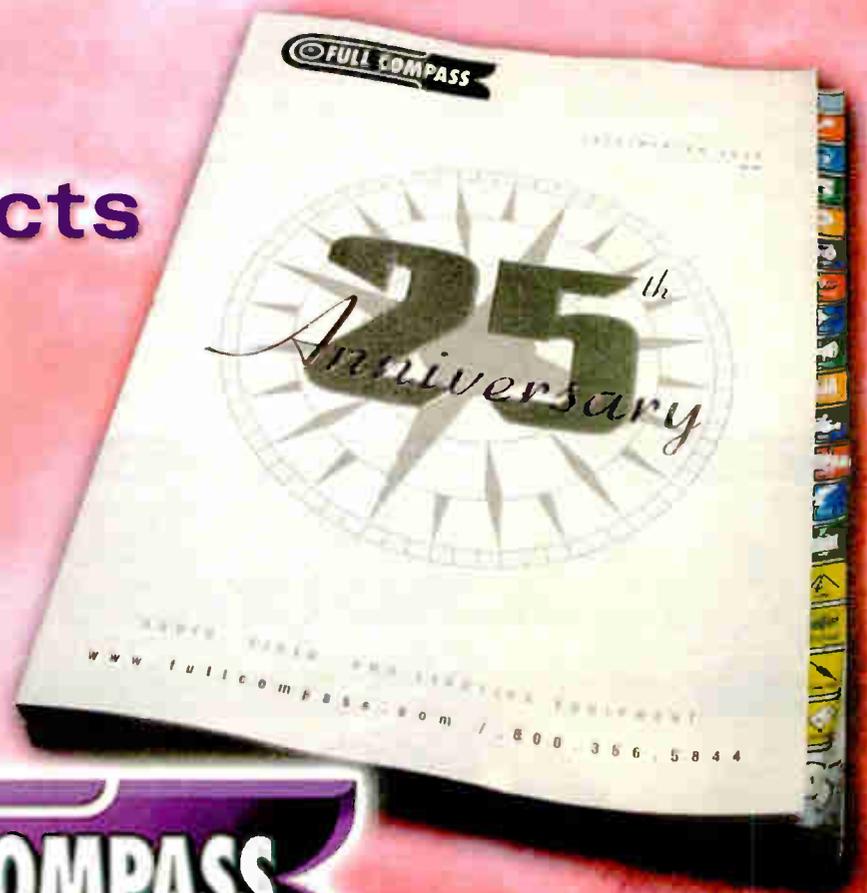
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Radio World

How to Succeed in the Dot-Com World

October 9, 2002

Countdown to Due Date for Fees

by Craig Johnston

Tick-tick-tick-tick. The Internet radio clock counts down to the due date for the first copyright royalty payments from those who streamed sound recordings over the Internet during the past four years.

At press time, the date stood at Oct. 20 but was being appealed by broadcasters, and there was movement on Capitol Hill toward a six-month postponement.

Indeed there has been a lot of activity among the parties concerned aimed at avoiding or reducing those fees.

One such tactic: playing dead.

John Simson, executive director of SoundExchange, the non-profit organization designated to collect the fees and distribute them to copyright holders and recording artists, told Web Watcher he expects a number of Webcasters to cease operation and declare bankruptcy in order to escape the fees. (See story at right.)

Companies deciding to cease opera-

tion and duck the fees might perhaps reappear as new operations if and when copyright rates are reduced or the advertising market regains its health.

In the meantime, they would lose whatever shelf-space they had gained in listener loyalty.

Regardless, the bankruptcy option presumably is not open to traditional radio stations that had streamed their programming over the Internet — not unless they want to fold their whole operation.

However, traditional radio has its own ace up its sleeve: the old unplug-the-clock trick.

On the eve of the NAB Radio Show in mid-September, the organization and several large broadcast groups asked the Librarian of Congress for a stay in the implementation of copyright fees for traditional broadcasters simulcasting their programming over the Internet, pending a court appeal.

NAB said the Librarian was wrong to include traditional radio streamers in the



group of Internet streamers subject to fees. The NAB argues that there are no provisions for refunding copyright fees should the organization's appeal be successful, and asks the Librarian to imagine stations trying to track down thousands of musical artists to recover fees paid to them.

Still other Webcasters were holding out hope that Congress would pass the Internet Radio Fairness Act before recessing for the year later this month. Web Watcher caught up with prime sponsor Rep. Jay Inslee, D-Wash., campaigning outside a football game in Seattle.

"I think we may still get a hearing on this bill," Inslee said. Failing action on the bill by Oct. 20, Inslee said Congress could pass a moratorium on the copyright fees until it did have a chance to pass his bill.

Define 'small'

One facet of the Internet Radio Fairness bill would exempt small businesses (those with annual revenues under \$6 million) from the present fee structure, waiting for a lower copyright fee structure to be worked out.

The Recording Industry of America Association, representing copyright holders, has been working on its own small business license, though its definition of "small business" is at a considerably lower annual revenue level. Radio and Internet News publisher Kurt Hanson has solomonicly editorialized for \$1 million per year as the definition of small business.

Then late in September, the Copyright Office, noting that there was no agreement on a format for submitting sound

See WEB WATCH, page 38 ▶

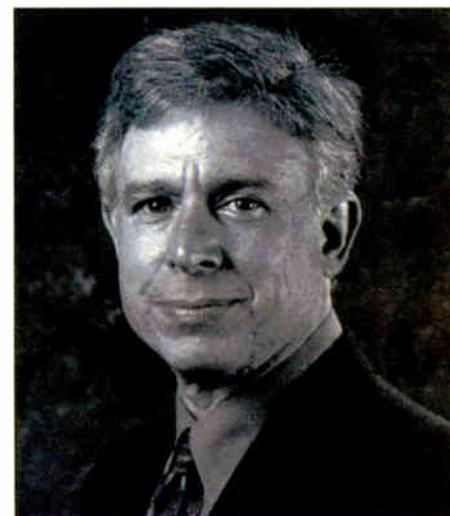
Radio, It's Time to Pay The Piper

Who Is SoundExchange And Why Do We Have to Write Them a Check?

by Craig Johnston

Even if the Oct. 20 fee deadline is postponed, as was being discussed at press time, many broadcasters that have streamed their programming over the Internet may eventually have to write checks to SoundExchange.

Sound who?



John Simson

Non-profit SoundExchange was formed in the fall of 2000 by the Recording Industry of America Association to collect and distribute copyright and artist royalties for sound recordings.

Such royalty payments were never
See SOUNDEXCHANGE, page 39 ▶



Bill Gates and James Cameron unveil Windows Media 9.



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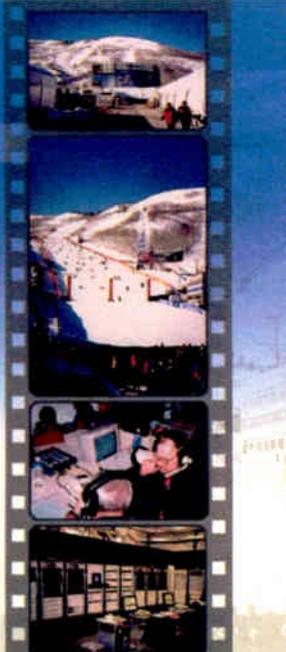
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Web Watch

► Continued from page 37

performance reports to SoundExchange, asked for comments and set a status conference for Oct. 8. So how can stations get their reports together in 12 days, by the Oct. 20 deadline? And if they can't file the reports, they don't know how much to pay.

Web Watcher's prediction: The Oct. 20 deadline will be delayed.

One entity that won't be around to see what happens is the Local Market Internet Venture, an Internet services provider for traditional broadcasters, which is closing up shop.

LMiV, a partnership between radio groups Emmis Communications Corp., Bonneville International Corp., Corus Entertainment Inc., Entercom Communications Corp. and Jefferson Pilot Communications, announced in late August that it would "wind down operations" by the end of September.

"The two things that were of critical importance to the mission of LMiV — the production of standard-setting Web sites for radio stations and the creation of a revolutionary model for cooperative initiatives among media companies — will continue," stated Jack Swarbrick, LMiV president and CEO. "They just will no longer be done by LMiV."

interactive efforts."

LMiV's bet had been on an Internet portal approach to station Web sites, which looked like the model for success back in mid-2000 when the venture was being organized. That model has since fallen out of favor.



Rep. Jay Inslee, D-Wash.

The LMiV demise is only the latest bit of carnage among Internet radio operations. This next item seems all the more amazing to Web Watcher. Regular readers will think they're hearing an echo, because Web Watcher reports this same

increased 3.3 percent August over July.

Web Watcher wanted to know if this was some statistical-trick: Are the MeasureCast numbers only indicative of the ratings service's clients, skewed by an increasing number of clients when the rest of the industry is in decline? Nope. The total time spent listening made that climb in August despite a decline of 11 in the number of stations measured by the ratings company. Fewer stations are garnering more listeners, pure and simple.

Trends

Sven Haarhoff, MeasureCast corporate communications director, thinks he knows one of the reasons for increased listening.

"The recent controversy over royalty rates has received considerable attention from mainstream news organizations, which means more people are learning about Internet radio, and many of those people are tuning in," he said.

Included in stations disappearing from Internet radio is MediAmazing, the top-rated channel in 2001 in the MeasureCast rankings.

The service switched to a subscription model in February after the Copyright Arbitration Royalty Panel had made its recommendations.

In March, MediAmazing President Henry Callie said that the move to subscriptions was not purely because of the copyright royalty situation.

"I think that anybody that's doing what we're doing is paying close attention to what's going on in Washington," he said then. "It generally has an effect on anything anybody's going to do. But it wasn't driven purely off of that; it was also driven off an extremely soft ad market, especially for streaming media."

Apparently, people weren't willing to pay \$3.95 a month for what MediAmazing used to give them for free. Subscriptions peaked at just over 1,000. MediAmazing's last MeasureCast ranking, for August, was No. 11.

Among those filling the void in MeasureCast's August rankings were two contemporary Christian music Internet stations from Sacramento, Calif., K-

International Webcasters Eclipse Those in U.S.

The economics of Internet radio in the United States may have decimated the ranks of U.S. Webcasters over the past year, through Aug. 31, but overseas Webcasters have flourished.

BRS Media Inc., which has tracked Webcasting since 1995, reported a 31-percent decrease in Webcasters worldwide, thanks to 42 percent of U.S. operators dropping by the wayside.

The number of radio stations broadcasting on the Net is 3,940, down from a high of 5,710 stations last year.

Against more than 1,000 U.S. Internet radio stations ceasing their streams, BRS found more than 300 new international Webcasters over the year's time. For the first time since BRS began its studies, there are more international than U.S. stations.

BRS President George Bundy blames the copyright issues with U.S. Internet radio's problems.

"On the international side steady growth continues, as many of these markets will likely benefit from the current turmoil plaguing the U.S. market," Bundy stated.

Another sign of the strength of overseas Webcasters is reflected in the MeasureCast Inc. Top 50 list of Internet radio stations (see page 40). London's JazzFM and Virgin Radio have been trading the top two spots on the list over the past few months.

— Craig Johnston

Some Webcasters were holding out hope that Congress would pass the Internet Radio Fairness Act before recessing for the year.

Swarbrick said that a "fundamental change in the economic viability of streaming and the recession in the broadcast advertising market have conspired to cause many radio stations to reduce the resources they are allocating to their

amazing trend month after month.

Once again, in spite of hundreds of traditional and Internet-only radio stations ceasing their streaming operations, MeasureCast Inc. reports that the total time spent listening to Internet radio has

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LOVE, the Internet station of KOVE(FM), and Air 1, both owned by the Educational Media Foundation, have risen to MeasureCast's top 25 station rankings, in third and 18th place respectively.

And finally, I'm sorry to bury this at the end of Web Watch, but it didn't fit into any of the cute segues that I was making from one thing to another above: Microsoft Corp. has finally released its new streaming codec, which had been code-named Corona.

In early September, Microsoft's Chairman and Chief Software Architect Bill Gates took the stage in Los Angeles to announce the immediate public beta release of Windows Media 9.

Though many of the features of version 9 are video-related, the new codec includes a 20-percent increase in its ability to compress audio files. This can be used by a Webcaster for either a 20-percent savings in the bandwidth costs to deliver the same quality of audio, or a 20-percent increase in audio quality at the same price being paid for bandwidth.

While increased compression will be to Internet radio's advantage, Version 9 also contains software to help PC users organize music files stored on their hard drives and to cross-fade between music cuts. Such features may encourage those users to create their own personal music channels instead of tuning in to Internet channels.

Gates said the company had spent \$500 million to develop version 9.

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

INTERNET RADIO

SoundExchange

► Continued from page 37

required for terrestrial broadcast play, but were stipulated to be paid for Webcasting in the Digital Millennium Copyright Act.

The alternative to a collection society like SoundExchange would have been for Webcasters to identify and seek out copyright holders and individual performing artists, then pay them directly.

As the Librarian of Congress notes in his filing on sound recording copyright fees in the Federal Register, "It would be impractical for a (Webcaster) to identify, locate and pay each individual copyright owner whose works it performed."

Judging by the effort SoundExchange has gone through building a database for this purpose, the Librarian's use of the word "impractical" seems insufficient.

Though the RIAA founded SoundExchange, its collection and distribution duties extend beyond the major record labels.

right owners," said Simson.

The artists performing the music split the other 50 percent.

"The featured artists get 45 percent, and then the background musicians and vocalists get 5 percent."

Two major unions, the American Federation of Musicians and the American Federation of Television and Radio Artists, represent the background vocalists and background musicians respectively, and have built their own comprehensive databases in order to distribute to their members fairly.

While the Oct. 20 payments will be the first for Webcasters, covering sound recordings streamed between Oct. 28, 1998 and Aug. 31, 2002, they are not the first such copyright fees collected and distributed by SoundExchange.

See SOUNDEXCHANGE, page 40 ►

Fifty percent of the fees collected go to the copyright owner, which is not always the record company. The artists performing the music split the other 50 percent.

"We had this massive exercise, looking for all of these hundreds and hundreds and thousands and thousands of people," said SoundExchange Executive Director John Simson.

Fifty percent of the fees collected go to the copyright owner, which is not always the record company.

"There are significant artists who own their own masters, so they're the copy-

NET RADIO SERVICES

New Web Radio Deal Eliminates Need for PC Hookup

DigMedia Inc. and MSN Music have joined forces in a Web radio deal.

DigMedia's Windows CE-based digital audio receiver and automated deployment platform, called IRIS, lets consumers access MSN Music services through a home stereo system, with no need for a PC hookup.

MSN Music services include 60 pre-programmed radio stations. Additional content is in the hopper. According to the company, the offering is a consumer-friendly, broadband-ready client device.

For more information visit www.digmedia.cc.

Survey Says ... Rockers Lead Exciting Lives

New research from Scarborough reveals that fans of rock music lead active lives.

Adult rock listeners are 84 percent more likely to participate in extreme sports — such as bungee jumping or sky surfing — than the average Joe. Rockers also are 53 percent more likely than average to play a team sport, 47 percent more likely to own a motorcycle and 12 percent more likely to own a personal watercraft or powerboat.

Minneapolis and Syracuse, N.Y., boast the highest concentration of rock fans. Boston and Denver follow closely.

Among the lowest penetration of rock listeners: Honolulu; Charleston, W.Va.; Raleigh, N.C.; San Antonio and Miami.

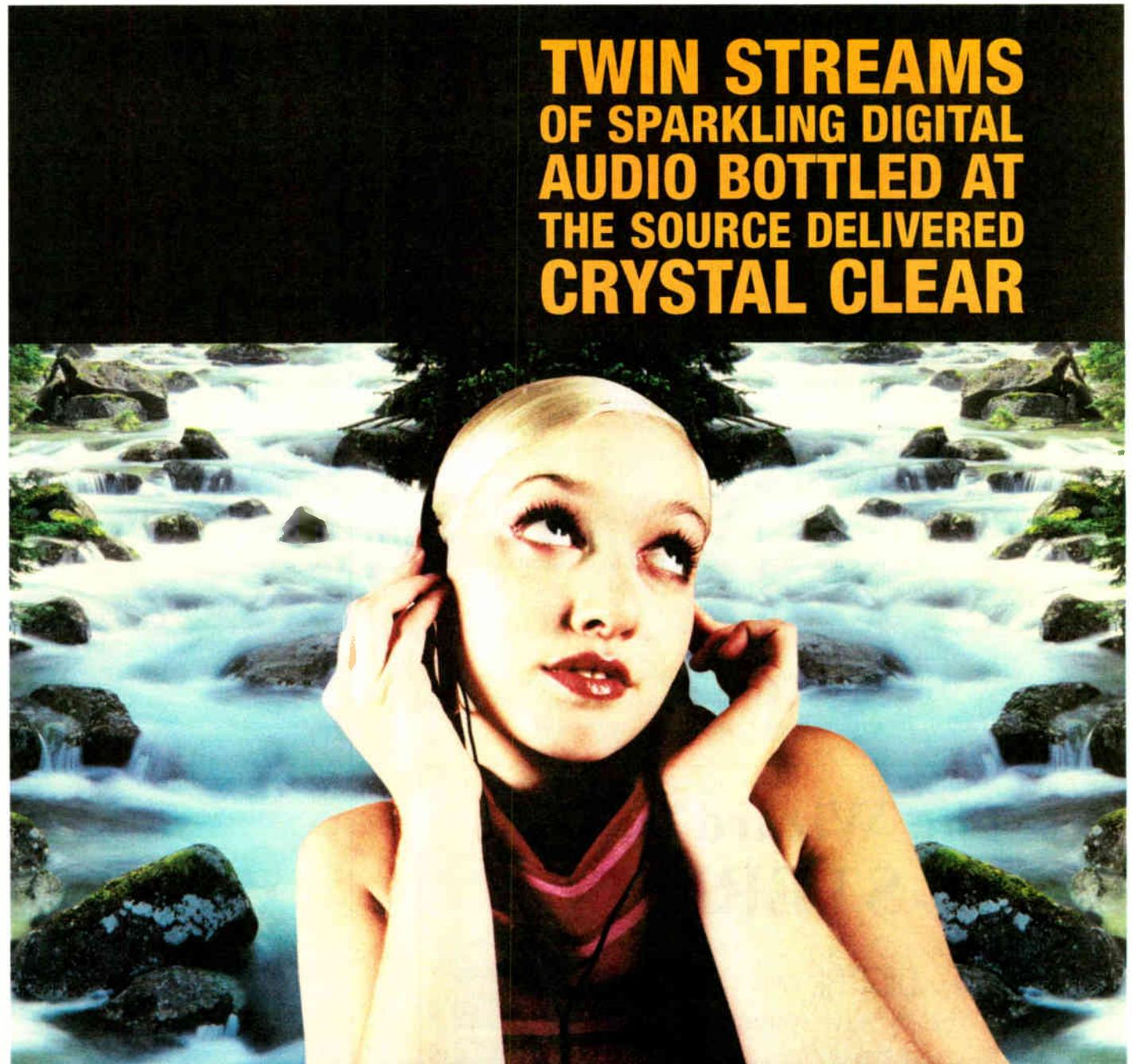
Nationally, a quarter of American adults 18-plus have listened to rock radio in the past week.

Rock listeners are 25 percent more likely to have a household income of \$75,000-plus; they rank above the national average with just over half investing in stocks, mutual funds or both. Two thirds of rock listeners are male, and they are 58 percent more likely to fall into the Gen X age group (18-34).

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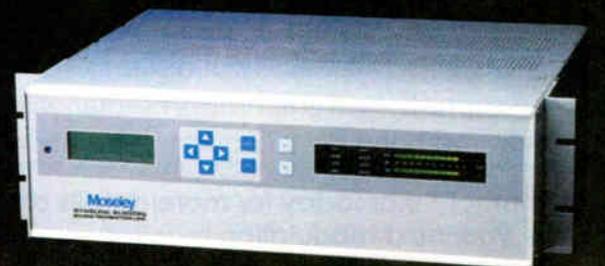
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SoundExchange

► Continued from page 39

An earlier piece of legislation, the 1995 Digital Performance Right in Sound Recordings Act, subjected music channel services such as DirecTV and premium cable to copyright payments.

Simson said the hundreds of niche channels on those music services were similar to channels offered by Webcasters.

"(For) our first distribution of those satellite services, which went out last October, there were thousands and thousands of artists — I think over 20,000 individual artists with performances, and there were actually several thousand labels with performances."

SoundExchange membership has grown to nearly 400 labels.

SoundExchange originally faced criticism that the five major record labels would dominate it. However the organization has board representation from smaller, independent labels as well as performing artists.

SoundExchange membership has grown to nearly 400 labels, including many of the smaller independents. The organization is required to make distributions to all copyright holders, whether they're members or not.

How much money will be collected in the first Webcaster payment is anybody's guess, Simson said.

"We heard from a lot of services that they may just go out of business and not pay royalties. So we don't know what percentage of people are going to pay us, so it's hard to get a really good,

solid number."

Simson's best guess is a range between \$5 million and \$10 million.

"If we get surprised and it's more than that, fabulous. If not, again, it's kind of like, my interest is much more on moving forward with the services that want to move forward into the future, and help them so that we have a really thriving new industry of Webcasters who are paying royalties in.

Revenue stream

"This is a great new stream of revenue for artists and copyright owners. And it's a great way for consumers to have a way to listen to music."

Setting up SoundExchange hasn't been cheap, but Simson said the organization will amortize some of the start-up costs.

"Rather than unduly burden people in the first year with distributions, they'll be spread out over five years of distributions."

He contrasts that to the beginning of the American Society of Composers, Authors and Publishers in the 1920s.

"They had a \$600,000 year in I think '23 or '24, of which they distributed \$80,000."

Simson aims to hold SoundExchange's administrative fees in the same range as other collection societies of the same size, between 15 and 25 percent.

"The reason it's that large a range is, again, the more money that goes through the system, the lower your administrative fee is going to be."

He predicts administrative fees will run 20 percent in the beginning.

"We see ourselves at around 16 percent by 2005 in our projections, and there's only reason to think that it will keep going south from there because revenue should be increasing and we've built (our operation) very technology-based and very lean and very efficient."

Once the Oct. 20 retroactive payments are made to SoundExchange, Webcasters are required to pay monthly on or before the 45th day following the end of each month.

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Arbitron: Virgin Radio Tops Webcast Ratings Again

For the ninth consecutive month, Virgin Radio took the No. 1 spot among individual Webcast channels in the August Arbitron Webcast Ratings. JazzFM pulled in the No. 2 spot while the New York Times' WQXR(FM) was third.

Among Webcast networks (not shown), Live365 dominated the No. 1 spot, Clear Channel Worldwide ranked No. 2 and ChainCast/StreamAudio came in at No. 3. Guardian Media Group moved into the top 10 network ranking at No. 5.

ARBITRON WEBCAST CHANNEL TOP 25 RATINGS REPORT AUGUST 2002

Channel	URL (Corporate Affiliate)	Format	ATH
1 Virgin Radio	www.virginradio.co.uk (SMG plc)	Hot Adult Contemporary	1,263,000
2 JazzFM UK	www.jazzfm.com (Guardian Media Group)	Jazz	1,110,600
3 WQXR(FM)	www.wqxr.com (New York Times)	Classical	780,600
4 Radioio	www.radioio.com (Radioio.com)	Album Adult Alternative	601,300
5 KING(FM)	www.king.org (Classic Radio, Inc.)	Classical	569,700
6 KNAC.COM	www.knac.com (KNAC.COM)	Album Oriented Rock	378,000
7 Radio Margaritaville	www.radiomargaritaville.com (Radio Margaritaville, LLC)	Adult Contemporary	364,900
8 KPLU-Jazz	www.kplu.org (Pacific Lutheran University)	Jazz	363,200
9 Ministry of Sound	www.ministryofsound.com (Ministry of Sound)	Electronica	260,000
10 MEDIAmazing	www.mediaamazing.com (MEDIAmazing)	Variety	252,200
11 JazzRadio Berlin	www.jazzradio.net (JazzRadio Berlin)	Jazz	242,600
12 WGMS(FM)	www.wgms.com (Bonneville International Corp.)	Classical	232,900
13 WFZX(FM)	www.937thebone.com (Sea-Comm Media)	Classic Rock	224,200
14 Killer Oldies	www.killeroldies.com (Royal Programs, Inc.)	Oldies	216,800
15 WFUV(FM)	www.wfuv.org (Fordham University)	Variety	185,100
16 Tom Joyner Morning Show	www.tomjoyner.com (ABC Radio Networks)	Talk/Personality	183,500
17 KSBJ(FM)	www.ksbj.org (KSBJ Radio)	Contemporary Christian	180,400
18 WHTZ(FM)	www.z100.com (Clear Channel Worldwide)	Contemporary Hit Radio	168,100
19 WTOP News	www.wtopnews.com (Bonneville International Corp.)	News Talk Information	145,500
20 WOXY(FM)	www.woxy.com (Balogh Broadcasting Company, Inc.)	Alternative	144,300
21 WBUR	www.wbur.com (WBUR Group and Boston University)	News Talk Information	143,800
22 Virgin Radio Classic Rock	www.virginradio.co.uk (SMG plc)	Classic Rock	142,900
23 Live365 - victorsdivas	www.live365.com (Live365)	Rhythm & Blues	141,600
24 KFI(AM)	www.kfi640.com (Clear Channel Worldwide)	News Talk Information	134,500
25 WLTW(FM)	www.1067litefm.com (Clear Channel Worldwide)	Adult Contemporary	134,200



MeasureCast: Webcasters Still Struggling

Despite some statistics pointing to an optimistic future for the Internet radio industry, MeasureCast's August Web Radio Report shows fewer online stations.

August MeasureCast data measured 11 fewer stations in August than in July, and 37 fewer than it measured in June. However the stations measured in August streamed nearly 1.3 million hours more than measured stations delivered in July.

The August report also shows that 5.1 million people listened to Web radio stations in August, compared to 4.6 million in July and 4.3 million in June.

JazzFM, owned by Clear Channel Worldwide, secured the No. 1 spot in the MeasureCast Top 50 (not shown). Internet radio stations ranking. The U.K.-based station streamed 1.44 million hours of programming to 243,687 listeners. Hot AC Virgin Radio was No. 2; contemporary Christian formatted K-Love was No. 3.

MEASURECAST TOP 10 INTERNET RADIO NETWORKS AUGUST 2002

Rank	Network	URL	Total TSL ¹ (in hours)	Cume Persons ²
1	Clear Channel Worldwide	www.clearchannel.com	5,128,672	703,515
2	Radio Free Virgin	www.radiofreevirgin.com	3,699,585	496,544
3	MusicMatch	www.musicmatch.com	3,591,573	446,599
4	Warp Radio	www.warpradio.com	3,217,516	320,708
5	StreamAudio	www.streamaudio.com	2,864,160	272,167
6	Internet Radio Inc.	www.internetradioinc.com	2,080,605	638,350
7	Virgin Radio	www.virginradio.co.uk	1,893,950	282,797
8	SurferNETWORK	www.surfernetwork.com	1,532,757	77,799
9	JazzFM	www.jazzfm.com	1,445,730	243,687
10	ABC Radio Network	www.abcradio.com	1,294,781	200,324

Notes:

- Total TSL (Total Time Spent Listening) is the total number of hours streamed by the broadcaster in the reported time period.
- Cume Persons is an estimate of the total number of unique listeners who had one or more listening sessions lasting five minutes or longer during the reported time period. This estimate is derived using an algorithm that takes into account unique media player GUIDs, unique IP addresses, and other variables during the reported time period.

About MeasureCast, Inc.

MeasureCast, Inc. is the first company to provide Internet broadcasters, advertisers, and media buyers with true third-party audience size and demographic information with the MeasureCast Streaming Audience Measurement Service™. MeasureCast employs patent-pending Active Event Monitoring™, a unique server-side technology, to record the exact number of streams requested from Internet broadcasters' streaming servers. Accurate, secure reports are available to customers within 24 hours of a webcast via a password protected web site. MeasureCast supports Microsoft Windows Media Technologies, RealNetworks RealSystem servers and other proprietary streaming technologies. MeasureCast products and services are available through its direct sales force, and through Nielsen Media Research as part of a strategic partnership with Nielsen Media Research and NetRatings. MeasureCast issues a weekly MeasureCast Top 25™ ranking of Internet radio broadcasters, a weekly MeasureCast Internet Radio Index™, which tracks the growth of on-line radio listening, and a monthly Top 50 ranking of Internet radio broadcasters. For additional information and a demonstration, visit www.measurecast.com. Corporate headquarters is located at 921 SW Washington St., Suite 800, Portland, Oregon 97205.



Studio Sessions

AI Gets His Hands Greasy

See Page 45

Radio World

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October 9, 2002

FACILITY PROFILE

O'Reilly Factors Views Into Show

by Ken R.

His comments are pithy, he brooks no spin from liberals or conservatives, and he is trying to move his TV success to another arena.

Of course, he needed a studio from which to do it.

Bill O'Reilly, host of Fox News Channel's "The O'Reilly Factor" weeknights on cable TV, has added an additional program to his busy schedule, "The Radio Factor," a joint venture between Westwood One and Fox News.

Heralded by Westwood One as one of the largest radio launches in history with 205 stations, including 19 of the top 20 markets, the show is broadcast live from New York weekdays from noon to 2 p.m.

When one considers that his weekly

column is carried by 200 newspapers, O'Reilly seems a very busy man.

As press releases flew and station clearance forms went back and forth this spring, someone had to create a studio in the previously all-TV Fox facility in New York, and quickly.

That job went to Fox News director of engineering Chris Bauer who worked with Chris Tobin, vice president of operations and engineering for Westwood One.

Studio install

"We didn't have any radio studios here in the building, so we found an old conference room that was large enough to accommodate a control room and studio," Bauer said.

"Fox is a tenant with six floors of a 48-story building, so we had to meet with

the architects and the technical people at Harris (Corp. Broadcast Communications Division) and complete everything in under six weeks."

After determining his needs for space and equipment, Bauer drove to Cincinnati to meet with Mark Colacito, systems engineer at Harris.

"We had to overestimate the amount of space for the studio because we didn't know how many guests O'Reilly might have at any one time," said Bauer.

Bauer selected the digital Pacific

Legacy 30, which Harris manufactures.

"It's a great little mixer and simple to operate because we really needed a short learning curve," Bauer said.

The studio uses two Denon C630 CD players, a Teac 122 cassette deck and a Sony PCMR500 DAT machine. Two additional devices — the 360 Systems Digi/Cart and Instant Replay systems — are used extensively on-air. These are digital playback/record devices that allow quick access to hundreds of pieces of audio.

A large part of the radio show comprises phone calls from listeners and guests; for that, Bauer selected the Telos TWOx12 talk show system. Of the 12

See O'REILLY, page 48 ▶

Behringer DDX Does It Digitally

by Alan R. Peterson

Behringer has an interesting way of taking nifty technology and making it affordable. The German audio manufacturer has proven this several times over with minimixers, microphone preamps and audio processors, and most recently, condenser capsule microphones for about \$100.

With the DDX3216 Automated Digital Mixing Console, the company now treads in waters dominated by the Yamaha 02R and 03D boards, and coexisting with other affordable digital mixers from Tascam, Panasonic and Fostex.

The steely appearance of the DDX3216 conceals a powerful brain and heart, capable of mixing up to 32 inputs onto 16 busses and 32 outputs, with DSP effects, dynamics control, lots of routing and motorized ALPS faders.

Both static and dynamic automation

are included, which means the console can snap to new settings from onboard or flash PCM RAM memory, or record and recreate gradual fades for artistic work.

Part of the affordability comes from the design and components of the DDX3216. The A/D and D/A converters are manufactured by AKM and Crystal, with DSP handled by Analog Devices SHARC processors.

Sonically speaking, and from a dependability standpoint, the choice of using these components is valid. The DDX3216 is an exceptional and well-made digital mixer, with the features and versatility an audio producer is going to want right at his or her fingertips.

Do not expect to use this as an on-air board. This one was made for music recording, sound reinforcement and broadcast audio production all the way.

See BEHRINGER, page 47 ▶



The DDX 3216



The 'Radio Factor' Control Room

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Balanced XLR Connections

"Sonically, the LynxONE is top quality. Easy install and crash free operation... offers I/O and sync options professionals expect. One could use this card for a big-buck master session or block-buster movie without any reservations."

- Pro Audio Review
April 2000

"It's extremely clean, very clear, and amazingly accurate. Rock solid with a wide range of programs."

-Recording Magazine
February 2000

"The LynxONE is an excellent mastering card in terms of sound quality and flexibility. Suitable for today's professional studio."

AUDIO QUALITY: 5 [out of 5]
-Electronic Musician
August 1999



LynxONE

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PRODUCT GUIDE

Drawmer DF330 Removes Unwanted Noise in One Pass

A two-channel noise filter from Drawmer, the DF330, requires no encode/decode process. The single-ended DF330 was designed to be a low-cost solution that allows studios to work with inconsistent audio material; the unit can be inserted at any point in the signal chain to address noise.

The unit reduces high-frequency noise, low-frequency rumble and background noise during momentary silences.



Frequency-controlled low-pass filter circuitry sets itself to open and close bandwidth to the highest frequency of input audio.

The company says the variable filter process tracks properly regardless of fade ins/outs or changes in program dynamics. The process is automated and requires no user interactions.

A new downward expander section reduces up to 40 dB of broadband noise during momentary silences in the pro-

gram. When the program ends, the downward expander reduces gain by up to 40 dB, maintaining silence.

The attack time of the expander is self-setting and the release times are variable with a five-segment LED gain reduction meter.

A custom rumble filter centered at 50 Hz with an 18-dB/octave slope eliminates low-frequency noise, such as

that from outside traffic and HVAC systems.

The DF330 has an overall bypass switch, rumble filter bypass switch and separate expander bypass and variable filter bypass, as well as a stereo link switch. Price: \$1,099.

For more information, contact Brad Lunde at Transamerica Audio Group in Nevada at (702) 365-5155, fax (702) 365-5145, e-mail brad@transaudiogroup.com or visit www.transaudiogroup.com.

LPB Creates 'Low-Power Systems' Position

LPB Communications recently created a new position, director of low-power systems, and appointed Enrique Lanz to the job.

The company said the move is in response to the surge of activity in the low-power market and increased awareness of the LPFM movement.

Lanz previously was manager of Latin American Sales for LPB; he opened new markets and reestablished the LPB brand in Latin American broadcast equipment purchases.

The company made the move after the departure of sales executive John Devecka; he left the company once owned by his father to become operations manager for WLOY at Loyola College in Baltimore. The online and low-power AM station goes on the air in October.

Devecka's father bought LPB from founder Dick Crompton in 1987. The younger Devecka took a sales job there in 1990. His father sold the company in 1998 but the son stayed on for four more years.

For more information from LPB, contact the company in Pennsylvania at (610) 825-4100 or visit www.lpbinc.com.

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Amek Touts Trigger

The Trigger Audio Replay System from Amek allows sound effects, music segments and voiceovers to be managed from a single system. Applications include radio, live theater, television productions and visitor attractions.

Trigger handles recording, editing, and assigning and replaying audio segments in a single-screen display. Mono and stereo audio segments can be assigned across four stereo outputs, with segments sequenced as four separate playlists or triggered individually by 32 instant-play keys.

For use during a live broadcast, Trigger is set up prior to the performance using a keyboard and mouse to name, edit and assign segments. During the broadcast, the operator uses the display monitor and Trigger Controller remote to control segment layout.

The system is disk-based and comes with an internal hard drive that can store 58 track/hours of audio, as well as a choice of removable media drives, including DVD-RAM, MO and Zip. Editing functions allow the user to fine-tune audio segments, trim start and end points, adjust fade-in and fade-out slopes, set gain levels and adjust EQ levels.



For more information from Amek, contact the company in Tennessee at (888) 286-9358, fax (615) 360-0273, e-mail amekusa@Harman.com or visit www.amek.com or www.purepath.co.uk.

UB Series Consoles Are New From Behringer

Behringer says its new UB line of mixing consoles use ultra-low-noise, low-impedance circuitry design and high-quality op amps for maximum headroom, minimal noise and transparent audio. Internal autorange switch-mode power supply automatically adjusts to voltages from 80 to 240 V.

The 10 Eurorack UB mixers range from the smallest, the UB502, to the largest, the UB2442FX-Pro. In addition to the internal autorange switch-mode power supply, UB Pro models feature Virtualizer technology with 99 stereo effects.

"Invisible" microphone preamps are a new approach developed by the company; they provide 130 dB dynamic range for 24-bit, 192 kHz sampling rate inputs. 60 dB gain range and +30 dBu line input capacity. The IMPs claim bandwidth of 5 Hz to 100 kHz.

For more information from Behringer USA, contact the company in Washington state at (425) 672-0816, fax (425) 673-7647 or visit www.behringer.com.



The Behringer UB802 is part of the UB series of mixers.

BroadcastMate Helps With Remotes

The BroadcastMate is an all-in-one system for radio remotes. It lets the user set things up ahead of time and be up and running on location easily.

The unit rolls on four or six wheels (depending on the model) when closed for travel. Handles are provided to facilitate transport. Sliding rails on the rear of the chassis along with handles permit a crew to tilt the unit at a full-crum point into the rear deck of a van or pickup truck, face up.

The unit is ready for a shipping truck or airfreight as is, without further packaging.

A basic BroadcastMate system includes a backlit sign (22 by 28 inches with the BroadcastMate Sr. and 16 by 22 inches on the Jr. version); two 100-watt RMS nearfield prewired and fused speaker systems, hook-and-loop fastener-ready front for posting promotions or show times or other signs; generous rack space with easy access to the rear; 4-inch, rackmounted locking utility drawer; and stowage compartments for promo items and giveaways.

Available options include a directional high-gain AM/FM antenna and custom-built speaker systems (far-field for DJ service).

Units are available in various external and internal colors. Prices: BroadcastMate Sr.: \$3,295; BroadcastMate Jr.: \$2,695.

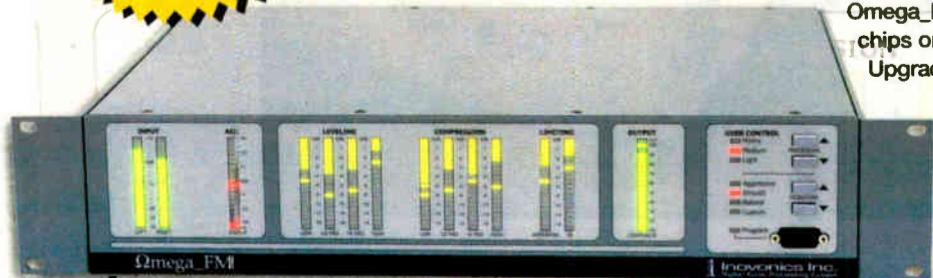
For more information contact BroadcastMate in Arizona at (800) 775-3660 or visit www.broadcastmate.com.



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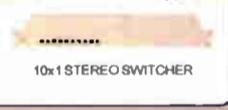
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<p>SR-64 \$698.00</p>  <p>6 X 4 STEREO SWITCHER</p>	<p>SR-61M \$1,799.00</p>  <p>6 X 1 STEREO SWITCHER WITH METERING AND MONITORING</p>

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One of the most requested FM broadcast products over the past year has been a "radio station in a box". Overseas customers, as well as some of the new LPFM licensees have a need to quickly "get on the air" at temporary locations or in the interim to their installed studio/transmitter setup. A number of overseas customers also had to originate short term programming from various remote origination sites for disaster preparedness broadcasts! Well, here you go...a radio station in a box!

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Those Freebies Pay Off in the End

by Alan R. Peterson

Now that my latest fling with cheap detective novels is behind me (RW, Sept. 11), time to get back to what is really important: real radio in the real world.

One aspect I have loved about writing this column is that I have been able to share my travels and journeys through several cities and many stations for the last 13 or so years with you.

While some folks get a simple press release in a trade paper somewhere ("Johnny Gherkin exits Memphis, assumes morning duties at Lumpy 108 in Providence"), I get to tell my story one coffee stain at a time ... one busted lamp from each move, one nutty boss in each city ... each and every filthy wrinkle in excruciating detail.

No simple sterile press release from me. When I take on a new gig, I tell it warts and all. Except this time, I can't find much in the way of wartage.

Plain and simple, I'm back with the Greaseman. And getting paid for it this time.

Dropped from the sky

While handling my daily duties at Christian-formatted WAVA(FM) in Washington several weeks ago, I got a phone call from Doug "Greaseman" Tracht. It seems he was about to be picked up by WGOP(AM), based in outer suburban Washington, with studios in the heart of the city.

I was half-hoping he'd ask me to rejoin the show.

I had the time of my life in the spring of 2001 when I worked and wrote for him during his comeback; but working for him for free was a strain on my already thready freelance income.

WAVA provided me with the means to

spring for a mortgage, but the sort of jokes and bits that ran through my mind would have cast me into the seventh ring of you-know-where had I actually voiced one aloud in the studio.

Working with Tracht would have been a comic's dream come-true, but my family and I would starve had I entered into the same deal as before. I would have had to tell him no if he asked.

Instead, I was surprised to find out that he put my name out to his new station owner as a possible candidate for operations manager of WGOP.

A little history

Some months earlier, the station had undergone a major metamorphosis, going from brokered programming to straight-ahead conservative talk (*G-O-P*, get it?).

I'm doing my best to move Grease over to the OMT iMediaTouch system ... maybe the moon will fall from the sky and flatten my car.

It had already begun airing Mike Gallagher and Michael Medved from the Salem network, and had taken a chance on the syndicated team of "Steve and DC."

Management sat back and waited for the Steve and DC show to pick up steam in Washington. After all, it had been airing in Manassas, Va., some months earli-

er, and there was some familiarity in the market. But it just wasn't jelling effectively and worked against the talk titans in the other dayparts.

Right around this time, Tracht had put a package together to send to the station owners and began barraging them with phone calls.

It took some persuasion, but management, almost on a dare, dumped the syndicated show and tapped onto the ISDN feed Tracht sent to his affiliates from his home broadcast studio.

With trepidation and a general feeling of "What on earth have I just done?" station owner Sima Birach Jr. ran the board himself on the first morning of the broadcast. For the first time in quite nearly a year, The Greaseman was back on Washington radio.

To make a long story short, the show is on for keeps. Birach took Tracht out to the NAB Radio Show in Seattle, announcing a partnership to form a network and carry the show as a syndicated effort, and launched him in Chicago and Detroit in early September. And they needed an ops dude.

What was it Captain Kirk said to Picard in that Star Trek movie?

I think it was, "Sounds like fun."

Well, get busy!

As I was about to find out, this was going to be a more energetic position than just sitting around and flipping through computer magazines to find a good deal on a server.

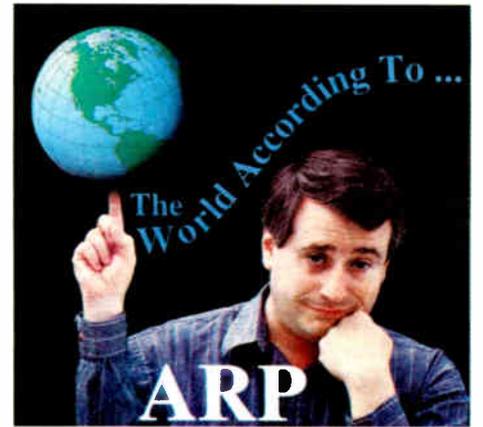
This is fine by me. I have never been able to sit in a starched white shirt with a pinned-down tie and just poke at my computer ... not when there is some *real* work down the hall waiting for me to dirty myself in.

Birach Broadcasting has had long-range plans for awhile now to take the 5 kW signal up to 25 kW, beaming a cookin' contour well up into Harrisburg (where I once worked) down well into Richmond (where I once wanted to work). This means construction of a new RF plant and tower site.

It also means a new studio location. Right now, WGOP occupies studio space near D.C.'s Fox TV affiliate and a little down the road from an ABC radio cluster. We are in decent company here.

But better space has come available in the form of a downtown D.C. location right in the heart of all the fun, and in the very offices once occupied by Vice President Dick Cheney in his pre-VP days.

One fact not lost on Tracht is that our new digs are just one block from his old home, WWDC(FM) "DC-101," immortalized in Howard Stern's movie



"Private Parts," where Tracht enjoyed earlier successes. DC-101 has since moved from downtown, but the memory remains.

We have our sights set on constructing a dedicated Greaseman studio (we *were* thinking wet bar and masseuse, but that's a little over the top), with the latest in digital goodies, and a satellite uplink right from our own rooftop.

For the time being, and as long as we are waiting for the new buildout, this humble "operations manager" is taking care of imaging, production, compliance with FCC regs and building an automation computer to run the BSI Simian program.

While Grease is still fond of using cart machines to play back effects and music drops, I am doing my best to move him over to the OMT iMediaTouch system for realtime playback and mixing of his show material. Maybe I'll win (and maybe the moon will fall from the sky and flatten my car).

And while I once found myself snorting and turning up my nose at any sound card carrying the "Sound Blaster" label, I confess a certain preference to the new Audigy unit. It is clearly not in the same league as a Digigram or AudioScience interface card for handling on-air automation duties, but it's a gas in the production room.

It comes bundled with some fun software, especially a self-contained synth/sequencer program called "Fruityloops," which I hope to review someday in this section. Just when I run out of creative steam for production music, I can fire up Fruityloops and slam together an interesting bed to get me through the session.

Hey, me!

I even got a congratulatory e-mail from Al Peterson, the news/talk editor for Radio & Records. Would you believe the two of us have yet to actually meet face-to-face?

There is much to do. And I am looking forward to every minute of it. It is not often you find a company ready to make this kind of investment in AM stations, so I am livin' large right now.

You know, I got chided a lot last year for giving six months of my life to "The Greaseman Show" without a nickel to show for it. Doug never forgot that, and now the payoff has finally come.

So to my pals at WAVA, thanks for the opportunity. I'd have never gotten on the air in a top-10 market (much less paid for groceries) without your help.

To WGOP, let's put on a show this town won't soon forget.

And to you, my longtime readers, it is time again to do what this column has always done best since 1989: Look at the wacky side of radio from *my* end of the hall. 🌐

PRODUCT GUIDE

Live Broadcast Warning Light System

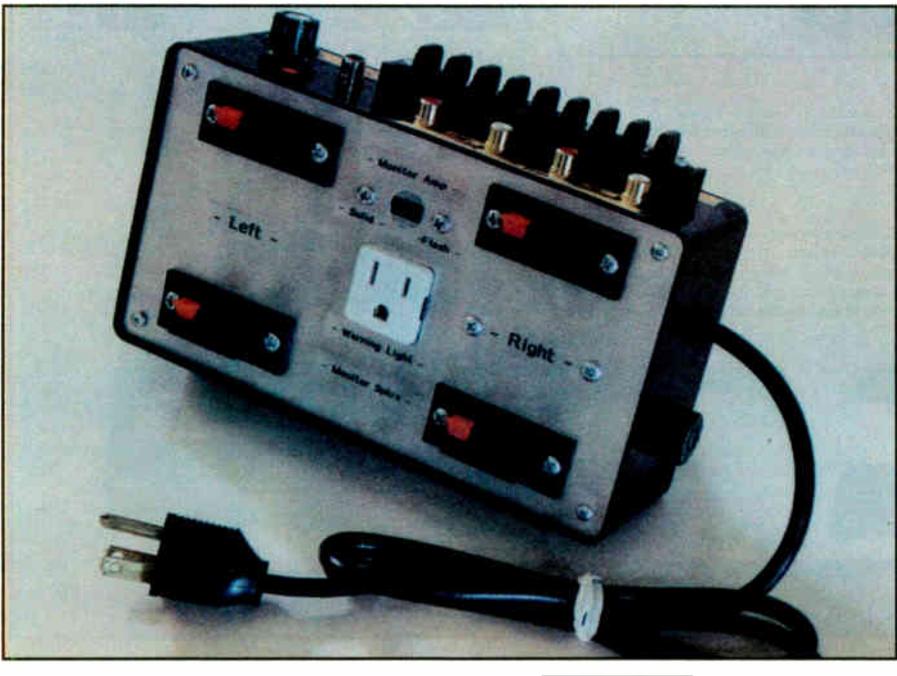
The Kontrollex A-1 speaker muting and studio warning light controller from Jasoni Electronics is for use with audio mixers that do not automatically mute speakers when live mics are in use in the same studio.

The A-1 can be programmed to display its light in steady or flashing modes.

There are several ways to incorporate the system into a studio, any of which will mute the speakers. If a studio warning light is connected to the A-1 via the panel-mounted AC socket, it will light.

Price: \$195.

For more information contact Jasoni Electronics in Nevada at (702) 791-3394.



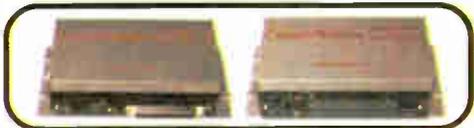
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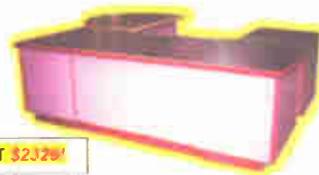


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CC-II Console Controller

The CC-II provides a (Mackie) non broadcast mixer with three channels of microphone switching. Additional features include; monitor level control; monitor muting; warning light relay; remote control of channel switches and status relays. Works with most (MI) mixers and/or DAW's with microphone channel inserts.

Time Sync II

The Time Sync II provides four separate GPS time referenced outputs. The first is a SPDT relay which pulses once every 15 minutes. These times are programmed for 13:00, 28:00, 43:00 and 58:00 after each hour. The second SPDT relay pulses at the "top of the hour" (00:00). This time may be user programmed. The third output is an open collector with a 100 ms pulse every second while the fourth output is an

4800 baud, RS-232 serial port providing UTC time in HH:MM:SS format. The final feature is the "SIG" led and SPDT relay, furnished as fail-safe for either loss of satellite or power and invalid time. The Time Sync II is supplied in a small profile chassis, along with a Garmin 12 - Channel GPS receiver with embedded antenna.



ICM-16/MHI



ICM-16/Controller



PSC-II



ICM-16/Tool-Box 2



Time Sync II



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ICM-16/DT-2



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Behringer

► Continued from page 41

Right out of the box, that “new mixer smell” is going to stay with you for several days. When powered up, the DDX3216 generates a hot-circuit-board scent you cannot ignore, helped around the room by a cooling fan mounted on the right side panel.

Once fired up, analog input connections are made to Input jacks 1 through 16 mounted along the top panel. Phantom power is activated separately for mic/line channels 1 to 6 and 7 to 12 (13 through 16 are line-level only). Each microphone channel includes a 20 dB pad, Signal and Clip LEDs, a 1/4-inch Insert jack and a gain trimmer.

Control Room audio outputs, Multi (bus) jacks and a +4 pair of Main Output XLRs are on the rear panel. Also found here are jacks for S/PDIF I/O, word-clock ports for syncing the DDX3216 to other digital studio gear, a SMPTE input and an RS-232 port for computer communication.

Two option slots are on the rear for AES/EBU, ADAT and TDIF digital I/O. You may notice that the optional modules are the only way to add in Inputs 17 to 32. Up on the top deck, you run out of inputs after No. 16.

Each channel strip is fitted with a motorized fader, a parallel LED level meter, a continuously variable rotary Channel Control knob ringed with LEDs, the stock Solo and Mute buttons and a pair of buttons — Auto/Rec and Select — that talk to the onboard processor for the automation process.

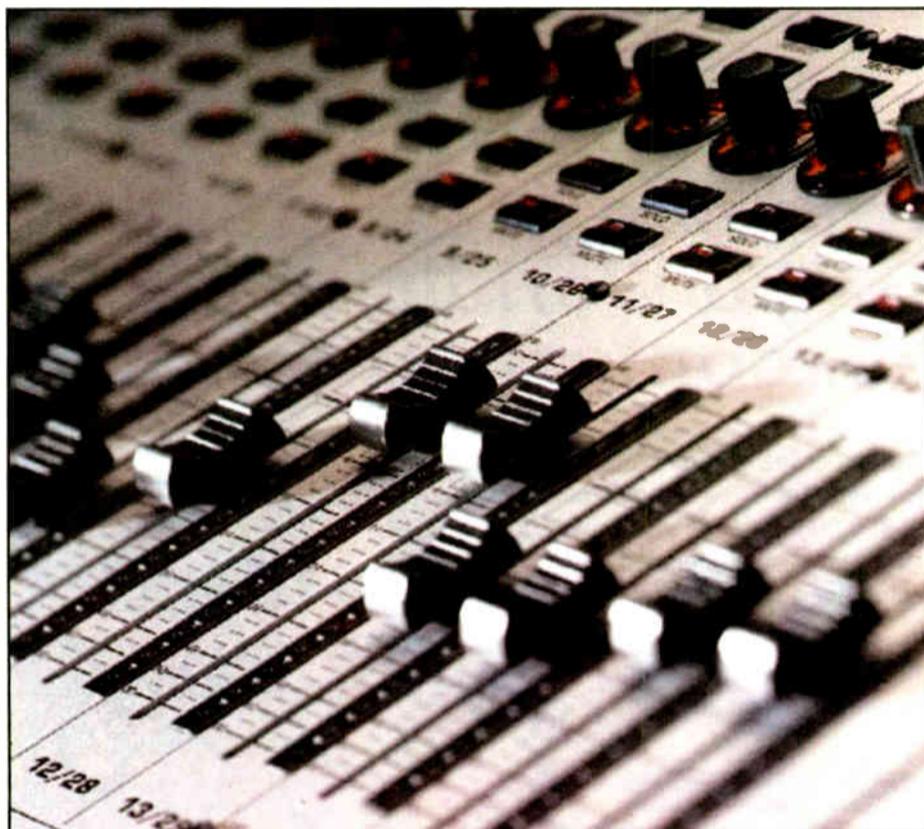
Navigation

As on many a digital mixer today, the center of the DDX is reserved for the main display. Here is where parameters, routing and controlling are visualized and fine-tuned. Six “soft” rotary controllers below the screen alter the settings shown above them, and by clicking the rotary control like a button, new functions may be selected. Four navigation buttons move you through pages of a specific menu.

On many nonbroadcast analog mixers often found in smaller production rooms, it takes two faders turned up in balance to accommodate a stereo input. This is not always easily remembered. Using the Select keys and the Group button found on the front left side, the DDX can gang several motorized faders together, so moving one will move two, three or all of them.

Also to the left is a block of switches controlling processing, grouping, automation recording and more. One line of buttons marked “Fader” instantly reconfigures the 17 faders (16 inputs and one Master) to reflect settings for the audio inputs, the Aux and Effect sends and returns, and Bus Levels.

As long as you are here, you can set up EQ and compressor settings for each input: All come with a four-band equalizer and dynamics processor. You may write your preferences to memory for later use, so your microphone input can jump right from a heavily compressed “liner-guy” sound to bandpass filtering with a button.



A Closeup of the Fader Panel

The Dynamics page on the display shows rotary “controls” on screen along with a graphic representation of the compressor’s response. It becomes easy to see and hear your curve as you dial it in.

To get audio from one end of the DDX to the other, you must get to the Channel Routing section where any one of the inputs are patched to a desired bus and to the Main Output. Likewise, routing for monitor functions must also be done to hear what you are doing.

This may sound like a lot of work, especially on an unfamiliar console; but as with most mixers, analog or digital, once you understand the signal flow and the patching, it’s a breeze.

The four-section Effect processor is a lot of fun. Here you will find a lineup of useful effects that go beyond basic delay and reverb, although those too are handy.

The reverb programs place one’s source audio into cathedrals, halls, small rooms and concert stages. There is extensive control over diffusion, damping, pre-delay (up to 500 ms in some cases), densities and more. This certainly is no three-pot musician’s toy.

Effects

Classic flanging and phasing fall under the Delay effects. There is a fairly respectable pitch shifter, which performs the basics (no formant shifting as in vocal

Product Capsule:

**Behringer DDX3216
Automated Digital
Mixing Console**

Thumbs Up

- ✓ A lot of features in an affordable package
- ✓ Good complement of effects
- ✓ Motorized faders
- ✓ Extensive automation

Thumbs Down

- ✓ No known analog I/O option
- ✓ Jacks along top could invite trouble

Price: \$1,999.99

For more information contact Behringer in Ohio at (425) 672-0816, e-mail support@behringer.com or visit www.behringer.com.

different about the DDX3216.

For one thing, I would prefer seeing optional analog I/O for the expansion slots and not just digital. Certainly the digital aspect is more appealing, but given the number of source devices that still exist in the analog world, this would not be a bad thing; perhaps a module with a “D” connector and an analog XLR breakout cable if back panel space is a consideration.

Jack worries

Any mixer with jacks on the top panel makes me wary. It’s just too easy for dust, crud and an inadvertent fizzy drink to enter the guts of the mixer in this fashion, thanks to mean old Mr. Gravity.

I realize this has been the norm for years, and even the venerable Yamaha digital mixers are built this way. It doesn’t mean I am overjoyed about it.

The buffed-steel look carries on the traditional appearance of Behringer products, but this mixer almost comes across as a medical device. Rather than an inviting centerpiece to a studio, it seems sort of sterile and clinical. Some will like that, I understand, but a pair of optional wood or melamine wings might soften its perceived harshness.

Finally — and I realize this is minor — the sound of the tiny cooling fan just adds to the low-key drone of disk drives and power supply fans already prevalent in many recording rooms and production studios. It is relatively quiet on its own, but you become aware of its whirr after a few minutes, especially if you cover it for a moment and note the silence. But then, that is what noise gates are for, right?

In the end when you stack up the \$1,999.99 DDX3216 against a \$3,700 Yamaha 03D, you might be tempted to look the other way, too.

Privately run project studios and production houses that need to gear up quickly with several good-sounding and versatile digital consoles need to check this mixer out.

If you are doing radio production and you wish a *nonbroadcast* type console to mix on, the DDX3216 may also be for you. With its compressor/limiters and internal effects, that outboard processing rack can be clipped away and moved into the storage room.

Alan Peterson is the operations director and imaging producer for talker WGOP(AM), Washington, and a longtime contributor to RW.

PRODUCT GUIDE

All-In-One CD Copying, Printing

The Bravo Disc Publisher from Primera Technology copies and prints CDs and DVDs. It can produce 25 CDs or DVDs per job.

A robotic mechanism transports discs into the 40X CD-R recorder or optional Pioneer combo DVD-R/CD-R recorder. After recording, the discs are moved to the integrated printer, where they are printed in color at up to 2,400 dpi resolution.

FireWire and USB interfaces permit the Bravo to attach to a PC running Windows 2000/XP. Veritas professional recording software is included, as is SureThing CD Labeler labeling software.

In addition to the Pioneer DVD-R-capable option, a business card adapter is available to copy and print 80 mm MiniDiscs and business card-shaped CDs.

Price \$1,995; with DVD-R/CD-R recorder, \$2,495; adapter kit \$199.

For more information from Primera Technology contact the company in Minnesota at (763) 475-6676, e-mail: sales@primeratechnology.com or visit www.primeratechnology.com.

O'Reilly

► Continued from page 41
incoming phone lines, 10 lines are designated for listeners; the others are for VIPs and other guests.

For postproduction Fox added a Digidesign Pro Tools system, used for taking sound bites from the previous evening's "O'Reilly Factor" TV show, which arrive on DAT or CD from the studio upstairs.

"The first set of show promos was done by Westwood, but we'll probably be doing that here soon," said Bauer.

"When Bill (O'Reilly) takes to the road for remote broadcasts, we use the Telos Xstream, which allows us to connect via ISDN for higher audio quality," said Bauer. "We also have a return chan-

nel back to his headphone."

The program uses Telos software for screening calls, which is on an LAN so that the host can work from a laptop wherever he happens to be.

"He'll see the caller's name, where they're from and what they're going to talk about," said Bauer. "O'Reilly has a monitor but no keyboard."

It has not happened yet on "Radio Factor," but sooner or later he's likely to get an unexpected and unwelcome surprise from a caller, as all talk hosts do.

For this studio, Bauer bought an Eventide EVTBD500. This digital device allows the instant dumping of an offending phrase, it then automatically ramps up without any dead air and is ready to use again quickly.

Because commercials are inserted into the show via Westwood One in New York,



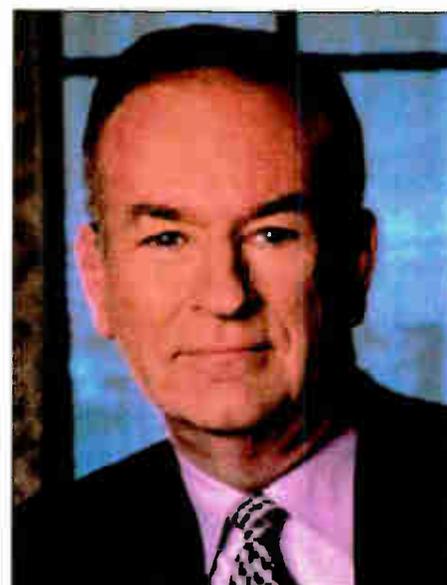
Guests sit in a wraparound configuration.

Photo courtesy of Christopher J. Tobin

the clocks are set eight seconds fast in the New York studio to allow for the delay.

"We just hit a 25-Hz tone and the Westwood One automation system triggers the commercials," said Bauer. "We have two digital loops between Fox and Westwood so we can verify that we're really on the air," said Bauer.

Whether O'Reilly is on the road or in the New York studio, his call screener/producer is Ron Mitchell, who has the duty of making those split-second censoring decisions.



Bill O'Reilly

"There actually is a label on the panic button," said Bauer. "We call it the 'oh s***' button."

Shure SM-7B microphones are used for the talent, which includes O'Reilly and any guests he may have.

"His current sidekick is E.D. Donahy, but we'll be rotating some other people in and out," Bauer said. "There are other mics in there to accommodate several other voices at the same time."

Every microphone position has a cough switch and an on/off switch. In the control room the board operator also has a microphone; the senior producer has a mic for interaction between the studio and control room on the air.

For off-air communication, O'Reilly has a headphone through which the board op, screener or producer can communicate with him. Usually this occurs only during commercial breaks so as not to interrupt the flow of the program.

Westwood One tapes each show on DAT for an archive. In the future these recordings may be used for promos.

How did the show go on the first outing live?

"Everything ran perfectly," said Bauer. "We deliberately tried to keep everything simple because of our short time frame."

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Michael Davis, General Manager
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Maynard Meyer, General Manager
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"RW has been very helpful in our purchasing decisions. I find myself holding on to past issues of RW so I can refer back to information or ads that I feel might be useful in the near future. Keep up the great work!"

Al Sergi, General Manager/Owner
— Summit Media Broadcasting, LLC Sutton, W.Va.

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Ralph Ulrich, Vice President
— Ulrich & Associates St. Louis, Mo.

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Radio World, October 9, 2002

GUEST COMMENTARY

The Need for Redundancy in Radio

by Lawrence Titus

Few stations have the sales expertise to sell off-air time to a prospective advertiser. Although I once worked at a station that sold the two seconds of dead air during an antenna switch to an advertiser, most stations prefer to be on the air, always available to their audiences. Time off the air is lost revenue. Period.

At some point, either the station engineer or station management will have to decide what is an acceptable amount of time for the station to be off the air during the year.

Failure rates generally are referred to in terms of percent of yearly failure periods. For instance, if management feels that a station that is on the air 99.9 percent ("three nines") of the year is acceptable, that would be equivalent to 8.77 hours off the air. I wonder how an advertiser will handle it if some of that takes place during an important broadcast or time that they are paying for?

How about staying on the air for five nines — 99.999 percent of the year? That is the same as 5.26 minutes off air during the year. My guess is that would be more acceptable, but is it possible to be on the air 100.00 percent of the year?

The answer is directly related to how important being on the air is to the station management and ownership. The degree to which a station maintains its on-air presence is directly related to two factors. The first is luck; the second is the amount and type of redundancy that the station has built into its facility.

Seeing the future

A complete signal path can be viewed as a chain, with each part of the path a link in this chain.

For example, one part of the chain might be the studio processing, or the STL or the antenna. Each is important in keeping the station on the air. More than one "chain" may be necessary to keep the station within an acceptable number of 9s.

The more attention given to the possibility of path failure due to any unusual situation, the better the station has of staying on the air. It's like trying to predict the unpredictable.

Signal path redundancy basically means that there are several different paths for the studio signal (audio, data, video) to reach the transmitter site. Redundancy in a radio or television station takes on different forms, such as parallel, interlaced, isolated path, completely isolated and mixes of the above.

A parallel form of redundancy can simply be a microwave path with a phone line backup. Some sort of decision-making process will determine when to have the primary microwave path (the STL) on the

air and when to have the phone line on.

The decision-making process can be a manual command from the station personnel or can be a sophisticated automated process. In either case, failure thresholds need to be determined spelling out at what point it is necessary to change the primary signal path to an alternate path.

These failure thresholds can be simple, as in the total loss of signal on the primary path, to a complex determination of signal degradation in the primary path relative to acceptable levels of signal degradation.

Even more complex is the establishment of a pattern of predetermined failure thresholds that have been exceeded over a period of time, and taking action based on projected failure conditions.

With a simple pencil and paper, you can start to figure out your facility's vulnerability to a path or signal failure.

The decision-making process is complicated further by increasing the levels of redundancy. With an interlaced form of signal path redundancy, the signal that finally arrives at the transmitter may be a subset of other signals traveling in the same direction (i.e., a T1-encoded signal path over a common telephone line).

An isolated redundancy signal path, as the name indicates, has isolated signal paths running from the studio or studios to the transmitter site. An example would be two studio sites feeding a single transmitter site over two different paths. A completely isolated system has two sources feeding two different paths to one or two transmitters or even multiple transmitter sites. Obviously, the latter situation would require a sophisticated system of communications between sites to coordinate which was on the air and when. At this point the control communication path lends itself to a redundancy scheme as well.

During any look at redundancy, the engineer must look at each link in the chain and what happens when that link disappears.

With STLs it can be a high wind that knocks the antenna around on the tower, even icing or damage to the transmission line. With a parallel redundancy scheme, interlaced or not, you are open to catastrophe if one item in the chain fails. Usually a mix of STLs and T1s will solve the "phone-company-has-a-problem" syndrome.

The decision to minimize redundancy in the signal path usually is purely financial. How often have you heard the following: "Why spend the money on two STLs or a phone line backup when that old STL is working just fine?" or "We haven't been off the air in years!"

One of many lessons that the World Trade Center disaster taught most of us is

that no matter how secure we feel with our systems, the unexpected can and does happen. Those stations that had completely isolated redundancy with their studio-to-transmitter links as well as different transmitter sites were the ones still on the air. The others were off the air for several weeks and were scrambling to find alternate facilities and equipment. Hopefully those stations had plenty of insurance. But then, isn't that a form of isolated redundancy, too?

Pencil and paper

Figuring out the degree of your vulnerability to a problem that causes a path or signal failure actually is pretty easy.

Draw your studio on the left side of a

piece of paper, and on the right draw your transmitting antenna. Between the two draw every piece of equipment that forms the "chain" between them.

Now draw a line between the equipment to show the path that the signal takes on the way from the studio to the transmitter. Now simply cut one of the signal lines or remove one piece of equipment. How does your station keep its signal on the air?

Now remove two signal lines or pieces of equipment. How is the station now?

For a fun exercise, draw in the power mains to each piece of equipment, and then the breakers that the mains are on, and add the main power distribution panel or even the power company. It's easy to see how complex designing a high-reli-

bility redundant system can be.

The variables can become astronomical. Eliminating each variable is now associated with a cost that must be weighed against the benefits. Again, how well can your sales staff sell off-air time?

There are as many approaches to designing a reasonably priced redundant system as there are station management teams and stations. Some systems are clever and thought out well. Others lend themselves to Catch-22 scenarios — for example, two STL transmitters being fed from a common AC power strip that the cleaning woman uses for her vacuum because there is no other outlet for her to use to clean the STL rack.

One of the more well thought out systems was recently installed by Kevin Plumb, director of engineering for ABC Radio in New York, for its flagship ESPN radio affiliate, WEVD(AM).

In his planning, Kevin took into consideration just about every possibility of equipment or path failure and found ways to duplicate the path, working around possible problems with various links in the chain. If WEVD had a redundant transmitter site, it would be one tough station to take off the air! WABC(FM)'s sister station WPLJ(FM), for example, has two non-colocated transmitter sites; one atop the Empire State Building and one in Alpine, N.J.

As with most things in life, calculating how much to spend on a redundancy plan is the same as calculating gambling odds. Calculating the odds that a phone line will be down during the next year or that the cleaning woman's vacuum cleaner is defective is easy. Calculating the odds that your transmitter site will be affected by a 9/11 type of disaster is far harder.

So how much is redundancy at your station worth? How about adding a column to your next rate card — one for "Hours Off Air."

Lawrence Titus is the owner of Titus Technological Laboratories in Glastonbury, Conn. This article and accompanying diagrams can also be found at www.tituslabs.com.

Shoars moves on

A recent story (July 17, "College Radio Program Suspended") concerned the closing of Riverland Community College's Radio Broadcasting program, my subsequent layoff and the trend nationwide of college radio programs being discontinued.

Since my layoff in May, I have been a free agent looking for a new opportunity. I had not had success and as of Aug. 12 was into double digits in rejection letters.

On Aug. 13, I received a call from Rosanne Rybak, the station manager at KROC(AM-FM) and KYBA(FM) in Rochester, Minn. She informed me of a sales opening. I had two interviews for the position, two days apart, and was offered the job of sales representative Friday afternoon, Aug. 16. I accepted.

In the original story about Riverland's Radio Broadcasting program, I was quoted as saying that God has a plan for me but that He hadn't informed me what it was as yet. My new job definitely involves a God sighting. Ms. Rybak had not heard about Riverland closing the radio program, nor my departure. She found a résumé of mine in a file from a now-departed manager at a sister station in Stewartville, Minn. She realized I might be a good candidate and gave me a call. This was a position I did not know existed and had not applied for. What I couldn't do in three months, God did in three days.

I look forward to the challenges and opportunities my new job will offer and am thrilled I can continue doing something I love — radio!

*Eric Shoars
Sales Representative
KROC/KYBA
Rochester, Minn.*

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READER'S FORUM

Bigger not necessarily better

In the July 17 issue, Thomas Hultquist painted a rosy picture of how great centralized broadcast facilities can be in his "The Benefits of Centralization."



While much of what he mentions may be true, it doesn't consider the whole picture. From his example, what would happen when the billing computers go down for all 100 stations?

It has been my observation that big companies always suffer with inertia and internal communication problems. The bigger the company, the greater the "overhead."

- 1. I once worked in R&D for a very large corporation that no longer exists. One of our research scientists wanted a piece of wood cut on a table saw at the maintenance department — just two straight cuts.

common ol' resistors for six cents each at a local electronics supplier. I once ordered 150 through Purchasing. When the bill came, my boss had a fit! The price: over \$100 just for miscellaneous resistors.

3. An engineer at a local group of stations needed a larger standby generator when they added another station at their group. They were trashing a perfectly good 100-kW generator and replacing it with a new 300-kW unit.

"Oh, no!" replied the engineer. There was so much competition between the various co-owned station managers, that if one generator failed to start when needed, that management would blame the Engineering Department of favoritism.

Bigger is not always better or cost-effective.

John Stortz
Chief Engineer
WKES/WKZM(FM)
St. Petersburg, Fla.

MPEG and IBOC

It was with considerable interest that I read two letters in the July 17 Reader's Forum, both of which related to audio quality and IBOC.

In the first, Rolf Taylor of Telos made a valiant, although ultimately flawed, attempt to justify the presence of numerous MPEG passes in the broadcast chain. Claims that "researchers have carefully investigated MPEG Layer II at over a dozen coding passes and concluded that very good results are achieved" is not a very substantive reply.

Undoubtedly AAC will gain a foothold in the broadcast market where operational costs are at a premium and quality can be sacrificed at that particular altar.

The IBOC Fee Waiver

The big news for digital fans at the NAB Radio Show last month was that Ibiqumity Digital Corp. has bowed to reality and offered an audio licensing fee waiver to owners that place orders for HD Radio/IBOC transmission equipment by the end of this year.

Radio One was the first to make a public commitment under this pioneer program; other groups reportedly were lining up.

The waiver is good news, but it comes too soon and ends too quickly for many broadcasters.

Any rollout plan needs to benefit all radio stations. Just as we don't need an IBOC solution that works only for AM in the daytime, we also don't need a fee waiver that ends before small- and medium-market broadcasters and college stations can take advantage of it.

For these stations, a few thousand dollars in fees (not to mention the actual cost of the hardware) is a really big deal. Many must go through purchasing departments or committee processes. They can't snap their fingers and place an IBOC order.

But if American consumers are to accept HD Radio, these stations need to be part of the rollout. Let's not create a situation in which some stations are on the air with digital and others are not for an extended period of time.

Offering a waiver now, when the biggest groups are the ones that can afford to commit, only advances the perception held by some critics that Ibiqumity tilts toward its investor partners at the expense of smaller non-investors.

Further, this waiver asks managers to commit to ordering equipment before the FCC has even indicated whether it approves of the concept, and in what form. We expect that the commission will give its approval to IBOC, perhaps even this month; but if we were running a station, we'd be hesitant to commit funding to a system not yet approved.

The fee waiver is a big step in the right direction, and we commend Ibiqumity for it. Now extend the waiver window to six months after an FCC endorsement. Give broadcasters some lead time to take advantage of it.

Then meet with small- and medium-market broadcasters to develop an equivalent waiver that will help them later, when they can afford the conversion.

— RW

success of this latest scheme. However, will all the broadcasters be duped again, considering the current argument raging through the industry relating to "listener fatigue" as a direct result of multiple MPEG passes? This issue gains even greater relevance as content can further deteriorate when passed through the PAC algorithm prior to IBOC emission.

A second letter, from Gordon Carter, chief engineer of WFMT(FM), questioned the audio quality of IBOC, given the various processes that occur to program content prior to emission.

It is quite appropriate that these two letters were published in the same edition of Radio World. Is quality coming back into

fashion, and should there be an in-depth study on concatenation with a particular focus on MPEG and IBOC in the broadcast chain?

Jon McClintock
Commercial Director
APT—Audio Processing Technology
Belfast, Northern Ireland

More Opinion Page 53

Table with 3 columns: Name, Extension, Title. Includes Paul J. McLane, Sharon Rae Pettigrew, Leslie Stimson, etc.

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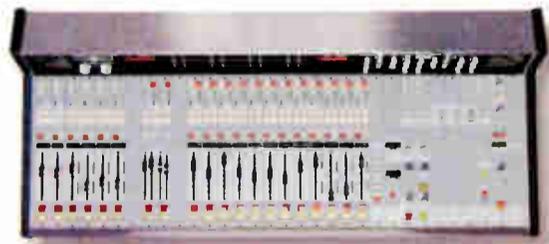
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THINK INSIDE THE BOX



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THAT'S RIGHT— ONE DUPLEX FIBEROPTIC LINK OR A SINGLE CAT-5 WIRE = 64 channels of simultaneous bi-directional digital audio, intercage communication, logic signals, X-Y controller commands, plus auxiliary RS-232 data streams. *This single interconnect between your studio and central rackroom can save you thousands—if not TENS of thousands—of feet of wire in a typical installation!*

THE WHEATSTONE BRIDGE DIGITAL AUDIO NETWORK ROUTER can start small with a single cage and only a few cards, or fully populated units can be stacked to form larger systems. Wheatstone's STAR TOPOLOGY ARCHITECTURE lets you connect multiple locations to your central rack room, providing shared resources for all yet still permitting independently functioning studios, each with its own combination of plug-in modules specifically suited for a select set of gear.

SIGNALS ARE ROUTED entirely in the digital domain. sample rate converters on each input, freeing you from sample rates throughout your facility. A family of plug-in makes installation easy, letting you mix varied signal standards all within the same cage. WHEATSTONE'S intuitive setup software handles system configuration, matrix selection sets. All systems interface directly with Wheatstone consoles source selection and display.

All AES cards have worry about varying connector modules technologies and graphic based and salvo pre-for seamless



THE BRIDGE

DIGITAL AUDIO
NETWORK ROUTER

 **Wheatstone**

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