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Out, Damned Spot
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Radio World



\$2.50

The Newspaper for Radio Managers and Engineers

February 11, 2004

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NEWS ANALYSIS

Satcasters Fight for Subscribers

by Leslie Stimson

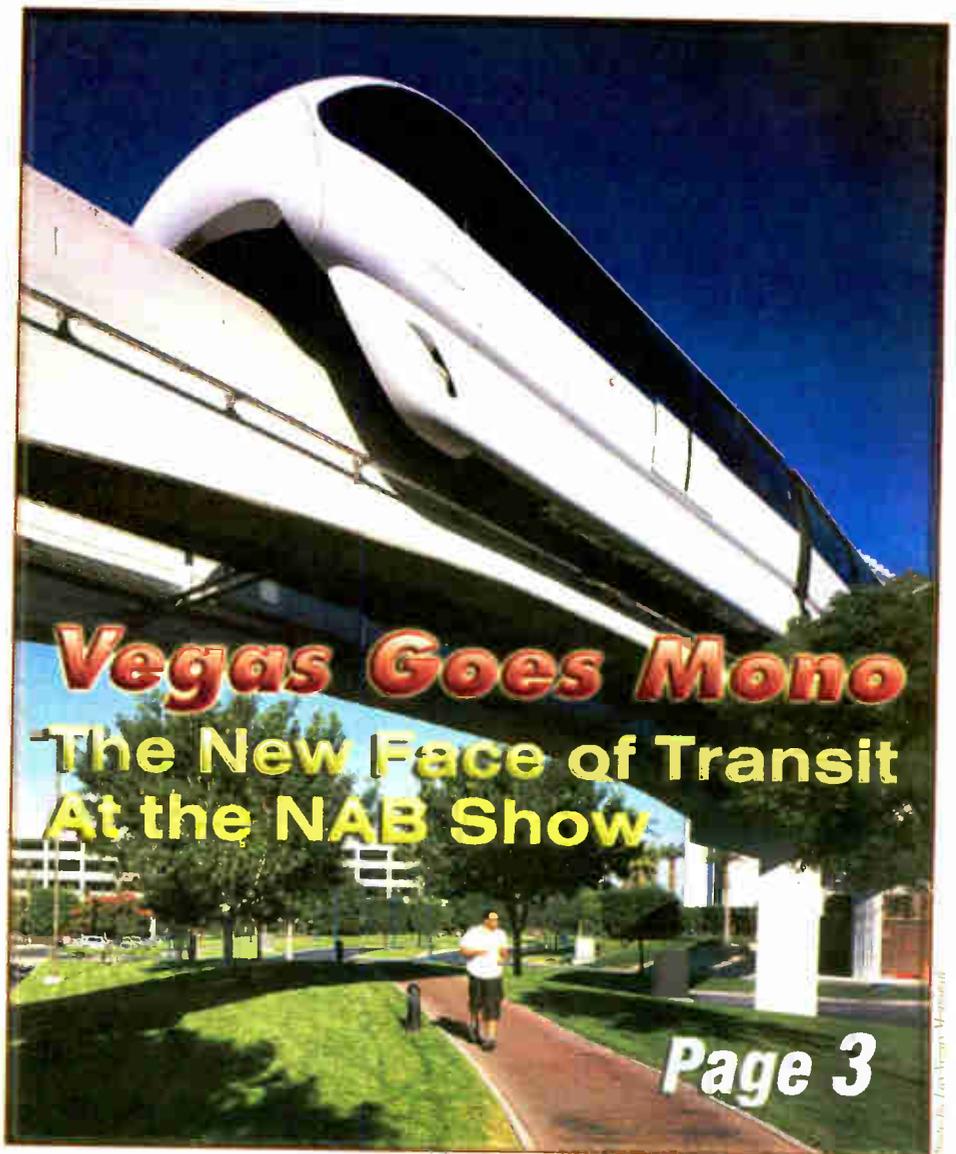
LAS VEGAS The young U.S. satellite radio industry isn't waiting for terrestrial radio to react to its recent gains. XM and Sirius are moving to generate more subscribers as each seeks to break even or better in 2004-05. Their strategies include trying to poach listeners from each other and terrestrial radio.

The efforts include regional traffic and weather services, something terrestrial radio leaders had feared, considering it a threat to radio's traditional monopoly on that information.

Some broadcast engineers told Radio World during the recent CES show that the introduction of such programming by the satellite companies was inevitable.

Although XM and NAB recently reached an agreement for suggested language regarding the FCC's terrestrial repeater rules — language that would bar XM from using repeaters to insert local programming — one engineer of a prominent radio group said he knew it was possible to deliver such regional programming

See SATELLITE, page 7 ▶



Page 3



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NAB: Proceed With Digital at Night

by Leslie Stimson

KEY BISCAYNE, Fla. At its semi-annual board meeting in late January, the NAB Radio Board took steps regarding the industry's digital transition and what members might face this year politically in Washington.

AM IBOC at night: The Radio Board wants the FCC to authorize AM nighttime IBOC on an interim basis. It stated, "The dramatically improved audio quality ... is well worth the predicted and limited reductions in analog coverage."

The commission should take steps to address those problems, stated board

members, should any AMs experience reduction in nighttime analog coverage "beyond those predicted by the studies." The studies referred to are AM nighttime feasibility and impact studies Ibiqity recently completed and delivered to an NAB committee.

A digital standard: The completion of an IBOC technical standard is seen as key to the FCC issuing further operational authorizations. The National Radio Systems Committee, a standards body backed by NAB and the Consumer Electronics Association, has been going back and forth with Ibiqity Digital for several months over how much information Ibiqity

must divulge so the NRSC can set a standard.

Tension has arisen between the NRSC's desire to document the technology and Ibiqity's wish to protect proprietary technical information.

Ibiqity has said its HDC codec is proprietary and unique. NAB Senior Vice President Science and Technology Lynn Claudy told the board Ibiqity is unable to disclose the technical details of the codec, in turn delaying the standards process.

Ibiqity has discussed pursuing "modulation and transmission" standards for AM and FM HD Radio that include provisions for advanced data

applications. These are elements Ibiqity can disclose, the technology developer told Radio World.

The NAB Radio Board members recommended that the NRSC pursue such a course for the HD Radio standard. The codec would be left out of the standard, so "audio compression methods thus would be subject to selection by market forces," according to the board meeting's minutes.

Ibiqity said the codec would still be included in the technology it licenses to broadcasters.

The board also discussed secondary audio channels for HD Radio and was "generally positive" about the potential feature.

"Big Media" and regulation: NAB President/CEO Eddie Fritts said last year's fight over media ownership rules activated a revolt by consumer and other groups against "Big Media" that could spill into the current session of Congress. Fritts said broadcasters must promote their public service efforts even more than before.

Small-market broadcasters also have lobbied FCC staff to retain the rules that would measure unrated markets using a modified contour overlap method.

Look for regulators to sharpen their focus on broadcast indecency. Marsha MacBride, NAB's new executive vice

See AM DIGITAL, page 3 ▶

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Monorail to Lighten Cab Lines

by Naina Narayana Chernoff

LAS VEGAS Some attendees will be able to avoid long taxi lines at this year's NAB show by catching the Las Vegas Monorail, the gambling capital's newest moving attraction.

Starting March 1, the electric transportation system will begin ferrying passengers along a four-mile route on and near the Las Vegas Strip. It will become the first fully automated large-scale monorail in the country, according to the Monorail Society, a volunteer organization founded to promote this transit method.

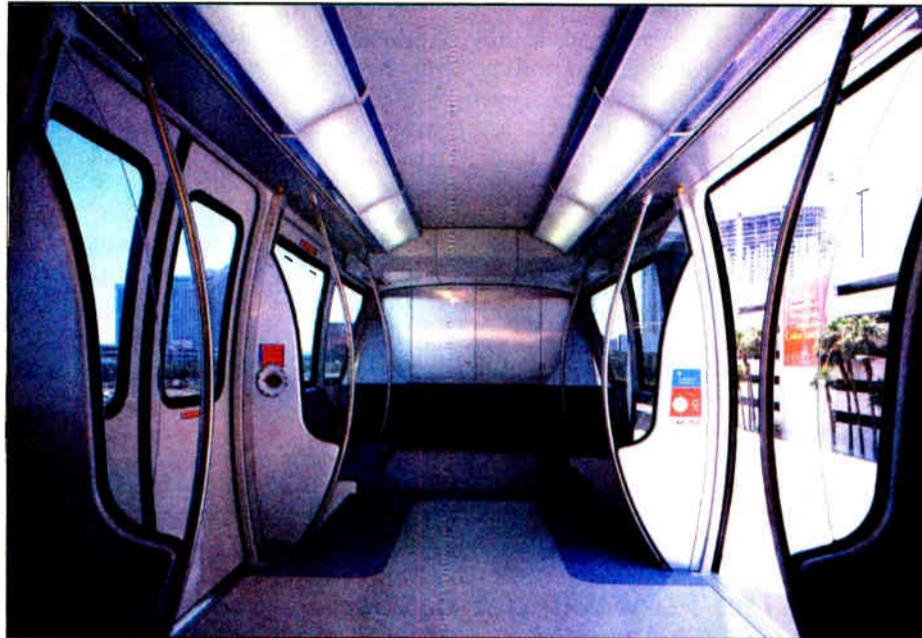
With stops at the Las Vegas Convention Center and eight resort hotels, the driverless trains will offer conference attendees and tourists an alternative to busses and taxis without hurting the environment. The LVCC station is at the intersection of Paradise Road and Desert Inn Road at the western end of the center.

The developers of the system predict that the monorail will eliminate the need for more than 4.4 million automobile trips on the major roadways and reduce carbon monoxide by 135 tons per year.

For large conventions such as NAB, which draws more than 90,000 attendees, the monorail will not solve transportation problems, but would supplement existing transportation options such as convention buses and taxis, said Todd Walker, director of communications for the Las Vegas Monorail.

For \$3 one way and \$5.50 round trip, riders can get off at seven stops from the Sahara to the MGM Grand Hotel-Casinos on opposite ends of the strip, with stops at the Las Vegas Hilton, the LVCC, Harrah's/Imperial Palace, the Flamingo/Caesars Palace and Paris/Bally's. Traveling at up to 50

miles an hour, passengers can ride the track from end to end in 14 minutes. Hours are 6 a.m. to 2 a.m. every day of the year. Tickets can be purchased online or at the monorail stations.



The new look of transportation at NAB shows.

Each train carries approximately 225 passengers and rail officials estimate that the system will carry up to 5,000 passengers per hour in each direction. During larger conventions, Walker said, the monorail will coordinate with the convention center to accommodate increased passenger loads at particular times of the day.

During peak times, from 10 a.m. to 10 p.m., riders will be able to catch a train approximately every four minutes in each direction.

NAB organizers believe the monorail will provide a great service for attendees. "Hopefully we'll see traffic lighten, cab

lines shorten and wallets thicken with the cheaper rates," said Dennis Wharton, NAB senior vice president of corporate communications. "The schedule and number of stops will allow our attendees

to get around quickly and easily."

NAB is not changing nor scaling back its convention shuttle service for this show, planned before the monorail plans became public. It will, however, evaluate the shuttle service for NAB2005.

NAB's shuttle reaches 20 hotels. Conceived 30 years ago, the monorail is the result of a 10-year effort by entrepreneurs, business leaders and elected officials who raised \$650 million from revenue bonds and contributions from resort properties to build the system. Developers said the monorail is privately financed and will not use any tax money for the system, which will be supported by fare revenue.

The monorail system is owned and operated by the Las Vegas Monorail Company, a non-profit corporation whose board is appointed by Nevada's governor. In December, the developers announced that the project was \$23 million under budget.

In 1995, the MGM Grand and Bally's Hotels built a one-mile monorail that carried approximately 5 million riders each year between two stations. The original monorail track was expanded for the new transit system, according to Walker. The monorail eventually will connect downtown Las Vegas and the McCarran International Airport.

While some cabdrivers expect the monorail to be successful and reduce gridlock during large conventions and high season for tourists, other taxi companies believe ridership estimates are inflated.

"We feel, plain and simple, it will be a white elephant," said Bill Shranko, director of operations at Yellow Checker Star cab company. The company's taxis would compete with the monorail for riders. Yellow Checker Star taxis offer door-to-door service and allow several riders to split a single fare, he said.

AM Digital

► Continued from page 2
president for legal and regulatory affairs, told the board. She replaces Jeff Baumann, who retired. Indeed, Rep. Fred Upton, R-Mich., chairman of the House telecommunications subcommittee, has introduced a bill raising the fines for indecency violations.

their FCC authorizations for providing a national program service. The companies say their plans do not violate those authorizations.

Entercom Communications President and CEO David Field updated members on NAB's marketing initiative to combat negative perceptions about terrestrial radio in the consumer press, a misperception being driven by the satellite radio companies and others, he said.

Radio Show returns to Philly: As

The NAB Radio Show will return to Philadelphia in 2005.

MacBride, fresh from her stint as chief of staff for FCC Chairman Powell, said the agency is interested in "reclaiming spectrum, and that broadcast spectrum is viewed as particularly valuable."

Satellite localism: The board directed its staff to "seek an explanation" on whether plans by XM and Sirius to air regional traffic and weather violate

attendance at the annual radio show has dropped, NAB has thought about combining it again with another show. The NAB Radio Show in 2004 and 2005 will remain a standalone event.

This year's show is set for Oct. 6-8 in San Diego, with a return to Philadelphia in 2005. The board decided to begin talks exploring partnership possibilities for 2006.

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Gotcha! Star Wars Just Heating Up

I got burned by the bird last month. I commented here in January on apparent harmony between NAB and XM over the question of terrestrial repeaters. My optimism was premature. Just after that issue of Radio World rolled off the presses and before it reached you, controversy erupted anew at the CES show on the topic of satellite localism.

It's hard for me not to blame XM for the egg on my cheek. The joint letter it signed with NAB sure made it sound like the warring parties had solved their "terrestrial/local" issue. But it was a foolish thought on my part. In fact, the war with the Death Star may just be heating up.

And I wasn't the only one lulled. NAB President/CEO Eddie Fritts called XM's plans for regional traffic and weather, announced at CES, "an appalling back-door attempt to bypass the FCC's intent to limit satellite radio to a national service only."

Fritts said XM's plans "violate the spirit" of the recent agreement between the companies for suggested language regarding the terrestrial repeater rules. That language bars XM from using repeaters to insert local programming.

At the CES show, XM told Radio World's Leslie Stimson that it is not violating the agreement with NAB because it will send its traffic and weather data as part of its satellite signal nationwide. "This will be a national service," President/CEO Hugh Panero said. XM apparently is simply adding these geographically-specific channels and making them available to all subscribers.

But it sure sounds like XM is bringing the battle right to radio's front door. It plans to introduce the service in 15 cities for no extra cost to subscribers in March. The list of cities is like a map of the IBOC rollout: New York, L.A., Washington, Dallas, Chicago, Houston, Detroit, Philly, Phoenix, San Francisco, Tampa-St. Pete, Orlando, Baltimore, Pittsburgh and St. Louis.

Shortly thereafter comes Boston, Atlanta, Miami-Ft. Lauderdale, Minneapolis-St. Paul, Seattle and San Diego.

So, tell me again what sets local radio apart from satellite?

'Relentless ambition'

Separately, local broadcaster and Whitney Radio President Bill O'Shaughnessy has been outspoken on this topic. He, too, had reacted positively to the earlier news of the translator agreement (although *he* didn't end up with a column that was out of date before it hit the street).

O'Shaughnessy issued a follow-up statement in January taking XM to task for "duplicious, under-the-radar behavior." Among his comments:

XM wants a bigger piece of our action.
The fight will get nastier.

"I've had a lingering feeling that the final nail was not yet driven into the coffin of XM's relentless ambition, even with last week's feel-good announcement of the joint filing and agreement regarding restrictions on their patented technology.

"It's like the Carnival of Venice. XM presents a different face to everyone and every entity with which it deals: one to the regulators at the commission; one to Wall Street; one to local zoning boards — even going so far as representing themselves as a 'public utility' and having 'permanent authority.'

"They haven't been candid or forthcoming with the commission, with poor NAB, representing all of us, and I suggest the American people. They say they're a national service with no designs

on local programming. But they are edging closer and closer. Now with that announcement out of Las Vegas, they're at the door. They've also tried to navigate very skillfully between the International Bureau and the Mass Media Bureau of the commission, which regulates us," O'Shaughnessy wrote.

"The whole thing is further complicated by the fact that Clear Channel, the nation's biggest terrestrial broadcaster, is hedging its bets with a very substantial investment in XM. Pity the poor NAB lobbyist trying to determine, trying to intuit what's in the best interest of his client. ... Clear Channel is working both

sides of this perilous street and covering its bets. ...

"This Star Wars threat to established AM and FM broadcasters has been driven by the marketing muscle of GM. We know that. But it has also, I suggest, been driven by a pattern of duplicious, under-the-radar behavior by XM, which built a terrestrial network right under the noses of the FCC. And all the while, refusing to reveal its ultimate goals and real intentions."

'Significant benefit'

We asked XM's vice president for corporate affairs, Chance Patterson, to reply to what O'Shaughnessy wrote. His reply:

"What we are doing and have done is clearly consistent with all regulations. There's no issue here as far as whether

From the Editor



Paul J. McLane

we're doing something consistent with our license or not. It's all going through the satellite. It's a nationwide service.

"Say you're a Washington Redskins fan. The game will be broadcast nationwide. Clearly the majority of people who would be interested in the game are in the Washington area ... but fans in California can listen, too. The situation is similar with XM's nationwide traffic service.

"The bottom line is our subscribers have indicated that this is a service they desire, so we've been fortunate to partner up with Mobility Technologies. They have a state-of-the-art traffic data system that will be a significant benefit to our subscribers. This is not only a strong consumer offering, it's also going to be a public service in that it should help people avoid traffic jams and avoid accidents. So consumers will benefit from this.

"This is an issue about content. This is content that is useful for people who are on the nation's roads and our content is what separates us from AM and FM, the lack of commercials, and programming that consumers desire," Patterson stated.

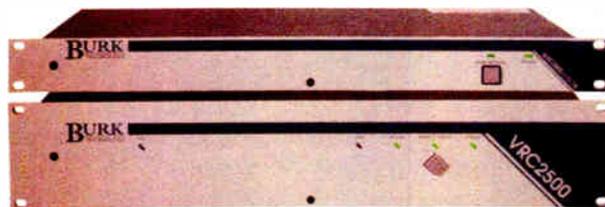
I'm with NAB on this one. XM was launched as a national service; but now it wants a bigger piece of our action. It will continue to look for ways to take our audiences and revenue.

My prediction: the fight over localism via satellite will get nastier. Those bird boys have sunk a lot of money into this game, and if they turn the corner to profitability, they will be radio's biggest nemesis for years to come. 🌐

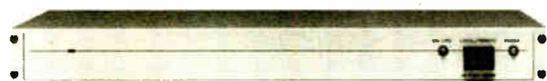
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Photos by Lavie Simson

FCC Chairman Michael Powell, second from left, and Commissioner Jonathan Adelstein, center, visit Ibiqity Digital's booth. Powell is listening to Ibiqity Digital President/CEO Robert Struble.



Musician, actor and syndicated radio producer Steven Van Zandt, left, and Sirius Satellite Radio President/CEO Joe Clayton. Van Zandt has joined Sirius as a creative advisor. He will create and produce 'Underground Garage,' to debut on Sirius later this year.



Don Milks with Onkyo was one of several manufacturing representatives who spoke at Ibiqity's HD Radio product launch. Onkyo is developing HD Radios for the home as well as a plug-and-play add-on module.



Sirius adds the JVC Plug & Play to its product lineup. The KT-SR1000 retails for \$99.95.



XM showed its Roady receiver installed on a Harley-Davidson motorcycle. The XM Delphi SkyFi, partially visible at left, can also be installed on a bike.



Delphi, Navigation Technologies, Panasonic and Visteon exhibited HD Radio traffic implementations. Shown is Visteon's multimedia navigation system demonstrated with HD Radio.

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The new Silence Monitor III improves on the features of the original SSM, with front-panel control, removable screw terminals, "Plug & Play" installation, built-in program switcher, restore timing delay, aural alarm and relays for most remote functions. Now rackable!

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The new RA-1 (1-RU rack shelf) provides mounting for three tri-rack or two half-rack "Rack-Able" configured products. The RA-1 is pre-drilled for flush and recessed product mounting. The RA-1 is furnished with filler panels and mounting hardware.

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XM, Sirius Expand Product Lines

Looking Beyond Boomboxes to In-Car Video, Wireless Distribution

by Leslie Stimson

LAS VEGAS Satellite radio companies Sirius and XM and their manufacturing partners are introducing a variety of products this year.

Sirius likes to create buzz with future concept demos at conventions, and this year's CES was no exception. Last year, Sirius demonstrated rear-seat live video — in-car mobile video transmission over a satellite radio network. Now it says it is perfecting the system with Delphi and hopes to have it ready for automakers in 18 months. The video feature was demonstrated at a press conference and showcased in moving vehicles in Las Vegas.

According to Sirius, video reception would not require that the consumer install another antenna; the delivery uses the satellite radio antennas available at retailers and car dealerships.

FCC questions Sirius

The FCC has asked Sirius for details about its plans to add "multiple" video channels to its offerings.

Commission spokesman David Fiske told Radio World the agency is trying to determine whether the video offering would qualify as an ancillary service, which would be consistent with the satcaster's spectrum authorization.

If not, Sirius may need to make a formal request to add the service. This would mean the service would require a ruling from the commission. "We're posing those questions," said Fiske.

The service rules for satellite digital audio radio services were passed in 1997.

Pending are separate rules to govern how Sirius and XM will use their terrestrial repeaters.

Delphi, meanwhile, was awarded a contract from Ford to provide radios for Sirius, joining eight other vehicle makers that have chosen Delphi's satellite radios.

A turning point for the receiver maker's aftermarket business came last year when it introduced the Delphi XM SkyFi radio. Delphi's president of its Electrical, Electronics and Safety sector David Wohleen said the company has sold more than 750,000 satellite radio systems.

Among the basic new satellite radio products consumers will see in stores this

year: Sirius struck agreements with Alpine and Blaupunkt to release Sirius-ready products in 2004. Alpine will develop aftermarket Sirius-compatible head units; Alpine becomes the first XM receiver partner to cross over and build receivers for both satcasters.

Blaupunkt plans to release a Sirius plug-and-play radio and a Sirius-ready in-dash tuner this spring. The tuner can be connected with Blaupunkt's Chicago IVDM-7002 in-dash audio/video system. It includes a DVD/CD/MP3 player, and 5.1 Dolby Digital Theatre System.

JVC, Audiovox and Antex came to the Sirius stable of partners in 2003, joining the original partners Clarion, Jensen, Kenwood and Panasonic.

Alpine becomes the first XM receiver partner to build products for both satcasters.

JVC has developed a plug-and-play radio for Sirius. The JVC KT-SR1000 Sirius Satellite radio is available at retailers and retails for \$99.95. The JVC plug-and-play resembles a handheld PC device and allows subscribers to use the same Sirius receiver in their car, home, office, boat and RV.

New in February

Sirius begins an ad campaign this month; plug-and-play buyers will receive three months of Sirius service free when they sign up for a year's worth of service. While Sirius President/CEO Joe Clayton didn't release the cost of the ad campaign, he told Radio World it would include terrestrial radio ads as part of the buy.

Sirius and its partners introduced two boombox units that are compatible with its 10 new plug-and-play models.

The Audiovox SIRBB1 Portable Boombox Audio System for Sirius is available for \$99.99 retail. The new boombox component works with Audiovox S.R.S. plug-and-play receivers.

Commercial truck dealers and truck stops now have the Pana-pacific Streamer, a transportable Sirius receiver that connects with any in-dash radio or

home stereo. The Streamer boombox retails for \$99.95.

Crestron and Nile Audio are developing in-home Sirius radios. Niles plans to incorporate Sirius technology into its next generation of multi-zone receivers and preamplifiers for release later this year. Tivoli is crafting a hand-held device for late '04 release.

Sanyo is developing a Sirius model for early spring release.

Kenwood is shipping the Sirius Home Tuner (DT-7000S), which lists at \$299.

Also a new partner for Sirius, Eclipse will manufacture Sirius-ready head units for release this year.

At last year's CES, Sirius showed a multi-zone satellite radio, designed for very large homes and shopping centers. In January, Antex Electronics began shipping to retailers the SRX-3 Triple Play, a

with an FM radio system.

The adapters plug into the vehicle's cigarette lighter. They wirelessly transmit XM to a vehicle's FM radio and provide power to the receiver.

For the home, XM has introduced the Roady home adapter, which retails at \$39.99. The home adapter connects the Roady to a home stereo or a set of powered speakers.

More customers are using XM in the home now, said Patterson. Much of the XM product being sold now is for portable use, suggesting that roughly half of buyers intend to use the products at home. Originally, the company predicted 10-15 percent penetration for home use, said Patterson.

Delphi has introduced the Delphi CD Audio System, its first AM, FM, XM, CD and MP3-capable boom box. It lists at \$179.99. This product delivers XM programming through the Delphi XM SkyFi receiver that was introduced in 2002 and lists for \$99.99.

XM recently introduced the aftermarket product XM Commander, an XM radio that works with any AM/FM car stereo, regardless of the brand. Terk Technologies distributes XM Commander.

In December, Alpine Electronics introduced the first in-dash stereo head unit with an integrated XM radio, along with AM, FM, and CD functions. The receiver eliminates the need for a separate XM tuner box.

The new XM Direct device features a universal tuner that connects to the car stereo system using a digital adapter cable for \$99.99. Once the XM Direct is connected, users can listen to XM on the in-dash car stereo using the existing stereo controls.

Blitzsafe introduced the XM Direct adapter cable for BMW and Mini automobiles last fall. Blitzsafe is expected to introduce adapter cables for Alpine and Sony head units in the first quarter of this year. In addition, Terk Technologies is introducing XM Direct adapter cables for Kenwood and Pioneer head units.

And what was in XM's demo of future car technologies? Its advanced technologies group in Boca Raton, Fla., had Delphi make a pre-production in-dash receiver displaying how XM might integrate with a navigation system.

The rear seat unit displayed and played stored audio clips, real-time weather reports and music videos sent over the air and displayed when the user wishes. XM Advanced Applications SVP Neil Eastman said the satcaster is working on these concepts. ☺

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Satellite

► Continued from page 1
without terrestrial repeaters. He suspects NAB was aware of it, too.

"They knew this was coming," he said. NAB President/CEO Eddie Fritts was quick to respond: and observers expect this tiff to continue for a while. The NAB Radio Board instructed the staff to keep pressing for "an explanation" on whether the satcasters' plans violate their FCC authorizations for providing a national program service.

"Whatever NAB will do will be political. Don't count them out," said one head of engineering for a prominent radio group. XM and Sirius say their services are national and they're not violating their FCC authorizations for their service.

The FCC has not commented on the issue.

We're legal

Instead of inserting programming on local repeaters, XM and Sirius simply intend to add traffic and weather data that is available to all subscribers nationwide. For XM, each channel, however, will be devoted to a particular region. Sirius intends to let the subscriber's receiver select which region's material to broadcast.

Satcasters say this does not constitute local programming because they are sending all of the data with their programming on the satellite signals.

"What we are doing and have done is clearly consistent with all regulations," said XM spokesman Chance Patterson. "There's no issue here as far as whether we're doing something consistent with our license or not. It's all going through the satellite. It's a nationwide service."

He gave a sports programming example that could also apply to XM's new traffic service, set to debut March 1.

"Say you're a Washington Redskins fan. The game will be broadcast nationwide. Clearly the majority of people who would be interested in the game are in the Washington area, but fans in California can listen, too."

XM has partnered with Mobility Technologies and The Weather Channel to offer dedicated traffic/weather channels for 15 cities in March, with plans to expand to 21 cities by the end of the year (Radio World, Feb. 1).

The roughly 4 kilobit-per-second channels would carry reports around the clock, every day. One broadcast engineer likened 4 kbps to 2 kHz of audio, roughly telephone quality. XM said the audio quality of the channels would be good.

A demo for Washington-area traffic heard by Radio World lasted approximately 2 minutes and included extensive coverage of the beltway circling the Washington metropolitan area, as well as information on north and southbound I-95.

A listener will be able to punch up the report when he or she gets in the car, and plan a trip, instead of waiting to hear traffic and weather at predetermined times on terrestrial radio.

"I'd pay \$10 a month for that," declared a prominent radio engineer, referring to XM's monthly subscription rate. There is no extra charge for the new traffic/weather channels.

"This is content that is useful for people who are on the nation's roads, and our content is what separates us from AM and FM, the lack of commercials and programming that consumers desire," said Patterson.

But the head of radio engineering for another prominent group said, "I have a feeling they're dialing down the bitrate for the program channels to develop enough channel bits for these new services. People will have to dial through some 100 channels to find (the traffic/weather). Whether it's good for consumers remains to be seen."

Privately, an official with one of the satellite companies said it would be interesting to see whether terrestrial high-power AMs lengthen their traffic reports in response.

Sirius, too, is broadcasting all the traffic/weather data for locations over its satellite signals. Certain "flags" in the data enable a subscriber's receiver to determine what traffic and weather locations would be preferred, and that radio only allows that information to be broadcast to that particu-

See SATELLITE, page 8 ►



Photos by Leslie Stinson

Go, Team: The Sirius NFL Cheerleaders



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Satellite

► Continued from page 7
lar subscriber.

In 2005, Sirius plans to offer simple text traffic with information for a general area and later introduce advanced traffic with the addition of real-time weather reports.

Also on the satellite front, XM is picking up a cue from rival Sirius and making all of its 68 music channels commercial-free this month. That has been a strong point-of-sale feature for rival Sirius.

XM executives hope the move will eliminate a big difference between the two digital satellite radio services when consumers learn about them from electronics retailers. "It's nice to set the standard," said Sirius

\$9.99 per month, nearly \$2 less than Sirius.

Rolling out hardware is key to the race to break even. So is signing up more subscribers.

XM says it signed up more than 1.36 million subscribers in 2003, and had 1 million net additional subscribers for the year. Much of that increase came in the fourth quarter, with 20,000 subscribers signing up on Christmas day.

XM added more than 430,000 customers in that quarter and expects to have 2.8 million subscribers by the end of this year, close to the company's break-even point of 3 million.

Sirius ended last year with 261,061 subscribers, up from approximately 30,000 subscribers at the end of 2002. It added more than 100,000 subscribers in the fourth quarter due to holiday retail sales.

But subscriber numbers alone don't provide the whole picture of how the company is doing, said Sirius President/CEO Joe Clayton.

Sirius needs to reach about 2 million subscribers and XM needs about 3 million to get in the black, both have said. Why the difference? Sources say it has to do in part with how much money each company gives back to its receiver and auto partners per sale, and how much debt each satcaster is carrying. Both companies re-capitalized last year, but Sirius claims it has less debt than XM, making for a stronger balance sheet.

In the skies

For those who would count out Sirius in the long run, Clayton said, "There are some who say that we're not in the game. Forget about it. We are for real."

XM President/CEO Hugh Panero countered, "It's not what you announce ... that matters, it's what happens the next day and the next 12 months. While other companies are trying to generate smoke, XM's on fire."

Fliers on some aircraft for JetBlue Airways and AirTran Airways will be able to experience that fire later this year



An XM display will appear on armrests in AirTran planes, and on seat-backs in JetBlue aircraft.



A Kenwood-made Sirius receiver was in this Mini Cooper.

This service would tie in with any navigation system, Larry Pesce, executive vice president of product development, said.

Sirius also plans to add sports and financial data ticker data this year for no extra charge to subscribers.

Retail Vice President of Retail Operations Bob Law, who recently joined the company from Kenwood.

That leaves programming offerings and price as differentiators between the satellite companies, with XM's subscription price at

for free.

XM will provide in-flight audio entertainment on flights using a system provided by LiveTV LLC, a wholly owned subsidiary of JetBlue. The XM in-flight service will be introduced on JetBlue's existing fleet of Airbus 320 aircraft beginning this fall and on its new fleet of Embraer 190 aircraft when introduced into service next year.

AirTran will offer XM on its existing fleet of Boeing 717s this fall, as well as its new Boeing 737 aircraft when introduced into service.

XM and Sirius also are exploring expanding into Canada. Both satcasters have applications into the Canadian broadcasting industry's regulatory body. If successful, XM and Sirius would each devote two channels to Canadian programming, one in English and the other in French. As part of the application process, Canada would need to approve the installation of terrestrial repeaters.

XM's Chairman Gary Parsons said the Canadian government also put out a call for proposals to open up the process to other companies. Those were due Feb. 16, he said.

RBDS Standards Review Begins

Receivers handle the ways broadcast-ers want to send text data differently. Some broadcasters are sending static text data; other stations want to send scrolling text and more than just call letters.

Up for discussion among members of the recently revived Radio Broadcast Data Services Subcommittee of the National Radio Systems Committee is how to do all of these things more easily within the context of RDS services, while not increasing driver distraction.

The subcommittee met at CES in January. Members elected Charlie Morgan of Susquehanna and Tom Mock, a consultant for StratosAudio, to head the RBDS standards working group.

Entercom's Marty Hadfield, co-chair of the RBDS Subcommittee, said the group hopes to know in broad-brush strokes what changes it should make the North American RBDS standards by this spring's NAB show.

RDS is undergoing a revival some 11 years after the first RDS-enabled receivers were introduced. Entercom is using RDS on all of its FM stations. Clear Channel Radio is using the technology on several facilities and other major groups are interested.

Hadfield said the standard needs to be updated.

"The system is not designed for anything beyond displaying call letters on a basic RDS receiver," he said. While many receiver designs seem to tolerate changing the location of the call letters in the display, others do not.

"Some will freeze or shut down the display, when new text information is added to that portion of the display," he said. "We need to make sure it's something that will have a reliable reaction in people's receivers" — in other words, predictability.

The group hopes to craft a uniform standard for displaying RDS content in the receiver. Once its work is complete, the RBDS standard would be published and could act as a general guideline for receiver manufacturers.

"Listeners are thrilled with it, when it works," Hadfield said. "Even low-end RDS-enabled receivers that may not have a radio-based function can at least display something. This converts it to a more versatile receiver."

When stations go digital, they can still broadcast RDS on their analog FM subcarriers. Although those subcarriers go away when stations convert to all-digital mode, "we're many years down the road from that," Hadfield said.

— Leslie Stimson

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JK Audio's Got A Digital Hybrid With Features Just Right For Your Job – Whatever Your Job Is!

Over the years, we've heard many ideas of what the "perfect hybrid" might be. We've learned that the "perfect hybrid" is actually different things to different people, depending on its use. The good news is that it really comes down to a handful of features, combined in ways that make a lot of sense. We're happy to introduce a series of digital hybrids that hit the nails on the heads, making them perfect for their respective jobs. Check them out and let us know what you think.



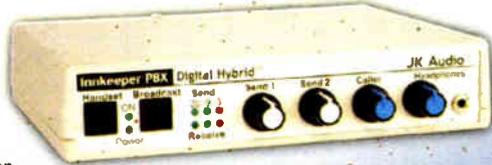
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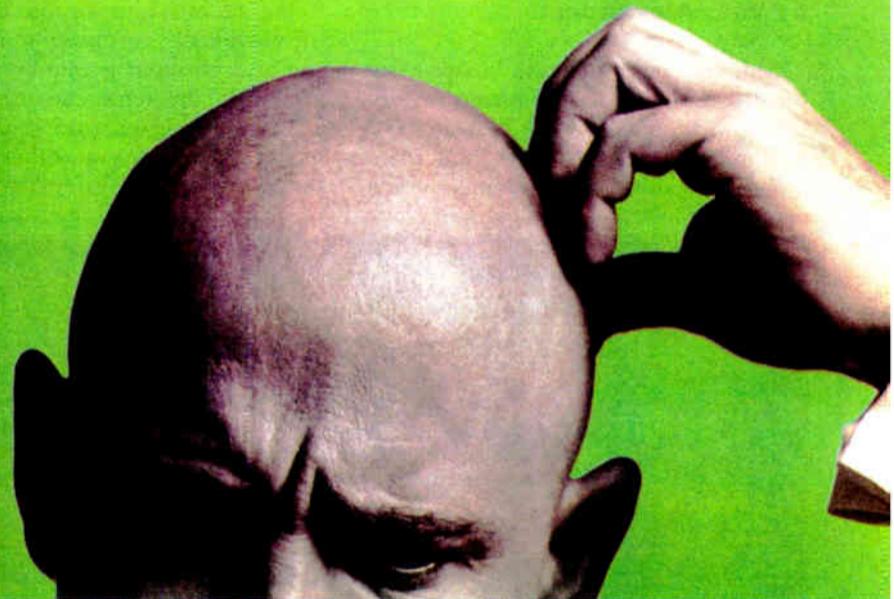


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Because HD Radio can transmit audio frequencies up to 20kHz, listeners will finally be allowed to hear the full CD spectrum – if their radio stations choose the right on-air processor. On this point, you should know something important: Some “HD” processors simply hack off everything above 15kHz... robbing listeners of the full HD Radio experience and keeping our industry in a fidelity backwater.

The new Omnia-6EX won't short-change your listeners. We've built Omnias with sampling rates of 48kHz and higher from the start. All along, we've needed the sampling headroom to keep analog FM audio grunge-free. Now it's essential for HD Radio. Even if some listeners wouldn't notice the missing high frequencies, there's a fair chance they would hear a sharp 15kHz low-pass filter operating within HD Radio's codec range.

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More than 50% of the US' Top 100 FM stations have already upgraded to Omnia. Maybe you're next?



The new Omnia-6EX has enhanced processing for analog FM, and is ready for HD Radio with a second limiter section and digital output. Both FM and HD limiters and outputs are included as standard.

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PRODUCT EVALUATION

Campaign Reform From Audemat-Aztec

*We Try Out the FM Navigator 100
Signal Measurement System*

by **W.C. Alexander**

Since the earliest days of broadcasting, broadcasters have sought means of measuring their signals. Some measurements are needed to evaluate the performance of a particular antenna or antenna system, while others may serve to define a cover-

9-meter mast, a tuned horizontal dipole and a 30-meter measurement run at each point is clunky at best and downright dangerous at worst.

In addition, what do such measurements really tell you, other than what the average field intensity is at each measurement location 9 meters in the



The FM Navigator is shown set up for a measurement campaign in the author's vehicle.

age area or determine the signal strength at particular locations within a station's coverage area.

Whatever the case, the basic need is for an accurate, easy, repeatable means of signal measurement.

A better way for FM

AM signal measurements have long been relatively straightforward and used a calibrated tuned RF voltmeter with a shielded loop antenna.

FM measurements, on the other hand, have been more of a challenge. The FCC-prescribed method of using a

air? They sure don't tell you what the average listener's antenna will see just a few feet above ground level.

Audemat-Aztec, a company headquartered in Strasbourg, France, and with a new U.S. subsidiary in Aventura, Fla., saw the need to provide real-world "rubber-meets-the-road" FM field strength data that stations can use to highlight their competitive situation, contrast their facilities against competitors and monitor site effectiveness.

In its FM Navigator 100 system, Audemat-Aztec combined a complete

FM broadcast receiver package that includes RF signal strength, FM stereo, RDS and DARC measurement capability along with GPS position fixing.

The FM Navigator 100 hardware is contained in a rugged anodized aluminum modem case that weighs in at about 2.5 lbs. It has external connections for FM antenna, GPS antenna, RS-232, headphones and multiplex. A Flash memory card slot is provided in

GPS position data is stored to the Flash memory along with signal level and other parameters.

Measurement campaign

Campaign parameters are stored before hitting the road. The type of campaign, slow or fast, is selected. A fast campaign samples each station for 300 to 2000 ms and records 10 parameters from each measurement. A slow one samples each station for five minutes and records a number of additional parameters.

The scan mode — none, FM, RDS or PGM — then is selected. No scan means the unit stays on a fixed frequency. An



FM and GPS Magnetic-Mount Antennas

the back for storing measurement campaign data, a far cry from the strip chart recorders of old. The unit comes with a handy foam-lined carrying case that is airline-transportable.

The FM Navigator 100 front panel is simple, containing an alphanumeric LED, selector wheel, two pushbuttons for programming and three status LEDs for stereo, RDS and DARC data.

The FM Navigator 100 is operated using a multi-layer menu system controlled by the selector wheel and pushbuttons. Anyone familiar with the Burk ARC-16 and its menu system will have no trouble negotiating the FM Navigator menus. The user can program 50 presets into memory for quick recall by channel.

A modem-type speaker is provided, but the quality was so poor that I found it to be of little value. A headset jack is provided as well, but volume adjustment is made through the menu system, making quick adjustment of volume level difficult.

Once a station has been tuned in, the user can dial up a wealth of information about the signal, including RF level in dBuV, peak multiplex deviation, multiplex signal power, multiplex overshoot, left and right audio levels, L+R and L-R audio levels, pilot deviation, subcarrier deviation (57 and 76 kHz), and complete RDS data. In the early part of our trials, we used the FM Navigator at several transmitter sites to confirm modulation and subcarrier injection levels. The accuracy was good, but we had to adjust our thinking from percent modulation to kHz deviation to make use of the data.

The FM Navigator's strongest suit, however, is in mobile signal measurements. A measurement campaign consists of a series of automatic measurements made along a planned route.

FM scan seeks out the next FM station in the band at the end of each measurement. This would be useful for comparing the signal levels of all the stations in a market. An RDS scan is the same as an FM scan but only stops on stations transmitting valid RDS data. A PGM scan sequentially analyzes all the frequencies stored in memory.

Finally, a name is selected and stored for the campaign. The Flash memory holds a good bit of data, and the amount of memory used can be viewed from the campaign menu. The user can also clear the Flash memory from the menu.

With the campaign parameters programmed, the user is ready to attach the magnetic-mount FM and GPS antennas to the roof of the vehicle and hit the road. At the start point, a quick double-press of the enter button starts the recording.

Just drive

There is nothing else for the user to do for the rest of the campaign but drive. The FM Navigator emits a soft beep as each measurement is made, letting the user know it is working. The display shows the frequency and RF signal strength of each measurement. At the end of the campaign, a long press of the enter button stops the recording.

Along with the FM Navigator comes the FM Explorer software. This Windows-based application allows the user to connect a computer to the FM Navigator and retrieve campaign data. It also allows comprehensive real-time signal analysis, including a bargraph type simultaneous mod monitor display of pertinent data. Comprehensive RDS and DARC analysis are provided through the FM Explorer application.

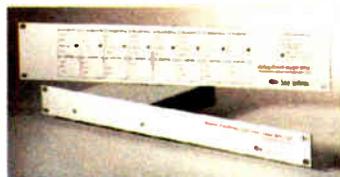
Microsoft MapPoint is provided as an option. At the end of a campaign, the data can be imported into MapPoint and a map

See NAVIGATOR, page 12 ►

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- parallel printer interface
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- accessory package for RFC-1/B

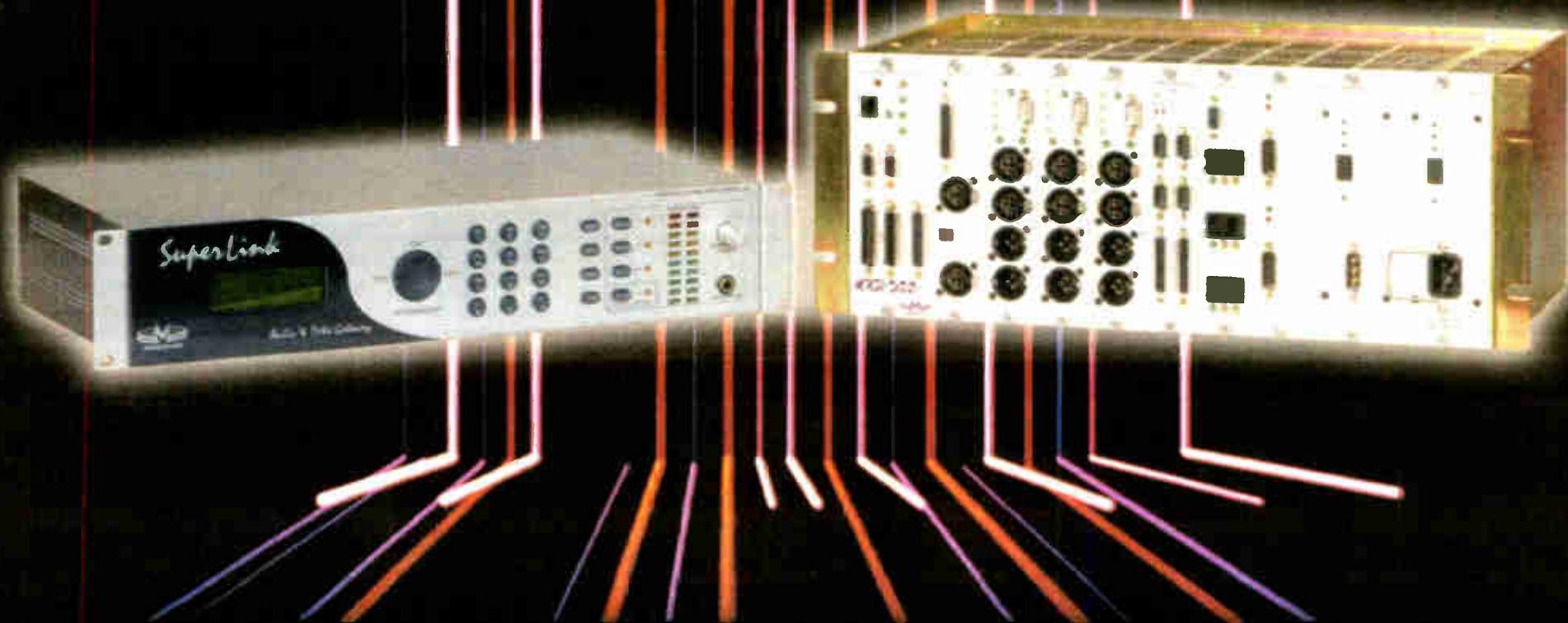


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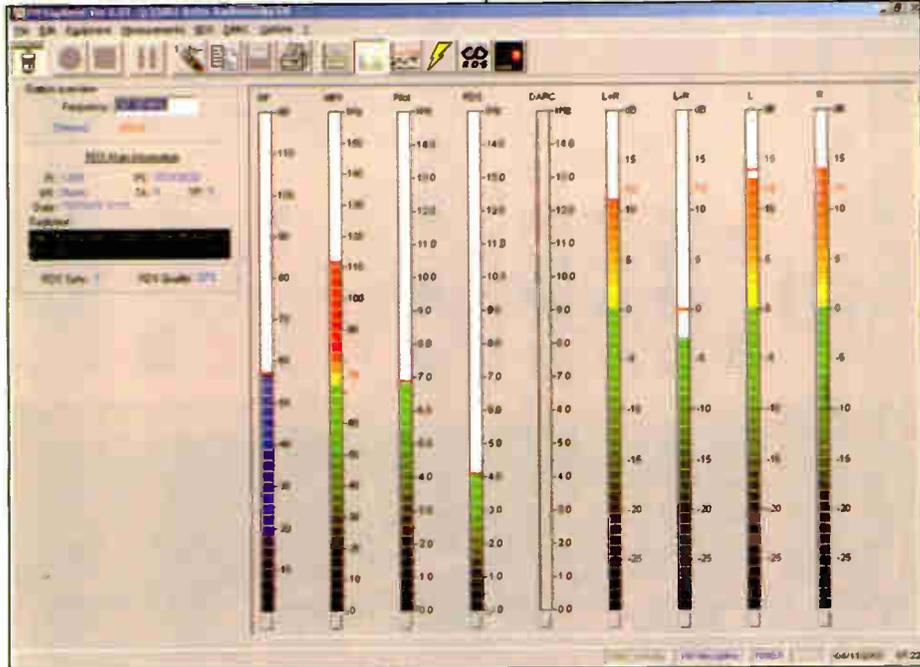
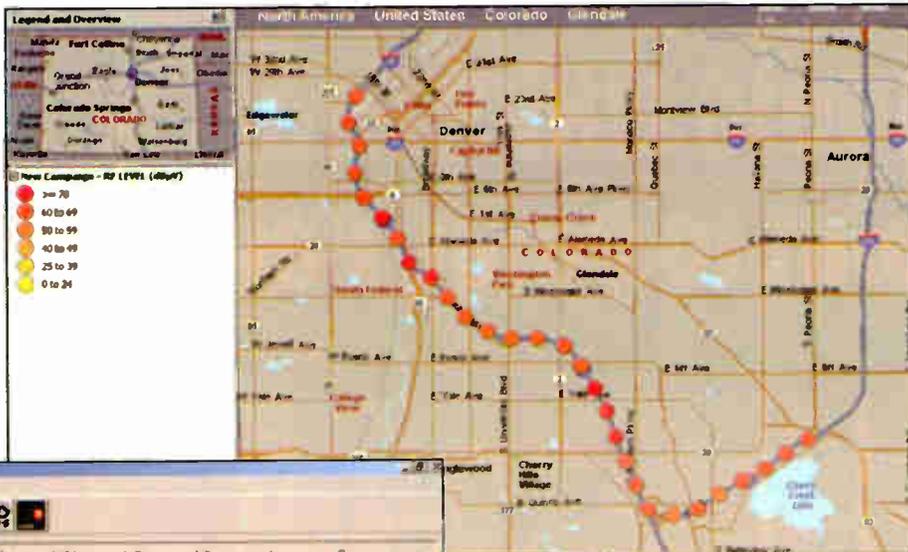
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Navigator

► Continued from page 10 showing signal level at each location can be generated. Filters and other tools are provided to customize the type and amount of information displayed.

I found it a little aggravating that the FM Explorer software was provided on three 3.5-inch floppy diskettes rather than CD-ROM. Many computers these days, particularly laptops, are not equipped with floppy drives.

The documentation left quite a bit to be desired. For the most part, the manual is simply a map of the FM Navigator menu



A screen shot of the FM Explorer application displays several modulation parameters including RDS data.

This measurement campaign map using Microsoft MapPoint was run through Denver's southeast corridor and South Platte Valley.

system. There are explanations of menu selections, but I found that I had to really dig to figure out how to get from point A to point B. There was no easy set of instructions on how to connect and set up the unit, program a campaign and use the data.

The manual was provided in loose-leaf paper and on CD-ROM. If you're expecting a bound instruction book, forget it.

Another aggravation was that while the manual referenced a mapping utility called MAPINFO Professional (not provided with the unit), the FM Navigator was supplied with Microsoft MapPoint. A supplemental manual was provided which described how to interface measurement campaigns with MapPoint, but the information it contained was sketchy. While I was able to generate a map of the campaign I ran, I was unable to do much more with the data.

The FM Navigator is no doubt a powerful tool, but I had the feeling that I was only scratching the surface in the

Product Capsule:

Audemat-Aztec FM Navigator 100 Automated Signal Measurement Device

Thumbs Up

- ✓ Provides real-world signal measurements
- ✓ Hands-free measurement campaigns
- ✓ Measures multiple parameters

Thumbs Down

- ✓ Poor, hard-to-follow documentation
- ✓ Map software poorly documented
- ✓ Software provided on floppies

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limited time I had with the unit. I allowed one of our market chiefs to use the unit for a week, and his experience was much the same as mine. Our combined experience confirms my initial impression — that the FM Navigator would be a much better product with comprehensive, easy-to-follow documentation that includes step-by-step instructions for the unit's many uses.

Bottom line

There is no doubt that Audemat-Aztec has found and filled a need with the FM Navigator. The hardware is a winner. The software is fair to good. If the software and especially the documentation can be improved, the FM Navigator would be an indispensable tool for many FM stations and station groups.

The author is director of engineering for Crawford Broadcasting.

MARKET WATCH

Microboards Expands QD Line

Microboards' Quick Disc series of duplicators lets users make archival copies of broadcasts for on- and off-site storage. The series has been expanded to include QD-52, a high-speed version of the QD-2, and a DVD version, the QD-DVD.

The QD-52 ships without a hard drive and is for users who require the copying of audio, video or data CDs. It features a read speed and write speed of 52X. LED indicators let the user know the status of

the duplication process.

QD-DVD is a one-to-one DVD/CD recordable duplication system for copying and backup of data onto DVD-R media. It also ships without a hard drive, and features a read speed of 16X DVD/48X CD and write speed of 4X DVD/16X CD.

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A birthday this significant deserves a special present, so here it is: the Zephyr 10th Birthday Bundle, a complete codec package at a **once-in-a-decade price**.

You'll get the best-selling Zephyr Xstream for your studio, and the satisfaction of knowing you can make CD-quality ISDN connections to virtually anywhere using industry-standard MPEG Layer 3 or MPEG AAC coding. And for your remote kit, the award-winning Zephyr Xport with built-in two channel mixer — perfect for sponsored remotes, sporting events, interviews and live appearances. Just plug in to any POTS phone line for an *aacPlus*[™] link to your Zephyr Xstream; you'll get stunning audio and rock-solid connections.

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JUNE 30TH, 2004!



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Whups, There Goes the Neighborhood

The World of Digital Radio Will Largely Be an Incompatible One, and That's Too Bad

by Skip Pizzi

The insular attitude common to most Americans often makes us assume that the way things are done here is more or less the way they happen everywhere.

Americans who travel abroad often learn the fallacy of such thinking; and this is certainly proven true in the world of broadcasting, as has been noted previously in this column.

Yet there is a basic area of common ground: Analog radio services are largely interoperable worldwide, allowing Americans to take along their radios when they travel and listen to AM and FM stations in other countries. Although channel bandwidth and spacing are not globally uniform, and transmission power generally is lower in many countries than that used here, most modern radios can accommodate these differences, via either manual or automatic adjustments.

This is not the case for analog television, where wholly different video modulation formats are used in different countries. This situation doesn't affect travelers too badly, since they don't usually carry their TVs with them; but they often may take along a portable radio, and this provides a convenient way to experience a bit more of an area's local color. (It's even more interesting for those of us in the radio business, of course.)

The TV incompatibility issue does affect relocating citizens, however, who typically will have to buy new TV and video equipment if they move outside North America, but not the temporary visitor or tourist.

Digital is different

Sadly, the compatibility enjoyed by analog radio services seems unlikely to be carried over to digital radio broadcasting, where several different, incompatible systems have emerged.

As most readers are aware, the U.S. digital radio system will use an in-band, on-channel service in the existing AM and FM bands, plus proprietary satellite radio services in the S-band. Meanwhile, most of the rest of the world will use the format now known simply as "DAB," formerly called Eureka-147, in the VHF

or L bands. Many of these same countries may also establish new service using the Digital Radio Mondiale system, on frequencies below 3 MHz, those currently used for AM/MW and SW services, and favored by international broadcasters.

Yet another system, the Integrated Services Digital Broadcasting format, will be used in Japan for both digital radio and TV services, while South Korea has announced plans to develop its own variant of the DAB format called the Digital Multimedia Broadcasting platform.

There are other countries that remain undecided on their digital radio plans, and they may use one or more of the formats listed, or choose to develop systems of their own.

Digital radio's international divergence seems to be for little good reason, as all these incompatible systems attempt to provide essentially similar services.

Not only do these digital radio formats use different transmission frequencies, they have widely different modulation and channelization schemes, and employ a variety of audio codecs.

This makes the prospects for an internationally agile digital radio unlikely, or at least rare and expensive. Even within a given format, some differences can exist among regions. For example, spectrum and RF channel mapping varies among countries within the DAB format, although a growing number of DAB receivers can accommodate at least some of these differences.

There is particular irony in the North American market. Consider that Canada and the United States share the same digital television terrestrial broadcast format, ATSC, but are deploying different digital radio systems (Canada uses DAB at L-band). Far more Americans will visit Canada (and vice-versa) in their cars and carrying portable radios than will take their televisions across the border, yet the

digital TVs are the only devices that will work in both countries.

Recent discussions indicate that satellite radio may gain U.S.-Canadian cross-border availability in the future, but terrestrial digital radio will remain divergent between these two otherwise largely compatible neighboring countries.

Home-grown space

To date, however, satellite-delivered digital radio that includes mobile reception capability remains a uniquely U.S. service. There are a number of reasons for this.

First, the U.S. radio market is by far the biggest for mobile radio usage, with approximately equivalent listening in home, car and office. Listening in fixed locations predominates substantially in most other countries.

Second, while European countries would be the next most likely candidate

for such services, the more northerly location of Europe makes it less friendly to geostationary satellite reception (like XM Satellite uses) from small mobile antennas, almost certainly requiring the more expensive, highly elliptical orbit (HEO, like Sirius uses) system to be employed.

Yes, climactic similarities lead most Americans to believe that Europe and the United States are at equivalent latitudes, but check the map; there is actually very little common positioning shared by the regions. For example, Rome and Boston are at approximately the same latitude. Europe and Canada, not the United States, are at generally similar global locations.

Third, the use of many different languages in close proximity reduces the efficiency of satellite delivery, or at least requires the use of spot beams, another additional expense, especially in a HEO system. In contrast, the large landmass of the United States, with only one or two

The Big Picture

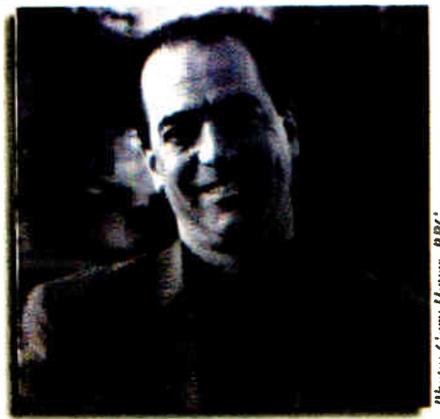


Photo: Gary Hayes, BBC

by Skip Pizzi

languages in significant use, coupled with its lower latitude, makes it ideal for satellite radio application.

Finally, many European countries already are well-covered by national services, delivered by networks of terrestrial FM stations. Practically all car radios are RDS-equipped, some with dual tuners; and the AF feature of that service allows generally seamless coverage from distributed terrestrial repeaters. Many of these services are also noncommercial, so the overall market demand for services like those offered by XM and Sirius in the United States may not be as high in European countries.

Separate but equal?

It's appropriate for different regions to develop divergent services that respond to the variations in their citizens' needs.

But digital radio's international divergence seems to be for little good reason, as all these incompatible systems attempt to provide essentially similar services. In a perfect world this might not have happened, but we must all acknowledge that development of any new technology is an expensive proposition, and return-on-investment requirements must be considered. Thus different digital radio systems have developed for business or NIH — "not invented here" — reasons, rather than purely for adaptation to local service requirements.

Perhaps future devices will smooth over these differences by offering multiple capabilities with transparent switchover, as some U.S. cell phones attempt to do today. In the meantime, current directions point to a world of undesirable diversity in digital radio.

Skip Pizzi is contributing editor of Radio World.

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MARKET WATCH

BIA Updates Media Access Pro

BIA Financial Network debuted its Version 4.0 database software, Media Access Pro, last fall.

It includes a comprehensive database covering 1,400 newspapers, featuring proprietary advertising and circulation revenue estimates. The software integrates three databases to offer a cross-media view and analysis of markets, ownership, revenues and coverage.

The company also offers a new publication, "Investing In Newspaper Market Report."

It estimates that local daily newspaper revenues in Nielsen markets totaled \$38.8 billion in 2002, not including the three national dailies, The Wall Street Journal, USA Today and the Christian Science Monitor, the revenues of which totaled \$1.85 billion.

BIAfn is a merchant banking and investment firm specializing in broadcasting, telecommunications and related industries.

For more information, contact BIA Financial Networks at (703) 818-2425 or visit www.bia.com.

MILE STONES

The Last Watch'

Heraclitus said the only constant is change.

Technical changes a-plenty have come to radio, but few have had more impact than the industry's move to remote controls for transmitters.

Prior to 1953, all transmitters had on-site operating engineers. These skilled folks were present to maintain standards, correct instabilities and repair and restore any plant component that might take the station off the air.

In the 1950s and '60s, various factors led to systems that allowed remote control of the transmitter. Among these factors were changes in FCC regulations to allow "off-site" monitoring and control; improvements in equipment reliability and the declining cost of gear, so that backups of critical systems could be kept online; and — as always — cost pressures.

Once more, people were asked to do more with less. Radio now saw the appearance of the combination air personality and licensed transmitter operator: the combo man.

A critical piece of equipment needed to accomplish this change was a cost-effective remote control system, reliable and accurate enough to be "legal." The Gates RDC-10 appeared and became almost ubiquitous.

Essentially an all-DC system, the studio and transmitter were tied together with two wire pairs, one for metering, the other for control. The control line actually consisted of two circuits, split into one wire and telco ground for each.

A fundamental FCC requirement for remote control was a fail-safe: If you lost connection or control of the transmitter, it had to fail in the Off mode. This was accomplished with a constant low-voltage DC "pilot" or "sealing" potential on the control pair. The pilot held closed a small relay, the contacts of which usually were in the interlock loop or filament On control of the transmitter. Lose the circuit and the transmitter went off.

The metering pair supplied DC analog for each reading calibrated against a stable reference voltage from the transmitter selected at the beginning of each meter-reading session. Channels were switched by pulses sent down the line rotating a telephone-type "step" relay reminiscent of dialing a number at the telco switch house.

Remote control is a standard configuration today even if the transmitter is in the next room. A sea change in the 1960s, it wiped out an entire job category in radio but liberated an army of talented people to make their mark elsewhere in the industry.

— Charles S. Fitch

Pulizzi Has Multi-Configuration Power Strips

A series of power distribution units with current monitoring is available from Pulizzi Engineering.

The V42 and V70 Series is aimed at applications where a lot of power supply is needed in a dense space, such as racks and other electronic enclosures.

The series has eight configuration options. There are two vertical package styles, 42 and 70 inches tall. The unit is 2 by 2 inches with receptacles running along the length. Detachable mounting brackets are included.



There are 12 to 32 receptacles per unit. The PDU can be configured with straight-blade or locking receptacles and plugs. Configurations include 120 or 240 volts, and 15, 20 or 30 amp input options, with various input plug types. EMI/RFI filtering is available optionally.

Current monitoring is provided by a two-digit display that shows the current draw of the connected equipment.

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Workbench

Radio World, February 11, 2004

Past columns are archived at www.rwonline.com/reference-room

Bend It Like Bisset

by John Bisset

As you take a look at the photos below, don't let some old salt convince you this is some kind of newfangled beam tilt!

Personal Achievement Radio DOE Winston Hawkins, a frequent contributor to this column, sent these shots of a site his group acquired. Fortunately,

there was escrow money to cover the replacement, because the tower was useless. The result is shown on page 17.

This series of photos is a good example of why an engineering due-diligence inspection is necessary when properties are acquired. During his inspection, Winston discovered this tower was unsafe; after the acquisition, it was professionally felled and

replaced. Save yourself this trouble and expense. Thoroughly inspect any property your owner is planning to buy.

In addition to a physical inspection, check the lease on the property; if the property is included, ensure that the title is clear.

A contract engineer recently told me about a station purchased by a client who did not see the value of an engineering due-diligence inspection. After the sale, the engineer was reading over the lease for the property where the towers were located. He discovered there are only three years left on the

lease. It's a four-tower DA! Everything was disclosed; the owner simply didn't read the fine print. No wonder the former owners wanted to sell the property.

Just as important is the omission of some aspect of an inspection. The tables could be reversed and you could be the one who misses the fine print on a lease. Unless you feel qualified, bring in a professional. This is true especially if you are a contractor who owns your own shop.

Missing something like this could ruin your business, a reason many contract firms carry "errors and omissions" insurance.

★★★

Readers of this column sure like to save money.

I've been surprised at the positive feedback on the supply of "cheap" thermal paper for EAS units. Al Kazlauckas with Radio One in Cleveland has used a similar method since the EAS system was created back in 1997. Al ran the idea by several engineers, who thought it was far too much trouble.

Al says the paper adapter used by Entercom's Lamar Smith is more aesthetically pleasing, and our pictures gave him some good ideas to incorporate into his printer adapter. One time-saving idea was the use of a band saw to cut the thermal paper rolls. Al used a hacksaw to cut the rolls of paper, and even sliced up a leftover roll of thermal fax machine paper. The hacksaw works, but the band saw is quicker.

Why would an engineer go to this trouble? Al used to have three stations on one EAS box; he would go through a small roll of paper in a short time. Adapting the EAS printer to accommodate larger paper rolls ensured the paper supply wouldn't run out.

See WORKBENCH, page 17 ▶



Fig. 1: The tower shows a serious bend.



Fig. 2: Professionally dismantled, the tower is allowed to fall on itself.



Fig. 3: Gravity does its thing.

Digitally Diverse Omega_FM - \$5880

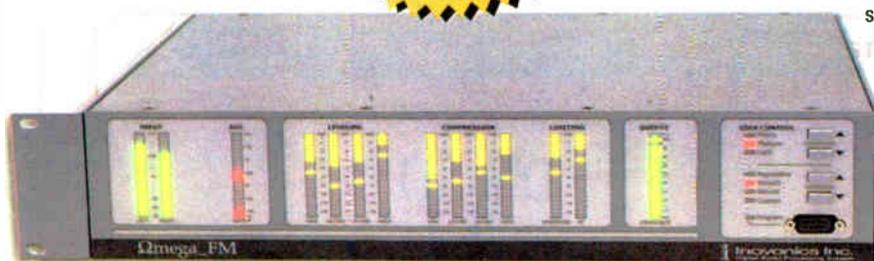
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Despite its modest price, Omega_FM challenges the versatility and performance of any processor on the market. Even if you are delighted with what you're using now, see your preferred equipment supplier for a comparison demo at your station.



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Hear It... Processing doesn't get any better than this.

Workbench

► Continued from page 16
Reach Al Kazlauckas at akazlauckas@radio-one.com.

★★★

In the Jan. 14 *Workbench*, Fig. 3 caught the eye of more than one engineer. Those three nitrogen bottles do not appear to be secured to the wall. This would be important particularly for the two without valve covers.

Not to worry; the tanks were secured with two levels of chains. Tom Franklin of NORCOM in Oregon reminds us that nitrogen tanks be secured with a chain or bottle rack to avoid "missile launch" in the transmitter building.

The SBE Web site lists legitimate contract engineering companies.

For engineers not familiar with missile launch: Compressed nitrogen can turn the bottle into a missile if the tank falls and the valve breaks off. That's why securing the tanks is such a big deal. A fire marshal once told me about a tank that plowed through two cinderblock walls, landing several hundred feet away in the transmitter field.

Nitrogen tanks deserve respect. Think of those 2,200 pounds of compressed gas. Never open a tank valve without a regulator attached. Even cracking a tank valve can unleash a deadly or maiming force.

Keep tanks secured; keep valve covers in place. Respect those cylinders. Thanks, Tom, for the helpful reminders. Franklin can be reached at tom@norcomsys.com.

★★★

Contract engineering is a wonderful career, especially as the ranks of qualified engineers dwindle. As a contractor, you're not just doing engineering but must manage the marketing of your business as well.

Why not let the SBE help you? Its Web site at www.sbe.org lists legitimate contract engineering companies, their areas of specialty and regions served. There's even a sample contract agreement.

If you haven't visited the site, give it a few clicks and build your business.

★★★

Dale Heidner handles broadcast station engineering as well as several Muzak satellite systems in three cities. To facilitate troubleshooting these satellite facilities, Dale has made a simple test device that he shares with *Workbench* readers.

It is an "F" chassis connector with a 270 ohm, 1 watt resistor soldered from the center conductor to the side of chassis connector. Dale has found systems where cable shorts have damaged power supplies in the receiver section.

To use the adapter, you must measure at least 15 volts DC across the resistor when



Fig. 4: The finished product.

the adapter is screwed onto the cable at the LNB end. If you don't measure this voltage, check the LNB voltage right at the receiver output. If you measure the proper voltage at the receiver output, the next step is to check the interconnecting coaxial cable for damage.

Dale has found that, in some cases, a cable staple damaged the RG-6, shorting the inner to outer conductors of the coax.

Reach Dale Heidner, W7NAV, at diheidner@in-tch.com.

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is the Northeast regional sales manager for Dielectric Communications. Reach him at (571) 217-9386 or john.bisset@dielectric.spx.com.

Submissions for this column are encouraged, and qualify for SBE recertification credit.

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At MTR, History in the Making

Though It's Home to 300 Broadcasts a Year, You Won't Find MTR on the Radio Dial

by Ed Ritchie

Between its studios in New York and Los Angeles, it broadcasts well over 300 AM and FM radio shows per year, but you won't find its call letters on the radio dial.

gram designed to teach teens about the power of radio. In another, experts examined how the events of Sept. 11 had changed American news and talk radio. Personality Scott Muni was on hand at that event to discuss his 40 years on New York City's airwaves.



The Museum's New York Home

You'll find others as guests though, names like KROQ, KABC, WHUD, WQEW and many more. Most all of the nationally syndicated shows too, from "Rick Dees Weekly Top 40" to Tom Leykis and Dr. Laura.

But it's not only today's broadcasts coming from the Museum of Television and Radio. The museum archives more than 110,000 radio and television shows, from the days when radio was known as "wireless," to modern HDTV broadcasts.

Bicoastal

The museum opened the doors to its East and West Coast facilities in 1975 and has actively promoted radio with a steady stream of exhibitions, listening series, seminars and education classes.

Among its exhibitions, the Annual Radio Festival stands out as one of the industry's key celebrations of the medium's place in American culture. The New York City-based event gathers members of radio's creative community together for 10 days of seminars, live broadcasts, family events and live radio drama.

For instance, the 2002 festival featured "Radio Rookies," an award-winning pro-

gram designed to teach teens about the power of radio. In another, experts examined how the events of Sept. 11 had changed American news and talk radio. Personality Scott Muni was on hand at that event to discuss his 40 years on New York City's airwaves.

The 2003 festival also marked the passing of Robert M. Batscha, president of the museum, who died last summer in Manhattan at the age of 58. Dr. Batscha joined as president in November 1981. He was appointed by the museum's founder, William S. Paley, chairman and

founder of CBS.

Under the leadership of Batscha, the museum launched the MT&R Media Center in 2002. The center convenes executives, journalists and creative talent from the converging industries of media and technology to discuss critical issues. Other programs include speeches and in-depth discussions on media subjects such as the impact of new technologies on television advertising and digital piracy.

In addition to the festivals and media center events, the facility plays host to many top stars in live radio performances each year. Pop and rock guests have included David Bowie, REM, Steven Chapman, Graham Nash and Stevie Nicks. Often, the appearances coincide with the release of a new CD, and the museum must coordinate with more than one radio station.

"We had eight radio stations doing live interviews when the Steven Chapman tour came in," recalls Ken Mueller, radio curator of the New York facility. "We had to get eight ISDN lines into the building and multiple pots lines to satisfy everybody." For the event, Director of Engineering Fred Cotton and Audio

our equipment and capabilities. There's a lot of pre-production and time going into the process."

Some of the pre-production involves a relatively recent technology for live radio events, Webcasting. For example, Los Angeles-based KCRW broadcasts and Webcasts from the New York facility a number of times each year. When live performances are done in the museum's theater on the eighth floor, the signal has to be routed to a computer on the first floor.

"There isn't a direct tie to the computer where we encode the signal so we have to sort of patch it around, using up to three routing switches," Jennings said.

The museum uses a Utah Scientific router, with a 64 x 64 matrix. "We don't have the luxury of redundant equipment," Cotton said. "But in the case of a failure we can bypass a piece of equipment and route to a tape machine."

Diverse missions

It's not just musical acts that keep the engineering staff on their toes. The Sci-Fi Channel has made the museum its choice for a Halloween tradition, a radio drama produced for Webcasting. Actors perform the show and sound effects before a live audience in the museum's theater.

The museum also teaches about the



The Ralph Guild Radio Studio in Los Angeles

Engineer Liz Jennings organized the stations into separate remote sites in the museum's gallery and scheduled them for individual interviews with Chapman.

Because the radio stations came from different time zones and featured Chapman on their morning shows, the museum's staff was busy from 5 a.m. until mid-afternoon. With an evening performance following at 7 p.m., prepara-

history of radio by using satellite programming. Walter Cronkite, for instance, hosted a project that was picked up by more than 250 universities.

"Students can call or e-mail their questions during the program," Mueller said. "It's one way for a relatively small institution like us to spread our wings throughout the U.S."

In Los Angeles, the museum also manages to introduce students to radio history before they get to a university. On Saturdays, kids from ages 9 to 14 are invited to participate in "Re-creating Radio," a two-hour workshop where children (usually accompanied by their parents) produce an old-time radio drama, compete with scripts, sound effects, and music.

The kids get hands-on experience in casting and acting, plus microphone and sound effects training. Shows include dramas based on "Superman," "The Shadow," "The Lone Ranger" and others from the early days of radio drama. The shows are recorded and the \$5 registration fee includes a tape cassette of the day's production.

The new technology is out there. Still, the patrons are here for the content.

— Ken Mueller

tions had to begin days ahead. Much of it because the radio stations and Chapman's record company brought in additional equipment.

"There's a tremendous amount of teamwork that goes on," Jennings said. "I talk daily to radio station engineers about

See MTR, page 19 ►

MTR

▶ Continued from page 18

On one spring day not long ago, an enthusiastic group of kids performed "The Lamp of Olah," a classic episode from "The Shadow" radio series. Much of the fun revolved around the sound effects: pounding shoes on gravel, cranking wind machines and more. Many of the devices were vintage sound effects and props donated by NBC's radio division.



Photo by Ed Ritchie

Amanda Hirsch readies an original door from NBC's radio sound effects department. Monica Di Biasio directs.

"The kids learn something while enjoying themselves," says Program Director Zachary Barton. "It's educational, yet they have no idea they're learning."

After their introduction to live radio, it's an easy walk from the studio to the museum's archives. Among the historical treasures are a number of rarities, such as recently acquired radio recordings of the 1935 "Trial of the Century," the kidnapping and murder involving the infant son of aviator Charles Lindbergh.

The archives are stored on tape, but the museum is testing a hard drive-based data storage system from Nexsan Technologies. Using advanced ATA disk drives, the system stores and protects data with RAID technology.

"We have about three terabytes of stor-

age in the testing stage," Cotton said. "It's about 300 hours of programming. We're beating up the system to see if we can break it. Things like pulling out the hot swappable hard drives and interrupting the power supplies. But we haven't broken it yet."

Restoration

Patrons access the museum's archives through a tape-based robotic system. Hard-drive storage will allow fast non-linear access, and it will be an improvement to the staff's archiving tasks.

"Digital files are a lot easier to index and edit than the old way of fast forwarding or rewinding tape. We'll save a lot of time and labor costs plus back office support," Mueller said.

In the process of restoring old recordings, the system will eliminate the time-

intensive step of transferring digitally altered programs back to tape. The museum receives some of its vintage programming on transcription disks, some with deep scratches, dirt and even mold. After physically cleaning the disks, Jensen records them to digital files and uses Sound Forge and Sonic Foundry software programs to improve the sound quality further.

As the museum continues to evolve its digital technology, Mueller would like to allow the public to access the collection through the Internet with streaming audio and video. Of course, such services would require higher budgets: and as a non-profit institution, the museum struggles with funding its operations. However, some manufacturers have helped.

"We don't promote specific manufac-

turers," Mueller said. "But as an example, Panasonic really supported us when we wanted to upgrade our video projector to DLP technology. Now, if you play a high-definition video on our 20-foot diagonal screen, it's spectacular. They also donated some 50-inch plasma displays."

Mueller, Cotton and Jennings are upbeat about the museum's future.

"We would like to upgrade with a nice digital mixer and processors, plus newer microphones and better editing systems," Cotton said. "But we have our work horses and have gotten our money's worth out of them."

"The new technology is out there," Mueller said. "Still, the patrons are here for the content."

Reach the author at eritchie@pacbell.net.



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Terk Antennas: U.S. Success Story

by James Careless

Since 1985, Terk Technologies of Commack, N.Y. has sought to combine performance with style. In fact, some of its products are in the collection of New York's Museum of Modern Art.

Terk's rakish line includes the AM/FM "pi" indoor antenna, a plastic FM tubular loop, with a circular AM panel that rotates on a base-mounted hinge, available in white or black; the slim, tall FM Edge indoor FM antenna; a number of slim tubular outdoor AM/FM antennas; and the one that started it all, the needle-like AM/FM Tower indoor antenna. They're sold in audio stores covering the

gamut from Best Buy to Bose.

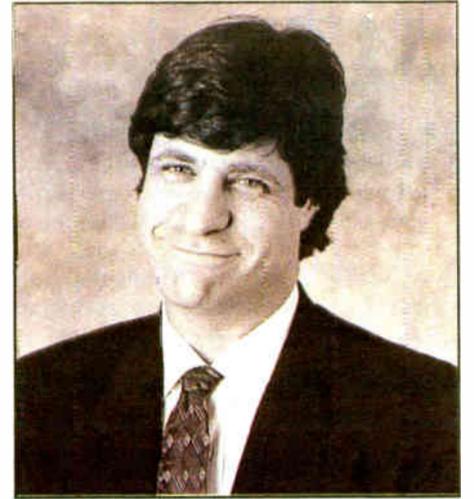
Along with these devices are indoor/outdoor TV antennas; Leapfrog wireless audio/video transmitters, allowing one satellite/cable TV feed to be seen throughout the house; and, to regulate the volume of TV commercials, the VR-1. Placed between a satellite/cable TV box and receiver, it keeps audio levels of ads matched to levels on the program; no more blaring.

At the recent CES 2004 convention, the company introduced a number of products including the HDTVi, the company's first indoor HDTV antenna; the XMico, a compact mobile antenna for XM Satellite Radio reception; and the

XM Direct Connect tuner module/XM Direct Cable adapters, which enable satellite-ready car stereo head units to receive XM.

Rock roots

The late founder Neil Terk, who died of lung cancer in 2003, at the age of 55, didn't start out as an antenna designer. In fact, Terk was at the other end of the spectrum in the 1970s and 1980s, designing album covers for rock bands.



The company was founded by the late Neil Terk.



Flavors of pi: the indoor antenna has a plastic FM tubular loop and a circular AM panel that rotates.



Success in importing the FM Tower convinced Terk there was a market for aesthetically-pleasing, high-performance antennas.

antenna. Launched in 1988, the pi features patented Gamma-Loop circuitry that reduces interference and antenna noise. Since then, "Terk has expanded to indoor, outdoor and mobile antennas for AM, FM, satellite radio and TV/HDTV," Roth said.

Designing for success

The company now has a 48-employee plant in Commack, home to R&D, industrial design and marketing/promotion efforts. Manufacturing is outsourced to trusted offshore firms.

Good looks aside, the first concern of Terk's nine industrial designers, the company says, is consistent, reliable service. In addition, the amplified versions offer adjustable signal gain: the AM/FM Q antenna even has LED lights which indicate the level of amplification and the part of the AM/FM band being boosted.

"Performance is always the first criteria," Roth said. "For an antenna to make it to market, it has to perform to the highest standards possible."

Design, however, clearly plays an important role in the company's approach. A case in point: the AM/FM Q's panels are hinged at the bottom. When rotated apart to improve separation, the panels still look good, rather like a bird taking flight.

The Terk TV-5 amplified set-top TV antenna resembles two flat tubular diamonds, connected at a black 4-inch post on a sleek square base. Never mind that the TV-5 delivers 40 dB signal gain in both VHF and UHF, putting it in the same league as conventional set-tops with long, wall-whacking rabbit ears. Compared to them, the TV-5 is the height of visual discretion.

A third element is ease of use: Terk's antennas are easy to set up and operate. In fact, in most cases you connect the antenna wires to the receiver, and plug in the amplifier AC adaptor (when required). Once this is done, the antenna works.

"The idea is to put ourselves into the consumer's mind set, to figure out the problems they'll be faced with in sitting up their equipment," said Roth. "We want them to be able to do it themselves, and for them to be happy with the result. This is why we design in ease of use."

"This isn't the case for most consumer electronics," he said. "In fact, 57 percent of customers have to go back to retail to complete the hook-up of their components. From our perspective, this is wrong. We're not doing our jobs if consumers can't get it right the first time. And it sure doesn't build repeat business for our retailers if our products aren't easy to set up and use." ☺

"Neil designed over 800 album covers, including Dire Straits' 'Making Movies,'" said Steve Roth, Terk Technologies' president and CEO. "He also consulted with Pepsi on their packaging. So when Neil saw an artistically-designed Italian-made antenna in 1985, he saw the opportunity to create a new category and started importing it."

This antenna was the FM Tower. It hides an amplified FM vertical within a black plastic conical shell, one whose angle is so extreme that the FM Tower looks like a needle. In contrast to most AM/FM indoor wire antennas — "which usually end up tacked to a wall, or coiled in a ball behind the receiver," noted Roth — the FM Tower is pleasing to look at. In fact, it is the kind of device an audiophile would want to display on his stereo.

His success in distributing the FM Tower in North America convinced Terk that there was a market for aesthetically-pleasing, high-performance antennas. So he hired engineers and industrial designers to join him in Commack. Their first product was the "pi" amplified indoor

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FIRST PERSON

When 'E-T' Meant Electrical Transcription

by Bill Ryan

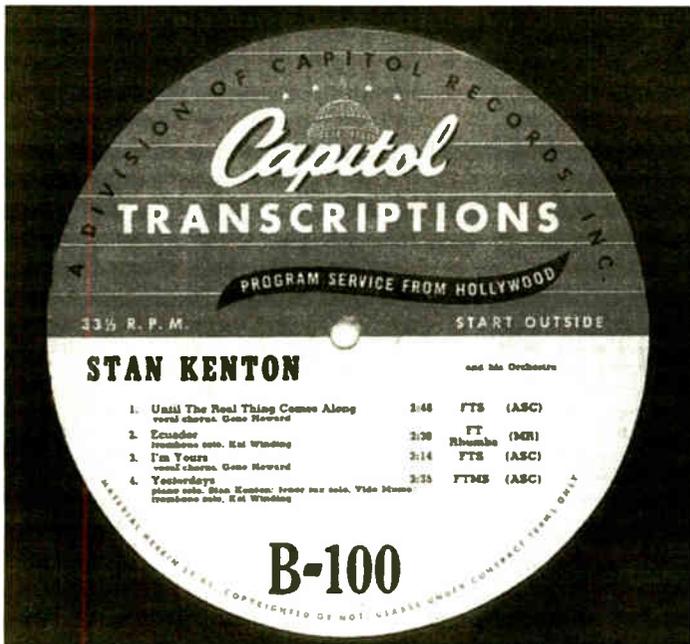
An almost-forgotten feature of pre-1950 radio is the canned music service, which provided all the melody a station needed or could use.

The World Transcription Service originally was a subsidiary of the Decca Record Co. and featured many artists who were also on the Decca label.

The World Library in the 1940s and '50s featured hundreds of artists performing

for the March of Time movies.

The Standard Transcription Service was known for its array of dance bands. Rumors continually floated that the Lewis Williams on Standard was really Tommy Dorsey under an alias.



When jocks began playing recorded music on the radio, the records were the same as collectors could buy in stores. Made of pressed shellac, those 78-revolution-per-minute disks were seldom of high audio quality, they broke easily and they wore out fast.

every kind of music. World transcriptions were unique in that the grooves started near the label and ran outward. The grooves were also vertical cut.

It was explained to me that the needle in a vertical cut groove bounced vertically to pick up a higher-quality musical vibration;

In working with transcription services, I was always searching for and finding musi-

cal treasures.

Wonderful singers like Marie Greene on World, Hal Derwin on Capitol and Kay Armen on Standard made few commercial records but cut dozens of songs on transcriptions.

I loved the John Scott Trotter, Ray Sinatra and Johnny Green orchestras on World, the Norman Cloutier and Alan Roth groups on Thesaurus, the Claude Gordon Band on Capitol and the Silver Strings on Lang-Worth. Few of these appeared on commercial records, although Trotter accompanied Bing Crosby on hundreds of Decca sides.

Two factors led to the death of the transcription services. One was the 1949 advent of the high-quality vinyl LP record. The other was the change in radio programming and production, which became less formal, with no need to keep on hand every kind of music.

As the contracts ran out, some of the services decreed that the stations could do as they wished with those hundreds of disks rather than shipping them back. Some languished for years before becoming targets for shooters or being melted down for further use.

One company owns a large stock of transcriptions and sells them to interested buyers. Otherwise, the services that once provided music libraries to radio stations are only a dim memory.

This story first appeared in Nostalgia Digest and is reprinted with permission.

Bill Ryan is a retired college professor and former broadcast news writer-editor for UPI. Reach him at wryan1807@aol.com.

World Library transcriptions were unique. The grooves started near the label, running outward, and were vertical cut.

But pressed into those wide grooves were the sounds of the popular singers and bands of the day. To avoid playing scratchy 78s and to have on hand any type of music needed, most stations subscribed to at least one transcription service by the middle 1930s. The big 16-inch, 33-1/3 rpm disks were made of better material, sometimes vinyl, which if treated right did not have scratches and pops or hiss and brought a higher frequency response. None, to my knowledge, were stereo.

Scripted

The libraries provided a vast range of music: dance band, marching band, popular and classical singers, choirs, Hawaiian, country and western and religious, plus production aids like fanfares and musical bridges or segues.

Most services provided scripts to enable the local announcer to put together a 15- or 30-minute program of music in which to insert commercials.

Typically they also provided voice tracks of the performers leading into their musical program: "Hello, this is Frank DeVol in Hollywood. I'd like to invite you to stay for a program of my music. Let's begin with 'The Teddy Bear's Picnic.'"

The announcer would segue from Frank's voice track to the music on that Capitol 16-inch disk, which was of high quality. Capitol Transcriptions, a subsidiary of Capitol Records, was a latecomer in the field. But then so was Capitol Records. The transcriptions featured many Capitol artists.

in a lateral cut, the needle vibrated against the sides of the groove. So the station needed special pickup arms and cartridges to play World Transcriptions.

All the services provided comprehensive catalogs of the songs and performers in the library, all cross-referenced for the local program producer's convenience.

Nice segue

Besides Capitol and World, another fine service which leased music to stations was RCA Thesaurus.

I enjoyed working with this service and its "Music of Manhattan" features. Besides the voice tracks and scripts, Thesaurus had tracks of a harpist playing progressions from one key to another. The Thesaurus book told what key each number began in and ended in. Thus, you have Normal Cloutier's Orchestra ending a nice piece in A and the next number begins in C#. You'd play the harp segue from A to C# and start the next number seamlessly. Now that was class.

With one exception, all the transcriptions of this type I ever saw were stored in large metal filing cabinets with pull-out drawers for easy access to the envelope-encased disks, which were kept in numerical order.

The Lang-Worth Company, like the others, used 16-inch disks and large filing cabinets. But they eventually went small, with 33-1/3 rpm records that looked much like today's CDs. Lang-Worth's Silver Strings was one of my favorites, with arrangements by the great Morton Gould conducted by Jack Shaindlin, who had written the music

USER REPORT

Designcraft Revitalizes U. of M. Studios

This article was to appear in an earlier Buyer's Guide on studio design and furnishings.

ANN ARBOR, Mich. Recently, the University of Michigan funded the renovation of Michigan Radio's nine new studios in Ann Arbor, Mich. Bob Skon, chief engineer of Michigan Radio, WUOM(FM), chose **Designcraft Studio Furniture** for its furniture systems after discovering the company on the Internet and learning more about the workmanship that is applied to its custom furniture.

Designcraft, a former furniture system

provider for Audio Broadcast Group Inc. and an industry fixture since 1985, was able to apply its expertise in furniture design to Michigan Radio's specifications by creating systems that are unique in terms of design and function. "You can't walk into another station and find the same exact system," states Designcraft Vice President of Sales and Marketing Dave Howland.

Upon completion of the project, Bob Skon fielded questions from Howland.

Q: Can you provide a brief explanation of Michigan Radio's move?

A: Michigan Radio had been in its

original facility atop the LSA Building in downtown Ann Arbor for 54 years. Michigan Radio's move was prompted by the University of Michigan, which will be renovating the LSA Building in 2004. We moved to a larger facility with more studio space to accommodate our growing needs. We have four control rooms, two talk studios and three edit rooms that provide a quiet space for news personnel to conduct phone interviews and produce news spots. The university paid for the new furniture and equipment out of its general fund.

Q: How did you hear of Designcraft?

A: I heard of Designcraft from its Web site, which I found by surfing for studio furniture designers. After contacting them and finding that they were located only a few hours away, I decided to investigate further.

Q: Why did you choose Designcraft for your furniture?

A: After meeting with you and Rob Smit, president of Designcraft, and viewing Designcraft's portfolio, I felt comfortable that they could give me personalized service, and design stylish furniture that would benefit the unique studios designed by Russ Berger Design Group.

Q: What do you like most about our furniture designs?

A: The furniture design is an extension of the studio architecture with the choice of wood, finish and laminate complementing the studio finishes. Working with Rob, we were able to come up with a furniture design that is specific to each room. For example, one production room was in need of space for the engineer, producer and call screener. Together, we came up with a design that fit our needs and looked great in the room.

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— Dave Howland,
Designcraft

I love the stand-up rooms. Coming from studios that were all sit-down height, this was a bit of an experiment for us. Half of the rooms were fitted with stand-up height and the other half with sit-down height. Stools were purchased for the stand-up rooms. This gives the operator the option of sitting or standing while you work.

Several of our operators have commented that these are their favorite rooms. In hindsight, I would have considered fitting all of the rooms with the standing-height furniture. It's quite striking and inviting.

Q: Anything else you care to add for potential buyers?

A: Michigan Radio went to great lengths to make sure their new facility would be one they could be proud of for many years to come. Designcraft was an essential part in making that a reality.

For further information, including pricing, contact Dave Howland with Great Lakes Area Regional Sales at (616) 847-2037, Michigan-based Designcraft directly at (616) 261-9658 or visit www.woodlinefurniture.com.

Oldies: Talking 'bout an Evolution

by Lyssa Graham

U.S. government census figures give them nearly 29 percent of the U.S. population. They are active, hip and adventurous. They spend money on large ticket items and on smaller items. They do not consider themselves old.

They're the baby boomer generation, born between 1946 and 1964. Some argue that they are being woefully underserved by today's radio programming.

While current alternative rock formats and yesterday's beautiful music formats don't suit most boomers, neither do traditional oldies, the format most associated with the 25-to-54-year-old demographic.

Consultant and author Donna Halper says the oldies format is ripe for a change.

"This is a very tough time to be doing oldies," she says. "A lot of oldies stations are flat in the ratings. It's not that people are so much sick of the oldies, I think it's because so many oldies stations have restricted themselves to the same few songs."

just found a marketing concept that works."

That concept is Boomer Radio. Mitchell, who programs KOCN(FM), a Clear Channel station in Monterey, Calif., preaches his format on his Web site, www.boomer-radio.com.

"There are a lot of minds out there that need to be changed," Mitchell says. He urges programmers to reach the boomer generation through repackaging traditional oldies, expanding the musical format and marketing the mix with a younger feel.

Traditional oldies formats, he believes, are "still programming to the demographic, not the psychographic." The term oldies, he says, doesn't apply to today's 34-54 demographic.

ing in a distorted view of the economics of that market."

While television might be moving toward a different view of the baby-boomer generation, radio still lags behind, according to Mitchell. "Radio will have to adjust," he says. "They'll have to answer to it because we've got the money."

Mitchell says he believes that mainstream advertising is already starting to seek the boomer demo. "I've seen this in trends," he says, "(in) car advertising in particular. There are ads playing Led Zeppelin, using music from my generation."

Slow to change

A change in the way Arbitron looks at demographics would help focus radio attention on the baby boomers, he says, although

he doesn't expect any changes soon.

"Arbitron is a tanker compared to a tugboat," Mitchell says. "A tugboat can turn on a dime. It takes miles and miles for a tanker to turn once that decision is made."

Halper agreed. "We need desperately to keep nagging the folks at Arbitron for a change," she says. "Instead of embracing that audience, we're saying that it doesn't exist. How silly of us."

Thom Mocarsky, vice president of communications for Arbitron, says the 35-64 demographic is simply the industry standard. He says subscribers have access to tools like the company's Maximizer service, which allows users to create specific demographics of their own.

"35-64 is the most used demographic, but it's not the only one available," Mocarsky said. "We've got the tools to make your own demographic."

The key to a successful boomer format, Halper says, is to really know your audience. "Don't just be museums of the past. Do things that allow listeners to be a part of the station. Don't just play the same songs over and over and over."

And most important, "Have respect for those people who are listening now because those people don't think of themselves as old." 



Donna Halper



Scott Mitchell

They're trying new experiences, active, sharp and aware. That generation is being underserved.

— Scott Mitchell

Instead of a fixed generational playlist, Halper says, the oldies format is something that should refine itself year after year.

"Historically, oldies has meant, to many people, songs from the '50s."

The reality, according to Halper, is that the oldies demographic today is composed of diverse people who want that same diversity in their musical choices. "Today's boomers are still alive, active, vibrant people for whom music and radio are a big part of their lives."

Fix the mix

Scott Mitchell believes the baby boomer market is virtually ignored by commercial radio.

"There's this mass amount of people with all of this income to throw around," Mitchell says. "You'd have to be an idiot not to program a radio station to their needs."

Traditional oldies formats don't provide the right mix for the boomer market, according to Mitchell. A baby boomer himself, he has studied the format and the musical tastes of fellow boomers and drawn some conclusions.

The right mix, he says, offers more variety and less of the same, tired songs from the 1950s and '60s. Most important, Mitchell wants to change the image of oldies to suit a demographic that doesn't feel old. "I'm not actually reinventing the wheel. I believe that I've

Mitchell says baby boomers truly don't feel old. Citing a recent Web survey, he says that baby boomers consider 67 to be old age, a full decade older than the far range of the boomer demographic.

"It's a different generation," he says. "They're trying new experiences, active, sharp and aware. That generation is being underserved."

Not all media are ignoring the boomers. A study released in the summer of 2003 by CBS television took aim at the myth that the money demographic is composed of 18- to 49-year-olds. In truth, according to the study, the real money is in the 25- to 54-year-olds.

The survey, conducted online by Insight Express and MediaPost, questioned more than 1,000 media professionals about their buying preferences. While the study was done independently of CBS, the network did have some influence in the survey design.

According to a MediaPost release, 30 percent of those surveyed identified adults 25-54 as their target audience vs. 21 percent who chose adults 18-49. CBS holds the top position with viewers in the baby-boomer demographic.

In the release, CBS Executive Vice President, Research and Planning David Poltrack said the survey "conclusively demonstrates that the current singular focus on adults 18-49 in the coverage of television advertising marketing is result-

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Maybe you didn't see that recent wire story in all the papers, but BSW headquarters Tacoma, Washington was recently ranked the country's **#1 most stressful city**. Here at BSW we're *proud* to be #1...and probably contributed to the ranking with our incessant drive to be the best. For instance, we're #1 at sweating out the details getting you great deals on gear, whether it's package pricing on a booth full of new equipment or the perfect console, mic or codec. And we're tops at pushing ourselves to the limit keeping our warehouse stocked with more of what you need and getting it out the door immediately. Call BSW and do business with the **#1 broadcast supplier**...and leave the stress to us.



Secret Undocumented BSW Employee #11: Blissfully unaware of Tacoma's "Most Stressful City" rating, BSW headphone tester Terry Slack begins another long relaxing day on the couch...er...job.



USB Interface with XLR/Line Inputs and Recording Software

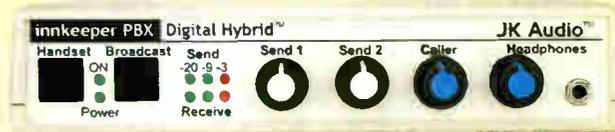
Lexicon's Omega Studio is an integrated computer recording system that includes the Omega 8x4x2 USB I/O mixer, ProTracks Plus 32-track recording software for PC and Bias Deck 3.5 SE for Mac, and the high-quality Lexicon Pantheon reverb plug-in. The Omega Studio contains everything you need to transform your computer into a professional 24-bit recording studio with tons of flexibility. The Omega I/O mixer provides 8 inputs - 2 XLR with preamps, 48V phantom power and TRS insert points; 4 TRS balanced line inputs; an S/PDIF input; and a high-impedance 1/4" instrument input. The mixer provides a peak indicator for each analog input as well as an assignable bar graph meter for signal level monitoring.



NEW

OMEGA List 529⁹⁵

349⁹⁵



Easy Connection To Multi-Line PBX Systems

The Innkeeper PBX digital hybrid easily converts your multi-line PBX-type telephone system into a professional audio interface with excellent separation of caller audio, connecting between your telephone handset and the phone base. It's great for interviews, talk radio and more. The DSP continuously monitors both transmit and receive audio signals to deliver excellent separation. It includes connections for microphone, headphone, mixer, sound card, and telephone handsets. The stereo output jack provides your voice on one channel and the caller's voice on the other channel; the XLR output jack contains only the caller's voice. The Handset and Broadcast buttons select between talking on the handset, or sending and receiving through the audio connections.

INNKEEPERPBX

List 495⁰⁰

459⁰⁰

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360 Systems just cut the price on the Instant Replay! This on-air staple redefined the term "Hot Keys", with a control panel that offers rapid-fire playback of 50 sound cuts, ordered in 10 different banks. Up to 24 hours of stereo audio can be stored on the installed hard drive, allowing you to store up to 1,000 cuts of various lengths. "Top and Tail" trim editing lets you select the exact portion of audio you want to edit. Includes built-in D-NET file transfer network capability; balanced analog XLR I/O; AES/EBU digital I/O.

DR554-E Old List 3,250⁰⁰ New Lower List 2,695⁰⁰ Call for Price SC182 01



Incred Short/

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The Rolls CS1000 tests ten different types of cable ends. Each cable being tested has its pinout scanned for continuity as well as proper polarity. Plus, the unit features a 1 kHz Test Tone oscillator with a calibrated variable level control. The balanced test signal is sent out each of the jacks on one side of the unit providing a convenient way to verify proper operation of audio equipment. It can be heard through headphones and even has enough signal for a speaker. The RJ jacks allow ringing out phone lines and other installed wiring. The CS1000 also features Phantom Power Voltage and polarity (both signals present) testing.

The CS1000 tests ten different cable ends, including: Banana, Speakon (Neutrik), RCA, 1/4", 1/8", XLR female/male, MIDI, RJ11 (telephone), and RJ45 (Ethernet and Cat-5).

CS1000 List 120⁰⁰

89⁰⁰



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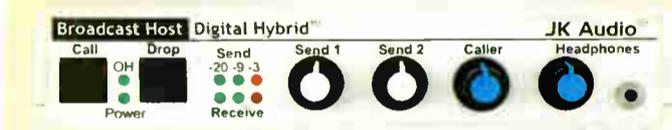
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Quality Telephone Audio – Great In and Out of the Newsroom

JK Audio's new Broadcast Host digital hybrid allows you to send mic and line level signals into a phone line while maintaining excellent separation between your voice and the caller's, allowing anyplace with a phone line to become a professional broadcast center. And if you're already at the station, the Broadcast Host is a great solution for making high-quality recordings of telephone interviews or putting audio on-air for talk shows. The stereo output jack on the back of the unit provides your voice on one channel and only the caller's voice on the other. The balanced XLR output jack contains only the caller's voice.

HOST List 495⁰⁰ **459⁰⁰**



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XPORT-XSTREAM List 6,850⁰⁰ (if purchased separately) **Call for Special Bundle Pricing**

Feature-Packed Console with 18 Input Modules

The modular AudioArts R90 console is packed with the features engineers want: two stereo program busses and two mono busses, one pre-fader and one post-fader, optional dual phone caller support with mix-minus feeds, 23 total input module slots, and more. The R902018 is loaded with 18 input modules, leaving 5 open slots for more inputs or accessories. Both control room and studio monitoring with talkback are provided, including both pre- and post-studio and headphone level pot monitor feeds. **Features:** quad mic pre card; LS-90 line selector module; count-up timer; control room and studio monitor module; dual headphone support; digital timer (manual and auto-restart); digital clock which reads ESE time code; cue speaker with amplifier; hinged meterbridge with crimp-type DB-25 connectors and included tool for fast and easy installation. (R902018 pictured above with optional modules.)



R902018 List 11,979⁰⁰ **Call for Price** **AUDIOARTS ENGINEERING**

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HHB's rugged MDP500 portable MiniDisc recorder features balanced XLR mic/line inputs, RCA line outputs, headphone jack, coax/optical S/PDIF I/O, and a USB interface for transfer of files to laptop editing systems. A memory buffer delivers glitch-free recording on the move, and a 6 second pre-record buffer ensures that you never miss a take. Additional features include auto gain control, one touch recording, auto start/cut, time/date stamp and more. Housed in a tough Pelican case, the Reporter's Kit adds a Sennheiser MD46 interviewer's microphone with cable, universal charger/AC adaptor, two battery caddies, a USB cable and six HHB MD80 80-minute MiniDiscs.



MDP500R/KIT List 1,769⁰⁰ **1,499⁰⁰**



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The New Face of 'Old' Listeners

PDs, Take Note: Classic Rock, Oldies Don't Have to Live in the Past

by Mark Lapidus

"Man, this is so incredible," hyped the afternoon jock. "The Allman Brothers are coming to town. And get this, they're coming with Journey! No doubt we'll have people camping out for tickets. Of course, we'll have tons to give away here, too."

"You'll want to listen tomorrow morning to find out how you can win 'em. It's gonna be the coolest show of the summer!"

Something has happened to many oldies and classic rock-based formats. A lesson commonly learned by program directors of 10 years ago has been forgotten by many PDs of today. Perhaps the latest generation learned it at one time, or maybe they just don't believe it.

The lesson: Listeners who love radio stations that play music from the '60s, '70s and '80s don't live in the past. They don't live as they did 40, 30 or even 20 years ago.

Yes, they love the music they grew up with. They love the memories. But they are different people now. They've grown up — and out.

Different lives

The simplistic, but commonly ignored truth: The vast majority of listeners over 40 do not hang out at bars getting wasted every night.

They don't take big risks or look for easy thrills on a regular basis. They don't wear the same clothes they did when they were 20. They don't have time to waste standing in line for anything; and their lives do not revolve around the next big classic rock or oldies concert.

Sure, they might like to see a favorite artist live, but only if it's convenient and inexpensive and they haven't seen them many times before (when original members were in the band!).

The vast majority of listeners over 40 do not hang out at bars getting wasted every night.

So why do so many radio stations pretend their 40+ listeners are still 20 year old?

Maybe:

1) Many of the PDs and DJs are younger than the audience to which they are broadcasting, so they project their own feelings.

2) Those of us in radio are not like our counterparts, even at the same age.

3) It's much easier to program a radio station in the past than attempt to take music from 20 years ago or more and surround it with contemporary content.

Now that I've laid down the challenge to improve, it wouldn't be fair if I didn't offer a few thought-starters about how to infuse a nostalgic based format with realism.

The process begins with painting a

picture of your typical listeners for your air staff.

Look at your median age. Let's suppose it's 43. Take some pictures of 43-year-old men and woman. Do some research for your station and find out what percentage are married. Discover how many kids they have and how old those children are now.

Promo Power



by Mark Lapidus

chores. Many of the men may be bald or gray and the women are concerned about their weight (their husbands' weight, that is).

Here's the tough part: After you educate your air staff about what's important to your 40+ audience, not all of your current DJs will be able to relate. If a DJ has been dishing out Pink Floyd trivia for six years, it may be impossible to transition to extemporaneous material that relates to the lifestyle of the audience.

All seriousness aside, your morning show not only has to relate, they have to entertain enough to be memorable. There are few in our business who can do so. You may have to steal morning talent from other adult formats (like country or talk) or from the talent pool working in comedy.

A side benefit of making your classic rock or oldies outlet more contemporary is that it may help you catch and keep some younger cumers who also dig the music, but don't remember 1977.

Did I just say "dig"? Yikes.

The author is president of Lapidus Media. E-mail him at marklapidus@yahoo.com.

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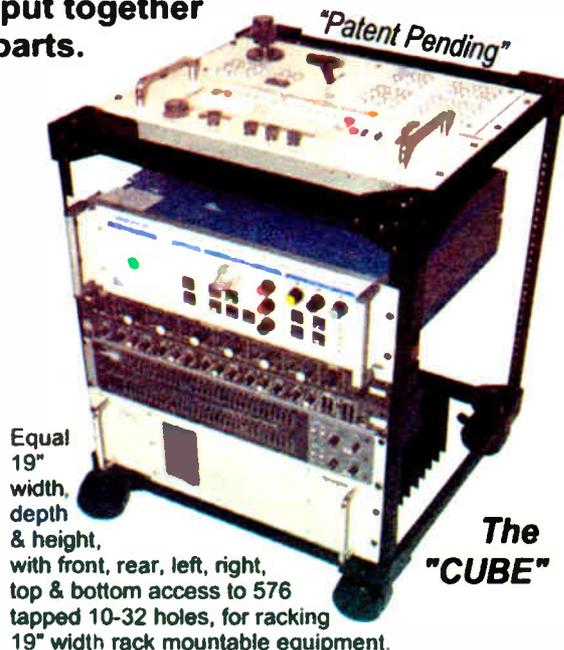
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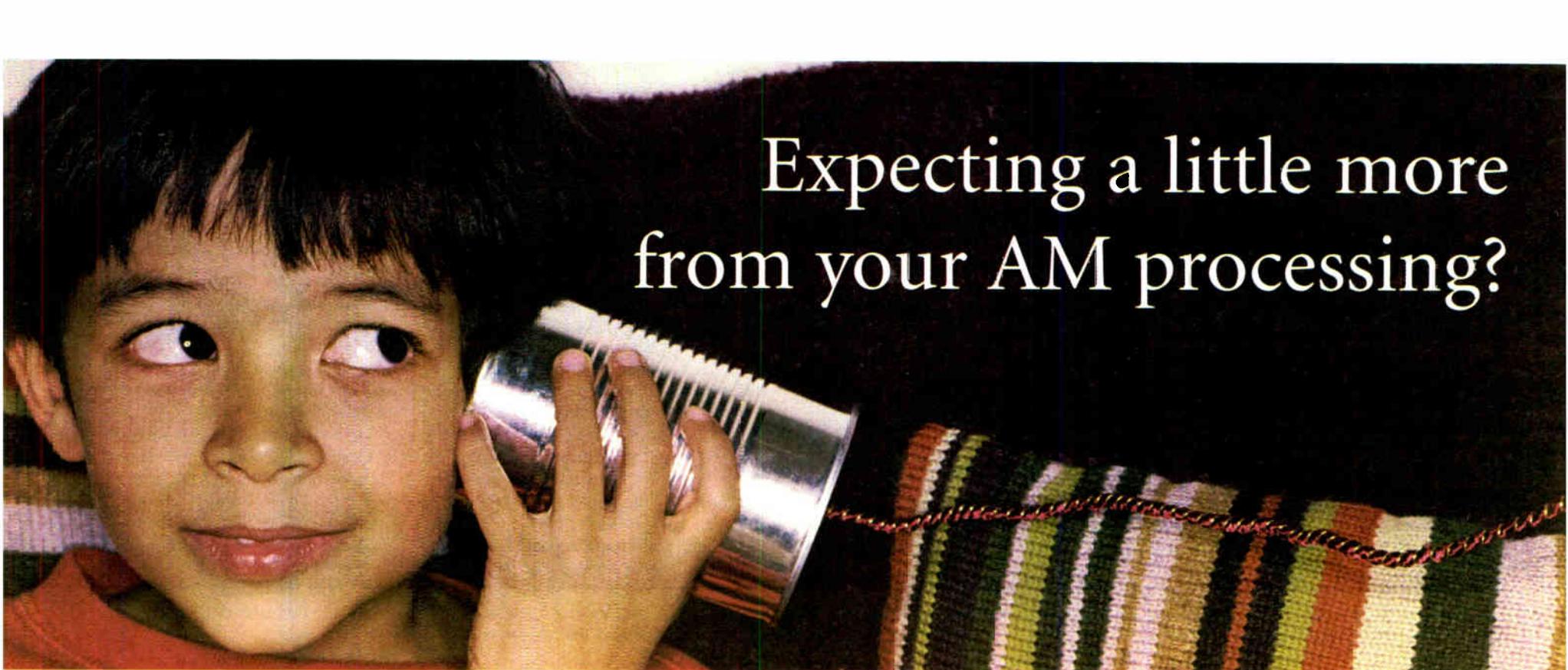
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COLE'S LAW

Just What Is and Isn't a Spot?

*The FCC May Not Pull Its Punches
The Next Time a Noncom Transgresses*

by Harry Cole

"Out, damned spot! Out, I say."

So said Lady Macbeth long ago, and so said the FCC's Enforcement Bureau to a noncommercial licensee recently.

In a decision directed to the licensee of WAAQ(FM), a noncommercial educational FM station in Onsted, Mich., the bureau spanked the station — but not too hard — for broadcasting commercial announcements both on WAAQ and on a translator in nearby Mt. Pleasant.

In recent years, a number of commercial stations have expressed concern about a seeming increase in "commercials" being broadcast by noncommercial stations. The bureau's recent action reflects the fact that the commission can and will step in when a noncom licensee steps over the line.

And what is that line?

No remuneration

Let's start with the obvious. Noncommercial stations may not broadcast "advertisements." In this context the Communications Act defines "advertisements" as program material broadcast "in exchange for any remuneration" and intended to "promote any service, facility or product" of for-profit entities.

That looks simple enough, but the question gets more complicated when you realize that noncom licensees are permitted to air "acknowledgements" of contributions made to the station by commercial businesses. This is where things get a bit murky, as such "acknowledgements" may identify the contributor, but may *not* "promote" the contributor's products, services or business.

Okay, then, what does "promote" mean? According to the FCC, underwriter announcements may not contain "compar-

ative or qualitative descriptions, price information, calls to action or inducements to buy, sell, rent or lease." But they may contain non-promotional references to the underwriter and its products.

How can you tell the difference? It's at this point that the FCC becomes distinctly unhelpful. It admits, "It is at times difficult to distinguish between language that promotes vs. that which merely identifies the underwriter." And at that point, the commission accords the noncom licensee considerable discretion to exercise its own reasonable, good faith judgment on a case-by-case basis.

Rules of thumb

As a practical matter, there are several rules of thumb that may come in handy.

If an announcement refers in *any* way to price or adjustments to price (such as discounts, rebates, two-for-one deals, "free" offers, etc.), it is almost certainly an "advertisement" that should not be broadcast on a non-commercial station.

Similarly, if the announcement contains anything more than a non-detailed reference to the nature of the goods or services provided by the underwriter, the chances are that it could be an "advertisement." And, of course, the more extensive, colorful and complimentary such references become, the more certain it becomes that the line has been crossed.

And if the announcement contains any suggestion, direct or otherwise, that the underwriter's goods or services are in any way preferable to any other competitive goods or services, you're almost definitely on the wrong side of the line.

All of which is an elaborate way of saying that, if it sounds like a spot, there's a good chance that it *is* a spot.

Which makes it a bit puzzling that the WAAQ licensee could have seriously

thought its announcements were anything but spots.

For example, according to one of the announcements (for a local appliance store), the underwriter was "putting the freeze on prices with cool rebates," including a "\$75 rebate" on the Amana refrigerator with the "easy freezer pull out drawer and spill saver adjustable glass shelves."

The announcement also helpfully advised that the Amana Side-by-Side refrigerators — you know, the ones that are "packed with features" — were available with a \$50 rebate.

So here you've got repeated instances of pricing information and relatively detailed descriptions of various qualitative aspects of the underwriter's goods. Those of you who guessed that this was a spot were correct.

If it sounds like a spot, there's a good chance that it is a spot.

Ditto for the announcement for the cellular company that could give you "the safety and security of cellular" for "less than \$10 a month," with "100 anytime minutes, for life, and the phone is free." And the other cellular company, where you could get digital handsets "for only \$19.00 and Go American Plans with free long distance and roaming."

And so, too, for various other underwriters, all of whose announcements included price information, qualitative descriptions and, in some instances, suggestions of comparative superiority.

Translation problem

For its part, the WAAQ licensee apparently sought to emphasize its claim that these announcements (which it claimed were not really advertisements) were not broadcast over WAAQ, but rather were aired on its FM translator pursuant to the rule which permits translator licensees to originate up to 30 seconds of programming per hour for fund-raising purposes. According to the licensee, that rule contemplates the broadcast of "advertising messages" promoting for-profit sponsors.

The bureau rejected that interpretation, holding instead that "the same restrictions that apply to noncommercial FM station are applicable to noncommercial FM translator facilities." Thus, if it's a spot on the main channel, it'll still be a spot on the translator.

Moreover, the bureau went on, it turned out that the licensee ran these advertising messages on the translator in blocks several minutes long. But that means that the licensee was also violating the 30-second per hour limitation on program origination on the translator as well.

In view of the pretty obviously commercial nature of the announcements at issue here, the bureau might have been expected to slap the licensee with a reasonably hefty fine. Instead, perhaps motivated by the good cheer in the year-end holiday season, the bureau declined to assess any monetary forfeiture. It merely admonished the licensee to do better next time.

More to come?

This decision probably is good news to noncommercial broadcasters, who may take comfort in the fact that the broadcast of even these particular announcements did not lead to a fine. But there is likely to come a time when the FCC will determine that it has issued enough guidance and warnings.

While the commission may have pulled its punch this time, it may not be inclined to do so the next time, or the time after that.

By contrast, this decision is almost certainly good news for commercial broadcasters who feel threatened by increasing commercialism in the noncommercial end of the band. This is particularly so in view of the substantial number of noncommercial translators for which applications were filed during the open window last summer.

If the bureau had held that noncommercial translators could properly broadcast real "advertisements," the line between commercial and noncommercial — already somewhat indistinct — would have gotten considerably blurrier and, with the likely arrival in the near term of boatloads of new noncommercial translators, the competitive environment would likely have become considerably more difficult.

If you have concerns about whether any particular announcement may be an "advertisement" — perhaps you're a non-commercial licensee looking to stay out of trouble, or maybe you're a commercial operator concerned about the commercial tendencies of a noncommercial station in your area — you should consult with communications counsel.

Harry Cole is a member of the law firm of Fletcher, Heald & Hildreth, PLC. Reach him via e-mail to cole@fhhlaw.com.

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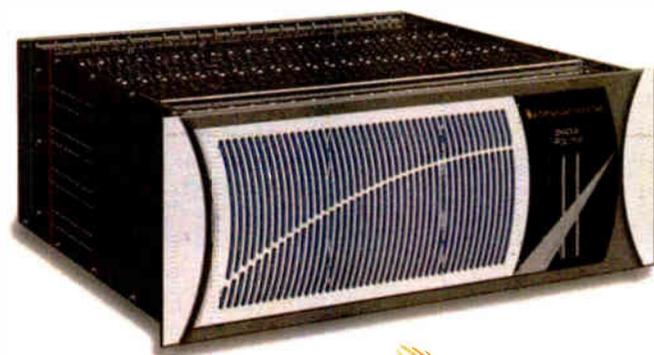
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World Radio History



Consolidation Muffles Farm Radio

by Steve Tarter

Farm radio is not what it used to be. With the announcement that Chicago's WGN(AM) will drop its noon agribusiness show, farm broadcasters are fast becoming an endangered species.

"Our numbers are down 20 percent in the last year," said Ken Root, executive director of the National Association of Farm Broadcasters in Kansas City, Mo.

Consolidation in agriculture has resulted in fewer advertisers for farm programming all over the country, he said.

WGN's Orion Samuelson and Max Armstrong will still file daily reports, but the hour-long noon show, a mainstay for more than 50 years, will be eliminated.

The Chicago Sun-Times reported that the noon show was still generating more than \$1 million a year in advertising for the station, but that figure was down from \$5 million in previous years.

Farm reports are a victim of consolidation, both in agriculture and broadcasting, said Colleen Callahan, a farm broadcaster for more than 30 years at WMBD(AM) in Peoria.

"The bottom line is that agriculture on radio doesn't generate the revenue it once did," she said.

The rise of Roundup Ready in the seed industry, with a 70 percent market share among soybean growers, has led to fewer ads by seed companies, said Callahan.

Days gone by

Farm reports have a long history in radio, she said.

"Farm programs on clear-channel stations (like WGN) were mandated by the federal government in the 1940s to provide agricultural programming for

the nation's rural areas," said Callahan.

Now with fewer federal restraints and fewer owners, radio stations are more cost-conscious than ever before, said Root.

Our numbers are down 20 percent in the last year.

"You've had stations that go from two farm broadcasters to one, while others eliminate ag reports entirely," he said.

Radio stations in Decatur and Springfield, Ill., are among those that have dropped local farm reporter positions in recent years, said Root, noting that there are 161 farm broadcasters in his organization.

"That number will be down" by the first of 2004 he said.

While a drop in advertising is considered the major cause in the decline of agricultural broadcasting, the reduction in the number of farmers is also cited.

"There are now 1,600 farmers in the WMBD listening area in central Illinois, according to the station manager," said Root.

Earlier this year, WMBD moved its weekday farm show from noon to 10 a.m. to accommodate syndicated talk show programming.

Another factor is the rise of ag information on the Internet.

"Twenty years ago, farmers told kids to be quiet so they could listen to the

While the Illinois Farm Bureau provides farm reports to stations throughout the state, Hawkins bemoaned the loss of local farm reporters.

"For a lot of small rural counties, that was their only source of local ag information," he said.

The attrition in radio's farm show category doesn't surprise Rod Thorson, a farm reporter for WLPO(AM) in LaSalle, Ill., who criticizes many of his fellow farm broadcasters for being cheerleaders for agribusiness rather than journalists.

"The way some people practice the form (farm reporting) is somewhat archaic," he said.

Farm reporters "are just reaping what they've sown. They've been led around by the farm and commodity groups who said concentration was OK. Generally, people in agriculture don't want to rock the boat," said Thorson.

"I tell advertisers that it's not my job to sell your product, but to draw an audience for you to sell to," he said.

"I expect another exodus of (farm) broadcasters once the courts throw out the check-off issue. A lot of them are living on check-off advertising right now," said Thorson.

This story originally appeared in the Journal Star newspaper of Peoria and is reprinted with permission.

STATION SERVICES

'Daddy G' Targets LPFMs, Noncoms With Oldies

One-hit wonders, rare B-sides and flops may not make it onto most radio shows, but they are just the kind of thing Gerald Gaule loves.

Gaule, an oldies music consultant who has worked at several stations in the northwestern United States, is syndicating and hosting "The Daddy G Show," a commercial-free show recorded at his studio in Lebanon, Ore. It is targeted at the 35-54+ demographics, and in particular at noncommercial/LPFM and Internet stations.

"I cover music from the Top 40/Hot 100 from 1954-1979, R&B, gospel, AM radio classics, Northwest regional hits and more," he stated.

The show — recorded, Gaule says, in "glorious mono" — is available on CD to stations for a nominal fee to cover material and shipping.

For information contact the company in Oregon at (541) 451-5734 or e-mail daddygradio@yahoo.com.



Members of the board of the N.J. Broadcasters Association gathered in the fall at a biennial retreat in San Juan, P.R. Topics discussed included development of a more effective EAS system for the state and potential translator and LPFM interference. Rear, from left: Tony Gervasi, Dan Spears, Richard Swetits, NJBA Chairman Robert McAllan, Leith Springer, Allen Lewicki and Charles McCreery. Middle, standing: Executive Director Philip Roberts, Thomas O'Neill, Robert Goldberg, Andrew Chavkin, Gregg Skall, Robert Dunphy and meeting facilitator Phillip Russo. Front, kneeling: Don Finn, NJBA's Mary Yaccarino and Don Delesio.

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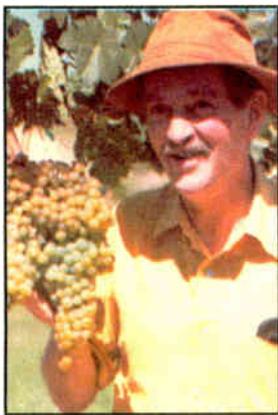
KBIG Founder John Poole Dies

John H. Poole died on Dec. 25 at the age of 86 after a short illness. He founded southern California stations KBIG-AM and FM, a Los Angeles TV outlet and, later, Mount Palomar Winery in Temecula, Calif.

According to information from his family, his life also spanned careers including tuna fisherman, merchant seaman and shipboard radio operator. Poole was born in Detroit in 1917, the child of Col. John Hudson Poole and Caroline Boeing, sister of Boeing Aircraft founder William Boeing.

He began his broadcasting career at the age of 16 when he ran live broadcasts of evangelist Aimee Semple McPherson. He was certified as a radio engineer at the RCA Institute in Chicago, and became a radio operator, navigator and fisherman on tuna clippers, fishing off the Central and South American coasts. Later, he was a Merchant Marine radio operator and navigator in the Caribbean and Atlantic.

Poole was commissioned as a lieutenant in the U.S. Army Air Corps Signal Corps during World War II and assigned to the Royal Air Force in Great Britain where he helped develop early military radar use. He met Olivia de Reya there; they married in 1943 in the remains of a bombed chapel in London. "She became the first WWII European war bride to return to the U.S. with her G.I. husband," according to the family.



John H. Poole

Poole bought 250-watt KSMA in Santa Maria, followed by KALI in Pasadena, which he changed to a Spanish format. In 1952, he started KBIG, known as "The Catalina Island Station."

Poole was an early entrant in FM and UHF television. He ended his broadcast career in 1969, by which time he'd been involved in founding nine radio and four TV stations.

Following the sale of his broadcast interests, Poole began Mount Palomar Winery in 1975, the second winery in the new Southern California wine region.

News Staff Needs To Be Ready

The next news emergency could happen in less time than it takes to read this paragraph. Is your station ready to handle it in a way that furthers trust in your station? Can you provide accurate and timely information that may save lives?

The time to plan for an emergency, whether natural or man-made, is before it happens, not on the fly.

Radio-Television News Directors Association President Barbara Cochran moderated a discussion on the subject at last fall's NAB Radio Show.

Ed Perry, president and general manager of WATD(FM) in Marshfield, Mass., which has won RTNDA's Edward R. Murrow Award for news excellence, reminded stations of the importance of checking backup generators, as was demonstrated during the Northeast power blackout last summer.

Preparation at WATD is part of the overall news philosophy. Perry said, "People expect quality (in the news product), and they know the difference."

Ed Tobias, assistant managing editor/broadcast news for the Associated Press, spoke of the need for crisis planning and gave examples of the thinking behind those plans.

"Know the community leaders," Tobias said, "and not just the police, fire and emergency medical service people. Make

contact with the local National Weather Service meteorologists, the hospital and the local department of transportation."

He said attendees should plan alternate methods of broadcasting in case the main studio becomes unavailable, and lay in a supply of food, cots, first-aid supplies and drinking water in case people are stranded at that location. His rejoinder: "Do it now."

Cpl. Wayne Sheppard, supervisor at the Pennsylvania State Police Bureau of Criminal Investigation, explained how his agency runs its part of the AMBER alert system. Sheppard talked about the decision to issue an alert and the steps he uses.

"If there is an abduction in Erie (in northwest Pennsylvania), we won't notify the stations in Philadelphia, unless we have credible information that the abduc-

tor is headed for that area.

"From the time the decision is made to issue an alert, I can have that on the way to the stations in 17 minutes."

Pennsylvania's system uses laptops and a satellite channel to get the information to stations.

Mike Starling, vice president of engineering for NPR, discussed the ongoing Emergency Alert System controversies. The system was not activated for the attacks on Sept. 11, 2001. Starling also talked about a recommendation to have embedded media at emergency operations centers, so information could be disseminated more quickly. He seconded Perry's suggestion to check the backup power before it is needed.

— Paul Kaminski

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Buyer's Guide

What's in
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Radio World

Portable Audio & Newsgathering

February 11, 2004

USER REPORT

KIRO Equips Vehicles With SRPT-40A

Northwest Radio Station Selects Marti RPU System for Its New Trucks

by Paul Carvalho
Studio Engineer
Entercom Seattle

SEATTLE KIRO(AM) 710 News Radio pumps out live news, sports, traffic and weather 24/7. Traffic and weather are broadcast with in-depth news coverage every 10 minutes on weekdays during morning and afternoon drive time. KIRO also provides live and local interactive talk programming, in addition to a slew of remotes as the flagship station for the Seattle Seahawks.

This station alone keeps our reporters on the go; and with seven other Entercom stations in Seattle needing spot news coverage and traffic, there's simply no time for problems in the field. We have up to six news vehicles rolling along the streets at any given time, with a goal of providing the best news coverage in the Northwest.

KIRO has the best coverage, but our GM wanted it to *sound* better than any other Northwest station. Entercom Engineering was given the task of putting RPUs in all six news vehicles. The system had to be easy and fast. This meant designing the system so that a non-technical person could operate it without having to put up a mast, aim the directional yagi antenna depending on the

location of the receive sight and checking signal strength.

To do this, frequency-agile RPUs and roof-mount high-gain omnidirectional antennas were required. We purchased these RPUs, not as replacements for other equipment, but specifically for the news project. We were starting from the ground up, with one for each truck.

We were determined to get frequency-agile RPU transmitters for the vehicles, even though at the time few quality RPUs with this flexibility existed. The biggest hurdle was finding a frequency-agile RPU that a non-technical person could use. In the past, a screwdriver and dip switches were needed to change frequencies. Some manufacturers

required you to remove the top cover to get at them.

That wasn't going to work. I had to find something better. We have three RPU frequencies licensed to Entercom Seattle for all eight radio stations, and frequency-agile transmitters would allow our teams of



KIRO(AM)'s Marti RPU system features a 3dB gain omnidirectional screw-on replacement antenna (upper left, in drawer) and a Lectrosonics wireless transmitter (lower left).

reporters to do back-to-back coverage of local news and not interfere with other remote broadcasts.

At the time, the only RPU transmitter that fit our requirements was Marti's SRPT-40A. I was told this unit was an upgrade of the SRPT-40 that used Marti's frequency synthesizer and RF power-amplifier design found in the company's STL product line. The audio circuits provided quality audio with a strong signal. I also liked that the unit doesn't use the crystal-controlled design of so many past

worked out of the box.

I installed the first SRPT-40A during the summer of 2003. The DC kit made it practical to rack-mount the unit in the vehicle. All I had to do was snap four clips onto the RPU, bolt it to the rack shelf, interface the pre-wired DC to the fuse box and connect the remote transmit feature to the wireless receiver.

Summer in the city

I could dial in the exact frequency from the front panel in our allocated 450 or 455 MHz frequency band. And with the omnidirectional antennas on the vehicles, our news staff just had to punch up one of the three frequencies and begin the remote news broadcast. I was impressed. Just hit execute and it goes right to the frequency.

In addition to the frequency agility of the unit, we found the remote transmit feature to be a great addition for newsgathering. Our news staff can now be several blocks away from the news vehicle and still broadcast live on location (using a Lectrosonics UDR200C wireless diversity UHF receiver and belt-pack UM250 frequency agile transmitter coupled to the SRPT-40A).

The newscaster turns on the wireless mic transmitter, which triggers the SRPT-40A to go from standby to transmit operation. With three mic inputs and one line level on the unit, one reporter can open the wireless mic for a brief news update, and another reporter can pick up the frequency from another wireless microphone elsewhere on location. We've been able to broadcast up to four city blocks from the vehicle so far.

After a week of field-testing, one unit lost final RF power. This was due to overheating in the summer, for the temperature of in the news vehicle was 200 degrees. However, it should have gone into thermal shutdown. Marti's technical support told me there was a power supply upgrade solution for that problem, and fixed the six units at no cost to KIRO.

I liked that the unit doesn't use the crystal-controlled design of so many past RPUs, which means it stays on frequency regardless of operating temperature.

RPUs, which means it stays on frequency regardless of operating temperature.

I was assured that the new design would give us the flexibility we needed to set frequencies on a moment's notice instead of having to set dip switches. The SRPT-40A features eight pushbutton switches, and the operator need only enter the desired frequency and push the execute button. 710 KIRO purchased six of the SPRT-40As with optional pre-wired DC Mobile Repeat cable kits and Mobile Mounting kits. The installation was smooth, and all six

710 KIRO has multiple receive sites at Tiger Mountain, Gold Mountain, Indian Hill, Queen Ann Hill and Capital Hill, all taking full advantage of the omnidirectional antennas and the frequency-agile Marti SRPT-40A. Our reporters and our general manager have been happy with the news reports we have been able to put on the air since the addition of our RPU and wireless equipment.

For more information, including pricing, contact Marti Electronics in Illinois at (217) 224-9600 or visit www.martielec-tronics.com.



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What's in My Bag and Why

Are You a 'Road Warrior'? Here's a Handy Checklist for Your Kit Bag

by Paul Kaminski

If you are a "road warrior," as I am, you know that lots of things can happen on the road.

That was the premise behind an article some years ago recounting what I carried in my kit. I've learned much since then, acquired more equipment and use almost every piece in some way, shape or form when I'm in the field.

My ideas had their inspiration from Army practice, where soldiers must take enough equipment ("basic load") with them to be self-sustaining and accomplish their assigned missions. Mine is to get reports or programs back to wherever they need to be, whether in a standard sports, news or emergency situation.

Be prepared

If your station is planning for news emergencies (at this time of year, blizzards and inclement weather come to mind), perhaps my equipment list and rationale can help you devise one of your own that will work in your situation.

Two things are constant:

- If something can go wrong, it will. (And your listeners expect you to deal with it when it does.)

- It is much easier to plan for contingencies before they happen.

recorder since 1998) and incorporate it into an immediate report or one filed for future use.

I use Sony MiniDisc recorder/players

Partial List:

JK Audio RemoteMix Sport with AC power transformer and two 9V batteries
 Shure SM-77 directional dynamic mic with small folding stand
 Shure SM-63 omni dynamic mic
 XLR-XLR adapters (1 each 24- and 60-inch)
 XLR-to-1/8-inch TRS plug adapters (for MD connection) (2)
 Sony MZ-M1 MiniDisc portable recorder/player with charger and external battery pack
 Sony MZR-37 MD portable recorder/players (2), with external battery charger/AC power pack
 Rayovac NiMH 1-hour charger with AC adapter and DC adapter and 8 AA NiMH cells
 74- and 80-minute MiniDiscs (8-10)
 Telex Earpiece with 1/4-inch and 1/8-inch cords, earmolds and acoustical tube
 Western Electric and GTE Voice-Act telephone microphone replacements
 Retractable telephone cords (4)
 2-to-1 RJ-11 adapter, inline RJ-11 couplers, small Swisstel ET 741 dial phone RJ-11-to-alligator clip adapter (clips on a terminal block and connects to RJ-11 equipment)
 Shure 50 AC Acoustic Coupler
 Surge Protector cube for phone lines and AC lines
 Six-foot extension cord with swivel head
 USB A-to-B adapter cord
 Backup ModemBlaster USB modem
 Other consumables, survival pack, MagLite AA Flashlight and Nite Ize headband flashlight holder
 Crescent Toolzall multi function tool, ViseGrip Toolbox pliers, soldering iron
 300-watt inverter (in the car when not flying to an assignment)

When I report from the field, my usual practice is to gather sound (notice I didn't write "tape" — I haven't used a cassette

— one MZ-N1 and two MZR-37 units — with a Shure SM-63 short barreled omni microphone for most field interview work. The MZ-N1 runs on a rechargeable battery and battery pack; the MZR-37s take standard AA cells.

MiniDisc recorders give a reporter some good options for editing pieces, because of the format's random access and ability to delete and move tracks of sound into proper order. I use Rayovac NiMH rechargeables almost exclusively, with alkaline AA backups. The charger can be used with 120 volts AC or 12 volts DC (car power point). One of the first things I do when I set up is to put a set of batteries on charge.

Depending on the assignment, I can process the sound through a Dell Latitude Laptop with Cool Edit Pro and BSI Stinger software. If you have a live shot, you can load your audio actuality into Stinger and fire it appropriately. It's also effective when you do a live or recorded wrap; no recues of audio needed for a retake.

The Dell connects to a JK Audio RemoteMix Sport console, which provides telephone interface capability for sending and recording on a POTS line along with a three-input mixer, headphone amp, IFB/cue input and a line output XLR. My early model didn't have the 2.5 mm jack built in, so I devised my own interface to a cell phone. It came in handy when covering a hostage situation at Case Western Reserve University in Cleveland for CBS News. The RemoteMix Sport also works well with POTS codecs and even a satellite link (with the line level output). It runs on 9 volt batteries and AC power.

With the laptop, I have the capability to file sound via e-mail or FTP. I can also write scripts and e-mail them for consultation if necessary. You might be tempted to use a lower sampling rate when you record audio on the hard drive in order to make a smaller file. Don't. When you record your audio, do so in mono (the

audio file in mono is 1/2 the stereo file size, and easier to crunch into a manageable MP3 file). Use a higher encode rate when converting that sound to MP3. It will keep the audio more robust; you really can hear the difference between rates.

Staying connected

I use a Shure SM-77 short-barreled directional mic when I do voice work or live shots on the phone through the RemoteMix Sport. The microphone cables in my kit are made with Belden 1804a Star Quad microphone cable. It's much lighter than conventional mic cables and stands up to the use I give.

For real-time road information, I carry a handheld CB, with an external BNC window-mounted rubber duck antenna, so I can monitor Channel 19. I carry a National Weather Service receiver and a Sony AM/FM/shortwave radio for keeping up with what's happening elsewhere.

Other items I carry include a Maglite AA flashlight and headband — keeps your hands free when using the flashlight — a set of tools for emergency repairs (Toolzall multi function tool, wire strippers, Vise-Grip miniature pliers, soldering iron, a spare XLR and length of 1804a wire, and two alligator clips bolted together as an "L" for a small stand) and a surge protector for the AC and telephone line, to which I connect my extension cord with swivel head.

Because most of my connections to the world involve a POTS line, I have Independent Technologies line testers in both my laptop bag and kit. After a battle with digital lines that fried a modem and 10/100 Ethernet card on my laptop (RW, Sept. 10, 2003, "Beware of Funky Phone Lines"), I am even more cautious when connecting to press room and other lines.

Wireless public access or Wi-Fi is becoming more prevalent and can help when uploading large files, like MP3 voices, wraps, etc. If you are on the road and need to file, Flying J Travel Plazas — not just for truckers — have their own Wi-Fi and high-speed Internet access in most locations. And it's likely a better place to be stuck in during a snowstorm than in a snowdrift.

If I get stranded, I have a space blanket, disposable rain poncho and inflatable pillow in the kit so I can stay warm whether in a car or airport terminal. I also carry an extra refill for my pen, earplugs, a notepad and some pre-addressed envelopes, in which I mail receipts back to my office.

When I travel by car, I usually have at least a six-pack of bottled water, and always some survival snacks like dried fruit, beef jerky, trail mix, packs of instant oatmeal, plastic forks and spoons, or a cooler of sandwiches and a travel cup that can be microwaved, with freeze-dried packs of coffee. (After all, java is the mother's milk of early morning journalism)

All of these items, except for the laptop, will fit in a standard 22-inch carry-on bag with wheels. I've never been close to going over on the luggage allowance.

It would be arrogant of me to tell you that what I do is right for all situations. You have to assess the situations that you will encounter, plan how you will deal with them and work backwards from that assessment to assemble a kit that will work for you and your listeners.

Paul Kaminski is news director for the Motor Sports Radio Network and past news director for the Armed Forces Radio and Television Service Armed Forces Desert Network in Saudi Arabia. He also contributes reports for CBS Radio News. 

TECH UPDATE

Onyx Debuts Plug-On RepoFlash

Onyx, a Netherlands-based company, manufactures professional audio equipment for radio reporters. The RepoDisc, a portable MiniDisc recorder, and RepoFlash, a plug-on MP3 Flash recorder, were introduced in 2003.

The RepoFlash, shown in photo, is a solid-state digital audio recorder. It can be plugged onto the reporter's microphone and records in MP3 audio format. RepoFlash features 128 MB of fixed internal Flash memory for two hours of MP3 digital audio recording. After recording, a USB connection facilitates file transfer to computer.

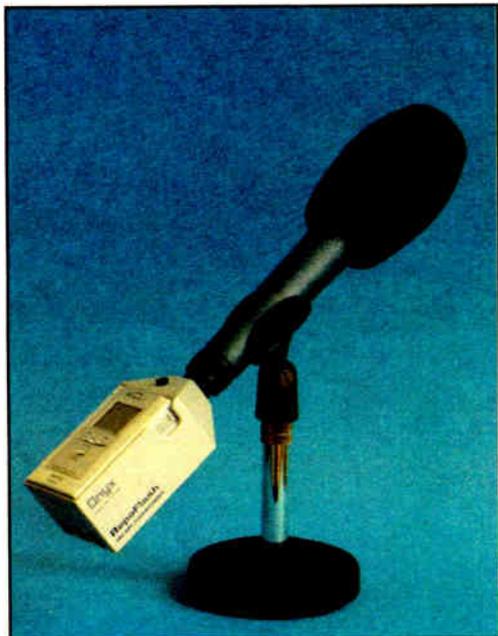
RepoFlash is delivered with USB cable and upload/download software.

The RepoDisc mono/stereo MiniDisc recorder, not shown, is useful for interviews and news gathering. It is built around an unmodified consumer Sharp MD-MT290H MiniDisc portable that is fixed to a metal chassis. The chassis is fitted into a protective case and comes with a shoulder-length carry strap.

RepoDisc has two XLR microphone/line inputs that are balanced by use of mic input transformers with outputs that feed the mic input of the Sharp MiniDisc unit. Three record switches convert both inputs to line-level, connect the left XLR input to both input channels (for use with a mono source) and activate a low-cut filter.

Also available are a 1/4-inch stereo jack headphone socket, a stereo cinch line output and a DC input to charge the internal rechargeable NiMH battery of the Sharp MiniDisc unit.

For more information, including pricing, contact Onyx in the Netherlands at +31-30-2599571 or visit www.onyx-audio.com.



The solid-state RepoFlash records in MP3 format.

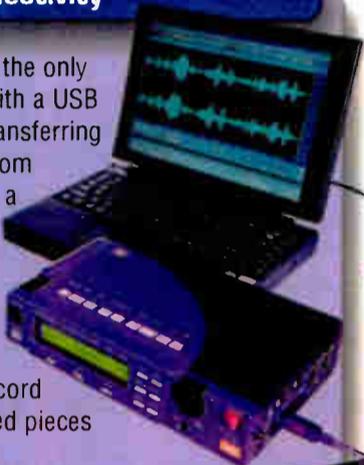
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USB Connectivity

PORTADISC is the only MD portable with a USB interface for transferring audio to and from computers. So a PORTADISC and a laptop with the appropriate software is all you need to record and edit finished pieces in the field.



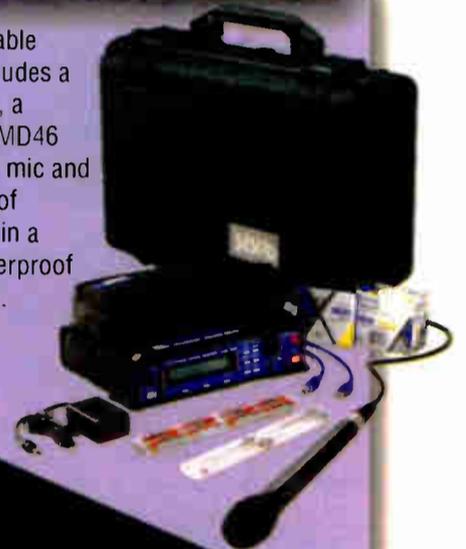
Flexible Powering Options



Three separate powering options are all supplied as standard: Rechargeable Nickel Metal Hydride batteries, an AC mains adaptor/charger (that connects to the 12-15V DC input) and a spare caddy for 8 standard AA alkaline batteries.

PORTADISC Reporter's Kit

This unbeatable package includes a PORTADISC, a Sennheiser MD46 interviewers mic and a full range of accessories in a rugged, waterproof Pelican case.



The PORTADISC portable MiniDisc recorder combines exceptional sound quality, a rugged, dependable MD drive and a full complement of professional features including a 6 second pre-record buffer, 40 second memory buffer and lockable controls. Comprehensive connectivity includes balanced

XLR Mic/Line inputs, RCA/phono line outputs and coaxial and optical digital I/Os. An On-board sample rate converter is included and Mic inputs feature switchable attenuation, bass roll-off, limiter and 48V phantom power.

Comprehensive Connectivity



An intuitive menu structure makes it easy to configure the PORTADISC for your precise requirements. There are five user programmable set ups so you can switch quickly for different recording applications. The large illuminated display also provides clear metering, margin indication and track, time and battery information while working in the field.



5 User Set-Ups

For further information, visit www.hhbusa.com

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USER REPORT

Comrex GSM Module Tours the Globe

by Mark Orchard
White House Producer
BBC News

WASHINGTON Traveling with the White House presents many technical and logistical challenges for broadcasters. The need for tight security and the fast pace of travel can sometimes make it hard to provide consistently high quality radio from every location the president visits.

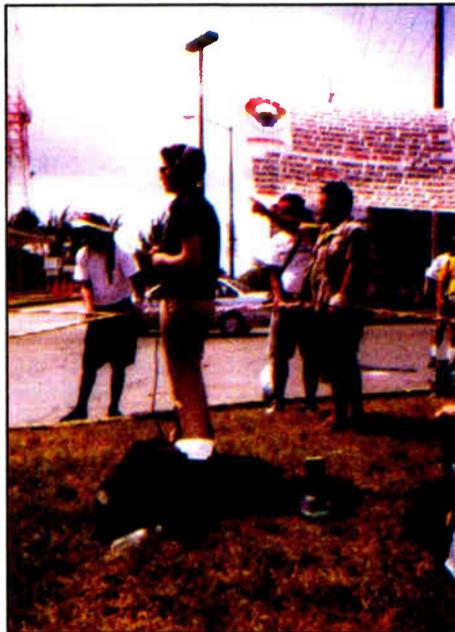
On President Bush's recent Asian tour, I saw a need and an opportunity to try something new for the BBC. With a little help from the kind folks at Comrex, my reporter and I were able to keep broadcasting wherever we went.

The Asia trip itinerary was daunting. In 10 days we were to travel nearly 24,000 miles with eight stops from southern California to eastern Australia. I've always felt the best way to approach these kinds of trips is to incorporate as much flexibility and redundancy as possible. In most locations, we have access to a pool ISDN line that connects through the BBC offices in Washington to our leased circuits to London. Additionally, I always carry a Nera M4 sat phone and Comrex Matrix to provide our own ISDN and POTS capability where necessary.

Jet-setter

What worried me about the Asia trip was a proposed stop on the Indonesian island of Bali. The White House was nervous about the visit, and had scheduled just three hours on the ground for the president to meet with local Muslim leaders.

With such a tight schedule, it became impractical to set up the usual press-filing center. The White House planned to leave the bulk of the traveling press corps on the press plane.



A BBC correspondent from the DC bureau uses the Comrex GSM module (at right, in the grass) while covering the World Trade Organization Conference in Cancun.

Faced with the prospect of trying to file from a chartered Boeing 747 on a runway in Bali, I turned to Comrex and its new GSM module for the Matrix codec.

The small device plugs into the bottom of the Matrix and includes an external antenna. Setup is easy. The user provides an appropriate GSM sim card, which slots directly into the module. With a battery pack, users have a portable device that can provide 7 kHz frequency response across GSM cellular networks.

My first test of the GSM module came on the third day, when we arrived in Manila. During a short bus ride into the city, I switched on the Matrix and stuck the antenna to the window frame. The connection went

through on the first attempt and reports from the other end suggest the line quality was on par with a good telephone line.

I repeated this test with the same results in Bangkok, Singapore and Canberra. In every location where the signal strength was good, the unit worked perfectly and the connections were usable. At several locations, we were able to keep broadcasting while on busses between venues, or on the plane straight after landing and just before taking off. The GSM module gave us that little extra bit of flexibility when we couldn't be near our fixed ISDN line, and when we didn't have time to setup the sat phone.

As for my headache over the stop in

Bali, in the end the White House solved the problem for me. They decided not to land the press plane at all, so we stayed in the air and carried on to the next country. I was a little annoyed that I didn't get a chance to use the GSM module there as I had planned. But based on my experience in every other location on our trip, I have no doubt that it would have worked just fine.

If I had one suggestion, it would be to make the module tri-band compatible. As it is, you have to choose either the 1900 MHz North America model or the 900/1800 MHz unit for use in the rest of the world. This isn't going to be an issue for most users, but for those of use who travel globally it would be a big help.

For more information, including pricing, contact Comrex in Massachusetts at (978) 784-1776 or visit www.comrex.com.

TECH UPDATE

Tascam Distributes Kamesan Mixers

Kamesan's KST-2000 and KS-342 location mixers were made available to the United States through a distribution partnership with Tascam.

The Japanese company touts the mixers' small size, light weight and long battery life and says the mixers are suitable for camcorder production. Also available is the MoniCough, a stand-alone microphone preamp, talkback/headphone monitor system and mute switch for commentary applications.

The KST-2000 three-channel ENG mixer has three balanced XLR inputs that can be switched between line or microphone sensitivity. Additionally, 48-volt or A-B (12V) phantom powering sensitivity control adjusts the input amplifier gain to optimize its amplification for any level.

Its size is attributed to the mixer's single meter, which has stereo capability. The transformer-balanced outputs appear on XLR connectors and can drive at professional line level or switched down to a low, microphone signal level. Two RCA jack connectors enable the connection to typical camcorder microphone inputs. The KST-2000 runs for up to five hours on four AA batteries, and will accept and regulate an external DC supply in the range of 10 to 15 volts.

The KS-342 is a four-channel compact mixer that has latex bar-grip knobs on channel faders. Thumb-knob master level controls prevent accidental adjustment, and the signal passes through switchable compressors before the final output stages.

A multiway link socket is included; it can be used to cascade a stereo input from another mixer without sacrificing channels. A discrete connector and sturdy locks attach and integrate a range of modules that expand capabilities. Two variations are available: the KS-6001, a four-channel sub mixer with identical input features; and the KS-6002, a block of four parametric equalizers and compressors.

For more information, including pricing, contact Tascam in California at (323) 726-0303 or visit www.tascam.com.



Kamesan's KST-2000 three-channel location mixer is available through Tascam.

Radio World

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Aaron T. Winski
Chief Engineer
WPW Broadcasting Inc.
Monmouth, Ill.

TECH UPDATES

TFT RPU Models Are BAS-Ready

When the FCC revised Part 74 of the Broadcast Auxiliary Service Rules in 2002, the industry faced new compliance issues for simple aural remote pickup systems. Emission masks and band plans complicated what had been relatively simple.

One of the challenges for equipment certified under Part 74 for aural BAS was to be frequency-agile in steps of 3.125 kHz. Another was to provide different deviations for different band segments. TFT said it determined that these certifications were met in the designs of current products, the Model 8888 RPU transmitter and Model 8889 RPU receiver.

In addition to being frequency-agile, the RPU system features DTMF control, so operators can switch between frequencies and deviations from the remote transmitter location or via telephone connection. If the channel is noisy, the IF bandwidth of the receiver can be changed. The same control can be used to key a repeater or other auxiliary equipment.



The frequency-agile TFT RPU system features DTMF control.

The 8888 transmitter has three audio inputs (both high- and low-level), three selectable RF power output levels up to 20 watts, external audio processor patching and a test-tone oscillator for level adjustment. The unit has front-panel metering, VSWR protection and alarm; it can be AC- or battery-powered.

For information, contact TFT in California at (408) 943-9323 or visit www.tftinc.com.

Marantz Offers Portable Flash

The Professional PMD670 from Marantz is a compact Flash recorder that records various levels of MP3 or MP2, and uncompressed 48k DAT-quality recording with no moving parts. The solid-state recorder offers one-touch digital audio recording capability of 74.5 hours on 1GB compact Flash cards or IBM Microdrives.

The portable tabletop PMD670 is touted by the company for its recording and playback versatility. It features a non-stop record function with four hours of battery life, or six hours when using NiMH batteries. Included is an EDL marking system for creating files on the fly during recording, which provides file selection during playback. The PMD670 offers variable bit-rate recording with user-adjustable sampling rates from 16 to 48 kHz.



The PMD670 features non-stop recording and an EDL marking system.

Mehdi Alister, a vice president of D&M Professional Americas, said the unit also is suitable for courtrooms, boardrooms, classrooms and other applications where an affordable portable audio recorder is helpful. He cited its digital audio quality and long-recording capacity.

Marantz said lockdown panels secure the recording-setting switches and media door from accidental changes in the field. Record and mark functions also can be operated via wired remote control.

The PMD670 includes a USB connection that allows it to be linked to a PC or MAC for file transfer. When thus connected, users can drag and drop recorded files to the hard drive in minutes, without the disadvantages that come with real-time delay, MiniDisc or DAT recording. Optional PMDEdit software facilitates EDL recognition, file management and editing.

For more information, including pricing, contact Marantz at (630) 741-0330 or visit www.d-mpro.com.

Portadrive Records On Hard Disk

HHB products are now distributed in the United States, Mexico, Central America, South America and the Caribbean by Sennheiser Electronics Corp. The companies reached an agreement in October of 2003. SEC distributes HHB's Portadisc and Portadrive location sound recorders, in addition to HHB professional recording media and CDR830 BurnIt and BurnIt Plus CD recorders.



The Portadrive portable multi-channel recorder records approximately four hours of uncompressed 8-channel 24-bit/96 kHz audio onto a removable 40GB hard disk.

A range of input and output connectivity avoids the requirement for non-standard signal cables. The unit offers eight line inputs, four line outputs, eight channels of digital I/O and six high-gain, low-noise XLR microphone inputs.

Mic inputs feature individual phantom powering; gangable limiters; input pads; a high-pass filter; adjustable delay, useful when working with radio microphones; and phase reverse, which enables Portadrive production mixers to capture sound from multiple microphone sources while mobile.

For more information, including pricing, contact Sennheiser USA in Connecticut at (860) 434-9190 or visit www.sennheiserusa.com.

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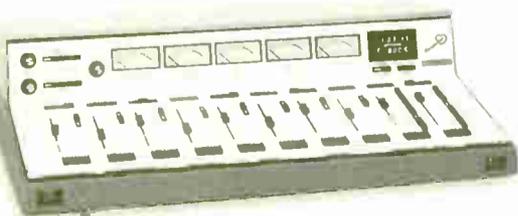
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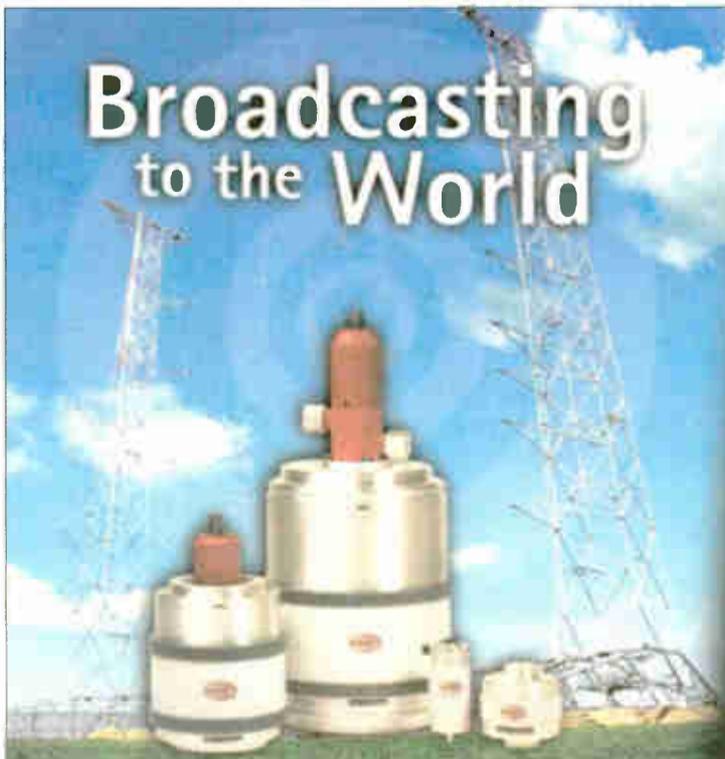
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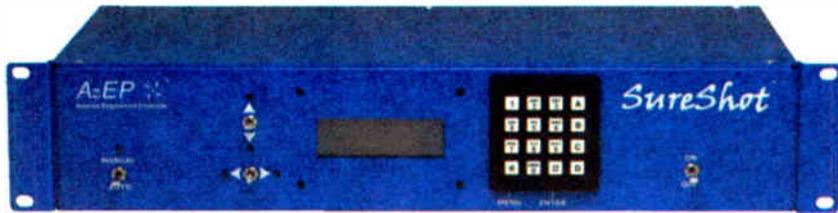


TECH UPDATES

SureShot Is for Remotes, News

Arizona Engineered Products' SureShot series of antenna positioning systems for remotes are useful to stations scheduling multiple commercial remotes per day or live reports from breaking news locations.

The rack-mounted systems — SureShot Microwave, Receive and Mobile-Uplink — use GPS and a computer to determine azimuth and elevation to a targeted receive site. The company says accuracy of +/-1 degree vertically and horizontally can be achieved in one pass.



The SureShot series uses GPS and promises accuracy of +/-1 degree.

SureShot stores 40 receive sites and/or repetitive bounce shots, and a live shot can be set up with the use of three keys, two to select the receive site and one to initiate antenna movement. The system pans the antenna's pan/tilt level around to the correct azimuth, then adjusts elevation and aligns the antenna with the receive site. Reciprocal heading data is displayed for use with directional receive antennas.

AzEP offers an upgrade to the field unit, and a similar rack-mounted controller for the receive antenna that enables SureShot to control and position the receiving antenna remotely for line-of-sight shots. After the field operator tasks the system to a particular receive site, SureShot sends positioning information to the receive site.

Other features include software for an optional Windows interface via RS232, the capability to automatically unpark and park the antenna and 110V AC or 12V DC operation.

For more information, including pricing, contact Arizona Engineered Products at (520) 891-5858 or visit www.azep.us.

Compact Courier Offers USB Connection

The Courier from Sonifex is a battery-powered digital recorder for field applications and news gathering.

The company touts its compact size and weight of about 4 pounds. It records in broadcast formats including linear WAV and MPEG Layer II.

Courier has large keys with "feel-in-the-dark" operation and accidental switch-off prevention. A confidence monitor confirms a safe recording; a backlit LCD display gives information on recording levels, battery and disk time remaining.

"Record Styles" and parameters, such as sample rate, file format and compression, can be defined for compatibility with editing and automation systems. The PCMCIA hard disks or Flash cards used by the system can be plugged into the PC for editing and playback.

To file reports from a remote location, Courier can be connected to a modem or to a mobile phone where data is sent down the phone line. Live reports are carried out with an optional ISDN version or CO-TBU telephone balance unit.

Courier uses rechargeable camcorder batteries. A large battery can give four hours of record time. An internal rechargeable battery will give over one minute of hot-swap time, during which the main battery can be changed. A cigar lighter-adaptor assists in covering emergencies and breaking stories.



The Courier has been enhanced with a USB connection for downloads to a PC. The USB B connector supports USB 1.1, which has a theoretical data rate of 12 Mbps. Due to a Windows overhead, Courier USB data transfers have been carried out at 4 Mbps, which enables downloads to the PC of up to 60 times real-time speed (for ISDN based recordings at 64kbps).

Software is supplied to enable a connection with Windows Explorer in MS Windows 98 and 2000. Once the Courier is connected via USB, the Courier hard disk looks like another hard disk on the connected PC system, from which audio files can be transferred, copied and deleted.

The USB connection allows the hard disk used for recording to be permanently stored in the Courier without the need for removal. Files can be downloaded to a PC, the disk wiped and recording started again in less time than normally needed.

For more information, including pricing, contact Independent Audio in Maine at (207) 773-2424 or visit www.independentaudio.com.

PocketREC Links Studio and Field

PocketREC turns a standard PocketPC into a mobile digital audio workstation for field news journalist or reporters. The unit won Radio World's "Cool Stuff" Award at the most recent NAB show.

Four modules offer professional tools to record and play broadcast-quality audio (current recording format is up to 16-bit, 48-kHz linear WAV); edit audio; manage multimedia content; and transfer complete text, audio and images using standard wireless and wired connections.

PocketREC uses Microsoft PocketPC 2002 and 2003 (Windows Mobile) operating systems. The company says the software is designed for ease of use through interviewing, note taking and filing and transfer.

PocketREC loads data onto the DAW or playback system at the studio or docking system, ISDN, mobile phone, modem or direct Internet connection. The transportation of a laptop or tablet computer and recorder to an assignment is rendered unnecessary.

A cableset is included that connects an external professional microphone to PocketREC's PocketPC devices. A headphone can be connected in parallel with the microphone to the PocketREC, enabling professional recordings of up to 48 kHz/16-bit mono, without blocking one of the integrated expansion slots.

For higher recording resolutions and stereo recording, the unit supports the PDAudio-CF S/PDIF interface card for up to 96-kHz, 24-bit stereo.

For more information, including pricing, contact Harris Broadcast at (800) 622-0022 or visit www.broadcast.harris.com.



The Mic on the Bike'

The editors of our international edition pointed out this item, and we just had to include it here.

In the small city of Weimar in eastern Germany, a station called Radio Lotte has set up an unusual remote rig. It is known as the "mic on the bike" — a bicycle rickshaw equipped with everything needed for a live remote broadcast. It may even market the darn thing.

Radio World's Michael Lawton reports that the setup is powered by a retractable roof made of four solar panels feeding two lead-gel batteries. The signal is delivered to the studio via a Sennheiser SR 3054-U stereo UHF transmitter. The idea came up in discussions with students of the Bauhaus Universität, successor to the trail-blazing Bauhaus school of art, design and architecture.

"The first designs looked a bit like the tricycle used by an ice-cream vendor," station founder Mathias Buss said.

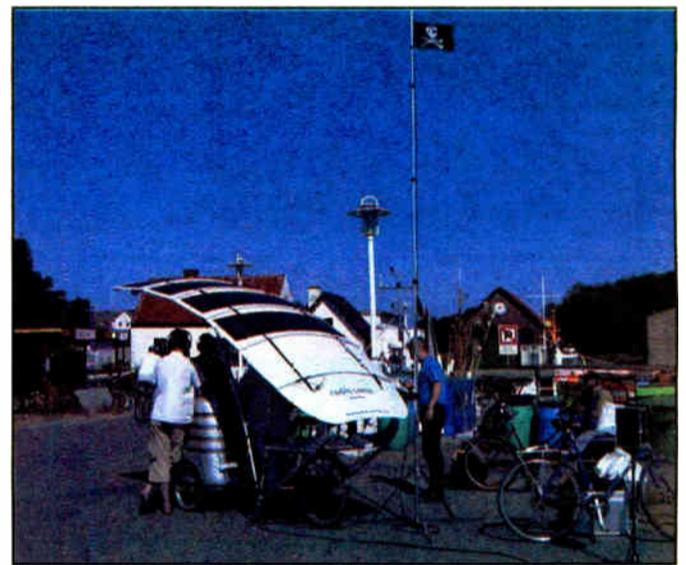
With help from companies and government, the station and the university developed a prototype. It has a retro design based on an old-fashioned radio microphone; the microphones themselves are retro Shure SA55s.

"We added a radio microphone, a MiniDisc player and monitors so that the people passing by could hear what was going on," said Technical Director Burkhard Blum. U.S.-made textile-based solar cells power two 38-amp hour lead-gel batteries that drive the audio equipment via a transformer. The batteries allow for up to six hours of broadcasting in the dark, if necessary.

Transmission of the signal is possible if there is line of sight to the studio. If not, the system sends the signal to a Dialog4 MusicTAXI codec at a nearby ISDN connection.

Buss wants the rickshaw to go into commercial production, perhaps in summer, but he is not yet saying who will manufacture it.

Other gear includes a Mackie mixer, Denon CD players, Sony MD player, Symetrix 528E voice processor and an Electro-Voice MR2500 wireless microphone, all of which is removable in case the remote is up steps or through a narrow door.



Radio Lotte is looking to market its unique rickshaw.

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TECH UPDATES

DigaTravel Enables Mobile Editing

DigaSystem software, developed by D.A.V.I.D., features applications such as audio editors and automation systems. In 1995, D.A.V.I.D. began developing DigaTravel, a mobile notebook-based system offering the features of DigaSystem to the reporter on the road, or wherever a remote vehicle can't be used. News editors and reporters can work in the same system environment, which allows short-term scheduling and playback as soon as a contribution is transferred to the station.

DigaTravel consists of a notebook, OS and pre-configured software package that includes EasyTrack Editor, a three-track multi-format editor for production and editing, and Database Manager for management and administration of audio files and metadata. The modules both feature a recording function, and data is transferable to the home station via ISDN phone or satellite with optional hardware/software packages.



VXpocket v2 Sound Card

The hardware components are Compaq notebooks or the Panasonic Toughbook. Optional components include an ISDN PCMCIA adapter and/or Inmarsat's Satellite IP Modem. DigaTravel can be equipped with Digigram PCMCIA sound cards, and users can choose between the PCXpocket v3, with MPEG encoding/decoding and mixing on the card, or the VXpocket v2. Both feature two inputs that can be analog (line/mic switchable) or digital (S/PDIF or AES/EBU), two analog or digital outputs, and a LTC (SMPTE) time-code input for synchronization.

With the cards' compact format, reporters need only carry the breakout cable with XLR connectors for the analog inputs/outputs, phono (CINCH) connectors for the digital input/output and a mini-jack for headphones.

Audio can be transferred to the station via an ISDN adapter and DigaTrans software. If terrestrial communication networks are overloaded or not available, such as in war zones or disaster areas, the transfer to a FTP server can be established through RBGAN satellite service. In contrast to a real-time transfer, where available bandwidth determines audio quality, the transfer alternatives are based on file transfers, which preserve the original audio quality.

ISDN-based transfer with DigaTrans enables audio conversion on the fly into the receiving station's preferred audio data format. It is registered in the station's database, including metadata, for playback.

Contact Digigram in Virginia at (703) 875-9100 or www.digigram.com, or D.A.V.I.D. at (703) 396-4900 or www.digasystem.com.

Nicom RPU Provides Live Links

Nicom USA's RPU/1919 organizes live links to the studio. It will begin shipping by April, the company said.

The system can be ordered on any frequency between 170 and 960 MHz in 20 MHz steps, and additionally on the FM band 87.5 to 108 MHz. RPU/1919 can be set on two frequencies through rotary switches; the use of frequency "A" or frequency "B" can be selected through a lever switch on the front panel. The output power can be selected between "low" (approx. 2 watts) and "high" (up to 20 watts), depending on the need.

A mixer is built in, with three balanced XLR inputs that can be switched between mic and line. Level regulators for inputs are included; the correct input level can be verified through a specific indicator. An ALC circuit equipped with a limiter avoids distortions and guarantees an optimal modulation level. The output mixer signal is available on a connector that can be used for PA purposes.

The RPU/1919 uses a variable monitor output for headphones from 8 to 600 ohms, and it may be connected to an AUX external signal to have playback through an FM receiver. The unit can be powered by regular AC, or through a DC external 12V input. The RPU/1919 also may be powered by an optional belt battery pack that can supply power for about an hour. The unit comes in a carrying case with a shoulder strap.

Transmitting and receiving units have "N" connectors to provide connection to the proper antenna device. Directional antennas and magnetic antennas can be supplied as options.

For more information, including pricing, contact Nicom USA in California at (619) 477-6298 or visit www.nicomusa.com.

Nagra Ares-P/II Records in Linear

The Ares-P and RCX220 from Nagra are handheld solid-state Flash memory audio recorders that enable a reporter to transport an editing system on location.

The company said they are resistant to environmental extremes of temperature, humidity and shock, and record to removable PCMCIA Flash media. Both feature the broadcast audio file format of MPEG Layer II.

The Ares-P and RCX220 differ in that the latter incorporates a USB port for file transfer and an on-board engine for PC-based audio workstations. In other aspects, the models are similar and use the same peripherals.

Recording is by an ALC system that adjusts recording levels in concert with incoming signal levels, increasing to capture distant sounds, decreasing with loud passages. Recording levels are shown on the bar graph-style modulators and with three-color LEDs on the control surface that show low, normal and high recording levels, calibrated to give ballistics.

NagraVision SA developed the Ares-P/II to meet demand for linear recording, which eases the manipulation of data once it is recorded.

The Ares-P/II comes as a linear PCM recorder using a FAT16 file format. Software options allow MPEG compression (up to 384 kbps), or the ability to emulate an RCX220 (PCX sound card). Operating keys are on the top panel, and above these keys is an LCD display that gives information about the state of the card, recording levels and operating mode of the machine. A system of software-driven menus guides the user through a visual set-up.

Features include PC and Mac compatibility, the ability to save .WAV files and individually delete files from the directory, a Vortex filter to rid wind noise, speaker, line output connection and +48V microphone Phantom powering.

Markers can be inserted during record and playback, and voice-start recording and templates for personal settings are featured. The Ares-P/II can accept Microdrives, if desired. Single-button record and automatically generated directories are included.

Existing Ares-P and RCX220 models can be upgraded with a DSP board to add some of these features, such as linear recording up to 48 kHz and compressed recording up to 384 kbps.

For more information, including pricing, contact Nagra USA in Tennessee at (800) 813-1663 or visit www.nagrausa.com.



The PC- and Mac-compatible Ares-P/II PCM recorder uses a FAT16 file format.

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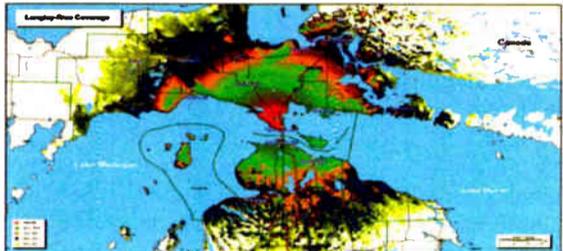
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Radio World, February 11, 2004

Will IBOC Demand Ever Top Supply?

An Industry Veteran Wonders If Consumers Will Abandon Analog for Pricier Digital

by Jim Loupas

As the radio industry blithely races toward digital transmission technology, someone has to stop and ask a really simple question: What is the radio audience hearing?

The answer is just as simple as the question. For the next 10 years or so, the bulk of the radio audience is going to be hearing analog transmissions. Heresy? Not at all.

No matter how marvelous digital radio sounds, or how fast IBOC receivers are produced, consumers are simply not going to rush out and buy newer and more expensive digital receivers to replace the perfectly good analog radios they already own. And even when consumers do purchase new radios, many of them will continue to choose the less expensive, more familiar analog products.

Unless the FCC establishes 'IBOC Police' ... the millions of radios in use will continue to outnumber IBOC receivers.

We in radio, entranced with our own new technologies, tend to forget that consumers really don't care that much about audio quality. In most cases they are a lot more interested in their jobs, kids, friends and bank balances than digital radio, HDTV, broadband Internet or any other new technology.

Eventually, these new technologies will probably dominate their respective markets. But the key word here is *eventually*.

Arbitron doesn't ask whether listening is via digital or analog receiver. If you poll your listeners, most of them probably won't know or care to which type of signal they are listening. I suspect that many consumers are not even aware there is such a thing as digital radio.

Unless the FCC establishes a Big Brother-like force of "IBOC Police" to go door-to-door demanding that American citizens give up their analog receivers, the millions of clock, kitchen and car radios in use all over the country will continue to largely outnumber IBOC receivers. Digital may be great, but the radio industry should maintain its analog integrity along with its digital quality.

Money for nothing

Which brings me to my second point.

The IBOC system requires receivers to default to analog whenever the digital sig-

nal is deficient. So, even when consumers do shell out their precious hard-earned bucks for a new digital radio, poor digital signals can cause even the IBOC receivers to default to analog.

What will the consumer hear? Something "funny." They won't know it's the signal flipping back and forth between digital and analog. They'll just know that they've spent a lot of money and your station still doesn't sound right.

Digital car radios are likely to present even more problems. The urban environment will cause signal shifts from building clutter while suburbs frequently suffer from distance issues. No matter the cause, the mobile listener will hear those shifts from digital to analog and back again as disturbances to their listening pattern.

Punch goes the button. And there goes your quarter hour.

Even now, when digital receivers are just beginning to penetrate the vast consumer market, audio quality parity between the analog and digital signals must be made close as possible to minimize the disruptive effects of the default to analog sound.

That's important enough to repeat: audio quality parity between analog and digital signals is critical, until the far-off day when there are no more analog radios in your listeners' homes.

Most audio processing manufacturers now offer single packages that process the digital and analog signals concurrently. This helps develop the parity required for IBOC receivers. But every radio station

must still maintain the analog signal that it needs to compete in its marketplace on a day-to-day basis. Remember, the analog



Jim Loupas wonders if radio listeners will ever be willing to pay for IBOC receivers.

sound will be the one measured most by ARB in the near future.

The IBOC receiver manufacturers will probably do a good job of matching the audio properties of the analog and digital elements. But the loudness of each element must also be at parity. What if a receiver defaults from digital to analog and the analog is 30 dB louder? Now that's a great way to screw up quarter-hour performance.

As if that isn't enough, remember the sound of traditional car radios differs wildly. Speaker systems, distortion, equalization and bandwidth vary by make of car

and by class of car in a fleet. Notice the difference between a Delco radio in a Cadillac, and a Delco radio in a Chevy Nova.

And speaking of car radios: there are ugly rumors that some receiver manufacturers may start manufacturing products that present analog default only in mono, or what is optimistically called "blended stereo." Imagine defaulting from digital to analog when the analog is not only 30 dB louder, but in mono. Pray it isn't so.

Service first

Here's the bottom line: Digital's great, but every radio station's analog signal will continue to be hugely important in the near future.

Processing digital and analog in tandem may work in some situations, but there are many markets and many stations that will have to treat the signals differently to maintain their existing audience. This means using different processors for each system and treating them independently.

The listener, after all, is our end user — our customer. The listener's perceptions are what drive our numbers, both in the ratings books and at the bottom line. The listener's convenience and satisfaction are what make a radio station successful. We get lost sometimes in the airy realms of new technology, and we think everybody else cares as much as we do. But do they? Of course not.

It's our job to sound good to the listener, no matter what technology or combination of technology is used to receive our signals. It's as simple as that.

The author is president of James Loupas Associates, a broadcast technical consultancy. He also consults with cable television networks on using audio to attract and hold audience share.

Robert Lambert

I was pleased to see the article on Robert Lambert ("Lambert Made News Early and Often," Dec. 17) yet saddened when reminded of how much I miss him.

I was his successor and CE at WCOS(TV) for 21 years. The article's picture shows him around 1950 or so, before he needed the thick glasses that he wore when I knew him, from 1967 on. The photo was of the Edgewood Avenue site to which he moved the station in the late 1940s, and from which I moved it in 1969.

The RCA 250D and racks are now in the State Museum. Unfortunately, some lowlife harvested the big RCA meatball emblems from the tops of the racks. This was the original WCOS equipment package from 1939. The xmtr and mod monitor were working quite well when removed from service in the early 1990s and relocated to the museum — the xmtr being the nighttime xmtr until the class IVs got 1,000-watt nighttime authority.

The 250D was pre-BTA nomenclature, had transformer coupling between all the audio stages, no feedback, and yet would pass a clipped waveform with almost no tilt and sounded and measured great. The mod monitor had the original meter movements still working.

But I digress. If you're ever in the area, do stop by.

Milton R. Holladay Jr.
Columbia, S.C.

What a surprise when I read Ken R.'s story about Bob Lambert. I knew Bob Lambert as well as Milt Holladay. When I was an EE student at USC (1970-72) I worked at WCOS(FM) ("Stereo 98 — the Sound of the Good Life"). I was hired to do

a Big Band show and a Sunday morning MOR program. If those walls at the Cornell Arms Apartments could talk.

Bob Schroeder, N2HX
Communications & Warning Officer, NJOEM
West Trenton, N.J.

Equal Time

Has your newspaper become a subsidiary of Clear Channel Communications? It seems that in every issue, you highlight another staff engineer from Clear Channel.

Granted, Clear Channel is the largest radio group in the country, but they are not the only ones in radio. I personally know several engineers that deserve to be put into print and work for other companies.

Jon Blomstrand, CSRE
ABC Radio
Minneapolis

Mitre and LPFM

Regarding the article, "Don't Ease Up on Interference (Dec. 3)," if Mr. Hieb feels that the Mitre report was flawed, and LPFMs may possibly interfere with a full-power station if they are allowed on the third-adjacent channel, then please ask him to explain what an LPFM will do that a translator on the first-, second- or third-adjacent won't do.

Paul Smith
W4KNX
Sarasota, Fla.

◆ READER'S FORUM ◆

PocketREC's Learning Curve

This spring, Radio World gave the PocketREC a "Cool Stuff" Award. We are excited about the PocketREC and its potential for the field news journalist. Perhaps our most difficult challenge has been keeping the expectations on the ground.

Some audio engineers are critical of the product until they learn that floating-point processing is not possible on this platform. Therefore, we have been creating our own fixed integer environment to enable us to achieve the high quality and performance that we do. The PocketREC will grow as it continues to develop.

Heretofore, the only thing many compared the product to is another product that runs under a much faster CPU and includes a floating-point processor and faster bus. So the "sell" to these engineers has been and will remain a challenge that we enjoy and eventually win.

Many journalists are placing orders, regardless of their station's engineering and corporate management. The major reasons are the physical characteristics, light-weight and small; the ability to do rough editing; and the ability to take the SD or CF storage cards out of the PocketREC, plug in directly to their notebook, call up Cool Edit Pro and start immediately without having to wait for the dub from their MiniDisc or tape device.

Perhaps the most significant experience within the community is the realization that the PDA and the PocketPC, which represent the hardware and software platforms used by the PocketREC, are computers. And just like all computers, the hardware and

software must be maintained. Periodic checking for software and driver updates directly from the suppliers is necessary. Management of battery power and careful software installation are imperative tasks.

If readers are interested in reading a copy of our white paper titled, "Before You Start," Radio World has it posted at www.rwonline.com.

Working to create a new paradigm is a great challenge. The PocketREC and certainly the PocketPC and PDAs will become part of every news journalist's kit of tools.

*Claude "Marty" Martin
CEO, Business Development
PocketREC Inc.
Vienna, Va.*

'Routine' Practice

Paul Lotsof makes a valid point in his letter (Oct. 22). This practice of "abusing FCC policy" is nothing new.

Every large market has services licensed to small suburbs with the intention of serving the larger market. There is an FM station licensed here in Hubbard, WRBP, that has had no local presence since the day it went on the air. The studios are in Youngstown. The transmitter isn't even in Ohio. Their programming has zero Hubbard content.

Recently the FCC granted a CP to WFJY(AM) in Portage, Pa., to change frequency from 1470 to 660 kHz and change their city of license to Wilkensburg, a move of 60-plus miles. This will take away the only local Portage AM service. Look for Wilkensburg on the map. You'll find it buried in the Pittsburgh market. WFJY will even share a transmitter site with a station that is licensed to Pittsburgh.

Can someone explain to me how this serves the public's interest and convenience?

*James Viele
Hubbard, Ohio*

Sirius Demand

After 10 years, I wonder if there's a "groundswell" demand for artist/title info brought on by common usage of XM/Sirius. I've been listening to XM regularly for the past year and I glance over at the receiver if I hear a song I

don't recognize. In fact, it's become such a habit, I now do it on my car radio even though I know the info isn't there.

To my knowledge, XM/Sirius' usage of current artist/title info is the first real exposure of this type of data to a

large audience. Could it be driving the demand?

Just a hunch.

*Luther Pierson
Programmer
Wicks Broadcast Solutions
Columbus, Ind.*

— RW

Clarification:

In the Dec. 17 issue, Radio World identified the author of the Guest Commentary, "The Case for LPAM," Fred Baumgartner, as an employee with Comcast. The opinion belonged solely to the author, and is not intended to represent Comcast's position in any way.

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