IS AM RELEVANT? READERS TALK BACK. — Page 36

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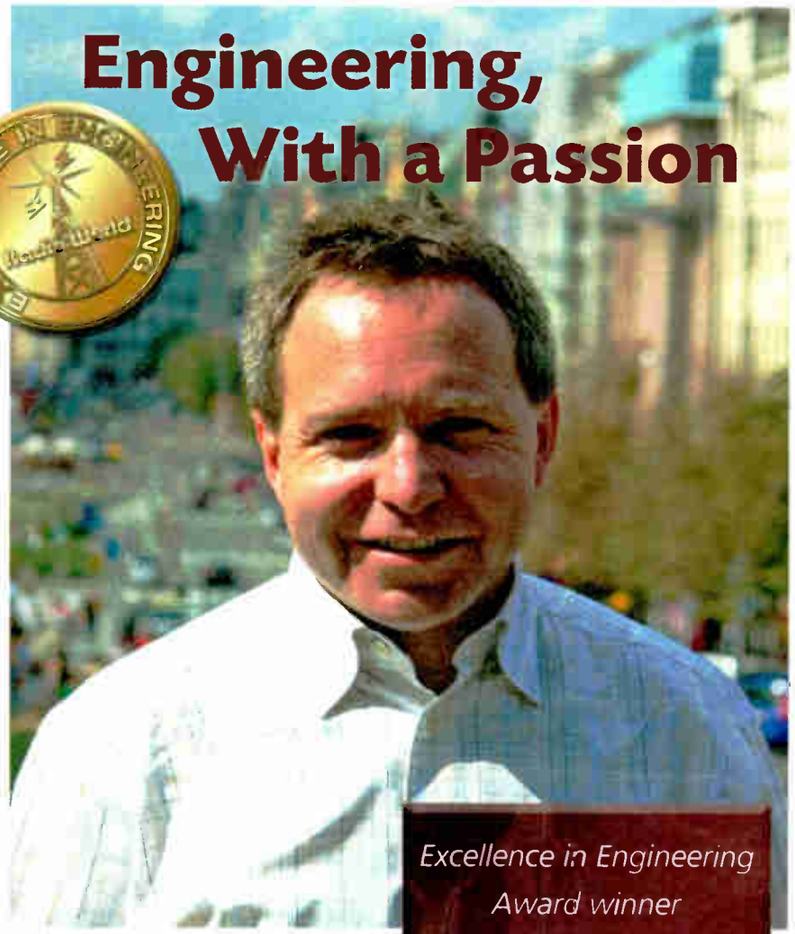

Excellence in Engineering Award winner **Gary Kline** *blends broadcast tech skills, IT expertise and a zeal for new ideas in his role at Cumulus Media.*

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Rackley, Dawson Hope to Boost Night Service

Engineers Seek To Ditch AM 'Ratchet Clause'

BY RANDY J. STINE

WASHINGTON — Two veteran engineering consultants are asking the Federal Communications Commission to allow AM broadcasters an opportunity to improve nighttime service while avoiding increased interference.

NEWS ANALYSIS

They say a rule modification eliminating the so-called ratchet clause would help stations remain competitive by providing better services for local audiences at night. The FCC is accepting comments on the Petition for Rulemaking (RM 11560) until Oct. 9.

Some broadcast engineers agree that the ratchet clause has, in some cases, delayed and added expense to AM nighttime projects. At least one downplayed the seriousness of the complications the ratchet clauses causes.

Ben Dawson, managing partner of Hatfield & Dawson Consulting Engi-

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Cumulus, Gap Share Engineers

Rather Than Outsource, They Experiment With Combining Tech Resources

BY LESLIE STIMSON

Seeing a way to strengthen engineering resources while keeping costs down, Cumulus Media and Gap Broadcasting have begun sharing engineers in four markets. If the arrangement works, they may extend it beyond those areas, according to executives at the radio groups.

Cumulus Vice President of Engineering & IT Gary Kline and Gap Broadcasting Vice President of Engineering Norm Philips — as well as their bosses — had been discussing such an arrangement. The companies finalized the deal in June for the Texas markets of Amarillo, Midland-Odessa and Abilene, as well as Shreveport, La.

Four engineers, two from each company, are part of the agreement so far.

Several weeks of discussions went into the deal, which is working out well to date, according to Kline and Philips. "Typically we hear about the complaints when something isn't working," said Kline, but there have been none from the engineering, programming or sales staffs of the affected stations.

In Texas, Midland-Odessa engineer Rodney Norris of Gap Broadcasting is shown at the transmitter facility of Cumulus-owned KBAT(FM).

"Norm and I agreed when the deal was done, if something needed to be adjusted, we could change it. We're going to make this work."

Gap Broadcasting and its sister division Gap West are subsidiaries of Gap Holdings, which is controlled by funds managed by private investment firm Oaktree Capital Management. Gap Broadcasting owns 60 radio stations in 12 markets; Gap West has 56 stations in a dozen markets. In June, the company formed another division, GAP East, to focus on acquiring and managing radio properties in markets east of the Mississippi River.

Cumulus Media is a publicly traded company based in Atlanta. It controls approximately 350 radio stations in 68 markets.

The arrangement essentially takes work that had been done by one or more contract engineers in each of the four markets and moves it to a full-time employee of the respective partner company. Two Cumulus contract engineers were replaced by full-time Gap engineers. Gap and Cumulus share their time.

One Gap engineer in one market was let go; Philips said the company is looking to hire a couple of engineers in other markets. Kline added: "It is our goal to do our best to keep our competent and trustworthy engineers' employed within the company. It is entirely possible that an engineer from outside the company could be hired as part of the sharing program."

The companies said that before the deal was reached, they studied whether they could accomplish the sharing, retain engineers and not burn them out. Aspects such as compensation and station proximity were discussed.

They looked for markets within a two- or three-hour drive of other Gap or Cumulus clusters, so an affected engineer could count on engineering help if needed.

"Say a transmitter goes off the air and this guy is the only engineer for both clusters," said Kline. Under the plan, theoretically that engineer can bring in engineers from more markets than he would have been able to otherwise.

COMPENSATION FOR EXTRA WORK

"Once we found a way to make it happen without many additional hours on the engineers, we worked out the plan. There is cost savings for both companies without losing services," said Philips, who says the affected Gap engineers are getting a bonus for the work. They're not being asked to work more hours, though that may happen from time to time, he notes.

(continued on page 5)

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Kline Blends Tech and Business Savvy

Cumulus Media Exec Is Radio World's Excellence in Engineering Award Winner

When Cumulus Media's engineering team recently rebuilt a pair of 2,000-foot tower sites in Houston after Hurricane Ike came through — replacing all of the transmission lines on both towers, and rebuilding an entire transmitter facility that had been flooded — it was just the latest entry on a lengthy list of technical accomplishments for the country's second-largest radio broadcast company and for Gary Kline, its vice president of engineering and information technology.

Gary is our engineer of the year, recipient of Radio World's Excellence in Engineering Award. We honor him for his achievements in broadcast engineering, his high level of responsibility at the company, his commitment to bettering the professional lives of employees, his mix of radio and IT savvy and his constant efforts to find creative ways to solve problems.

TECH TOT

Born and raised in Queens in New York, Kline was interested in radio from the time he was a little kid. He remembers getting up late at night, turning on the stereo and listening to distant AM stations WOWO in Fort Wayne, Ind., and CKLW in Detroit/Windsor, Ontario.

He'd pretend to be a DJ, using his eight-track deck and cassette player. Ham radio got him into electronics in a serious way; he took night classes at the New York Hall of Science at age 10 or 11 and built kits and circuits he bought at Radio Shack.

As a youngster he went on the NBC studio tour and snagged a personal visit to WQXR(FM) from its chief engineer. He remembers calling WYNY(FM) when he was in junior high to let them know about a technical problem he'd noticed on the air and wrangling that into a tour too.

By the time he graduated high school, Gary had attended summer engineering programs at Ball State University and the University of Colorado at Boulder through the National Science Foundation, and he had participated in a six-month internship at NBC Radio after lobbying the station to participate in the program. (Gary, as you can tell, was already good at networking.) That led to part-time paid engineering work there.

BUSINESS UNDERSTANDING

He did both technical and on-air work to help pay his way through Purdue University, where he studied business.

"I wanted to go to school for electrical engineering," he said, but his father, a civil engineer, provided another perspective.

"My dad always told me, 'You can be an engineer, but maybe you should be the guy who tells engineers what to do. You should have more of a business and management understanding.'" That helped give Gary the broad foundation he brings to his job, overseeing people who have stronger skill sets in more specific technical areas.

(To this day Gary is a loyal member of Purdue's family. He has done the broadcast engineering for the Purdue Football Radio Network since 1997, handling technical production for its games. Every autumn weekend he travels from his home in Atlanta to West Lafayette, Ind., where he keeps an apartment; for away games he continues on to the road stadium with the team.)

Gary Kline: 'Go become a better manager. You're not just an engineer. You're a department head.'

Over the years he has held engineering positions at ABC Radio and NBC Radio in New York as well as Artistic Media Partners in Indianapolis and other companies. He has done consulting work in at least eight countries.

He is a member of the Audio Engineering Society and Association of Federal Communications Engineers. He is or has been involved with the IPAWS Practitioner's Working Group, Media Security Reliability Council, National Radio Systems Committee, SBE Radio Frequency Coordination and IT Strategy Committees, and NAB groups including its Digital Radio Committee, Broadcast Engineering Conference Committee and TAP Radio Discovery Group.

FROM THE EDITOR

Paul McLane

Gary Kline is 45. In addition to the award, this month marks 10 years for him at Cumulus Media, which now owns more than 350 radio stations.

BIG JOBS

Among notable accomplishments for him and his team was a huge IT project that became necessary when Cumulus Media Partners purchased Susquehanna Radio in 2006.

"We moved and consolidated their two data centers with our Atlanta facility, requiring many changes and expansions to our existing infrastructure. The project took at least six months of planning," Gary told me.

"We built a new e-mail system using Microsoft Exchange … incorporating the additional 1,000 mailboxes that Susquehanna had. We moved and built the infrastructure for a multitude of Web sites, all of which used many third-party providers or customized software." The entire Web site portfolio was cut over in a matter of seconds once it was time to pull the switch.

"We moved accounting information, listener databases, real estate/tower databases and several other critical systems."

A year later, the technical team designed and built a large infrastructure for new Cumulus corporate offices in Atlanta. They worked with architects and designers to prepare wiring, technical areas, conference rooms, video and audio gear. When the building was ready for wiring the team installed the routers, phone and network gear for the new space.

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SHARING

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Kline says the arrangement helps him attract good engineers because Cumulus is sharing the cost with another company. Cumulus has to pay Gap for its engineers and vice versa to account for the different compensation systems within each company and different number of studios in each market. The agreement also covers compensation if one company has older equipment than another in a market, which may necessitate more time for upkeep.

Cumulus engineers who work for Gap received a package modification, according to Kline, in the form of a bonus or commission.

Jasen Bragg, DOE and IT director for Cumulus Media of Shreveport, works on a switch at a Gap facility.

Neither Kline nor Philips would provide financial specifics about the agreement such as the cost-savings for each company or how much the affected engineers would earn.

There are set days that the engineers are scheduled to work for each company, but that is flexible depending on need. The week Philips spoke to Radio World, he said the Cumulus engineer in Shreveport was having a transmitter issue. It was a "Gap day" but the engineer worked on the Cumulus transmitter.

"I talked him through a couple things to look at and offered to meet him at the site later if needed, since I [was] driving to Shreveport anyway," said Philips. "We had a similar off-air issue the first week of the agreement in Abilene and the Cumulus engineer was working on a Gap transmitter on a Cumulus day."

The four engineers involved retain their seniority and benefits with their respective employers. Each reports to his or her market manager, who is the point of contact with the other company.

PROGRAM MAY EXPAND

The companies have discussed expanding the agreement and are open to it if it makes sense, according to Kline and Philips. How many stations in a market an engineer would need to cover is key, as is proximity to other Cumulus or Gap markets, they said.

The numbers worked out, for example, in Shreveport, where Gap has six stations, four FMs and two AMs. Cumulus has five total stations in the market, four FMs and one AM.

Asked whether the arrangement is a way for both companies to do more work with fewer engineers, Kline said, "I can understand why someone would think that, but that's not what this is about. It's about retaining engineers with decent compensation plans and good tools for the job.

"You might think [a situation with] an engineer who had five stations, and now has 11, is horrifying. It's not," Kline explained, because engineers now can draw from two companies instead of one

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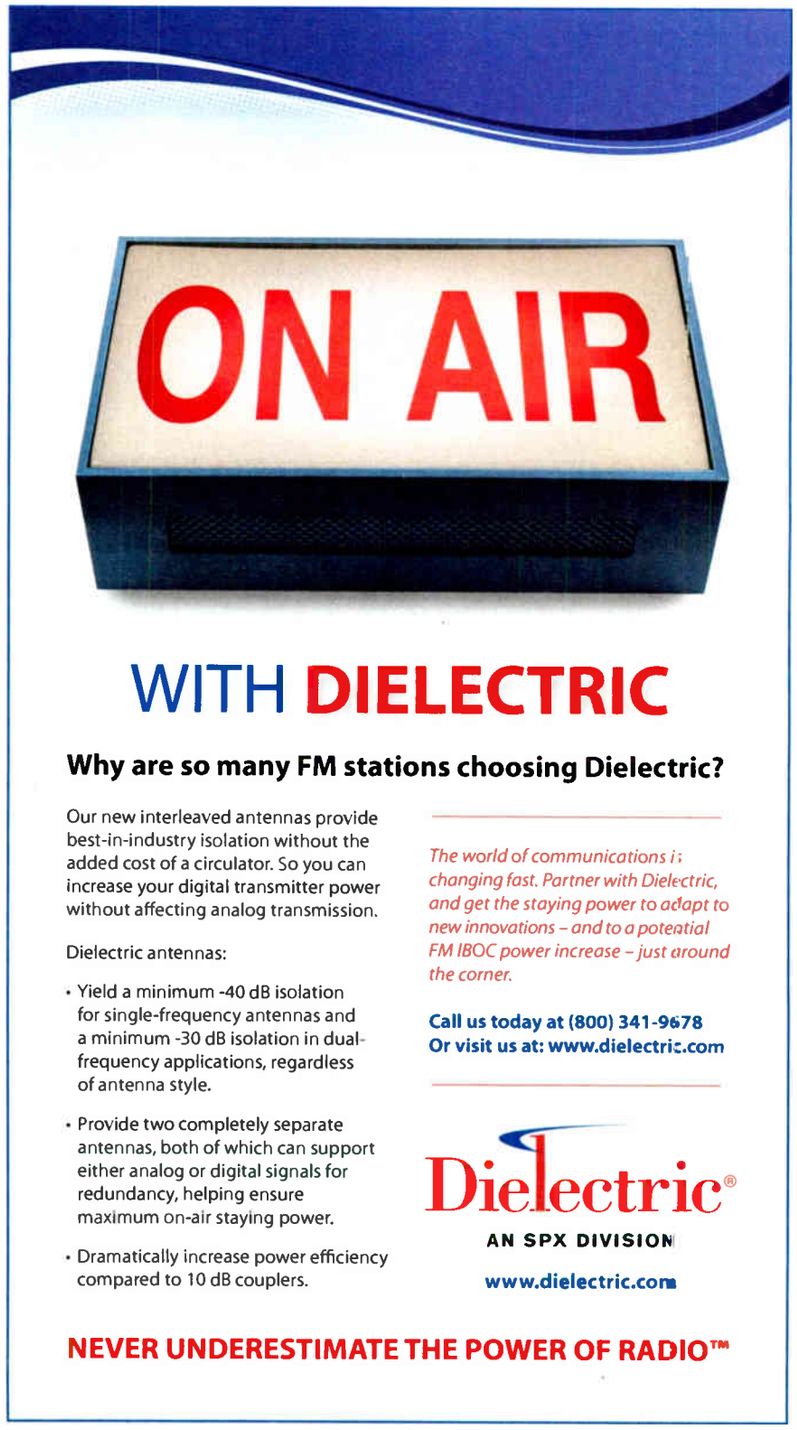

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RATCHET

(continued from page 1)

neers, and Ron Rackley, a partner in du Treil, Lundin & Rackley, feel the timing may be right for their request, in light of recent commission actions aimed at making AM more competitive.

The ratchet clause appeared in a FCC rulemaking footnote in 1991 with the hopes of reducing nighttime interference from modified facilities. Dawson and Rackley believe the clause has had a negative impact on AM radio stations wishing to improve their nighttime signals.

UNINTENDED CONSEQUENCE

The ratchet clause, from footnote 1 of FCC rules 73.182(q), reads: *Those interferers that contribute to another station's RSS (root-sum-square) using the 50% exclusion method are required to either reduce their contributions to that RSS by 10% or to a level at which their contributions no longer enter into the 50% RSS value, whichever is the lesser amount of reduction.*

Root-sum-square refers to a way of adding the effective power of multiple interfering signals, Rackley said.

The clause requires AMs that want to modify their signals to demonstrate an overall reduction in the amount of skywave interference they cause to certain other AMs. While newer stations have come on the air accepting interference from existing AM signals, those existing signals are now expected to provide additional protection to the newer ones, even if there's a chance for the existing signal to move to a better site or improve its directional pattern.

The ratchet clause got its name, some believe, from FCC staffers discussing means to "ratchet down AM interference." Rackley and Dawson believe it has had the opposite effect of penalizing existing stations.

Such stations have the greatest opportunity to provide interference-free nighttime service by protecting or improving their legacy service areas, they feel; but the rule has prevented such stations from making improvements and makes them less competitive because of ever-increasing ambient noise levels and increased skywave interference from newer stations.

Dawson and Rackley also contend that a subsequent FCC decision allowing AMs to rebroadcast their signals on FM translators in some cases (RW, Aug. 1, 2009) has recognized that the underlying premise of the ratchet clause is defective and has had an opposite effect to what was intended.

"We don't believe the FCC thought this through clearly when it was enacted. Many stations have since been locked down and unable to improve nighttime coverage. They have to take a severe hit in power reduction if they want to improve facilities," said Rackley.

Site work at Clear Channel's AM triplex in Boston. Opponents of the ratchet clause say its effect is to discourage AMs from making antenna system improvements.

> **Many stations** have since been locked down and unable to improve nighttime coverage.
>
> – Ron Rackley

AM broadcasters at the time of the rulemaking in 1991 had been clamoring for ways to reduce interference, and the FCC took the ratchet clause approach, Rackley said.

He said the footnote makes overall power reduction the only remedy available when radiation must be decreased toward a station that receives theoretical interference. The effect is to discourage AMs from making antenna system improvements.

SERVICE REDUCTIONS

A large number of AM stations could benefit from the rule modification, according to Rackley, by improving the efficiency of their nighttime directional arrays.

"The commission certainly appears to be sympathetic to the plight of AM broadcasters right now and is looking for opportunities to help them remain competitive," Rackley said.

Dawson said the ratchet clause has been a factor in at least half of the nighttime facilities changes applications his firm has looked at since its adoption in Report and Order to Docket 87-267 by the FCC.

That R&O originally was a "Review of the Technical Assignment Criteria for the AM Broadcast Service" but morphed into the expanded-band allotment rulemaking, which changed many criteria for calculating interference between stations and added the ratchet clause, Rackley said.

The clause "is particularly onerous in cases where old stations are significant contributors to RSSes of newer stations from the post-World War II station explosion, but were prevented from power increases to serve expanding metros because of the old 5 kW regional channel power limit," Dawson said.

His firm has received several dozen waivers of the ratchet rule, but "we've also looked at that many or maybe more cases where it would have caused a significant service reduction and so prevented an improvement or site change," he said.

The petition for rulemaking was filed in late August, and the FCC invited comments on the proposal in September. "The FCC has so many (ratchet clause) waiver requests pending that they can no longer ignore the issue," Rackley said.

The commission has approved waivers for stations that meet certain criteria centered on the necessity of making site changes due to circumstances beyond the control of their license, the petitioners noted.

Further, Rackley and Dawson believe the FCC already has invalidated the principle upon which the ratchet clause was adopted. In a 1997 letter, the FCC wrote an opinion regarding an unbuilt station KIOQ(AM) in Folsom, Calif., whose licensee had proposed modifying an outstanding construction permit.

Dawson and Rackley state that "the FCC clearly explained in its KIOQ decision that groundwave coverage, which is present 100 percent of the time, has primacy over signal levels calculated based on 10 percent of time assumptions."

They conclude that the ratchet clause forces an AM station that is making a change, to reduce its groundwave field strength in a certain direction to reduce interference that theoretically occurs 10 percent of the time at another station. They said the ratchet clause is upside-down, in principle, from the doctrine the FCC employed in the KIOQ decision.

Several AM owners that could benefit from the modification support the elimination of the ratchet clause, they believe.

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SHARING

(continued from page 5)

in times of need, for instance, and will have more test equipment to share.

"You're alone day to day, typically, but if something goes wrong, you've got people who can help," said Kline.

Cumulus does some sharing internally now, he said. For example, the chief engineer in Cedar Rapids, Iowa is also the CE in Waterloo. The company has the same CE covering stations in Green Bay and Appleton, Wis. and one CE covering all the stations in Oxnard and nearby Santa Barbara, Calif.

The program also is a way for participating engineers to gain more responsibility and management experience, in addition to gaining more experience with consoles, wiring systems and other equipment — keys to becoming a regional engineering manager at Cumulus, according to Kline.

"In each market, you want to consider who has the broadest experience and the right maturity level," said Kline. "Who is the best candidate for this job? Is this person responsible? You want the other station to say: 'I'm glad this person is doing this job.'"

They say their companies keep the lines of communication open.

"In all the markets I am familiar with the engineers have worked behind the scenes to help out engineers [from other companies] in times of off-air situations, said Philips. "This is an extension of that concept on a daily basis."

Comment on this or any story. Write to radioworld@nbmedia.com *with Letter to the Editor in the subject line.*

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FM ITUNES TAGGING, PAUSE FEATURE IN NANO EXCITE INDUSTRY

Apple's decision to include FM radio in its new iPod nano is getting a thumbs up from radio folks I'm hearing from and reading about for the iTunes Tagging and pause feature.

Tom Webster at "The Infinite Dial" from Edison Research (*www.infinitedial.com*) is high on the live pause feature — kind of like a mini-TiVo for radio.

Apple describes this as pausing the broadcast with a click, with another click to listen again. "You can even rewind as far back as 15 minutes, then fast-forward to catch up to the live broadcast," it says in its announcement.

"The chip would be an excellent way for someone in the car to hear the tail end of a weather bulletin or breaking local news. It would be easier to hit a recap button on the radio while driving, than to read a text alert on a phone," wrote one commenter.

RDS supporters like Allen Hartle are pleased with the FM analog RDS iTunes Tagging feature.

Many commenters, both on our site (*www.rwonline.com/article/86868*) and others, have noted the lack of any mention of HD Radio in Apple's announcement. I noted this too, and chalk it up to iBiquity's discussions with Apple about an HD Radio accessory. There's no announcement about that as yet.

NAB and Jeff Smulyan of Emmis in particular are pleased with the Apple news.

Critics of the nano's inclusion of FM radio would be those who don't think an MP3 player needs to include radio at all, or understandably, AM station folk who are getting tired of their service being left off new devices.

I'd be curious to hear from device-makers about the costs of including an FM chip vs. an AM chip and/or whether antenna considerations of AM vs. FM are the tipping point in cost-effectiveness. (It's time for the FCC to look at the proposals for re-purposing analog TV Channels 5 and 6 and re-purpose some of that spectrum for AM.)

A CREDENTIALING PROGRAM FOR ENGINEERS?

The season of California wildfires has SBE engineers thinking about ways to better ensure that technical personnel have access to their transmission sites during a crisis or as soon as possible afterwards.

Society of Broadcast Engineers President Barry Thomas wrote in a letter to Bob Gonsett published in the CGC Communicator. Thomas says SBE members are discussing a credentialing program that will grant them access to disaster areas to restore critical broadcast operations.

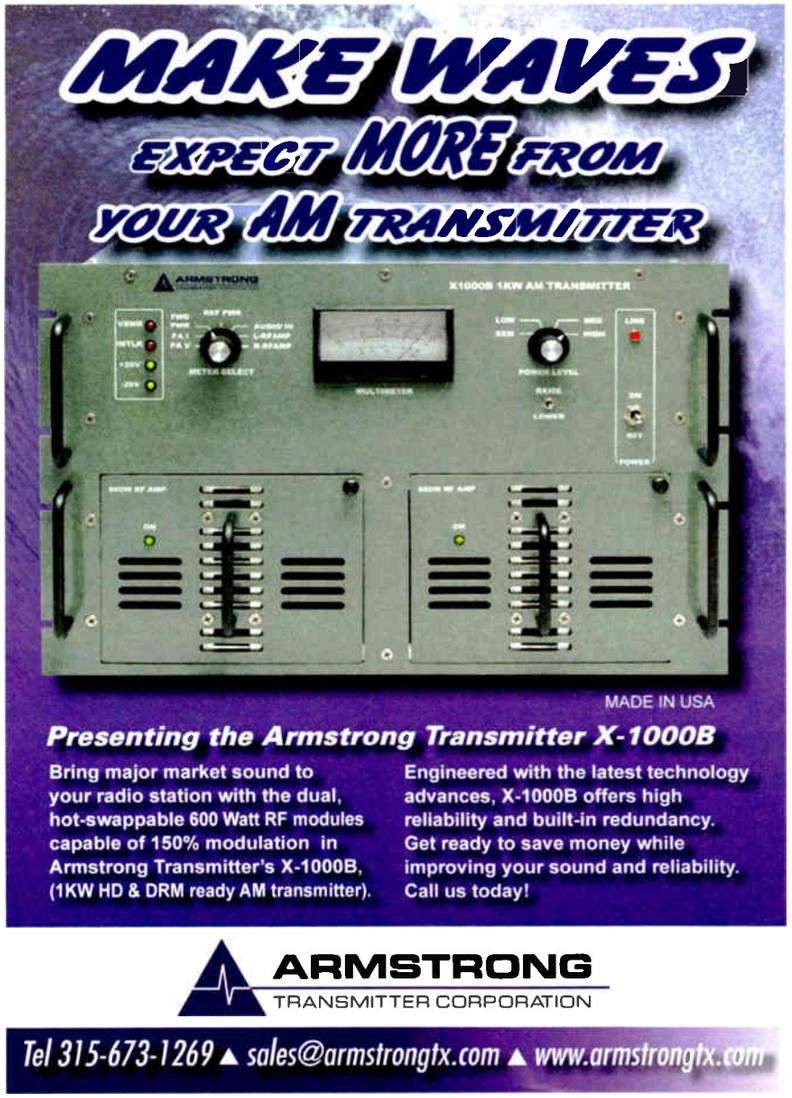
(The idea is not new, though the scope would be. As RW reported in a cover story in 2007, the Wisconsin Broadcasters Association several years ago made agreement with the Wisconsin Department of Justice to issue Broadcaster Emergency Personnel ID cards. That program might serve as a model, *www.wi-broadcasters.org*.)

"The problem is that a national credential probably won't get you past a state or local police roadblock because the rules (and dangers) are different in each situation," writes Thomas. "A successful program will need to be based in state or local government."

This is similar to what radio and TV stations in New Orleans had done for their news personnel after Hurricane Katrina to ensure that in the future, news crews could get to where they needed to be to perform their jobs and get vital information out to the public during the next crisis.

Though the discussion is in its infancy, according to Thomas, the SBE is talking to FEMA and other federal parties to figure out the best way to accomplish this goal.

Thomas invites input at *www.sbe.org*.



RATCHET

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"I'm in total agreement with the filing," said Norman Philips, vice president of engineering for Gap Broadcasting/GapWest Broadcasting.

He said he knows of several instances in the past 15 years where AM stations could have improved coverage in their communities of license by relocating or improving their nighttime directional arrays. Such improvements "were not made, due to the ratchet clause."

ADDED COMPLEXITY

John Warner, vice president of AM engineering for Clear Channel, said the clause "adds a lot of complexity to any project. I'm not aware of any recent AM projects we've had to cancel because of it, but it typically results in a more complex array, say a four-tower array instead of a three tower — and of course, additional expense."

Clear Channel has had to ask the FCC for waivers to the ratchet clause when faced with a forced relocation of an AM transmission facility, Warner added.

"The FCC has been very evenhanded and fair in those cases where we have asked for the waiver. However, it just is another layer of complication for us to see our projects through," Warner said.

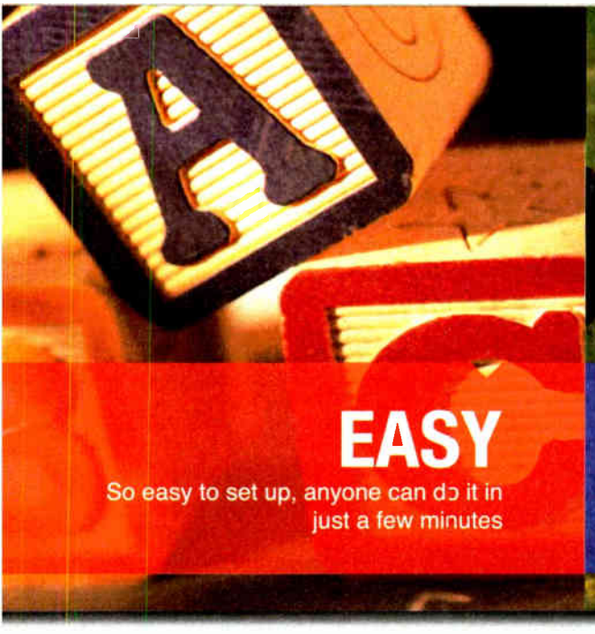
At least one AM radio technical consulting firm hasn't found the ratchet clause requirement particularly burdensome.

"In general terms, we encounter this rule section in about half of our AM nighttime allocation studies, but we have found that it is not usually the critical factor in a station's ability to relocate or upgrade (nighttime service)," said Stan Salek, senior engineer at Hammett & Edison Inc.

He has reviewed the rulemaking petition, but his firm "does not have a position" on the proposal.

"We are supportive of the FCC's efforts on AM technical improvements, but subsequent events to the FCC's 1991 Report and Order to Docket 87-267 on the matter seem to have introduced problems. One example is the establishment of nighttime IBOC service and its effect on overall noise levels in the band," Salek said. "It is certainly possible that the intent of the ratchet clause is largely undone in practice by this and other factors."

World Radio History



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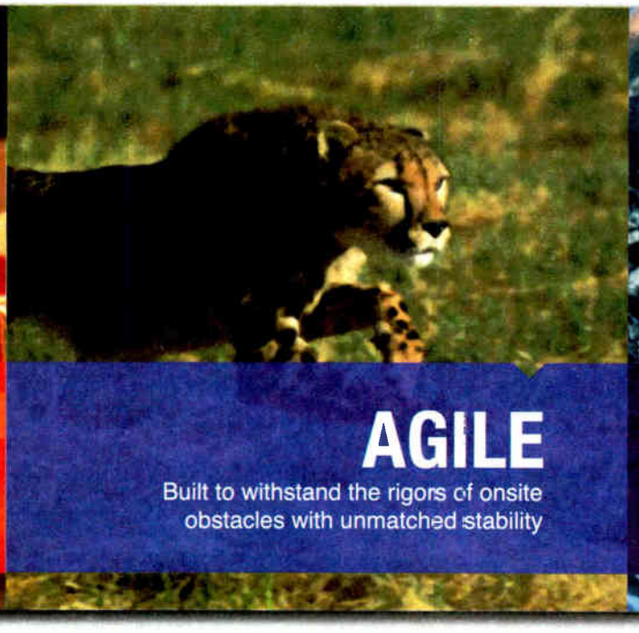
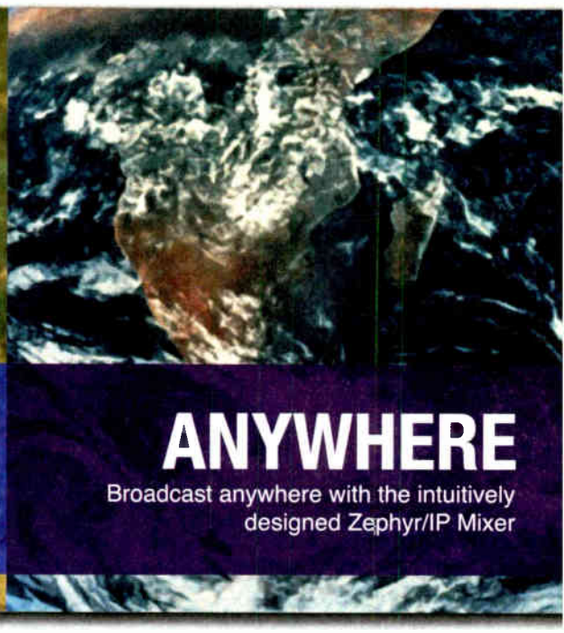


AGILE

Built to withstand the rigors of onsite obstacles with unmatched stability



ANYWHERE

Broadcast anywhere with the intuitively designed Zephyr/IP Mixer

Locks In Your IP Connection Where Others Fail

Engineered to use public IP networks and mobile phone data services, the Z/IP Mixer combines the excellent performance of the original Zephyr/IP with the convenience of a digital four-channel stereo mixer. Designed to deliver high-quality audio transmission with low delay, even over less than perfect networks. Enclosed in a road-ready portable chassis, built to go wherever the action is.

Z/IPMIXER: Lock it in.

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World Radio History

NEWSWATCH

SMALL SIPORT CHIP POWERS ZUNE HD

The Microsoft Zune HD, which arrived on store shelves in brick-and-mortar Best Buys and Walmarts in September, includes an SP1010 chipset from SiPort. The chip gives the new Zune HD improved radio reception and new programming functions with long battery life in a small size without compromising cost, say SiPort officials.

In addition to HD Radio, the unit is the first touch-screen Zune and includes WiFi and an Internet browser. The 16 GB version lists for about $220 and the 32 GB Zune HD lists for around $290.

"Zune HD is going to bring HD Radio to the masses," SiPort VP Marketing Sunder Velamuri told Radio World. He called it a "branded product" with a nationwide campaign behind it.

SiPort engineers worked with Microsoft engineers for four to six months on decisions as where to place the chip in the MP3 player. They fielded tested the unit in cities by driving and listening to the Zune HD, monitoring which digital stations they could receive and comparing that performance to a digital car radio, he told Radio World.

The Zune HD could be pre-ordered online in August from Best Buy and Walmart, as well as from Microsoft and Amazon.

NEWS BRIEFS

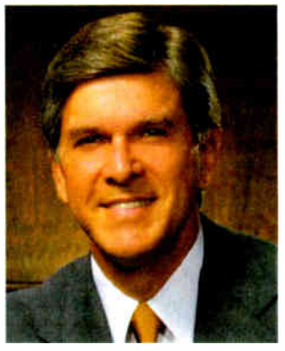
EAS: The Federal Emergency Management Agency awarded Eastern Kentucky University a contract to test Emergency Alert System equipment to make sure it conforms with the Common Alerting Protocol being developed by the Integrated Public Alert and Warning System. Testing equipment is the next step in FEMA's initiative to expand IPAWS with products based on an open standard. Eastern Kentucky University will conduct the first tests, and vendors will be invited this month to apply for testing slots in October. To speed vendor participation, FEMA will pay for conformity assessment testing during the first year.

STREAMING DEAL: Triton Digital Media purchased online audio measurement and ad management provider Ando Media. Terms were not disclosed. The acquisition comes soon after Ando merged with Spacial Audio.

DAB: Pure introduced a commercial radio receiver that uses RadioVIS technology to display IP-delivered visual services from many DAB radio stations in the U.K. The Pure Sensia screen can also display custom Pure apps for weather, news, Facebook and Twitter. It also can stream music from a home computer or network storage device via WiFi. The unit is expected to be available at retail in October for roughly $405 U.S.

GORDON SMITH TAKES THE HELM

WASHINGTON — Former U.S. Sen. Gordon Smith was named president/CEO of the National Association of Broadcasters shortly before the fall NAB Radio Show.



Gordon Smith

Smith, a Republican, represented Oregon for two terms and served on the Commerce, Energy and Natural Resources, Finance and Foreign Relations Committees. Smith's role on Commerce and as the chairman of a Senate high-tech task force helped foster an interest in new media and new technology issues, according to NAB.

Bonneville International President/CEO Bruce Reese headed the search committee for NAB's new chief executive. Russell Reynolds Associates, an executive search firm, worked with the search committee.

NAB Joint Board Chairman Steve Newberry said Smith's background as a lawyer, statesman and entrepreneur coupled with his knowledge of broadcast issues from having served on Commerce "make Gordon eminently qualified to represent the interests of free and local broadcasters in Washington."

In addition to the usual congratulatory messages, Smith received one from the RIAA and MusicFirst, the coalition of record labels, artists and others that support a performance fee for music aired on terrestrial radio.

They extended congratulations and an invitation "to work with the music community to create a radio performance right that is fair to artists and musicians, fair to other music platforms and fair to radio." They also stated, "During his years in the Senate he was a champion of the rights of artists and creators."

NAB remains opposed to the fee, saying it would strangle stations already on shaky ground financially in a poor economy.

Smith, who at one time was an executive of family-owned Smith Frozen Foods, is an attorney and comes to the NAB from the Washington law firm Covington & Burling on Nov. 1.

Smith replaces David Rehr, who left the association abruptly in May. NAB Chief Operating Officer Janet MacGregor has been serving as acting president.

NEW COMMISSIONERS SUPPORT LPFM EXPANSION

WASHINGTON — It appears low-power FM proponents enjoy support on the commission to ease interference limitations. How that might translate to regulatory changes remains to be seen.

The industry got a chance to hear views of the new FCC commissioners on select radio issues at an agency oversight hearing in September.

Rep. Mike Doyle, D-Pa., has co-sponsored a bill that would direct the commission to drop third-adjacent channel protection for full-power FMs in order to create more possible allocations for LPFMs. Saying he "hoped the committee chairman will allow us to proceed on mark-up soon," Doyle asked the three new commissioners how they feel about lifting third-adjacent protections.

New Chairman Julius Genachowski said "based on what I know now," he'd support that, and Mignon Clyburn and Meredith Baker agreed.

Doyle said that in 2007, the other current commissioners, Michael Copps and Robert McDowell, had indicated they supported the change. He did not ask them again during this most recent oversight hearing.

REFORM, FAIRNESS DOCTRINE

At that same hearing, Genachowski reiterated that he does not support a return of the Fairness Doctrine, "either through the front door or the back door." As chairman, he said, he's discovered "sometimes I have to repeat things."

Some conservatives worry the commission plans to use tougher localism rules to get around the policy.

Also, several possibilities for FCC reform are being discussed, the chairman told members of the House Telecom Subcommittee.

Genachowski said he'd followed a suggestion from Rep. Greg Walden, R-Ore., and arranged for Media Bureau staff to meet with broadcast engineers to discuss certain issues, though he didn't provide specifics.

LLOYD

Mark Lloyd, the FCC's new associate general counsel and chief diversity officer, was discussed at the hearing. He has come under criticism from some conservatives and broadcast advocates. The week of the hearing, a number of progressive groups issued a letter defending Lloyd and calling some of the comments directed against him lies.

At the hearing, Rep. Walden said he considers some of Lloyd's writing about broadcasters to be "very offensive." He quoted 2007 articles in which Lloyd reportedly wrote that broadcasters want to be "trustees" of the public trust "without the responsibility" and questioning whether stations are fulfilling their license responsibilities.

"What troubles me is someone who is as opinionated as he is, is not going to bring balance to policy," said Walden. "As a former licensee, we don't talk to commissioners. We talk to the staff," who have an "extraordinary range of power."

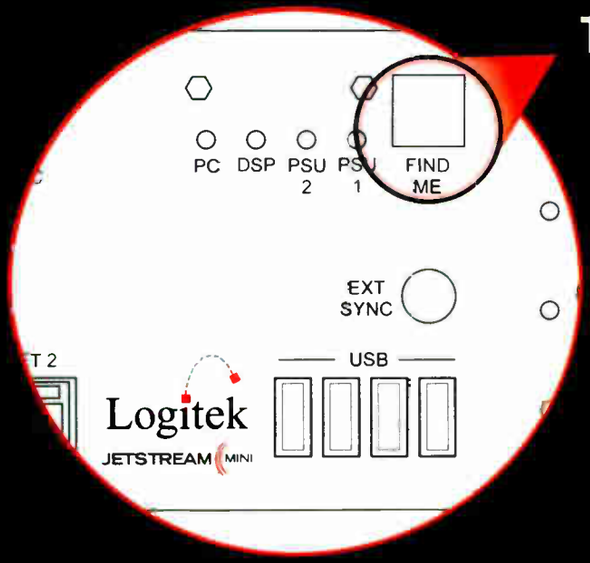
He asked Genachowski what Lloyd's role is and whether he could appear before the committee. The chairman said Lloyd is a long-time communications expert who helped mobilize non-traditional stake-holders in the DTV transition. Lloyd is working on broadband adoption, not broadcast issues, according to Genachowski, who said that he would make Lloyd available to the committee "as we would any staffer of the FCC."

— Leslie Stimson

World Radio History

Is setting up IP Audio networking tables a bit frustrating?

COOL STUFF AWARD
Radio World
2009



Try the One-Second JetStream approach.

Press one button to find other JetStream units on your network andautomatically configure your system.

You'll save time, money and rack space, while enjoying the convenience of Logitek's next generation IP audio routing solution.

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World Radio History

Light Your Work With an LED Lamp

Gone Are the Cords and Broken Bulbs of Other Work Lamps

In our Sept. 1 issue, Tom Ray described how nesting bees (we're told they actually were wasps) indirectly helped him diagnose a sampling line problem.

Tom was called to another station recently, specifically to the tuning building, where the phasor was located. See Fig. 1.

WORKBENCH
by John Bisset

Read more Workbench articles online at **radioworld.com**

Although these hornets didn't diagnose anything, they were guarding that step ladder diligently.

Tom points out that though the site is clean and orderly, this is the kind of problem that can occur when sites aren't visited regularly. The picture is the perfect argument to present to a GM whose attitude is, "Why do you need to go to the transmitter?" Thanks Tom for helping us to make our case.

Tom Ray can be reached at *tomray@hvc.rr.com*.

Sunbury Broadcasting's Director of Engineering Harry Bingaman is a frequent contributor to *Workbench*. He always has a new twist on solving a problem around the radio station.

His most recent "find" is pictured in Fig. 2. It's a battery operated, rechargeable LED trouble lamp. Gone are the cords and the broken bulbs. Harry has outfitted his transmitter sites and tool boxes with these lamps, which for LEDs provide a lot of white light.

Harry writes that he is amazed at how far portable light technology has come. He remembers not too many years ago that portable lighting consisted of either a penlight (AA and AAA) flashlight or two-cell, four-cell, six-cell or lantern (6 Volt) flashlights. They were rather bulky but functional, with limited battery life. Then came the big Maglite, which reminds Harry more of a weapon than a light.

Nowadays, when you walk into an electrical distributor, there's a whole shelf of LED technology flashlights. The LED

Fig. 1: That last step could be painful. Regular site inspections will identify such problems before they grow.

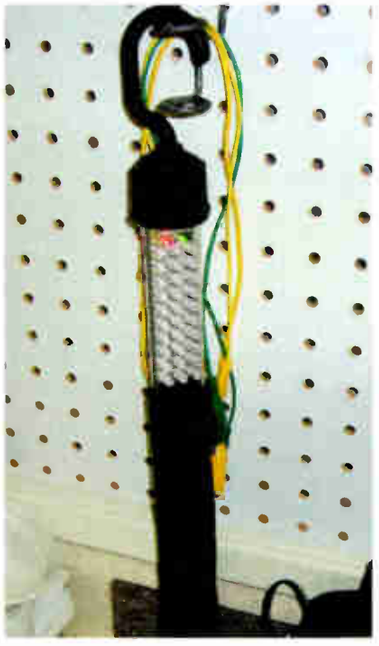

Fig. 2: Convenience and bright light are both provided by an LED work lamp.

trouble lamp is made by Exide and includes a wall-wart charger.

I imagine your first question is about battery life. Harry was working under a console recently; when he was done, he closed up but forgot his LED light. The next day, the morning drive guy thought Harry had installed a light under the console. It had lasted all night, and through most of the morning.

These work and seemingly last forever. Harry notes the newer models have an LED flashlight built into the end.

If you'd like more information on these lamps, click on *www.toolprice.com*. From the category selection column on the left, select the last listing, "Work Lights." It's the best $40 investment you'll make.

After reading Buc Fitch's Marti incandescent replacement trick, Harry also sent in a picture of his phasor LED lighting (page 16).

It seems the vibration of the RF contactors during pattern change would eventually damage the filaments of the incandescent lamps. The lighted switches used the old 24 V telephone key system bulbs. The frequency of bulb failure moved Harry to action. He used the old metal frame that held the incandescent bulb and inserted a red LED for day pattern, a green LED for night, adding a dropping resistor to each LED/frame assembly. See Fig. 3. Harry writes he's not had a "bulb" failure since.

Harry Bingaman can be reached at *kc3qhhmb@aol.com*.

Here's a story to file in the back of your mind in case this ever happens to you.

WBQB(FM) Engineering Manager John Diamantis started noticing a less-than-clean signal on his studio air monitor. After all the usual checks, externally monitoring the signal, he determined the problem was in the monitor system.

Breaking things down into sections, he swapped receivers but the noise remained. He checked the receive antenna; it was properly oriented and there were no corroded connections.

While following the coax through the attic of the studio building, he noticed an old TV preamplifier — unused, but still plugged in.

(continued on page 16)

Model 730
Inovonics' Flagship RDS/RBDS Encoder
Supports RT+ Song Tagging

Featuring a front-panel LCD screen and jog wheel for instant on-site setup, the 730 may also be programmed easily through any of its data ports using the included Windows® software. USB, TCP(x2), UDP and serial ports can accept both ASCII and UECP command sets.

The 730 connects direcly to, or can be networked with virtually any playout sytem and offers full support for RT+ 'tagging,' TMC traffic updates and other advanced applications. An Internet connection will assure accurate Clock Time and Date (CT) timekeeping.

Internal data diagnostics and transmission safeguards guarantee foolproof installation and operation, and field-upgradable firmware ensures compatibility with any forthcoming RDS/RBDS applications.

www.inovon.com

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EVERYBODY WANTS ONE.

And who could blame them? Omnia ONE is the most flexible processor ever built. Yes, it can be used for FM processing. Or AM processing. Or netcasting or even studio production and mastering. Everybody wants more for their money. Omnia ONE delivers. And of course, the ONE has the smooth, punchy, brilliant sound that has made Omnia the #1 processor brand in radio. Everybody can now sound amazing. And we do mean everybody. In less than two years, we have sold more than 2,000 units, making ONE the most successful new processor introduction of all time. Go ask a broadcaster who has an Omnia ONE. You won't have any trouble finding ONE.

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World Radio History

PowerStation: the new console system from Axia.

COOL STUFF AWARD Radio World 2009

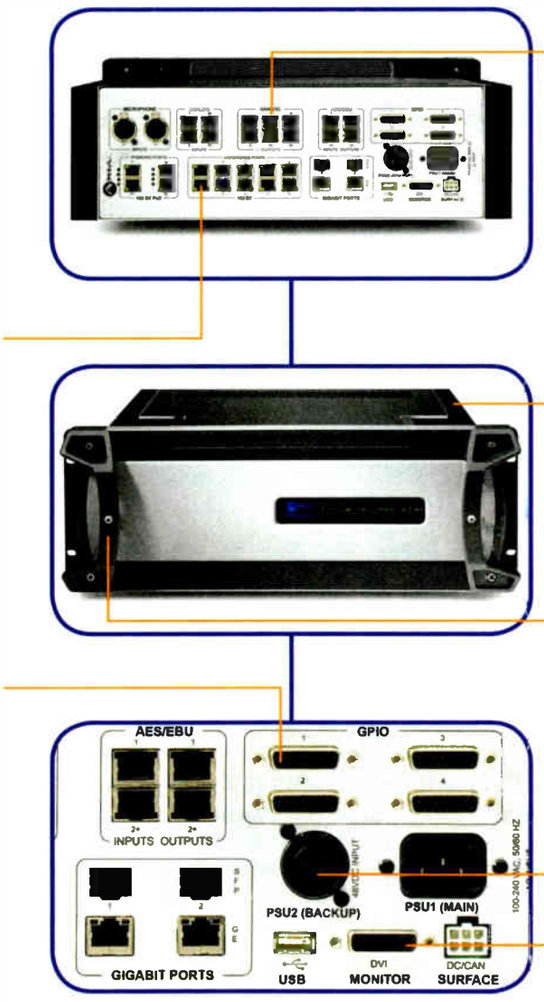
Because there's no such thing as too much uptime.

All stops removed • Twenty years from now, you'll have forgotten this ad. But you'll still have your PowerStation, the full-featured one-box IP-Audio console/router system hardened with **industrial-grade components** and redundant power capabilities. Tough enough to take a football to the groin and keep on going. PowerStation **minimizes setup** and **maximizes "bang for the buck."** Engineered without compromise for broadcasting without interruption.

Easy as π • PowerStation combines a console DSP engine with audio and logic and a network switch, **all in one box.** As its name implies, there's a whole lot o' muscle inside that burly frame, but that doesn't mean it's complicated. In fact, setting up PowerStation **couldn't be easier:** connect your studio gear with standard CAT-5 cables, connect your console with just one cable, name your sources and set preferences with a browser, and you're ready to rock. PowerStation makes building studios about 3.14 times easier than ever.

GPI Oh! • **GPIO ports are built in** to PowerStation — no breakout boxes or add-on converters needed. One day, you might not even *need* logic ports: more and more products from companies like 25-Seven Systems, Audio Science, ENCO, Google Radio Automation, International Datacasting, Omnia Audio, Radio Systems and Telos (to name just a few) use the Livewire™ standard to send their audio and logic control directly to Axia networks over a **single CAT-5 connection.**

Everything's included • Yeah, we said *everything*: PowerStation combines half-a-dozen essential tools into one compact unit. No hidden extras to buy, no "gotchas" after purchase. Inside that muscular chassis you'll find a **bulletproof mixing engine** capable of handling consoles up to 40 faders, a beefy power supply (with optional **redundant power**), machine control ports, and **audio I/O**, all in one box. And of course, since it's from Axia, the IP-Audio experts, a studio built with PowerStation can stand alone — or it can become a part of a large network quite easily. Thanks to **PowerStation Simple Networking**, you can daisy-chain up to 4 PowerStations directly for easy multi-studio installation without the need for a separate core switch. Just another way Axia makes IP-Audio easy.



You're covered • Axia has the most comprehensive warranty in the industry — **5 years parts and service.** And (not that you'll need it), **free 24/7 technical support**, 365-days-a-year. We've got your back, my friend.

E-I-E I/O • Finding space in the equipment racks is like living in a barnyard: too many chickens, never enough coops. So our team of obsessive designers fit **an entire studio's worth of inputs, outputs, logic and network connections** – plus an advanced DSP mixing engine and a massive console power supply – into just 4 RU. There's inputs for 2 mics, 4 analog inputs and 2 AES/EBU inputs, with 6 analog and 2 AES outputs. 4 GPI/O logic ports round things out. Want even more? Just connect the PowerStation Aux to instantly *double* the I/O — or plug some Axia Audio Nodes into its **built-in Ethernet switch.**

Fan free • PowerStation is **silent and fanless.** Because studios today are already full of PCs, laptops and playout servers clicking, whirring and generating heat — who needs more of that? Not only is there no in-studio noise with PowerStation, those **big extruded heat sinks** are just plain cool. No pun intended (or maybe it was. We're like that, you know).

Built like a tank • Remember when consoles were built to last? We do. At Axia, we're all about the long haul. **There are no compromises:** PowerStation uses only best-of-the-best components. Like studio-grade Mic preamps and A/D converters. A rigid, steel-framed, EM-tight chassis that shrugs off RF like Walter Payton brushing off tackles. An industrial CPU designed for high reliability in harsh environments. Beefy extruded heat sinks. Big, brawny handles to make rack-mounting easy. (And it looks cool, too.)

Redundant power redundancy • The power supply is the heart of any broadcast equipment, right? That's why PowerStation is **hardened against failure** with a **super-duty power supply** that sports enough amps to power an arc welder. And for those of you who like to wear a belt *and* suspenders, there's even a connection for **redundant auxiliary backup power** – with automatic switchover, naturally – that kicks in if it's ever needed.

Screen play • Yep, that's a DVI connector. **Your favorite monitor** – standard or widescreen – plugs in to present the console operator with Axia's "so easy an overnight jock could do it" **info-center display.** Meters, timers, fader assignments, mix-minus settings and more, all on-screen, on-demand.

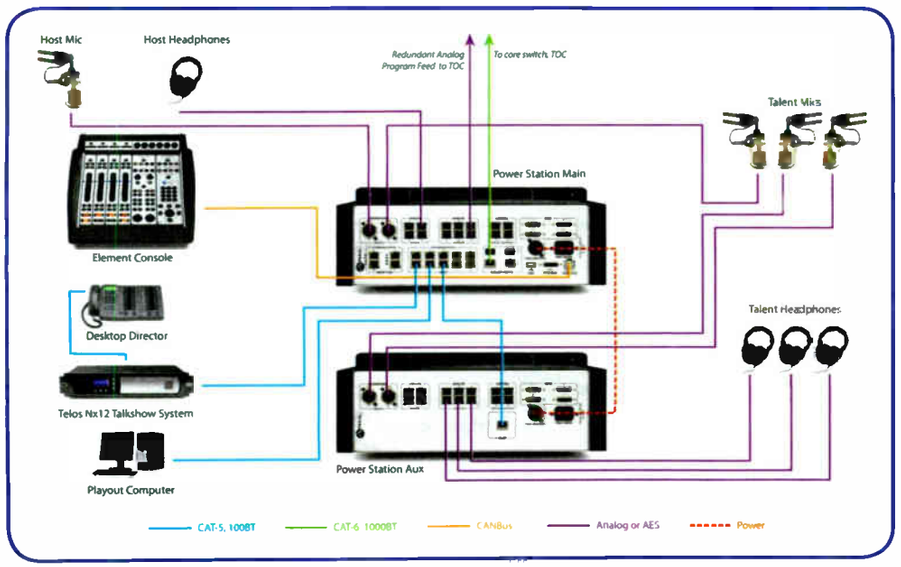
World Radio History

Element shown in Silver/Charcoal color scheme. Also available: Bronze/Charcoal and Warm Gray

Element 2.0 • With more than 1,000 consoles already on the air, Element is a huge hit. And now, thanks to suggestions from our clients, it's better than ever. Element 2.0 has cool features like Omnia™ **headphone processing** presets to give talent that "air sound", **super-accurate metering** with both peak and average displays, **one-touch phone recording** with automatic split-channel feed, **automatic mix-minus** for every fader, an eight-channel **Virtual Mixer** that lets you combine multiple audio streams and control them with a single fader, and metallic bronze or silver module overlays. And we haven't even begun to tell you about Element's **Show Profiles** that instantly recall talent's favorite settings, its **built-in Telco controls**, fully-integrated **talkback/IFB** and **Mic processing** by Omnia. And durable? Element is nearly indestructible, ready to take whatever pounding ham-fisted jocks dish out and keep going. You want examples? Element's **avionics-grade switches** are rated for more than two million operations. What look like ordinary rotary controls are, in reality, **bullet-proof optical encoders** — no wipers to wear out or get noisy. The silky-smooth **conductive-plastic faders** actuate from the side, not the top, so dirt and grunge stay out. The **high-impact Lexan** module overlays have their color and printing applied on the back, where it **can't wear or chip off**. The frame is made from **thick aluminum extrusions** that are stronger than truck-stop coffee. To find out even more about Element, visit **AxiaAudio.com/Element/**. Grab some coffee and prep for a good, long read — remember, our marketers get paid by the word.

Come together, right now • Now that you know what you can do with PowerStation, let's build a studio. The diagram below shows how a typical Talk Studio might look. Mics and headphone feeds plug into the built-in Mic inputs and Analog outputs... your playout PC, using the **Axia IP-Audio Driver** for Windows®, connects to a built-in Ethernet port... and so does the Telos Nx12 Talkshow System (which sends 12 lines of caller audio, mix-minus and take/drop/next commands over **one skinny CAT-5 cable**). Send a **backup audio feed** to your TOC for extra peace of mind. And after all that, there's still plenty of I/O left to plug in the turntables for the Saturday night Oldies show.

The standalone network • You want your console to be more than just reliable — you want it **built like a battleship**. You want the absolute peace of mind that comes from knowing your gear will **never let you down**. And if you take one studio down for maintenance, you want the rest to be completely unaffected. So we designed PowerStation to be the world's **first networked broadcast console that doesn't *need* a network**. It's completely self-contained: sure, it plays nice with others, but unplug its network cable and it keeps right on truckin'. Build just one studio, or a dozen, at any pace you choose — your PowerStation network is ready to expand when you are.



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World Radio History

KLINE

(continued from page 4)

"We spent almost a year working on the design and implementation of the move. We shut down the old office on Friday afternoon and had everyone up and running like nothing happened when they came to work on Monday morning. This included moving PCs and other technical gear for several people."

Further projects over the decade include multiple RF jobs in Houston. There were new digital studios for Eugene, Ore., Topeka, Kan. and Nashville, Tenn., the latter featuring one of the first broadcast radio facilities to use fiber optics to connect studios into a centralized router.

Cumulus also launched its own streaming audio system; its stations all now stream using software written by the IT department. "A complete backend and high-bandwidth infrastructure was put in place to handle the loads; all commercial inventory for streaming is scheduled using this system," he said.

Last year the company also set up an HD2 to feed an FM translator, a novel concept at the time; the multicast channel of WNNK(FM) in Harrisburg, Pa., feeds a translator on 95.3 MHz.

Cumulus also converted one of its formats in Atlanta to a Web-only visual radio station using live video jocks and its own streaming software; this year 99x returned to the airwaves using an FM translator rebroadcasting an HD2 signal.

All of these projects relied heavily on Kline's team.

'ON IT'

What makes Gary Kline successful is not just his technical ability, though that's vital. It's also his passion and the way he blends understanding of two worlds.

As one Cumulus market manager told him after learning about RW's award, Gary is "both an engineer and a radio executive," someone who can provide engineering leadership while making sound economic decisions that are in the company's best interest. Also, as another colleague wrote, "You are one of the radio guys who always is 'on it' 24x7x365."

If you've spent time with Gary, you know how enthusiastic he can be on the topic of broadcast engineering. Words just shoot out in a rapid stream, like water under pressure.

I asked what advice he'd give to someone starting today. His answer is to get as much experience as you possibly can — broadcast engineering, Internet, digital media — but also managing projects and budgeting; and, perhaps harder for some engineers, developing a better understanding of moods and personalities, "interacting with people and gaining the respect of people who might work for you. If you get those skills you can probably transfer to many different roles.

"Radio has morphed," he continued. "A lot of what I do isn't about changing the tube in the transmitter. It's measuring bandwidth in a given city and finding out how we'll turn on a new video Web site and making sure everyone around the world will have a clean and unbuffered connection to that video. These are new things we didn't have to worry about before. Get as much experience as you can."

Don't be afraid to tell top people about your ambitions, in a confident, professional way. When Gary was working as a contract engineer, he made it a point to sit next to COO John Dickey at a company event one evening. He told Dickey about ideas and projects he'd been working on. That contact paid off soon with a job offer.

Most of all, learn to delegate ... and trust your employees.

"I could not do what I do without great people on my corporate team or the folks in the field, my regional engineers and every chief in the company," Gary said, specifically asking me to include that point in this article.

"I'm very happy about the team we've built at the company, at the cooperation and brotherhood we've built among the engineers and the folks in IT. I think the fact that we have done all of those projects, on budget and usually within schedule, and have done good work that furthered the distribution capability of our company — better signal to more people — ultimately has helped serve the people in those markets."

WORKBENCH

(continued from page 12)

On a hunch, he called for the operator to listen closely to the monitor. John unplugged the amp. The noise went away. He removed the amp and the problem was solved.

Down on the bench, he found that the little TV booster amp was spewing harmonics. John's not sure who installed the amp; that was way before his time. It clearly hadn't been used in years yet had remained plugged in. Maybe an off-air TV feed for the newsroom before cable or direct satellite!

It's a good thing John's station isn't near a cell tower. I bring up the story because in addition to causing John headaches, it reminds me of an FCC action reported recently by the CGC Newsletter.

Fig. 3: Broken filaments are eliminated by converting to LEDs for phasor indicators.

See *http://tinyurl.com/px6efj*. This commission document describes a citation issued to a private citizen whose set-top TV antenna preamp broke into oscillation, causing interference to a nearby cellular tower. It's great reading.

CGC Editor Robert Gonsett asks: If this citation sticks, why would anyone want to buy a DTV antenna preamp?

Gonsett, whose newsletter also did great work during the recent fires threatening California's Mt. Wilson, can be reached at *cgc@cgc333.connectnet.com.*

John Bisset has worked as a chief engineer and contract engineer for 39 years. He is international sales manager for Europe and Southern Africa for Nautel and a past recipient of the SBE's Educator of the Year Award. Reach him at johnbisset@myfairpoint.net. *Faxed submissions can be sent to (603) 472-4944.*

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

MARKETPLACE

ROLAND GETS EFFICIENT WITH PORTABLE DIGITAL PA

The BA-330 is a new portable digital PA system from Roland, designed to deliver stereo sound to crowds of up to 80 people.

The system has a four-channel configuration, two dedicated for microphones or instruments, two for standard 1/4-inch stereo inputs.

Each channel has its own tone adjustment and effects switching for built-in effects such as EQ, reverb, delay and widening. A Stereo Link function allows a pair of BA-330s to work in tandem to provide an extra-wide stereo spread.

"Powered by a high-performance digital stereo amplifier, the BA-330 features four custom-designed 6.5-inch stereo speakers and two tweeters, positioned for wide stereo dispersion," the company states. "While the built-in tilt-back stand enables the unit to be angled up for better sound monitoring, the BA-330 also can easily be mounted on a speaker stand."

The system features an Intelligent Anti-Feedback function that Roland says is otherwise unavailable in self-contained portable PAs.

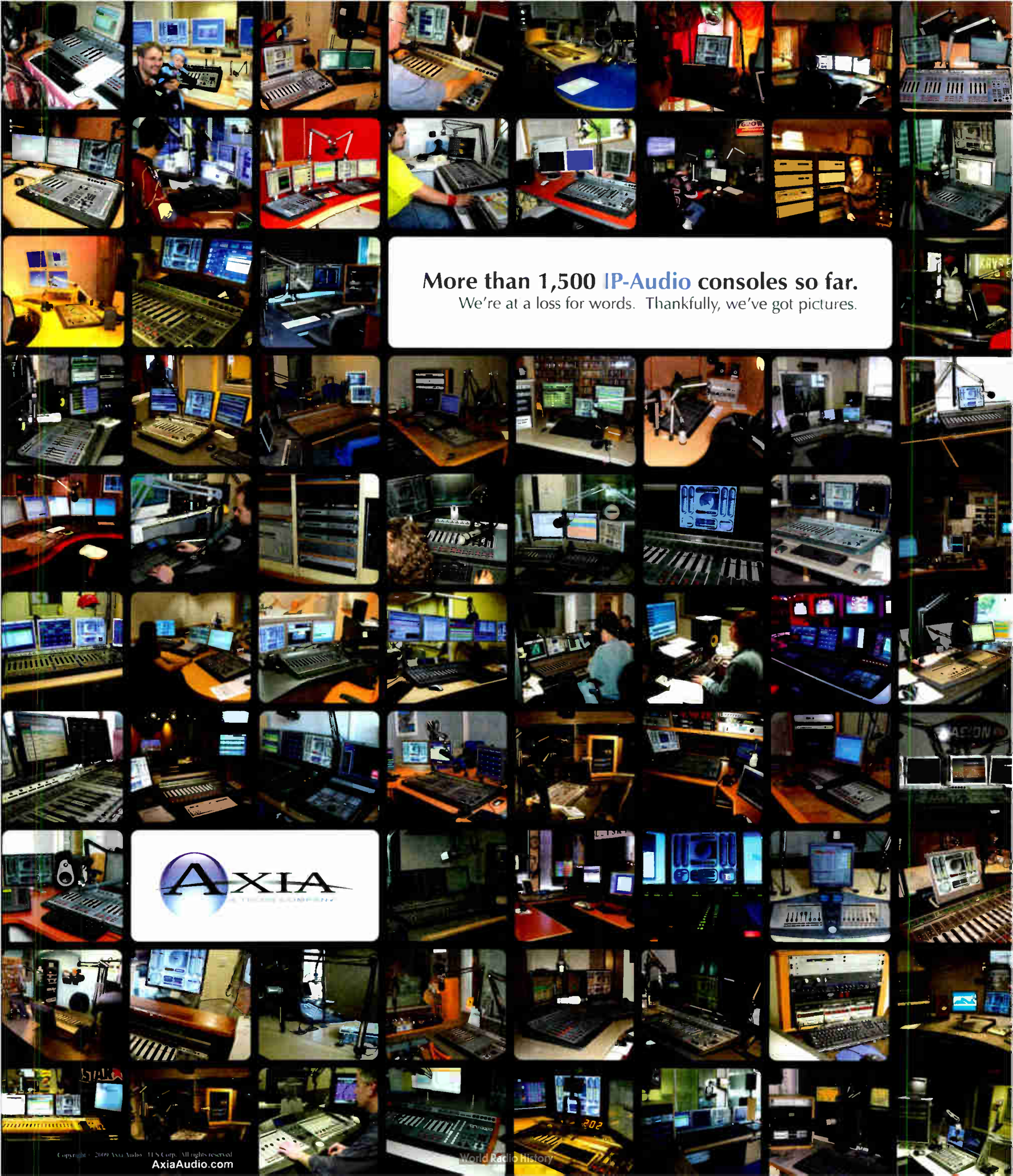
"During use, the BA-330 can automatically detect potential feedback possibilities and eliminate it immediately. This is a huge advantage over manually adjusting volume levels, as it allows performers to place the PA system behind them and easily hear themselves without experiencing feedback."

The BA-330 can run on AC power or eight AA Alkaline or Ni-MH rechargeable batteries. Switchable output power allows the user to switch between the maximum power and energy-saving Eco modes to preserve battery life.

Retail price is $829.50.

For information contact a Roland dealer, call the company in California at (323) 890-3700 or visit www.rolandus.com.

World Radio History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World Radio History

What's Up in Test and Measurement?

Digital Technology and DSP Power Are Among Factors Affecting Product Design

BY TOM VERNON

Whether a radio plant runs with analog audio, digital audio or streaming media, test and measurement gear is key to a successful operation. It facilitates maintenance of a top-quality signal, enables troubleshooting and in the case of terrestrial stations helps to ensure compliance with FCC regulations.

When you talk to industry manufacturing experts, several trends in test and measurement technology become apparent.

The transition to HD Radio is one of the driving forces in new measurement gear. Further, David Day, president of DaySequerra, notes that "anywhere-anytime" access to signal information also has become an expectation, which crosses into the area of monitoring.

"Most of the monitoring gear is at the transmitter, but that information needs to be accessible not only at the studio, but also via cell phones and e-mail. These demands create a level of complexity in the development of monitoring gear."

There is also an interest in extreme portable gear to measure digital radio signals, perhaps with a laptop. Designing such a device with DSP technology is not difficult, according to Day. "The question is, with design and manufacturing overhead, can it be delivered at a price point where consumers will buy it in significant numbers?"

ON THE SPECTRUM

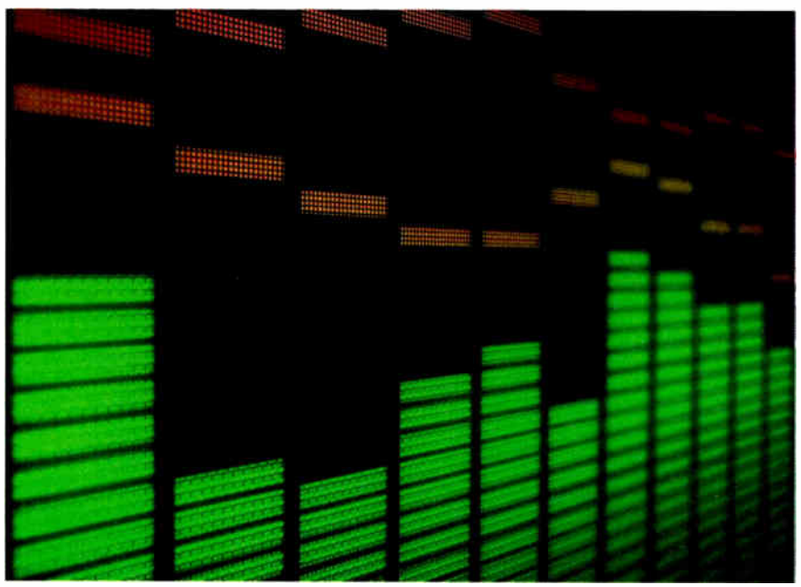
As digital transmission becomes more widespread, the spectrum analyzer, once considered a luxury, is now becoming a necessity.

David Maxson, managing partner at Broadcast Signal Lab, said, "A spectrum analyzer has been required to measure the FCC-required mask for analog FM signals as well as the NRSC-2 mask for AM, but these measurements were usually done by consultants. As the costs of spectrum analyzers have come down, more stations or groups are able to acquire them. At the same time, however, measuring digital signals has become more complicated."

Maxson said confusion over measurement techniques for IBOC signals led the National Radio Systems Committee to create more specific guidelines; you can download the NRSC-G201 documents at *www.nrscstandards.org*.

The appendix to this document provides a list of test equipment that has been self-certified by manufacturers, along with the list of requirements, so that engineers can check equipment that may not be on the list.

When stations or networks send audio signals through a third party, such as the phone company, a unique set of test and measurement requirements arises.



Dan Knighten, director of products for Audio Precision, said, "Contracts for program distribution usually come with a Quality of Service (QoS) agreement. To keep providers honest, contracts should specify how testing is to be done, and broadcasters should schedule regular tests. HST (High Speed Testing), also known as multitone testing, can send a burst as short as 250 ms which is barely noticeable by most listeners."

Knighten adds that source tones can be stored on CDs or as digital files. Analyzers at the receiving points will recognize the burst, analyze it and e-mail test results to a central location. According to Knighten, there has been a 50 percent reduction in the cost for multitone technology, while the quality has been greatly improved.

PATH CHECK

A standout signal also requires careful maintenance of the analog and digital paths back at the studio plant.

Art Constantine, vice president of sales and marketing for Audio Technologies Inc., said, "Although analog audio remains an acceptable method of handling audio in a facility, more and more stations are going all digital." A portable digital audio monitor enables an engineer to check parameters such as audio level, sample rate, digital errors and headroom below 0 dBFS.

According to Constantine, some analog testing techniques are becoming lost art. The use of white and pink noise generators is one example.

"A savvy engineer knows how to investigate the psychoacoustic effects of audio, and do room EQ with a noise generator." He adds that audio begins in the analog realm, and any imperfections will only be worsened with the conversion to digital formats, making the maintenance of analog quality all the more critical.

The explosive use of the wireless spectrum by radio broadcasters for wireless microphones, IFB and remote control has created the need for a new type of test equipment.

Mark Kaltman, president of Kaltman Creations, said, "Dropoffs of signal can be the result of weak batteries, blocked line of sight or interference from someone else's wireless devices. A handheld spectrum analyzer can quickly isolate interference problems and allow users to change frequency on the spot."

He adds that before the advent of handheld devices, users had to bring large, laboratory-grade spectrum analyzers into the field, something that is not often practical.

"Setting up wireless remote broadcasts without having a way to visualize the wireless spectrum you're using is like flying blind," said Kaltman. "The situation will only get worse as these devices become more popular with broadcasters."

DRIVEAROUND

New digital technologies and DSP power have enabled improved equipment performance, mainly in term of precision, according to Christophe Poulain, president of WorldCast Systems Inc., which incorporates Audemat, Ecreso and APT.

He said test and measurement gear, though still a significant investment, need not be super-expensive, in part because more features now are being built into single products.

"That's what we are doing with our FM Modulation Analyzer; it replaces about six or seven legacy units." Also helping keep costs down is that in some cases, factory calibration is no longer needed because analog components largely have disappeared from hardware designs.

Remote access via TCP/IP is exciting, he continued. "You can also create some automatic sequences and cycles of measurement. This means you can leave the test and measurement unit to run and operate by itself at a site for hours or even days, then come back and analyze all the data. It will even generate automatic reports."

Poulain thinks engineers might make better use of the intelligence and automatic operation that are built into today's products.

> **One observer** said he thinks engineers could make better use of the intelligence and automatic operation that are built into today's test and measurement products.

"Some of our field measurement equipment can be set up so that all an operator has to do is connect the antennas and power and start driving. In one case, a user hired a limousine company to drive around a city nonstop for three straight days. The customer didn't even have to be there, and the limousine company kept up with its normal business, they just made all of their appointments with the measurement equipment in the trunk of the car.

"At the end, the user had hundreds of thousands of data points to analyze the signal coverage of every station in the market, with very little investment of his personal time."

What trends in test and measurement do you see in your workplace? Tell us at radioworld@nbmedia.com.

Tom Vernon is a regular contributor to Radio World.

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You meld your broadcast engineering and IT expertise with intense passion and creativity. Well done indeed, Gary.

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Lessons of 'How the Mighty Fall'

A Book About Business Declines Is Instructive for Radio Groups

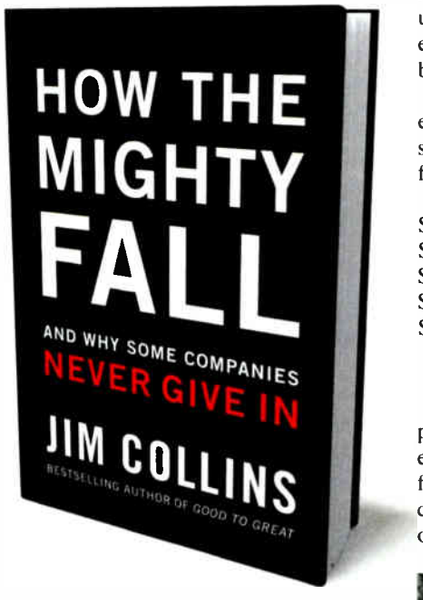
THE BIG PICTURE

Skip Pizzi

You may be familiar with the work of business writer Jim Collins, author of the popular books "Built to Last" (with Jerry Porras, 1994) and "Good to Great" (2001).

Like these earlier works, Collins' 2009 effort, "How the Mighty Fall," is based upon meticulous research of real companies. While the title seems to portend doom, Collins insists the book is a work of "well-founded hope."

The book is subtitled, "And Why Some Companies Never Give In." Collins provides many object lessons showing how some deeply troubled companies managed to turn things around.



IF THE SHOE FITS

This makes appropriate reading for the radio industry, which hears so much about its impending demise. As we noted in our previous column, this pronouncement often is overblown, but what radio companies have to worry most about are their own missteps — which is why the book seems so on point.

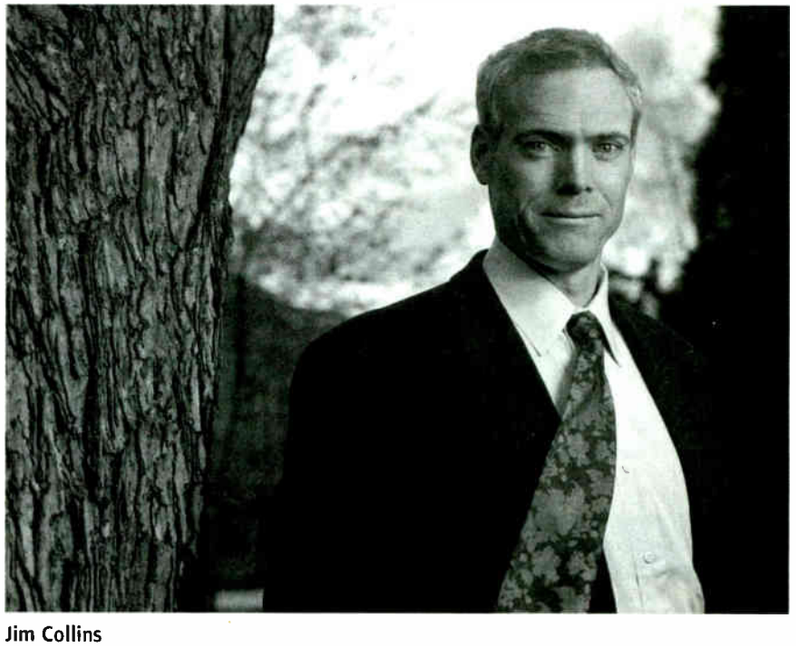
The central thesis of the book is presented as the "Five Stages of Decline," not unlike the well-known Kübler-Ross model of the five stages of grief.

But Collins's approach is more about what *causes* a business's demise rather than the process of its recognition. In fact, Collins points out that most businesses don't even realize they are failing until Stage 4 — although he shows how even at that late date the course can still be reversed.

While the entire book is recommended reading, a quick synopsis of the five stages is telling. See if any of these sound familiar:

Stage 1: Hubris Born of Success
Stage 2: Undisciplined Pursuit of More
Stage 3: Denial of Risk and Peril
Stage 4: Grasping for Salvation
Stage 5: Capitulation to Irrelevance or Death

If you think there are some radio companies already deep into Stage 4 and others well on their way there, I'd agree. In fact, it seems Collins could have conceived his five stages purely from observing the radio business today — although no broadcasting companies are included in the book's analyses.



Jim Collins

Where the book is perhaps most useful is in its study of companies that were able to stave off failure late in the game (prior to Stage 5), in some cases coming back stronger than ever.

Given that Collins' research shows corporate decline largely is self-inflicted, it stands to reason that it can also be self-healing, once the problems are acknowledged. This is perhaps the most frightening point he makes: that decline is insidious, often masked by executive denial, and not noticed or accepted until it has already wreaked much havoc across the enterprise.

For example, the book presents numerous cases where companies failed to continue innovating because things were going so well for them. Once their momentum was thus lost, it was only a matter of time before things began to go downhill fast.

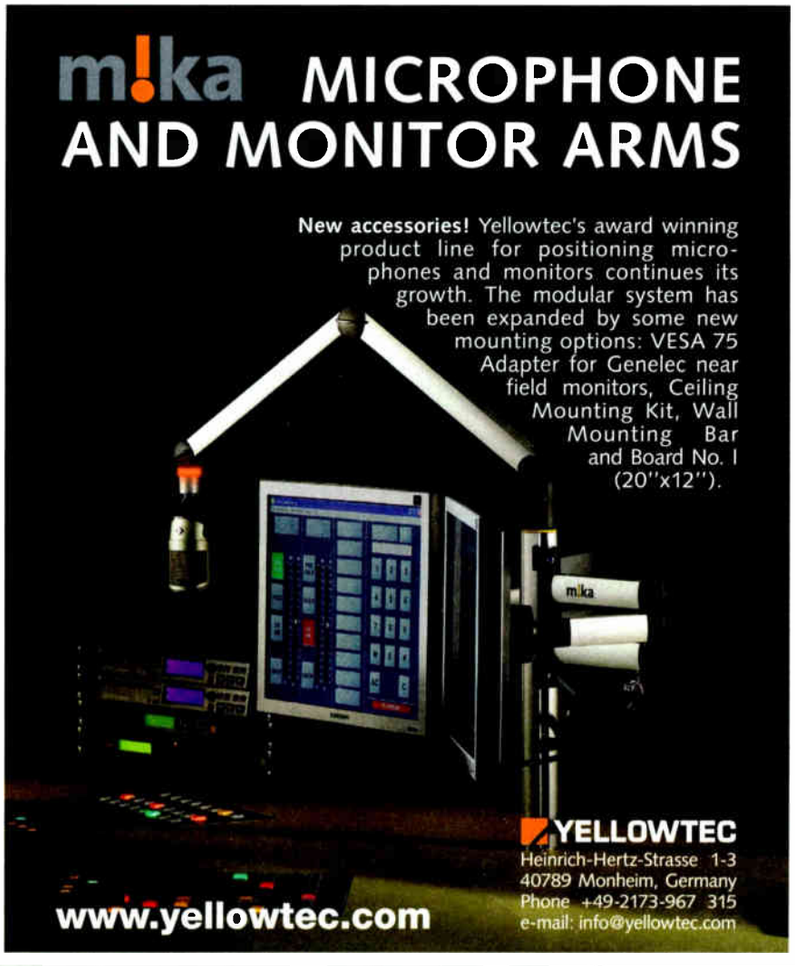
Other cases are simply a factor of "corporate lifecycle," by which young companies feel free to take big risks, yet after they pay off, the increasingly mature organization grows reluctant to remain so adventurous and becomes more conservative. Collins recommends the perspective of "paranoid humility" as an antidote.

TIMING IS EVERYTHING

Although Collins began his research well before the current economic crisis began, the timing of its publication earlier this year was serendipitous. The book garnered immediate, strong attention in the business community (it would have anyway given the author's track record, but the climate no doubt helped), including a cover story in Business Week and many positive reviews in major newspapers and elsewhere.

Not all have praised the book, however. One critic, Don Sull, a professor at the London Business School, thinks that Collins accurately documents the *symptoms* of management actions, but that these are not the root causes of corporate decline.

(continued on page 21)



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PEOPLENEWS

George Corso

Beasley Broadcast Group named **George Corso** its engineer of the year. He is regional director of engineering for the company's Miami and Boca Raton markets.

Also honored with company awards were **Kent Dunn** for general management, **Leo Baldwin** for programming, **John Jaras** for sales and **Robin Wood** for business management. WRDW(FM) in Philadelphia was Beasley station of the year.

Jampro Antennas named **Ben Crease** as regional sales manager, Asia Pacific. Crease will be based in Bangkok, Thailand.

Ronald J. Schiller was named **NPR's** top fundraiser. He had been vice president for alumni relations and development for the University of Chicago.

Dan Dry and University of Chicago

Ronald J. Schiller

Dial Global/Triton Radio Networks named **Conrad Trautmann** executive vice president of technology, a new position. He will oversee technical infrastructure including studio operations, engineering, distribution, telecommunications and information management systems. He most recently was senior vice president of engineering and IT at Westwood One.

The **Broadcasters Hall of Fame** chose **John Lyons** of **The Durst Organization** for inclusion in its Class of 2009. Induction will take place in November in Akron, Ohio. Lyons' career spans 45 years from WNYE(FM) at Brooklyn Technical High School to his current position at Durst, owner of 4 Times Square and other New York properties.

Hal Kneller joined **Nautel** as market development manager. He most recently was director of international broadcast business development for iBiquity Digital. Prior he worked at Harris Broadcast in senior sales and development positions.

DECLINE?

(continued from page 20)

In other words, Sull feels the book is more about *how* than *why* businesses fail. For example, Collins says companies get into trouble when they stray too far from their core strength, but Sull counters with research showing just the opposite: that failure is more often bred from companies sticking too close to their comfort zone.

I believe a case can be made for either premise, leading to the conclusion made frequently in this column that proper *balance* between those two extremes — the "innovation sweet spot," if you will — is key to success for any company or industry undergoing a gradual environmental transition, as radio currently is experiencing: Maintain core strength while developing and evaluating new ventures.

Collins concludes with a fundamental point that is often lost in the noise of commerce: The goal is not corporate survival, but creation of an enterprise that provides impact so significant that it cannot be easily replaced by another.

I would add that today this objective is not a static accomplishment but an ongoing process, and that this is the primary takeaway from the discussion for radio right now.

Ours clearly is an industry that has made such a potent mark upon society, but now other venues threaten to match and perhaps exceed radio's value. Collins would argue that this is when radio's leaders must step up to push the industry beyond simply keeping its head above water, and struggle to find the next nonpareil. The aim is not simply to retain relevance in a burgeoning marketplace, but to provide the next level of service that no other entity can match.

A lofty target perhaps, but such is the aspiration that radio deserves from its current captains.

"How the Mighty Fail: And Why Some Companies Never Give In" is by Jim Collins, published by Jim Collins, 2009.

Skip Pizzi is contributing editor of Radio World. Follow him on Twitter at http://twitter.com/skippizzi.

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RADIO 2010

Part 2: Traditional Solutions Blend With the New

On the Ice, On the Air

Pittsburgh Penguins, Clear Channel Launch Multicast Channel

Pittsburgh has always been crazy for its Penguins — but never more than now, after the National Hockey League team won the 2009 Stanley Cup under star captain Sidney Crosby.

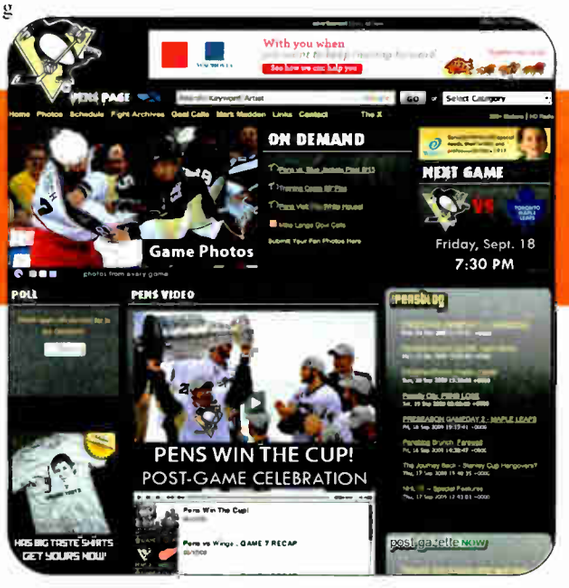
So it makes sound marketing sense for the team to launch its own HD Radio station in the Steel City. Created in conjunction with Clear Channel's WXDX(FM), which carries Penguins games on its analog and HD1 channels, Pittsburgh Penguins Radio is heard this fall on WXDX's HD2 channel, 24 hours a day.

"We're going to have six hours of live programming a day, which will be replayed three times during the 24-hour time slot," says Mark Turley, the Penguins' corporate sales media director.

"We'll do shows with our players and coaching staff, with the ability for fans to interact with them."

Pittsburgh Penguins Radio will also carry NHL Radio's "NHL Live" daily two-hour program and NHL Commissioner Gary Bettman's "NHL Hour" weekly talk show. In addition, the club hopes to air live Wilkes-Barre/Scranton Penguins games and "classic" Pittsburgh Penguins games from its archives. The content will be produced in the Penguins' own facilities and sent by ISDN to WXDX for broadcast.

"This is truly a joint venture," says Tim McAleer, Clear Channel director of sales. "We retain the license, approve the programming and do the transmitting, while the Penguins handle content. It's really an expanded form of block programming. We're starting the venture using baby steps, by only producing a six-hour block to begin with. But as the station gains traction, I expect that more live content will be added."



The multicast will be a logical complement to the station's Pen's Page online.

For the Penguins, launching their own HD Radio station is good business.

"With so many newspapers and broadcasters going through consolidations, it is not always easy to get as much exposure as we want to get," Turley said. "Pittsburgh Penguins Radio gives us a way to get our message across to the fans directly, ensuring that we do so at the time and the level of detail that is best for the club."

Fans aren't the only ones who will benefit: Pittsburgh Penguins Radio will be selling spots to advertisers hungry to associate themselves with this cup-winning team.

"Pittsburgh Penguins Radio is going to be good for them and Clear Channel, and for HD Radio too," says McAleer. "In fact, I think this HD station will help HD Radio sales in Pittsburgh; something that will benefit all broadcasters here. It's a model that is really compelling. That's probably why I am hearing rumors about other professional teams launching their own HD Radio stations elsewhere."

— by James Careless

Radio Visionaries

Radio is moving forward. Traditional solutions blend with the new as executives look to the next decade of broadcasting.

This special section of Radio World offers case studies into how radio managers are preparing for the next decade of the millennium by improving their businesses in traditional and nontraditional ways. These case studies also build on our special "Radio 2010" supplement, published this spring, which you can read at radioworld.com *by clicking on Resources, then Supplements.*

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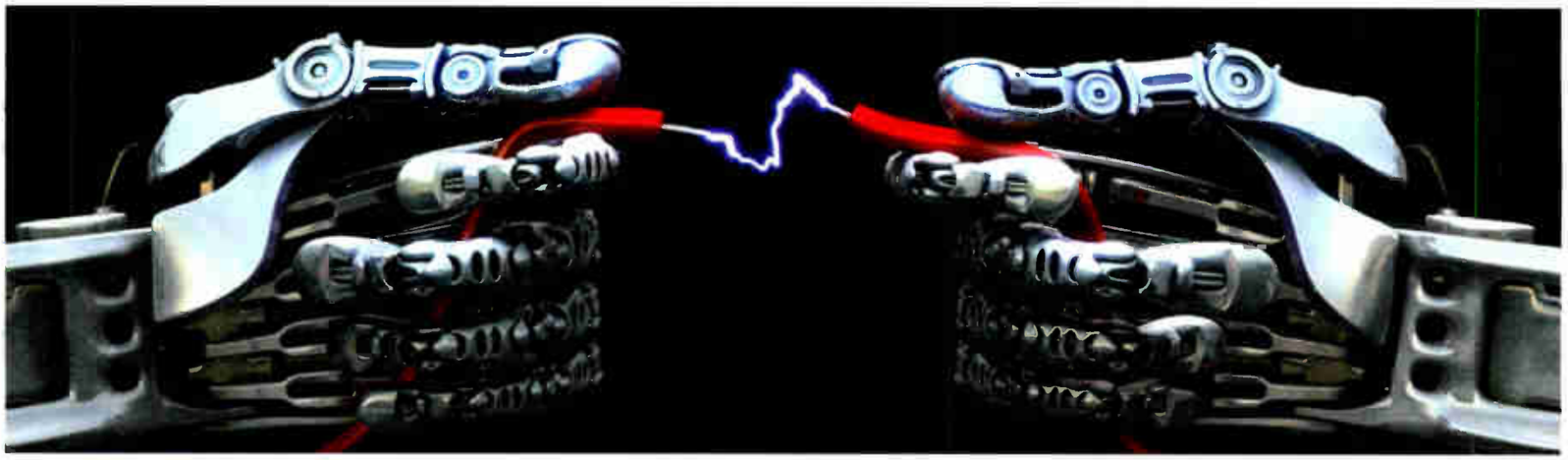
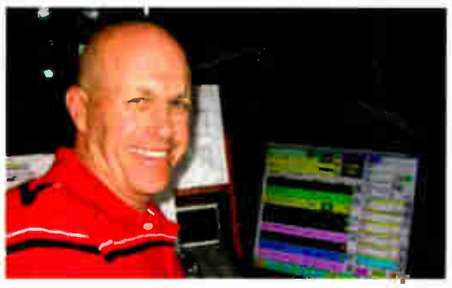


Not since Axia audio-over-IP was introduced to the broadcast industry have we at BGS been so excited! It is with great enthusiasm we'd like to invite you to take a look at the new Op-X Radio Automation delivery system for any single or multi-station cluster. Op-X works seamlessly with Axia IP-Audio networks or as a stand-alone system.

*"The merging of traffic and music logs takes a mere :30 seconds, making it among the easiest I have ever worked with. Once you get used to your adjustable personal color scheme, everything is pretty easy to follow. The best part about this system is the LACK of "dead-air" or "hangups" during automation. PD's will breathe a sigh of relief at this. Another thing that stands out is the absolute ease with which you can build your personal hot keys for each air talent. If you organize your show properly ahead of time and know where you are going, this system will make your show much easier and let you concentrate on *sounding good* on the air. "*

~ Jim Franklin, Program Director
WVBO, Appleton/Oshkosh - Wisconsin



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~ John O'Dea , Operations Manager
WNNK FM, Harrisburg - PA

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~ Leslie Whittle, Program Director
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ESPNRadio.com: Nine Years of Sticky

Sports Media Giant Builds Content That Attracts and Keeps Consumers

In rising to the top of Ando Media's "Most Listened to Audio Stream" rankings, ESPNRadio.com was an overnight success nearly a decade in the making.

Ando recently estimated ESPNRadio.com's audio streams were reaching 420,000 unique listeners per month.

In the *stickiness* category — keeping a listener connected once they've tuned to a stream — ESPNRadio.com might be up for the Golden Flypaper Award: Ando's research shows the average session in ESPNRadio.com's audio stream lasts 2.5 hours.

ESPNRadio's terrestrial radio reach, with five owned-and-operated stations and 750 affiliate nationwide, not to mention the brand strength of ESPN's popular cable television channels, is certainly part of the reason for online streaming success. (ESPN is majority owned by ABC Inc., part of The Walt Disney Company. The Hearst Corp. holds a 20 percent interest.)

But there's a technical story to be told as well.

> *'We were one of the first companies to stream radio, so we've had a lot of time to be able to evolve it, grow it, and improve it.'*

"Our audio engineers have a lot of experience in this," said Cory Smith, associate director of ESPN partnerships. "We were one of the first companies to stream radio, so we've had a lot of time to be able to evolve it, grow it, and improve it."

He said ESPN Audio, as the online efforts are now called, has also worked with its O&O stations and other affiliates to evolve and grow their streaming as well.

Over its nine years of online streaming, ESPNRadio.com has changed streaming providers several times, and with each new provider Smith said the sound quality has increased. He compares their early streams with a static-laden AM signal. From there, they progressed to a clearer FM quality signal, and today to ESPNRadio.com's HD Radio-quality audio.

And then there was buffering. "Back even two or three years ago, you'd listen and every five minutes or so there would be a re-buffering," he said. "The technology that we use has decreased the amount of buffering that takes place, so the user experience is definitely a lot better."

The bane of many Internet radio services, copyright royalty payments, is not on ESPN Audio's radar screen. "We own all of our own content, so we're fortunate enough we don't have to overcome those costs," said Smith.

He said the continuing idea is to look for every way to get its listeners to consume ESPN's audio content. Where the audio streams and podcasts have allowed listeners to continue listening to ESPN as they leave their cars and sit at their desks at work, a new initiative is targeting other places listeners spend their day.

The organization launched an iPhone

ESPN Radio App

app in September. "Becoming more mobile for us is going to be big." Smith said the app "not only will allow listeners to listen at work, but while they're at the game, while they're on their phone or at the gym. So getting mobile is definitely going to be something that we're looking to grow."

And because sports fans are often fans of their local teams, and want their sports radio weighted with local sports information, ESPN Audio recently launched new technology that allows for dynamic, geo-targeted ad-insertion in both live audio streaming and downloadable audio.

This provides for locally relevant content to be delivered in live ESPNRadio.com streams and free ESPN podcasts, including more than 100 podcasts available each month through ESPN.com PodCenter.

Still, "As technology improves and users have access to more choices in what they listen to via satellite radio, HD Radio, podcasts, streaming radio, etc., while some radio stations may see this as a threat to radio, ESPN sees it as an opportunity to expand our reach.

"Our goal is to be everywhere that the sports fan is. It doesn't matter which device our listeners use, we just want to make sure that we give them the option to listen to ESPN Radio, however is most convenient for them. With that variety in options, the #1 way in which we are making sure that people continue to listen to us, as they are offered more choices in audio, is by having quality content."

— by Craig Johnston

Middle Atlantic Products Offers Control Room Desk Systems

Post/Control Room Desk Systems from Middle Atlantic Products are customizable, scalable and designed to adapt to the changing needs of broadcast and post-production environments while providing enhanced comfort and usability for system operators.

Adjustable optional monitor supports for up to six screens per desk allow placement of monitors at varying heights to suit individual operators or line of sight beyond the desk.

New Desk System design enhancements include ergonomically contoured edges for desktops and keyboard shelves to allow greater operator comfort and efficiency. Desk surface heights have been raised to 30 inches to accommodate all sizes of users.

Surfaces are made of high-pressure thermolaminate and available in a variety of colors including recent additions such as honey maple, dark cherry and pepperstone.

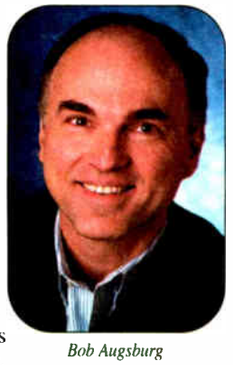
These Desk Systems are part of Middle Atlantic Products' integrated mounting system solution including space-efficient cabinet/rack enclosures with thermal management to remove heat from equipment and intelligent cable management for proper data transmission and serviceability.

Contact Middle Atlantic Products at (973) 839-1011 visit www.middleatlantic.com.

Product information is provided by suppliers

WAY-FM and the Power Of Repeating Yourself

FM Translators Help Bob Augsburg Spread the Word of God



Bob Augsburg

Christian media network WAY-FM is a big believer in FM translators. "FM repeaters have been an important part of our business since the mid-1990s," company founder and President Bob Augsburg tells Radio World. (A repeater technically is not the same as a translator, but Augsburg uses the word to refer to his translator network.)

"Repeaters have allowed us to serve markets too small to support standalone FM stations. They have also allowed us to get footholds in places such as Huntsville, Ala. We started there with a 10 watt repeater. Now we have our own noncommercial station there, WAYH 88.1 FM, with an ERP of 3500 watts."

Today, Augsburg estimates that his Nashville-based company, which owns 18 full-power stations, operates 40 to 50 FM repeaters throughout the southeastern United States. In many of these markets, listeners don't realize that these 10 to 50 watt transmitters aren't full-powered stations.

"If you manage to locate the repeater in the center of your coverage area at a good height, people can easily get you in their cars where most listening still

WAY-FM continues on pg 26

World Radio History

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DEVA Band Scanner Pro is the tool to evaluate FM broadcast band congestion and to log station identification parameters. Can measure RF level, MPX deviation, Left & Right Audio levels, RDS and Pilot injection levels. System is powered by the USB port of any Windows PC. *Free* Windows software sweeps the receiver across the FM band, logging every carrier and generating a spectrum display of carrier level vs. frequency. It then analyzes each carrier and creates a station list. Stations with an RDS presence are further refined to show all the radio data groups being transmitted. **And much more!**

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World Radio History

Why Hyperlocal Makes Sense

Fisher Communications Creates 43 Seattle Neighborhood Web Sites

Fisher Communications President and CEO Colleen Brown begins a conversation about her company's media future by looking at its innovative past.

Fisher began 99 years ago in Seattle as a family owned flour mill. "They decided that an efficient way of marketing their products was to buy a radio station," she said, which the company did in 1926.

Beginning with that station, KOMO(AM), the company grew to a broadcast group that owns and operates 13 full-power and seven low-power television stations along with eight radio stations in the western United States.

It was with an eye to continue that innovative past that Fisher's Seattle cluster of radio and TV launched 43 local Seattle neighborhood Web sites in August.

"It was clear to us that there was a desire for more neighborhood connection with local businesses and local information," said Brown. The Web sites bring together KOMO's brand with an abundance of neighborhood local news and neighborhood advertisers.

She said Fisher did an in-house study that found 80 percent of the news stories submitted to their Seattle newsroom were too narrow in focus to put on TV or the all-news radio station's air.

"So rather than just discard the information, for years now we and others have been looking for ways to use that information, to redistribute it to those folks who want that information."

The neighborhood advertisers are equally important to the strategy. "We've created not only an innovative content development strategy that is scalable, but we've also developed opportunities for local businesses that don't traditionally have the ability or wherewithal to cover the costs to advertise on either TV or radio," said Brown.

She noted that in order to maintain 43 neighborhood news Web sites and integrate servicing them into the existing news department, Fisher needed to partner with an infrastructure provider. They chose the nearby DataSphere Technologies, with its LocalNet service designed to provide broadcasters as well as other local media companies a way to insert news content as well as to serve the local small business advertising market with technology as well as a sales team.

From left: Holly Gauntt, news director of KOMO(TV); Troy McGuire, VP of news/general manager of Fisher Interactive Network; Colleen B. Brown, president/CEO of Fisher Communications; and Satbir Khanuja, president and CEO of DataSphere

Brown pointed to one other structural change Fisher made to the Seattle broadcast properties: "We never experienced the value [of owning TV and radio in the same town] until we put in one general manager, flattening the organization, in charge of all distributions.

"Suddenly the walls have come down," she said. "Creative ideas are good no matter if you're TV, radio, Internet, it doesn't matter."

Among new technology Brown sees for the future is mobile DTV, where a television station devotes a small portion of its 19.2 Mbps digital channel to sending video and audio to mobile handsets and automobile receiving devices. Fisher's Seattle KOMO(TV) is currently a testbed station, broadcasting the mobile signal to allow device makers to test their prototype receivers in the market's challenging terrain.

"We know statistically mobile TV is the number-one consumer product that is desired but not yet offered," she said.

Off on the horizon, Brown predicted that a listener or viewer will decide what content they want, and a device's software will determine the best way to receive it, whether it's over-the-air, cable, satellite, Internet or what-have-you. "It still comes back to your content, content is king, and how efficient are you at delivering it to the customer?"

— by Craig Johnston

> *'Creative ideas are good no matter if you're TV, radio, Internet, it doesn't matter.'*

WAY-FM, continued from pg 24

takes place," he says.

"For instance, we have a 10 watt repeater on top of Cheyenne Mountain some 4,000 feet up. It covers Colorado Springs so beautifully that you can receive it in your car up to 35 miles away."

Such is the utility of FM repeaters that WAY-FM is now considering buying available AM stations in order to access their newfound right to operate 250 watt FM translators.

"Being able to go from 10 to 250 watts would make a huge difference in the markets we cover," he says. "Of course, the business case would have to be there: We would need the AM station to be offered at a real low price."

> *Augsburg said translators 'have been an important part of our business since the mid-1990s.'*

Given current market conditions, this seems entirely possible. In fact, he said, prices for radio stations in general have dropped far enough for WAY-FM to buy two commercial FMs in Louisville, Ky., and one commercial FM in Charleston, N.C.

"If some of the large radio companies are looking to divest a few stations in top 100 markets, WAY-FM would be interested in taking a look at the properties," he said.

Meanwhile WAY-FM will continue to tend its farm of FM translators and look for places to site new ones.

"An FM repeater allows you to enter a new market for under $50,000," says Bob Augsburg. "That's a very good price for what the technology offers."

— by James Careless

Op-X Remote Voicetracker Is a Real-World Solution From BSI

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World Radio History

Emmis and Online Television Channels

Benjamin Finley Puts Video to Work for Stations in N.Y., L.A. and Chicago

A year ago, Emmis Communications partnered with Gen2Media Corp. to turn New York's WQHT(FM) into an ad-supported online television channel.

Since that time, the two companies have done the same with Emmis' two additional New York radio stations, WRKS(FM) and WRXP(FM), as well as a pair in Los Angeles, WPWR(FM) and KMVN(FM); and they are currently developing TV channels for Emmis Chicago stations WKQX(FM) and WLUP(FM).

Benjamin Finley

WQHT, known as Hot 97, was an obvious place to start because it's an international brand, said Benjamin Finley, vice president of eTV, brand content solutions at Emmis.

"It was the first station in the country to play rap music," he said, and it has listeners to its online audio stream around the world.

The station had something else that would come in handy for a virtual television network: video content.

"There were many famous hip-hop artists, sports celebrities, even movie stars who would come on the station," Finley said. "We were already shooting video in the studio and posting it on YouTube."

Not only did they have content, they had content that was generating a lot of interest. "We saw that we were getting millions and millions of views on YouTube."

In the case of WQHT's on-air staff, they also already were recognized on television. "You'll see all of our DJs host MTV Music Awards, so they've already got that reputation and celebrity feel," said Finley. "So what I'm really working on is how to take that coolness and that content, and put that on this video platform and monetize it."

While Finley comes from a sales background, he has one foot in sales and one in content development.

"What's really driving this is content — we all know content is king. Great programming is what drives ratings, advertisers want to be around that; and the better the programming, the more people that view it, or tune into it, or watch it, the more efficiently the advertiser can reach and target that audience."

He said the Gen2Media platform not only provides the Emmis stations with enhanced online video programming flexibility, but "we are able to offer our advertisers targeted, quantifiable and measurable on-air and online exposure to our brand loyal audiences, thus accentuating the reach and positive impact of their advertising dollars."

Emmis now markets three platforms in New York as a new online video network called ETV, offering "a robust array of high-quality music and entertainment programming to highly passionate, Web-savvy music fans across our three 'TV-like' digital video channels." That's just another arrow in the company's quiver of broadcast, digital and mobile platforms (as well as lifestyle marketing services like talent management and music and event sponsorships).

Finley's got his eye on ad dollars that are targeted to over-the-air television and cable, which he estimates in New York alone at a billion dollars. With the virtual television channels, 'No matter what their argument might be — 'We don't buy radio because it's not visual' — well, now we are."

The television channels are just the start in his mind. With the relationships that Get2Media has, if the content is good enough, "it can get distributed onto Xbox Live." Downstream from that, the content could even be licensed and distributed to other media outlets. He said that this wider distribution could get him invited to pitch sponsorships to the biggest of the big advertisers.

At the present, Finley says he works hard to straddle his sales and programming roles, "because I built credibility with programming here. They see that I have not only brought ideas that have monetized this, brought in some money, but that I'm also really thinking about what's valuable to our audience. And programming people will come to me and say: 'Hey, we're thinking about stuff like that, can you add content?'"

— by Craig Johnston

World Radio History

Bryan Broadcasting Goes Multi-Platform

Analog, HD Radio, PC, iPhone, BlackBerry, Windows Mobile, Google Android G1 ...

Texas' Bryan Broadcasting is a big believer in HD Radio. This local company — which broadcasts exclusively to the Brazos/College Station market of roughly 200,000 people — has added HD Radio capability to its two College Station outlets: KNDE(FM) at 95.1 MHz and WTAW(AM) 1620 kHz.

The area is home to Texas A&M University and its famous Aggies sports teams.

"Our analog FM station and HD1 channel, KNDE, operates under the name Candy 95," says Ben Downs, Bryan Broadcasting's VP and GM.

"It's a CHR station; to complement its format, our HD2 channel is branded as 'Rock Candy.' It features new rock music and artist interviews. Meanwhile, our HD3 channel is known as 'Play by Replay.' It's a channel where we replay some of the original content we generate, like sports coverage and local talk shows."

Chief Engineer Chris Dusterhoff installs ground strap on a new Harris transmitter.

On the AM side, Downs says HD Radio improves the station sound. "The audio improvement on WTAW's HD Radio channel is impressive. We like to say that it makes us 'sound smarter,' simply because it sounds so much better than analog AM."

> *'We're providing original, local content to encourage residents to buy into the HD Radio platform.'*

The organization also generates locally focused content for its streams and HD channels that would not otherwise be heard.

"We broadcast a local high school football team on our HD3 channel. Without the HD outlet, this team's play by play wouldn't be broadcast," Downs said.

"We have promotional staff at those games to conduct drawings for the new Insignia HD receivers during halftime. The winner can put their earbuds in and listen via the HD broadcast or through their streaming application.

Bryan Broadcasting makes all of its audio content available at radioaggieland.com.

"It's also the channel where we replay significant news stories. For example, Rep. Chet Edwards conducted a health-care town hall meeting; we archived the event and played it back at different times for listeners who couldn't make it in person."

The station also broadcasts less-attended collegiate sports from Texas A&M.

"We have a broadcast team that originates play-by-play of TAMU soccer and volleyball. At this point, the Internet streams probably have more listeners than the HD3 broadcast, but we're providing original, local content to encourage residents to buy into the HD Radio platform.

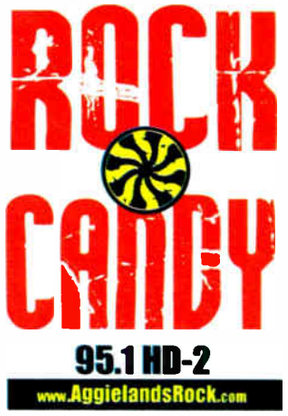
"Our HD2 station, Rock Candy, incorporates unsigned artists throughout the day. Our DJ, Emo Sarah, records interviews with indie artists and broadcasts the interviews and music five times daily on her 'Emo Sarah's Cry for Help' program."

In general, Downs is delighted by HD Radio's performance. However he is afraid that the format could go the way of AM stereo if manufacturers don't do more to popularize the technology.

"As broadcasters, we have no real control over the future of HD Radio," he says. "We can launch HD Radio stations — and there are now more than a thousand of them — but without HD Radio receivers being readily available in cars and at home, the format is not guaranteed to exist."

Mindful of this, Bryan Broadcasting is making all of its audio content available at *radioaggieland.com*.

"You can listen on your PC, plus we have apps that can be downloaded for reception on iPhones, BlackBerrys, Windows Mobile Phone or Google Android G1 phone," Downs says, "We are using every available platform — including HD Radio — to get our content to our listeners."



The CHR FM station airs 'Rock Candy' on its HD2.

— by James Careless

Moves on the Radio Chess Board

Genesis Stations Step Down the Dial and Power Up

On the AM band, transmission power matters ... a lot. So when Florida's Genesis Communications purchased Tampa Spanish-language station WMGG — and its 50,000 watts of daytime power on 820 kHz — from Mega Communications last year, company management had a shuffle in mind.

To capitalize on WMGG's big reach throughout the state, Genesis moved its flagship Tampa news/talk WWBA format from its 1040 AM slot to the 820 frequency and transmitter facility.

Next, Genesis' Tampa ESPN affiliate WHBO was moved from 1470 kHz to the vacated 1040 frequency. Finally, the 1470 station took the call letters WMGG and rebranded as Bay Biz 1470, the city's new business talk station.

Allan Davis

"Through one simple purchase, we were able to boost the reach and power of our two Tampa AM stations and launch a third," says Allan Davis, Genesis Communications' VP of programming.

"Being able to expand our vital WWBA news/talk station outside of Tampa to go up and down the Florida coast was a huge boost to our reach. But WHBO and its ESPN sports fans also benefitted from getting a better signal and dial position than before. Finally, Bay Biz 1470 serves a niche that was ignored until now."

The 1040 signal is licensed for 3.6 kW by day while 1470 is licensed for 5 kW. All three stations reduce power at night.

Genesis' AM station shuffle is part of a larger strategy, aimed at making its content as accessible as possible.

"We are offering our six stations' content on the Web and through Radiolicious' iPhone application," Davis says.

"In doing so, our goal is to give listeners as many routes to our content as possible. So if you can't get Bay Biz 1470 on your radio, you can still get us on the Web or your wireless handset."

— by James Careless

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'It's a Very Exciting Time to Be in Radio'

Broadcast Company of the Americas Uses New Media Tools

They don't call it interactive radio, yet. But compared with much of our history, during which radio audiences mainly just listened, radio today is interactive.

Jenny Rose Gonzalez helps Frank Anthony, afternoon drive host for the Walrus, upload video and pictures to his blog.

"Radio is not the medium it was even five years ago," said Jenny Rose Gonzalez, director of digital media for Broadcast Company of the Americas (BCA Radio), an independently owned radio group based in San Diego that owns and operates XX1090AM Sports Radio on XPRS(AM), oldies 105.7FM The Walrus on XPRS(FM) and talker SD1700AM on XEPE(AM).

Strong communication between programming, digital media and sales is vital." she said. "If a listener hears something that interests them on-air, the first place they go is the station's Web site; if the information they seek is not there, then we have failed our listener.

"We recently underwent a major redesign for two of our station's sites and our traffic has increased significantly," she said. "With the introduction of many new areas of content, the integration of our loyalty clubs into our main site's design and an overall better look and feel of the sites, more listeners are coming more often, and visiting a lot more pages than before." In fact, the station's group saw its page views increase over 70-fold to 1.2 million a month.

The company engaged Platformic for its Web platform and online Web development environment. "It's a very user-friendly platform; even the most un-Web savvy guys can use it to upload a podcast interviews, highlights from the live shows and videos in a timely manner so the listener can access them right away."

Online interaction for BCA has even replaced a radio staple.

"We don't do 10th caller giveaways anymore," said Gonzalez. "This method of giving away a prize doesn't benefit the listeners, the station or the client who is giving away the prize. Most people don't react to 'be caller 10' because they know that they probably won't get through. In fact, those that do are often not even regular listeners to the station. Our online loyalty clubs enable us to reward those who are not only listening, but gives those who listen more an even better chance to win."

The stations have also added the social networking capabilities of Facebook and Twitter as more arrows in their online quiver. But Gonzalez cautions that the dizzying array of online offerings can become confusing.

"You have to be careful not to overwhelm the listener. You want to give them as many ways to interact with us, without them having to spend time thinking about *how* they are going to. It's all about options: giving our listeners options to interact with us in the manner that is most convenient for them.

"You also need the buy-in of the on-air talent. These are the guys telling our story so they have to be fluent with all the different platforms. It's really important to consider all the different parties involved as new medias are introduced into your digital media strategy."

> *'You have to be careful not to overwhelm the listener.'*

"At the end of the day, we're a radio station and our headliner is what you hear on-air — the talent, the entertainment. Digital media has presented us with a way to make this product, bigger, better and more relevant to the lives of our listeners, enabling us to super-serve these very important customers. It's a very exciting time to be in radio."

— by Craig Johnston

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Zoom H4n Is Feature-Packed

Digital Recorder Is More Like a Handheld Digital Audio Workstation

PRODUCT EVALUATION

BY IRA WILNER

Packed with many unusual features, some very useful, the Zoom H4n kept me enthralled for hours as I evaluated it for broadcast use.

Truly a Swiss Army knife type of product, it has capabilities normally associated with a digital audio workstation computer. And while it can't replace a full-blown DAW for serious multitrack production, its feature set nonetheless is remarkable for a handheld device.

It does come bundled with a light version of Steinberg's Cubase, a popular DAW application for PC or Macs. It has something to offer for a range of users. Spoiled rotten, I'm besotted by this flash recorder.

The H4n is a makeover of Zoom's H4 and shares most of its predecessor's features. Improvements include better control layout, larger LCD display, higher-speed USB 2.0 I/O and most important, better mic preamplifiers with a 110 step digital gain trim. You can adjust the gain on the fly, even while recording, by using a simple rocker switch on the right-hand side of the unit.

The H4n has three distinct operational modes. Stereo provides a basic two-channel recording environment with high-quality PCM capture rate of 96 kHz samples at 24-bit depth down to 16-bit MP3 at 48 kbps. Four-channel enables four audio sources to be recorded simultaneously from built-in and/or external mics but at less than highest capture quality. Multitrack recorder is a feature-rich mode that emulates some DAW functions.

BASIC FEATURES

The H4n can record at high-resolution 24-bit/96 kHz sample rate in stereo onto common SD cards. You can use the built-in mic capsules, consumer-grade "plug-in-power" mics and/or external balanced XLR-style phantom powered mics. You can control phantom power and even set it for 24 or 48 V. The lower conversion voltage reduces the drain on the batteries. Many mics can operate at 12 V or less without significant loss of dynamic range. The Shure SM81 comes to mind.

Be aware that the 1/4-inch balanced high-impedance line-level inputs are really derivatives of the XLR mic inputs as they are designed to handle guitar pickups too. Thus they exhibit mic level gain! Fortunately, the digitally controlled preamps have been designed with this in mind. The gain is adjustable from point-one to one hundred (0.1–100) with the 0.1–1 range ideal for trimming hot line-level inputs. And being high impedance they are more susceptible to picking up ground loop noise from differing AC power potentials when connected to unbalanced sources.

A gold-plated 1/8-inch unbalanced stereo microphone mini jack is located in the rear of a die-cast aluminum block, which makes it sturdier. You can turn plug-in-power voltage on for consumer-style electret condenser mics. It also has higher gain than the balanced XLR inputs and is a better match for dynamic mics. I tested it with an Electro-Voice DO56, which is typical of the handheld microphones one might use for news gathering. Of course, use of the unbalanced jack will require a custom XLR-to-1/8-inch plug cable.

There is an optional mono mix mode that will sum the outputs of any of the stereo inputs to a monaural sound file. Only one external microphone need be used for sound bite recordings. However, be aware that the unterminated mic preamp may add noise to your recording. You might want to make a dummy plug with the appropriate termination resistor placed across the unused mic input.

For unattended situations or where there are long pauses in the proceedings and your eyes have long glazed over, the auto record feature will repeatedly start and stop the recording creating new sound files each time. You can fine-tune its behavior by independently adjusting the start and stop audio level detector thresholds and stop delay time. Each sound file is date and time stamped by the built-in real time clock.

Ever wish you were clairvoyant or had the ability to roll back time if only for a few seconds when you started a recording a beat or two late, chopping off the beginning of a sentence? The H4n is equipped with a preroll buffer that you can enable so the start of every recording goes back in time by two seconds.

Any recorded sound file, PCM or MP3 can be played back at half to 1.5 times normal speed in 5 percent increments! If you are transcribing spoken word, you can slow down its delivery without affecting pitch. If you need to make up time while listening to a recorded meeting, you can do so at time and a half, without turning the speaker into Mickey Mouse.

The process does introduce some reverberation sounding stuttering when slowing speech down below 80 percent. Speeding up above 100 percent sounds natural and could be used to cram more copy into a commercial.

M-S

Doing stereophonic recording with one pair of mics in an M-S (mid-side) arrangement can be advantageous. The mid or monaural mic is set to cardioid pattern while the side mic is set to a figure eight pattern facing across the performer. The left side as viewed from the audience's perspective should be the in-phase or front of the figure eight pattern mic.

By adding and subtracting the side pattern mic from the mid pattern mic you get left and right channel audio respectively without a hole in the middle. Furthermore, by varying the ratio of mid to side mic level you can control the sound stage width from wide to narrow. To do so, you require an M-S matrix to decode the mics into L/R stereo. The H4n has a built-in M-S matrix feature but it is

World Radio History

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Thumbs Down
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– Modest battery time.
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applied only to the input record audio rather than playback.

Thus, you can set up an M-S mic arrangement, adjust the mic input mix ratio and record it as a decoded stereo image. You can apply the M-S matrix to either the 1/8-inch or the external XLR mic inputs. Applying it to the built-in X-Y mics will result in a strange out-of-phase recording.

Because the H4n uses the M-S matrix only in the recording process you cannot adjust the sound stage width during post-production. The workaround is to select M-S matrix mode only to preview microphone placement. Once set, deselect M-S matrix mode and record both mics into conventional stereo tracks. In post production, using a DAW, you can create M+S and M-S mixes separately on L and R tracks or play back both tracks into an analog mixer using three inputs plus a phase reversing cable.

Noise handling issues are similar for all handheld flash recorders with built-in mics. Unless the capsules are floating in compliant shockmounts they will pick up the slightest handling noise through the body of the machine. The H4n has its capsules embedded in a heavy aluminum casting that helps absorb some of the transmitted noise by virtue of its mass. Zoom provides a large foam windscreen designed to cover the entire top of the unit and there is a 10-step low-cut filter, 80 Hz–287 Hz., which can be tailored to the audio source to further attenuate wind and low frequency handling noise.

A host computer can recognize the H4n as a USB external drive or, with the appropriate ASIO driver, a USB sound card.

Connected as a USB external drive, all of the built-in folders and subfolders are available for dropping directly into your DAW's editor. My test setup using Adobe Audition 2.0 worked flawlessly. Individual sound files could be loaded into the editing view and multitrack sound files could be loaded into individual tracks in the multitrack view.

Sound files are either stereo or monaural BWF (broadcast WAV) format. Editing markers set during recording are visible on the DAW's timeline. Four-channel mode sound files are stored in stereo pairs with the default file names of "4CH####M.WAV" recorded from the built-in mic channels and "4CH####I.WAV" recorded from the external XLR/1/4-inch inputs. Individual monaural multitrack mode sound files are labeled "TRK1-##.WAV," "TRK2-##.WAV," etc.

Connected as a USB sound card with ASIO driver the H4n main display will show play or record levels for a stereo signal. The submenus provide access to the effects patches which you can apply to the record input audio being fed to the host DAW.

POWER

Battery life is almost five hours with a pair of AA alkaline cells in normal power mode. While not nearly as impressive as the ultra-miniature Yamaha Pocketrak CX, which can run for days at a clip, considering the amazing array of features and the required processing power, this is pretty darn good.

There is an optional Stamina mode, selected with a switch hidden in the battery compartment. You have to power up the unit after selecting this mode. It boots into a firmware load with only basic features allowed but it stretches battery life to almost eight hours.

The unit comes with a tiny switch mode style AC power pack. You can use it for long recording sessions. Alkaline batteries will provide backup in case AC power is accidentally interrupted. Some users have reported some recorded noise when using the AC adapter. Being a switch mode power supply, it will exhibit some high-frequency ripple. If you leave the H4n powered down when you plug it into a host computer's USB port it will power up through the port. USB port power noise ripple will vary from computer to computer.

You can run the unit on rechargeable NiMH batteries by calibrating the battery voltage-sensing threshold to NiMH via a menu item. The unit will not recharge the batteries internally. For best results you might want to use Sanyo eneloop NiMH rechargeable batteries, as they do not suffer from the high self-discharge rates of conventional NiMH cells.

The H4n has a built-in confidence monitor speaker in the rear. Fidelity is limited but is sufficient for field checks. The reproduction is quite good considering it is only about an inch in diameter.

The stereophonic headphone output is rated at only 20 milliwatts. Many headphones can be driven to usable listening levels, but I found the distortion just a bit too high for my critical listening. Serious headphone monitoring really requires an amplifier capable of delivering several watts of power effortlessly. This is not readily achievable in a small handheld battery portable device and not one running on only a pair of AA cells.

The new H4n looks masculine with its satin rubberized no-slip plastic surfaces and heavy die-cast metal top. By comparison, the flyweight Yamaha with its shiny black finish looks more like a chic accessory for a woman's purse.

Physically, the Zoom H4n is comparable in size to a large bar of bath soap and quite a bit heavier. The top is dominated by the aluminum casting, which supports a pair of cardioid X-Y crossed coincident microphone capsules. There is no mechanical protection for these capsules that stick out beyond the top of the case. An accident waiting to happen?

The aluminum casting makes the recorder slightly top heavy, thus increasing the risk of the unit falling to the floor, top down, delivering a smashing blow to the mics.

On the front you will find an LCD display, large enough to be read at a glance while offering a lot of information. The pixels are a bit blocky.

The root screen has a large counter at the top with hours, minutes, seconds and milliseconds for indicating the current position in the recording. The next line provides audio file type, resolution and file name. The middle section is reserved for two to four level meter horizontal bargraphs with a displayed range of 48 dB. The bottom is reserved for storage time left on the SD card and other icon indicators such as compressor, low-cut filter, etc. When you press the monitor or record level controls, popup windows appear with the level value from 0–100.

The unit has an extensive set of nested submenus easily navigated by a scroll wheel found on the right side of the case. In addition the four illuminated track arm buttons just below the LCD display double

(continued on page 34)

A NEW WEB SITE FOR PRSS

In a collaboration with application service provider Public Interactive, which NPR acquired last year, NPR Distribution has upgraded its Web support for the Public Radio Satellite System.

Look for that collaboration to form the basis of other endeavors.

Organizers say *www.prss.org* is now more intuitive and that pages load more quickly, among other improvements. The site provides info to stations and producers about the system and also is the main gateway to the ContentDepot distribution infrastructure. PRSS VP Pete Lowenstein said in the announcement that for many public radio stations, the Web site is the "face" of the PRSS.

The site also hosts information on PRSS products and services including Content Exchanges, WebDACS and program producer resources, as well as training modules.

PRSS is a distribution network that feeds programming to public radio stations; it is a cooperative managed by NPR Distribution. Connected stations own their down- and uplink equipment. Transponder capacity and national operating gear in Washington are owned by a charitable trust.

NPR acquired online service provider Public Interactive last year. It provides modules that help broadcasters with their online offerings. Its 170 subscribers operate 325 public radio and TV stations. The new site uses the PI Public Platform content management system for creating and maintaining Web pages.

For information call PRSS in Washington at (800) 235-1212 or visit www.prss.org.

World Radio History

ZOOM H4N

(continued from page 33)

as shortcuts to four submenus, folder, file, speed and WAV/MP3 audio format selection. Inputs can be selected on the fly with illuminated pushbuttons that also blink upon peak overload. The layout, indicator lights and feel of the controls make operating the recorder quite intuitive.

INTERCONNECTIONS

The battery compartment in the back of the unit is covered by a slide-off cover that is not tethered to the unit. A standard 1.4-inch threaded socket is on the back. This can be used to anchor the unit to a photographic tripod, or you can attach a bizarre-looking plastic cylindrical handle designed to fit into a mic clip, not provided, to affix the unit to a conventional microphone stand. Depending upon the type and size of the available mic clip this may or may not be a sufficiently secure arrangement.

If you prefer a direct mechanical connection you can purchase the adapter Roland offers for their R-09 recorder. The OP-R09M is a ball mount adapter with 5/8ths thread mic stand adapter and an insert for European stands.

A pair of dual type XLR/1/4-inch mic/line input jacks and a coaxial power inlet dominate the bottom of the unit. There is also a cutout for an optional wrist strap, not supplied.

The external unbalanced mic input jack is located on the back of the unit securely. If you need to use all four external mic inputs simultaneously you'd have to hold the unit in the air. While it can be rested on its back or bottom, depending upon use, the only two positions giving full access to all connections, display and controls are either hand held or on a tripod mount.

I'm not fond of 1/8-inch jacks or the I/O connections on most small pro-sumer equipment because they are frequently the first items to fail. Most manufacturers mount the jacks directly to printed circuit boards to save cost. These solder connections get repeatedly stressed and sheared off by the normal flexion of the jacks when in use.

Ideally, all jacks should be anchored to the outer case and connected to the circuit board with short wire jumpers. That would reduce flexion and permit the wires to absorb any movement. However, it would significantly increase the cost of product assembly.

The form factor of the H4n with its present accessories does not lend itself well to a reporter on the run. The latest Marantz models better address that need and probably are more reliable in that service. That said, the H4n could be viewed as a general-purpose workhorse that can fulfill a plethora of needs in broadcasting and audio content creation.

Zoom should offer a belt clip accessory that could be securely attached to the 1/4-inch tripod socket on the back of the unit. That would make it far more convenient for reporters on the run.

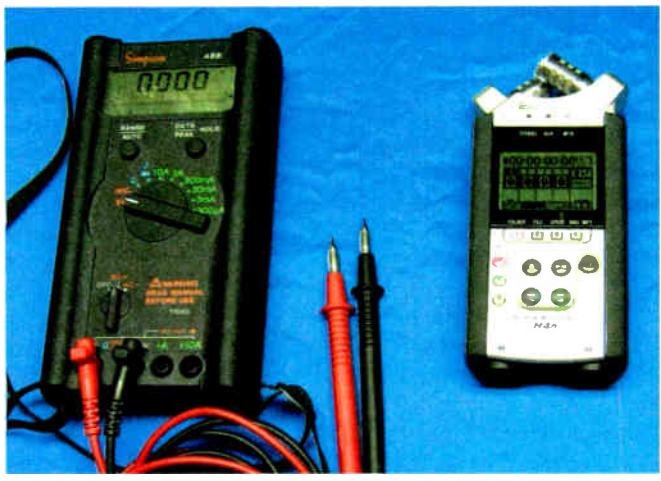
ADVANCED PRODUCTION

Multitrack recorder mode is where the H4n becomes unique and interesting. This handheld flash recorder contains a miniature four-track DAW. Each track will play back in real time, even if in record ready, up until it is punched into record mode. Punching in and out is glitchless.

The home screen top row is a settable time line counter. Users can use the menu wheel to select and change position in the timeline as required for cueing to specific places in your four track project.

The middle section has four channel strips with icons for punch-in buttons and pan pots. Selecting a pan pot with the menu wheel opens up a submenu where you can adjust track playback level, track panning, select a sound file for that track or select an effects patch for recording to that channel. If the track select pushbutton is active you can audition the effect in real time and instantly hear any changes you make with the effect's menu. A vertical bargraph at the bottom of each channel strip appropriately displays playback or record levels for that track.

Users can overwrite an existing sound file or create a new sound file each time a track is recorded. If you are in overwrite mode you can do punch-in editing of a track. And you can automate the punch-in and -out points to make it foolproof. You can also make backup duplicates of track sound files or of the entire multitrack project before making changes.



The Zoom H4n is smaller than a handheld tester and about the size of a large bar of soap.

Once you have the four tracks mixed based upon their panning and playback levels you can open up tracks by bouncing them (mix down) to a new monaural file, which you can then reload into a track. Or you can bounce to a stereo file to create an output file of the project. But then you must move that file to a stereo file folder for playback as the multi-track mode can only load monaural sound files.

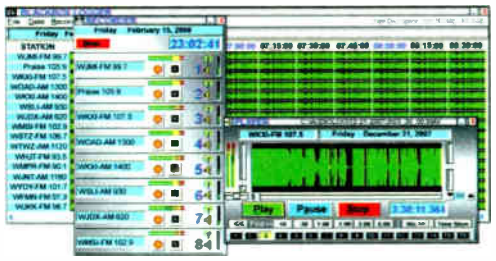
There are 50 effects patches with 10 additional empties for storing user-defined patches. Each patch consists of an EFX module and a preamp module. Most are designed for electric guitar. There are 10 patches for electric bass, four for acoustic guitar and eleven for vocals.

Most of the preamp modules produce various types of fuzz distortion. The vocal mic preamps can add midrange and bass equalization bumps while the effects are various forms of reverberation, flanging, chorusing or compression. Each effect has many adjustable parameters. Due to limited processor horsepower only one patch may be applied at a time.

At first glance one might conclude the karaoke feature would only interest musicians. But it could be useful for creating music beds and humorous parodies.

PRODUCTGUIDE

PRISTINE BLACKBOX HELPS WITH COMPLIANCE, VERIFICATION AND MONITORING



Pristine Systems' Blackbox Digital Audio Logger, Monitor and Alert System is a radio and television audio logging product designed to meet compliance, proof, audit, programming, management and engineering needs.

Up to 16 stereo (or 32 virtual mono) channels of logging are available. Choose from a variety of WAV audio devices and AM, FM and TV tuner boards. Most popular audio storage formats are supported.

Advanced tools provide a program director or consultant with everything needed for quick review or detailed analysis of an entire market. Time-based and microphone skimmer modes are included.

A "Virtual Radio"-style player allows switching between multiple stations during playback as though listening to a radio in real-time.

Real-time monitoring of audio level and RF signal strength, when equipped with ASI tuner boards, with an extensive alarm system provide quick alerts to help avoid lost air time.

A recently announced compatible RDS Viewer has been added as an optional feature. The viewer will display up to 16 channels of RDS PS and RT data.

For information, contact Pristine Systems at (800) 795-7234 or visit www.pristinesys.com.

WIREWORKS OFFERS CUSTOM RACK PANELS

Signage sometimes is an overlooked element in broadcast facilities, perhaps not thought about after initial construction. Customized signage beyond name and position is even rarer.

But interconnects and accessories maker Wireworks seeks to change that.

The LumaVue Custom Panels line offers acrylic panels (1/4-inch or 1/8-inch thick) in a number of colors or matte and glossy finishes. These panels can be rear-engraved with a label, message, diagram or logo. The rear engraving prevents marring or desecration of the legend. They are also UV-resistant.

LumaVue panels are semi-translucent so they can be lit from behind, making them useful for "On Air" and similar duties. The panels can also act as equipment identifiers or occupy ventilation spaces to prevent accidental obstruction.

For information, contact Wireworks at (800) 642-9473 or visit www.wireworks.com.

World Radio History

Karaoke uses the first two tracks in the Multi Track Recorder mode to import a stereo music file. It can be any file you want to use as a background for a new vocal as long as it is 16-bit/44.1 kHz stereo. The original vocal should be centered, equally in both channels. You can now invoke a process to cancel the centered vocal mix, then pitch-shift the music into the key best suited to your voice. The music background now minus its vocal can be saved (bounced) to a stereo file or you can proceed to record a new vocal directly onto one of the remaining two tracks.

GOODIES

If you are going to add the unit to a remote kit, you should buy a small roadie box with foam insert to safely cradle it. Gun shops carry small pistol cases that can be used to transport small electronic items. I use one by Winchester to tote around a mic preamp, its power supply and some adapter cables. As an added benefit, the case is equipped with combination lock latches.

Also supplied is a 1 GB SD memory card, a windscreen, the oddball mic clip adapter, a wide voltage range switch mode AC power adapter, a short USB cable, a CD with Cubase LE and the user's manual. I strongly recommend buying at least a 4 GB SD card to provide more storage headroom.

With its low cost and versatility, the Zoom is the price/performance champ.

Batteries are not supplied. The only other optional accessory is a wired remote control ($39.99) that duplicates the input selector buttons, playback, record functions and playback, record volume controls. The best use of this remote would be to eliminate handling noise. The control cable is too short to permit useful separation between the recorder and the operator in a large venue situation. It does not have an LCD display to help you keep track of record time or remaining record time on the SD card. And it has no provision for extending the headphone monitor.

My gold standard for audio quality is a MOTU Traveler with FireWire connection to a custom Asus laptop. My monitoring is via a Stax Lambda Pro SR electrostatic headset driven by a line-level output of the Traveler. For comparing headphone outputs I also use a beyerdynamic DT 990 dynamic headset. All of the audio files recorded by the Zoom H4n were played back through the MOTU using Adobe Audition 2.0. Microphone recordings were compared with those created with the MOTU Traveler's mic preamps and converters.

When you select mono mode, each mic channel is summed at –6 dB to prevent level build up. This seemed to affect my Shure SM81s adversely as they suffered from a slight reduction in presence in mono mode.

In general, the audio of the Zoom had a somewhat restricted low-end response compared to my MOTU. Overall sound was ever so slightly less smooth with a bit less impact and clarity. Not enough to be worrisome for broadcast use.

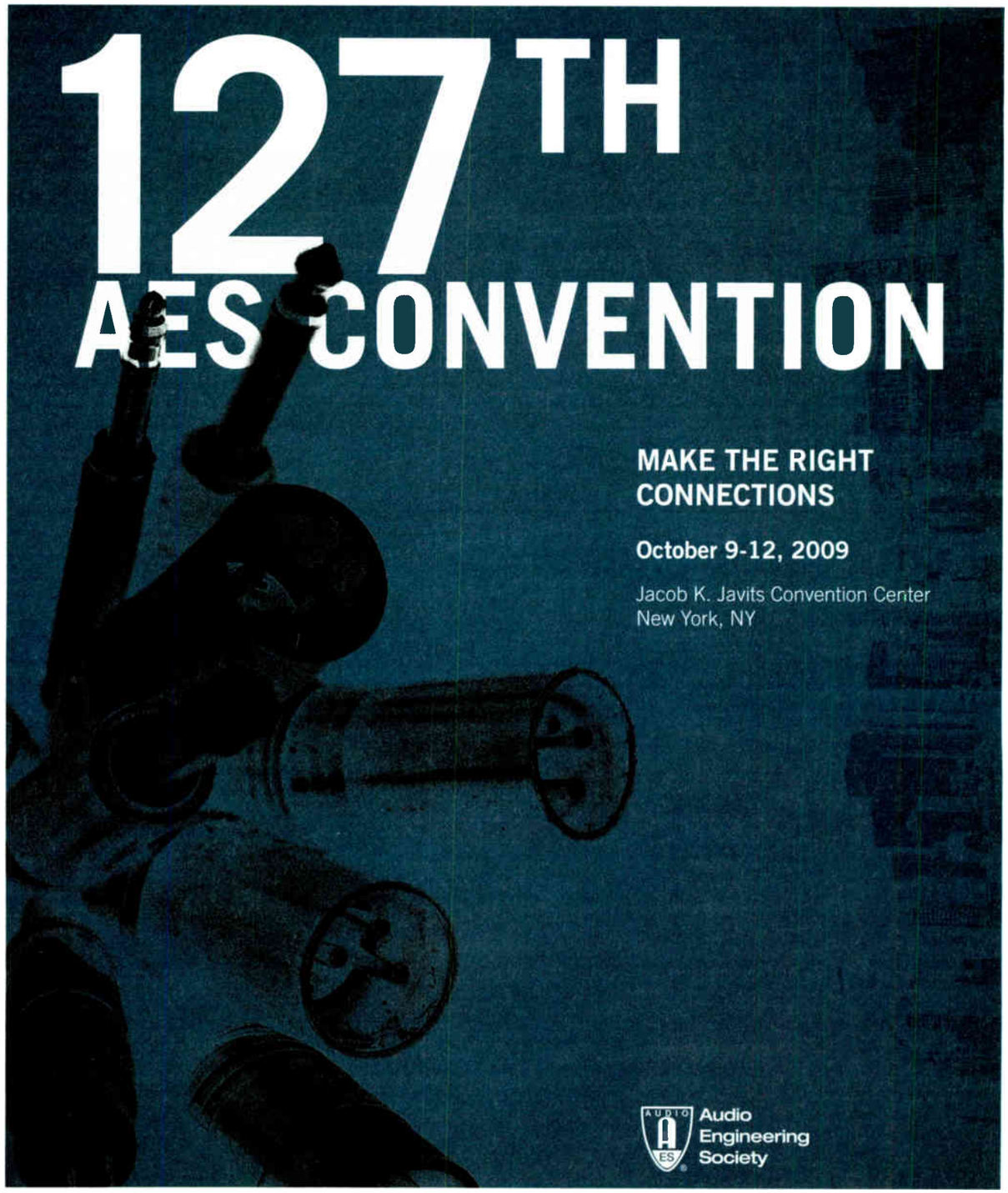
WRAP

I have to conclude that the Zoom H4n provides amazing bang for the buck. While it does not provide the ultimate in recording quality, with its low cost and versatility the Zoom is the price/performance champ.

The H4n is a jack-of-all-trades recorder that could be at home in your production department, remote broadcast operations department or news department. Is it ideal? No. There are compromises to be had when cramming so much capability into one device. Think cell phone.

If you can afford to own multiple flash RAM recorders, you could match specific machines to specific user requirements such as extra long battery life, clandestinely small size for candid recordings, highest audio recording quality, eight or more track simultaneous recording, military ruggedness, ease of use, surround sound recording, etc.

You won't find one machine that embodies all of these virtues. But if you prefer to standardize on one machine that can empower your staff to achieve a wide range of tasks, the H4n might be it.



World Radio History

FEELINGS RUN STRONG ABOUT AM RADIO

An article in the Sept. 1 issue explored whether AM radio is "still relevant." Intended as the first in a series that reports on both the problems and successes of AM, the story summarized what some observers see as a mounting wall of challenges to operators including the state of its financial backing, ad revenue, listenership demographic trends and the lack of AM features on new electronic devices.

Longtime RW contributor Randy Stine, who interviewed numerous sources for that assigned article, wrote, "From clear-channel powerhouses to small rural stations that still feature a grain report, the news for owners on the U.S. AM radio band is fairly grim."

Readers responded vigorously to the question in our headline as well as the tone of the article. In this issue we provide space for their reactions plus a commentary from R.V. Zeigler on the topic.

10 Steps to Fix AM's Problems

What's Wrong With AM? Here Are Some Cures

BY MARK HELLER

Radio World in recent issues has asked, "Is AM radio relevant?" Previously they've asked, "Is the FCC relevant?" I'm sure you would have had a bigger response if you'd asked if shortwave radio or ham radio is relevant.

AMRADIO

Since Radio World is read widely in many radio stations, I'd like to address not only engineers but talent, PDs, managers and owners.

To fix AM's problems, we have to take a 10-step approach.

Nothing is as sweet as a well-run AM signal that someone actually cares about. When you hear it, you know. Unfortunately, they're not as prevalent as they were 30 years ago.

Mother Nature has always affected AM broadcasts when lightning was involved. But today, man-made devices interfere around the clock. Sodium vapor lights, farm fences that are electrified, aging power transformers and even the common personal computer monitor affect us.

Here are some "nuts and bolts" solutions. Not the latest, shiniest thing. We

> **Nothing is as sweet** as a well-run AM signal that someone actually cares about. When you hear it, you know.
>
> – Mark Heller

I can't help get an AM radio application built into a cellphone without wireless Internet or a 60-foot antenna attached to an iPod, so my comments are limited to what we can do today, with the equipment that now exists.

in broadcasting sometimes chase after things that sparkle, are new and trend-setting. Roll up your sleeves, and feel free to cross the items off as you complete the list.

1. The 5 kHz reduction of audio of recent years was a disaster. It was started by one major group and others quickly followed in lock step. You've surrendered your bandwidth for the benefit of a few IBOC operators.

Here's a little-known secret. AM radio does not have to be all-talk or all-sports. Music *can* be played on AM radios.

Put your radio station back at your original specs, according to FCC rules, the way the transmitter manufacturer worked so hard to build it. The guys who invented AM radio never wanted it to sound like a police scanner. Knock it off! Your advertisers with music beds and singing jingles will appreciate it, too.

2. Frequency synchronization has been patented for AM radio carriers at least twice since 2001. It came out of Oak Ridge, Tenn., and the University of Tennessee.

Simply put, end the fluttering noise at night on AM with every one of the licensed frequencies, coordinated using a GPS device to stay exactly on frequency. Listeners know the difference, especially at night. P.S. It's not expensive to do, either.

3. Power levels on AM must be legal and honest. If you have a license that says 11 watts at night and you are running 125 watts, you deserve to get fined. You are contributing to the overall noise at night. If you are the manager or licensee, ask your engineer how he computes your nighttime power.

4. Doing high school sports on AM with a simple cellphone? Grow up!

Just because your station has a trade-out with a cell provider doesn't mean you have to do four-hour remotes with "tin-can" audio. Dust off your Marti transmitter. Find that Comrex audio extender. If you can't afford the latest "near-studio-quality" equipment, check out the used items on eBay or from your audio dealer's used inventory.

It's OK to put a cellphone on the air at an emergency or breaking news like an accident, but stop kidding yourself.

5. A major issue is expanded-band AMs that kept the original frequencies they were supposed to give up. Please explain how 80 broadcasters were given a new frequency and, to win them, were graded on how much interference their current old AM signal caused; then, after five years, they kept the original frequency as well.

There is a small corner in hell reserved for these licensees. The expanded band was created exclusively to clean up interference in the rest of the AM band.

6. IBOC at night didn't work, doesn't work and won't work. Turn it off at

(continued on page 38)

Take Fred's Challenge

BY FRED WEINBERG

What are you guys trying to do? Alienate half your readers?

It's one thing to question the future of AM radio. It's entirely another to essentially pronounce it dead, especially in view of the fact that many AM stations are thriving.

I said this in 1986 at an FCC conference in Dallas on "saving" the AM band and I'll say it again, this time with a challenge:

AM radio is not dead. Many AM programmers, however, are brain dead.

Tell you what. Anybody out there has an AM station in the western United States (say, west of the Mississippi) that they don't want, we'll pay you $5,000 for it. And if we don't make a profit within a year, we'll make a donation to the journalism school at the nearest university in the exact amount we spent trying. And I promise you we'll make that profit operating in "the public interest, convenience and necessity," in case you folks have forgotten that phrase.

I don't care if it's a daytimer, a Class IV or in the middle of dirt holding the world together. As long as it has a license and it is within a reasonable distance from one of our properties, I'll take on all comers — especially the naysayers like Randy Stine.

Oh yeah. We won't be using HD Radio in that challenge *because it doesn't work and is useless!*

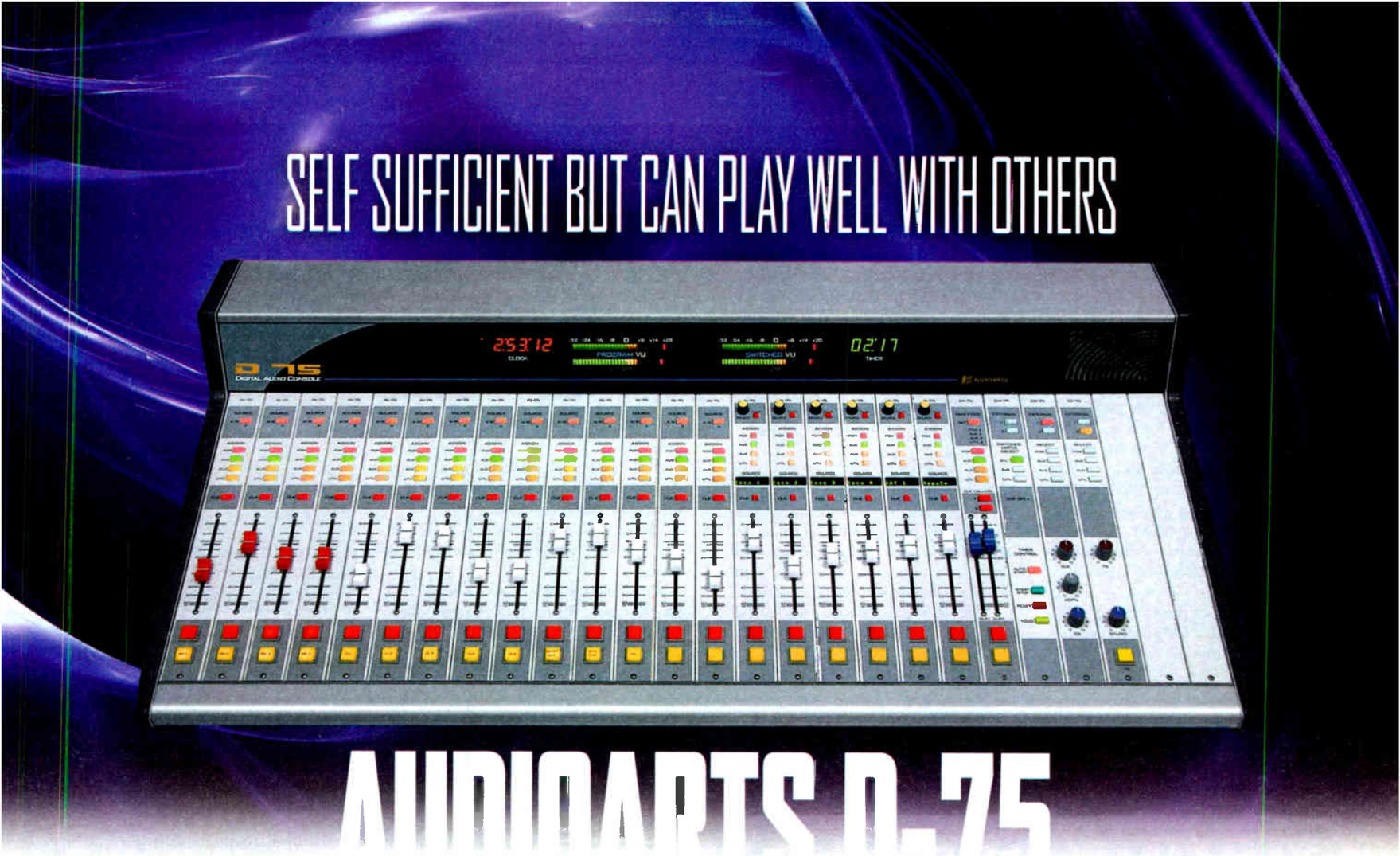
I don't deny we have some problems. But to pronounce a medium dead that has more receivers out there than any other medium by a factor of maybe two is just silly.

Any takers out there?

The author is managing member of Ely Radio LLC in Winnemucca, Nev.

World Radio History

SELF SUFFICIENT BUT CAN PLAY WELL WITH OTHERS



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It's no secret that Wheatstone is the #1 name in radio consoles and networking, known for top quality performance and ruggedness. That heritage is apparent in every aspect of the Audioarts D-75 Digital Audio Consoles.

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Need to network your plant? Easy! Install Wheatstone or Audioarts network I/O frames and a switch in your TOC/ rack room. Install D-75N consoles in your studios. The D-75N includes six networked input channel modules that access any source from anywhere in the network, plus two locally connected sources that appear on your consoles and on your network. And the D-75N's four output buses are available on the network as well.

When we conceived the D-75, the idea was to make it digital, affordable and networkable. And it's incredible just how fine it turned out. We're proud of the D-75 and it's ability to play well with others. We think you're going to find it pretty incredible, too.

D-75 major market features:

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World Radio History

HELLER

(continued from page 36)

night until a fix is found and proven.

Citadel Media, one of the early adapters, was sensitive to their adjacent neighbors and did the right thing. They deserve a lot of credit for their common sense.

7. When was the last time you "proofed" your AM station?

I don't mean getting that annual 20-minute drive by R.F. Emission Measurement, either. Take the station down on a Sunday night and proof the audio chain with a tone, including the processor, and check your connections on the ATU at the antenna.

I'm betting your answer to the question is, "I can't remember." Proof it!

8. The next two points have a political overtone. They need to be said.

NRSC standards were adopted back in the 1980s to address solid-state florescent bulbs, solid-state vapor lights and other interference. It's time to reconvene this group. Some of the original members of this group have either passed away or long since retired from the business.

9. Marathon, Fla., has one AM station, with a directional array pointed away from the U.S. It's time to make a deal to make it go away.

It's not an FCC problem, either. We as loyal broadcasters stood mostly silent while our government attempted to reach Cuba with up to 100 kilowatts from this station, only to have Cuba successfully jam more than one frequency back at us. That jamming continues today. Write your congressman. The NAB and SBE right now don't care.

10. Finally, to managers and program directors: You're busy giving away concert tickets, free pizzas and the kitchen sink on your FM station to maintain your cume and share of audience. When are you going to do this with your AM station?

One of my colleagues says, "All that AM needs after these corrections is one 'gangbuster' promotion, more than giving away a box of cereal or tickets to a minor-league baseball team." Do something dramatic.

Mark Heller is president and general manager of WGBW Radio in Two Rivers, Wis.

Here We Go Again

AM Has Its Problems, But Stop Belittling It Please

BY EDWARD DE LA HUNT

I find it incredible that so much effort is being put forth to constantly belittle AM.

I read an article written by Randy Stine, who I have no idea who he is.

AMRADIO

About AM radio! The question is simple. Does he own one? Is he invested in one? Does he sell advertising on one? And if he does not, what in the world is he beating his gums about?

As Stan Salek reflected, it's not the first time that people have claimed AM is dead.

Combination owners are to blame in a lot of cases. When they instruct their salespeople not to worry about AM, just sell FM. Single standalone FMers spend an inordinate amount of their time knocking AM radio. Even the NAB, which argues AM isn't being left behind, are responsible for the greatest damage to the spectrum when they wrote off the Kahn Stereo system in favor of the flawed C-Quam system and now they're ready to begin again by trying to have the AM band go IBOC digital.

We are running a very successful AM station; but over the 47 years we have run this station, we have constantly improved the facility from a lowly beginning of 100 watts on 1240 to our current position 40,000 watts on a half-wave antenna on 870 kc. It is hard to compete with 100,000 watts of FM when you only have a 1 kW AM station.

I have often thought it's really upside down. The FM stations should be limited to 50,000 watts and the AM stations should be allowed to have 100,000 watts. You can bet your sweet bippy that would level the playing field.

I just wonder where we could have gone if, back in the '60s, the clear-channel 750,000 watt proposal would have been granted.

It is true that many operators have not worked to improve their facilities or maintain them. I applaud KGLB at Glencoe, Minn., and WMVP in Chicago for their efforts to improve.

Three years ago, we took our 1600 kc station at Walker, Minn., moved it to 1570 and increased the daytime power to 10,000 watts along with a new tower, new transmitter and better ground system.

This station is struggling because its former owners prostituted the hell out of it by reducing its modulation to 10 percent in order to save power. They also ran 47 watts at night and simulcast with their FM by putting a microphone in front of an FM radio. You could listen to the background conversation in the studio quite often.

When we took over the facility, field strength at a mile was 16 mV. Three days later, after we removed a single shunt wire and installed a folded unipole, our measurements netted 65 mV at a mile.

The purchase and the reclaiming of this station is a virtual story of many AM operations yet everyone is convinced that AM's problem is AM. Not hardly!

"Quick fix." Operators do you know you can go plus or minus three channels without a bunch of monkey business? Have your consultants look at it. Maybe there's a power improvement of the daytime or, at the very least, a nighttime power improvement; and then if we could only change the stereo standard to the Kahn system and encourage or mandate AM radios that would receive the same; and above all, if we could muzzle the critics that are not involved and truly don't have a clue.

Ed De La Hunt is president/general manager of KK Radio Network in Park Rapids, Minn.

> **I find it incredible** that so much effort is being put forth to constantly belittle AM.
>
> – Ed De La Hunt

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World Radio History

AM Remains a Vital, Important Medium

At Least in Much of the Country, It Is Not Just a Programming Backwater

BY R.V. ZEIGLER

To paraphrase Mark Twain, "The report of AM's illness grew out of radio's illness. The report of AM's death was an exaggeration."

AMRADIO

AM is quite alive and vital today. It may have been relegated to the programming backwaters in some places, but in the central United States it still remains the primary source of essential information for many people.

I am from an area that literally lives and dies by the current and impending weather as well as the commodity markets. This is not only the trading of commodity stocks, but what the producer receives when he sells to a receiving terminal at a given time. AM radio gives people this up-to-the-minute information that is not easily accessible from any other source.

Wireless hot spots for the laptop while you are checking cattle or in the dusty cab of a combine while harvesting grain? Not very likely! Cell phone coverage? To an extent, but the further you get from interstate highways or population centers the spottier the coverage becomes.

So what provides the necessary information to these areas? The old-fashioned AM broadcast band that people have grown to love and trust.

People in rural Nebraska desired it to the extent that more than 4,000 of them came together and formed a broadcast company in 1951 to give them the information they need and want, still today. This is who I work for, and the listener-owners are not shy about letting us know if we are not giving them the information they need.

I am also pleasantly surprised that they are equally willing to tell us when we do things to their satisfaction. Few things give you that "feel-good" sensation such as when you are approached in public and told how well someone likes what the station is doing. Not a ploy to get "swag," but genuine appreciation of the job we do for them.

This part of the U.S. also has many main transportation routes going through it. Comprehensive, accurate and up-to-the-minute weather reports are vital to the safety of the people and the goods using these arteries of commerce.

AM radio, once again, is the best medium to disseminate this information.

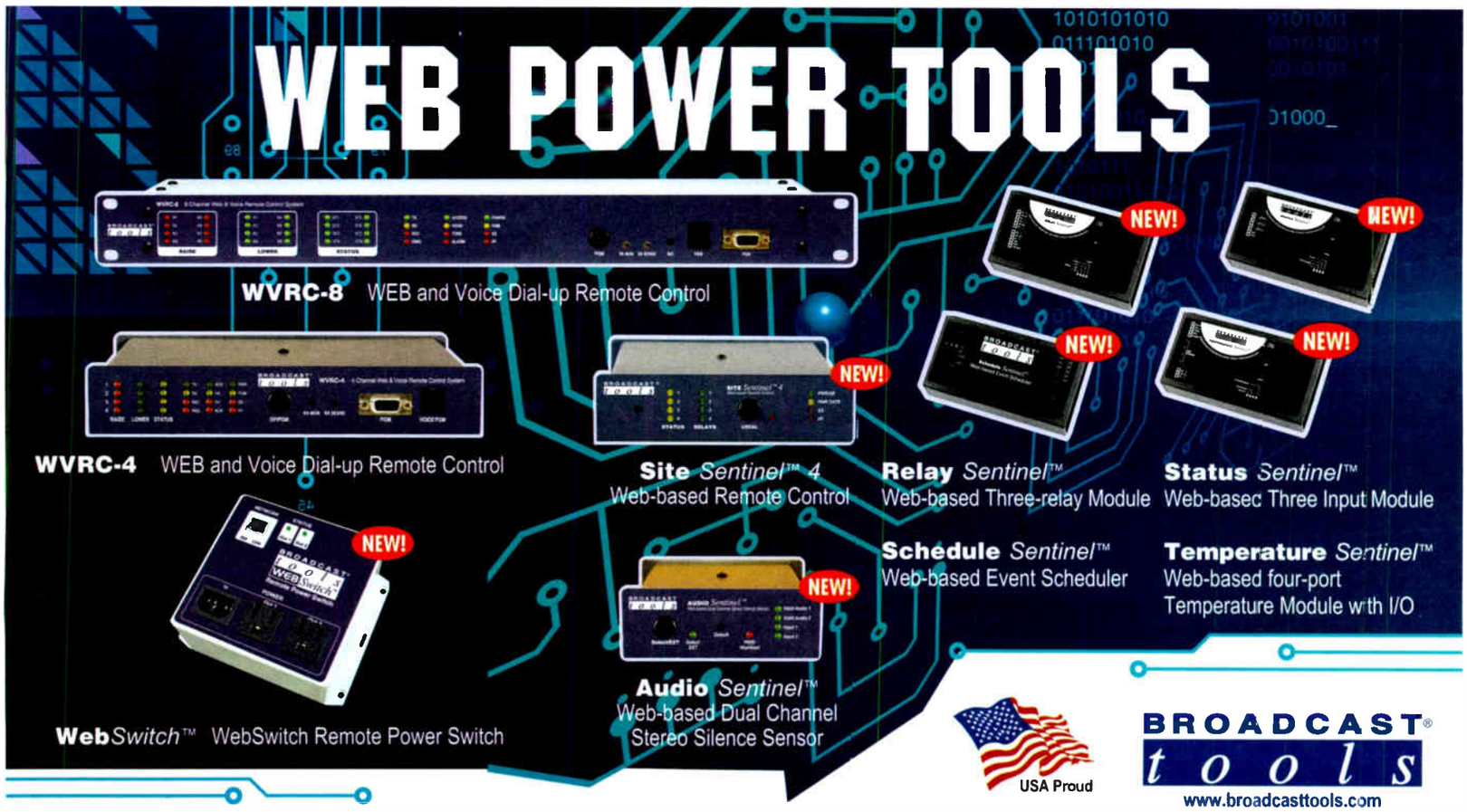
GODSEND

I had to travel one day in unknown territory during flooding conditions. Finding a regional AM station that gave timely information about road closures was a godsend.

This happened during a weekend,

(continued on page 40)

R.V. Zeigler. 'There is no better way to get vital information to the greatest number of people, over the broadest coverage area, in the shortest amount of time than live AM broadcast radio.'



World Radio History

Trust, If You Wish — But Verify Too

Senior Managers, It's Up to You to Keep Your Ears and Eyes Open

PROMO POWER

Mark Lapidus

Read more Promo Power articles online at radioworld.com

I'm driving through Jacksonville, Fla., listening to that famously long Pink Floyd song "Us and Them" when the DJ begins answering the phone over the music without realizing he is on-air.

The first few calls are ordinary requests and stupid questions from guys. Then a young lady calls and the DJ's abrupt phone manner immediately alters.

Within a minute he is trying to get the female caller to come down to the station after he gets off the air so they can go have a drink together. She laughs a few times, innocently flirtatious. He tries to close the deal and she says oh, no, she has school the next day. He tries to sweet-talk her, laying it on pretty thick, and she finally gets nervous and hangs up.

The next caller says, "Hey, dude … You know you're on the air, right?" Mr. Suave DJ says, "What do you think I am, a moron? Of course I'm on the air. I'm on the air every day at this time."

"Yeah," replies the caller. "And the whole world was listening to you trying to pick up that jail bait. And to me telling you that, yes, you *are* a moron."

Sudden silence.

UNEXPECTED GUEST

Three years later, I watch as a bookkeeper is being escorted to her car after being caught embezzling funds. She says she needed the money to put her son through college. The owner very generously decides not to prosecute.

Flash forward a few more years. I'm now a program director. It's late Saturday night and I realize that I left a pair of tickets to tomorrow's concert in my office. Since I rarely see the guy who hosts "Saturday Night Metal Shop," I decide to pop into the studio while I'm at the station.

He has his bare feet up on the console, a beer in one hand and a joint in the other.

He looks up at me and says, "Hey dude, what's goin' on?"

SMART, NOT PARANOID

True story No. 4: Station clusters become the norm and suddenly there are more people than ever in one building. Theft is now an issue and much to the shock of the employees, we've installed Webcams near the prize closet.

We watch the recording as two people whom we'd trusted load our gift certificates, T-shirts, autographed items and tickets into a bag. I feel a mixture of sadness and anger as I call the police. The cops come, watch the recordings and obtain warrants for the arrest of our former employees.

The hard truth is that no matter how senior managers feel about their employees, they must keep their eyes and ears open.

This means unannounced but regular auditing. It means occasionally listening in on the request lines to see how on-air talent is interacting with the public.

It means randomly checking e-mails, text messages and Facebook pages to make sure communication with listeners and other staff members is appropriate. It means having an outside auditor look at your books at least once a year.

It also means letting your staff know that what they do at work isn't private — especially since they work in a very public business.

They should be told that communications can be and are being monitored and that their behavior is expected to be held to a certain moral and ethical standard.

Make sure they know you've got a zero tolerance policy when it comes to internal or external harassment, theft and drug abuse on the job.

I am not suggesting that you become a paranoid employer. But being naïve and believing that all is hunky-dory is risky business.

Better you should find nothing when you look every three or four months than to hide your head in the sand and deal with larger issues later.

And yes, I did finish that guy's "Metal Shop" air shift. I felt sorry for the next station that might hire him. But lo and behold, within weeks he was on another station's overnight. His new employer never called me for a reference.

Mark Lapidus, a longtime contributor to Radio World, is president of Lapidus Media. Reach him at marklapidus@verizon.net.

Remember the Listener

BY BOB HAMILTON

Bob Hamilton. 'Not all operators let their AMs go to hell. Most do.'

I read your article on "Is AM Radio Still Relevant?" and had to respond.

Since '96, owners big and small "bought and bought now." Some companies are very big, with lots of losing AMs.

The word losing starts from the top of the company. Yes, economics are tough; but if you set a game plan to win you should have *not* failed.

In most situations I have been involved in, and there have been many, most operators just throw some kind of net or satellite service on it, and that is it. Try to find a local newscast on big or small AMs? Public service? A joke.

If the FCC really wanted to get on each operator and looked at community service, it is not there. I visited a station recently and not one thing local was on it. Should it have been licensed? Most operators are waiting for AM to return to cash in on the money they spent. Forget it! You have let it go to the dogs and now you can find an AM to buy *cheap*. Why? Total neglect.

Not all operators let their AMs go to hell. Most do. Their priorities have changed because of economy. AM today *can* survive *if* the people running it put "passion" back in broadcasting.

There are many people out of jobs who would love to help you turn around your AM. Find them and let the AMs with service and community involvement return — or AM, and even FM, could be over. Remember the *listener* or it is all over!

Bob Hamilton is president of Hamilton Communications in Ft. Lauderdale, Fla.

ZEIGLER

(continued from page 39)

and the majority of the local stations stayed with their formats, hardly mentioning the problems in the area. There were the generic high and low temperatures and chance-of-rain "weather forecasts," but few were breaking in with information that was helpful.

It was painfully obvious that few stations were even staffed, which is another reason that radio in general, AM in particular, might seem irrelevant to some.

This small incident was a glimpse of what was to happen on a much larger scale when Katrina destroyed our Gulf coast region.

People were displaced from their homes and businesses, then left to fend for themselves in a chaotic situation. Cell phones became useless, Internet connections were nonexistent and quite a few broadcasters were silenced due to a number of factors. However, AM radio, from stations outside the directly affected area, was able to get lifesaving information to those who had been affected.

This is the reason that small battery- or crank-operated radios are among the emergency supplies passed out by responding agencies.

There is no better way to get vital information to the greatest number of people, over the broadest coverage area, in the shortest amount of time than live AM broadcast radio.

This is also why, many years ago, government agencies set up a network of cooperating AM broadcast facilities across the nation for use in time of national emergency. These stations, with their broad coverage areas, can provide information directly to the vast majority of the national landmass whenever needed.

This information can be received on inexpensive, simple receivers powered by a multitude of sources, and require no subscription fees or local infrastructure.

I would like to suggest the following to any broadcasters who have AM stations in the larger over-served markets, especially those of you who have publicly questioned the viability or necessity of AM: Please consider darkening your AM and turning in your license. This would save you the large, ongoing expenses and let you concentrate on your more profitable properties. It would also allow those of us outside of those areas to expand our AM coverage and serve our listeners to an even greater degree.

AM dead? No! It is a vital and important medium of communication to a large part of the country and will continue to be for the foreseeable future; and I am quite proud to be associated with it.

Rod Zeigler is director of engineering for Nebraska Rural Radio Association in Lexington, Neb. Stations are KNEB(AM/FM) in Scottsbluff, KTIC (AM/FM) in West Point, and flagship KRVN(AM) and sister station KRVN (FM) in Lexington.

World Radio History

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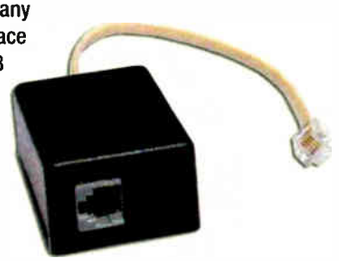
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World Radio History

IBOC INTERFERENCE

As a broadcast engineer, the interference problems that could arise from this have me deeply concerned!

My observation is that anything greater than a 3 dB increase in IBOC power will not only cause problems for other broadcasters on first-adjacent and co-channel frequencies, but will also have a great potential for increased self-interference for stations.

READER'S FORUM

I have been involved in installation of IBOC FM since the very beginning, when HD Radio was called Project Acorn and then USA Digital Radio. I still install and maintain HD Radio systems today for a number of stations. As someone who has been there and done that since the early days, I can tell you, this IBOC power increase is a big mistake.

My reasoning:

It's currently difficult enough to get spectrally clean IBOC power at the present power level (1 percent of main channel power) with a common antenna. To increase this power by 6 dB, most stations will be forced to resort to using separate antennas for the main and IBOC carriers. Since the two antennas will almost certainly have considerably different radiation patterns, the power ratios out in the field will be way out of whack, just about all the time ... sometimes favoring the analog, and sometimes favoring the IBOC.

I've already personally measured stations using separate antennas, where the IBOC power is equal to, or even greater than the analog carriers in some locations. This causes a great deal of self-interference to the host station! Even the best radios cannot perform in these cases, so they just blast out loud noise bursts while traveling these parts of the coverage area.

The other issue is interference to stations on first-adjacent frequencies ... 200 kHz away. There are already atmospheric conditions that cause frequent interference between first-adjacent stations from the IBOC carriers at the 1 percent power level, especially at this time of the year, as I write, when the "Sporadic E" is causing FM stations' signals to travel a good deal farther than expected.

I've already had situations where a *local*, non-IBOC station's signal is quite listenable, but an HD Radio-equipped radio will be taken over by a co-channel (same frequency) station that is running HD Radio from a hundred miles away!

> **This IBOC power increase is a big mistake.**
>
> – Dave Obergoenner

This will force listeners with HD Radios to lock them in analog mode, something some of the new radios are not even capable of, even if the clueless consumer would have any idea how to do it in the first place.

The radio has *no* idea that the IBOC carriers are not in any way connected with the analog station the consumer is trying to listen to. This is a basic, fundamental flaw in the HD Radio system that will cause all kinds of grief in the future if IBOC power levels are increased, and the radios are in greater circulation.

Cost is another issue. Smaller-market stations (mostly) cannot afford to make the conversion to HD Radio now, at the 1 percent power level. Pushing this power up even further will only increase the cost, making it permanently beyond reach for many.

The only winners in this game will be the larger group-owned, larger-market stations who can afford this. Smaller-market (mostly independent) stations will pay a dear price nonetheless, with considerably increased interference. Many of these smaller-market stations are just barely getting by now, or are losing money.

The rich get richer, and the smaller stations go bankrupt.

We all know that money talks, and everything else gets swept out the door at the FCC lately, so I can only guess how this will go, unless there's huge outcry ... which is unlikely, because it's just too technical an issue.

To avoid turning the FM band into a wall of noise and interference, I still strongly suggest opposition to this proposed increase in IBOC power levels.

Dave Obergoenner
(Lifetime) SBE Certified Professional
Broadcast Engineer
St. Louis

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World Radio History

Let's Broaden the Pipe

As Everyone's Bandwidth Expands, Ours Should Too

BY DAVE WILSON

A Web site can *simultaneously* provide *personalized* content to *everyone*. Radio broadcasters should be able simultaneously to provide personalized content to everyone, too.

COMMENTARY

To make this happen we need to expand our bandwidth. We don't need more spectrum, though it wouldn't hurt. Nor do we have to invent a new modulation system. We simply need multi-tuner receivers with storage capability, and broadcasters who will take advantage of them.

LEARNING FROM THE INTERNET

We can learn a lot from the Internet. Like our radio channels, the conduits for Internet traffic (telco and cable networks) were created to convey real-time content. Unlike radio, though, they have figured out how to provide personalized content to everyone simultaneously.

Two things have enabled the services coming into our homes via telco and cable wires to advance dramatically while radio service has remained limited to real-time program streams. These two things are the ability to store content on consumer equipment and increased channel capacity.

In the July 1 edition of Radio World I talked about how receiver storage could improve radio service dramatically. This time I want to talk about increasing channel capacity.

LET'S BROADEN THE PIPE

As modem technology advanced from 2400 baud to 28.8 k to 56 k all the way to DSL and cable modems, we witnessed dramatic improvement in the content available to consumers. Radio broadcasters need to broaden our pipeline to consumers so we too can dramatically improve our service.

I propose "widening the bandwidth" of radio receivers so broadcasters and consumers can make use of multiple signals at the same time. I propose that we tailor our service for receivers with multiple tuners, and work with the consumer electronics industry to deploy such receivers. Let's call it broadband radio.

THE VALUE OF ADDITIONAL TUNERS

Channel capacity and storability go hand in hand. Without store-and-replay capability a consumer can only use one radio station's signal at a time. A dual-tuner receiver would have limited value without store-and-replay because consumers cannot simultaneously listen to two programs.

If consumers could store radio programming locally on their receivers, then getting more content onto the receiver would increase the listener's ability to personalize. A dual-tuner receiver can capture twice as much content as a single-tuner receiver. A three-tuner receiver can capture three times as much content. A four-tuner receiver four times as much, and so on.

More tuners mean more content can be delivered to listeners. More content delivered to listeners and stored locally on their receivers means each listener has a lot more to choose from. A lot more choices for each listener means much more personalized service.

WELL-SUITED FOR GROUP OWNERS

If you own multiple signals in a market, multiple tuners with store-and-replay capability would help you provide a much better service.

Let's say you have four signals to work with. Station 1 could broadcast codes that tell the receiver to tune its second tuner (if available) to Station 2, its third tuner (if available) to Station 3 and its fourth tuner (if available) to Station 4. Station 2 could broadcast codes telling the receiver to tune to 1, 3 and 4, and so on.

Station 1 could target women. Station 2 could target men. Station 3 could target girls, and Station 4 could target boys. All of the spots broadcast on each station could be stored on the receiver. Men who happen to like the programming on Station 1 could then hear spots targeted at them during each Station 1 stop set because the receiver could automatically replace the spots from Station 1 with ones broadcast on Station 2.

This is one small example of how multiple tuners and store-and-replay could make listeners' experiences much more personal, and thus much more valuable. The ability to capture programming from multiple signals at once and store this programming on the receiver would allow consumers to customize their radio experiences to fit their personal tastes.

I'll talk more next time about personalizing the listener experience. Until then let me emphasize that no advances in technology are needed to do what I propose. All that is needed is for broadcasters to recognize the benefits and commit to adding codes to their signals that identify affiliated channels. Then receiver manufacturers could market multiple tuner products with storage capabilities and make use of these codes.

Dave Wilson's commentaries are a recurring feature in Radio World. Wilson is owner of WHDX(FM) and WHDZ(FM) on Hatteras Island, N.C. He is also senior director, technology & standards at the Consumer Electronics Association. His views are his own and do not necessarily represent the views of CEA or its member companies.

WRONG!

OOPS 1: STRUBLE, INSIGNIA AND ZUNE

In the Sept. 9 issue, page 8, Bob Struble commented about the likely impact of a portable device, saying it will be a "nice little interim step" that "is not going to sell in the hundreds of thousands." The subhead incorrectly indicated that the topic was the Microsoft Zune HD. Struble was referring to the Insignia HD Radio. "The Zune HD will definitely sell in the many hundreds of thousands, if not more," Struble emphasizes in a followup.

OOPS 2: SMART GRID

In the Aug. 12 issue, Skip Pizzi's Big Picture column ("Radio's Part in the 'Smart Grid'") referred to the ZigBee utility control-signal format as one of several "proprietary networking formats." It is in fact an open standard technology, managed by the ZigBee Alliance.

OOPS 3: GROUND

The Sept. 9 story "Steve Lampen, Guilty as Charged" stated, "If you do lift one side of a shielded balanced-line cable, you must lift the source end. Lifting the destination end sets up a very interesting RC filter that will affect the response of that line." The ends were reversed. The text should read: "If you do lift one side of a shielded balanced-line cable, you must lift the destination end. Lifting the source end sets up a very interesting RC filter that will affect the response of that line."

OOPS 4 X 2: COCKERILL

Terry Cockerill is the radio product line manager for Harris Broadcast. RW misidentified him in a story on page 10 of the Aug. 1 issue. Harris then provided RW with a correction that we printed, but gave the wrong title. He was an applications engineer for the company for three years and has been in his new position for just over a year.

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READER'S FORUM

THE FUTURE OF RADIO

Skip, your columns about the future of radio ("Maintain the Core, Explore the Fringe" and "Ponder This Post-Broadcast Paradigm," archived at *radioworld.com* under Columns/The Big Picture) are some of the best stuff you have ever written.

Your organization and attention to detail with clear writing are remarkable. I'll be passing these articles onto programming friends in the biz who are not readers of RW. Keep up the good work!

Mike Rice
President
Connecticut Broadcasters Assn.
Willimantic, Conn.

iStockphoto/Kelly Talele

World Radio History

OPINION

RADIO REDISCOVERED

The iPod Nano and Zune HD Put Radio Back in the New Platform Game

09-09-09 will be remembered by most in our industry as the release date for remastered Beatles albums and the Rock Band video game, but for broadcasters it also marked the day the pause buffer finally came to U.S. radio.

Arriving in the form of an update to the iPod Nano — the world's best selling personal music player — it was included among many other new features in the release, like a video camera and pedometer, which were mostly trickle-downs from the iPhone.

The FM tuner was a wholly new feature, however — the first built-in radio receiver to ever appear in any iPod product.

In true Apple style, the introduction exceeded expectations. After years of debate and lament within in our industry over why the sages of Cupertino repeatedly refused to include a radio in their popular devices, Apple abruptly ended the discussion by breaking new ground.

This raised the bar for the entire handheld industry, while also rolling up other advantages Microsoft had previously introduced on its Zune device (FM tagging via Jump2Go, and title and artist metadata via RBDS RT+).

Now we hope to see this powerful tuner feature *trickle up* to the popular iPhone and iPod Touch (AT&T may have something to say about including it on the iPhone; if anything this should be a good idea for AT&T, which has an interest in reducing the demand streaming audio puts on its 3G networks).

The new iPod tuner came just before Microsoft's Zune HD hit retail stores, and thus the white-hot personal music market — and perhaps even the cell-phone industry — should remain focused on the inclusion of broadcast radio on their devices in the run-up to the holiday season.

Apple iPod Nano with FM radio

Microsoft Zune HD with HD Radio

So even as a rocky economic year draws to a close, we can enjoy the upswing of radio's relevance in the new-media marketplace, thanks largely to two titans of the digital world and their recognition of radio's value on their platforms.

The only bad news here is furtherance of the travails of AM radio. Its disinvitation to the party will place added urgency on the proposed migration of AM stations to FM translators.

Meanwhile, Apple's sticking to analog FM while Microsoft takes on HD Radio has also generated much grist for the rumor mill, but we recommend reserving judgment here. Zune may have pushed iPod to add FM. Zune HD could eventually motivate Apple to follow its rival's lead again.

Finally, our gadget lust remains intrigued by the 15-minute pause buffer in the iPod Nano. It makes radio more useful, which we applaud and hope other manufacturers will emulate.

This development also implies that the elusive programmable/time-shifting radio recorder might not be far behind. The radio electronic program guide that would essentially enable such a device, and which is being developed by the NAB FASTROAD program, may have come along not a moment too soon. Our kudos to NAB for its prescience (or at least its good timing) here.

These new devices and the R&D investments they represent provide a sorely needed vote of confidence for the radio industry. We welcome that, and count it as a triple win for device manufacturers, FM broadcasters and U.S. radio listeners.

— Radio World

DON'T TELL ME IT'S NOT A PROBLEM

In response to Guy Wire's column ("A Critic Lashes Out at HD Radio, Again," RW Engineering Extra, June 10):

Let's look at HD Radio from the perspective of the consumer (me, for many years) and the radio person (me, for the past nine years).

READER'S FORUM

As a listener, I can tell you that when the FCC gave Froggy 99.7 a power increase so that I could no longer get 99.5 in Silver Spring, Md., with my stereo Probe 9 Channel Master antenna because the stations and my location were in a straight line, and when WFRB got clobbered by WRDJ, I wasn't happy.

I wrote the FCC and got some technical stuff with distances and coverage and what I considered "crap" at the time, because something had changed and messed up what I could receive.

That's the consumer perspective, and I'm sure that's what most listeners think. So when WBZ splatters up and down the dial, it's not right.

It's interesting that you say that there aren't many stations running HD at night and you poo poo the noise.

Don't tell me it's not a problem. Forty miles from WBT 1110 in Charlotte, N.C., at critical hours and after dark, WWWE or WTAM 1100 HD hash makes their signal unlistenable. WBT has bought into IBOC but aren't running it due to their directional array, I believe, so they won't bitch. I drive I-77 up North Carolina; 50,000 watts at 40 miles trashed by Cleveland is a fact and can't be justified by all the "experts" at IBOC or NPR.

Then there is the statement that digital is better. No evidence. Just complicated and expensive. And it's my understanding that the contour that the FCC set up as you measure up and down from your carrier frequency was for spikes or occasional levels of power, not 100 percent duty cycle. That changes everything.

Again, just get in your car and drive around and listen to the real world. IBOC trashes up the dial.

I'm sorry, but the IBOC story reads too much like "The Fugitive" and the travesty against Dr. Richard Kimble.

Speaking as a small station owner in a not-wealthy part of South Carolina: IBOC fees and the fact that there are no radios out there make the rabid push for IBOC look like a power and money grab by the conglomerates. Make it complicated and expensive, and we pesky little guys get rubbed out.

Finally, it really is all about content. What passes for radio today is lame. Talk to just about anyone. Repetitive, homogenized boredom. Another issue altogether — but all the technology in the world doesn't make a bad movie good and won't help bad radio either.

Jim Jenkins
Owner/General Manager
WAGS Radio
Bishopville, S.C.

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E-mail: radioworld@nbmedia.com
Web site: www.radioworld.com
Telephone: (703) 852-4600
Business Fax: (703) 852-4582
Editorial Fax: (703) 852-4585

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EDITORIAL STAFF
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CIRCULATION
ASSOCIATE CIRCULATION DIRECTOR, AUDIENCE DEVELOPMENT Anne Drobish
CIRCULATION MANAGER Kwentin Keenan
CIRCULATION COORDINATOR Michele Fonville

SUBSCRIPTIONS
Radio World, P.O. Box 282, Lowell, MA 01853
TELEPHONE: 888-266-5828 (USA only 8:30 a.m.–5 p.m. EST)
978-667-0352 (Outside the US) FAX: 978-671-0460
WEB SITE: www.myRWNews.com
E-MAIL: newbay@computerfulfillment.com

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ADVERTISING SALES REPRESENTATIVES
US EAST & LATIN AMERICA: John Casey, jcasey@nbmedia.com
T: 330-342-8361 | F: 330-247-1288
US WEST & CANADA: David Carson, dcarson@nbmedia.com
T: 615-776-1359 | F: 866-572-6156
EUROPE, AFRICA, MIDDLE EAST: Raffaella Calabrese, rcalabrese@broadcast.it
T: +39-02-7030-0310 | F: +39-02-7030-0211
JAPAN: Eiji Yoshikawa, callems@world.odn.ne.jp
T: +81-3-3327-5759 | F: +81-3-3322-7933
ASIA-PACIFIC: Wengong Wang, wwg@imaschina.com
T: +86-755-5785161 | F: +86-755-5785160
CLASSIFIEDS: David Carson, dcarson@nbmedia.com
T: 615-776-1359 | F: 866-572-6156

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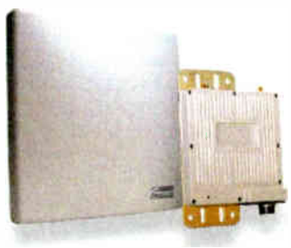

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