LAURA MIZRAHI ON CH. 6 PROTECTION — Page 32

NewBay Media

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INSIDE

Lopez Focuses on Education, Training

Sinclair Engineer Is a TV Guy and New President of the SBE

BY RANDY J. STINE

SYRACUSE, N.Y. — Vincent Lopez, new president of the Society of Broadcast Engineers, is a

NEWS MAKER

TV guy — always has been and likely always will be.

He is director of engineering for Sinclair Broadcast Group's WSYT(TV) and WNYS(TV) in Syracuse, N.Y. However, like many TV broadcast engineers, Lopez has a keen interest in radio. He even has a radio studio in his basement and uses it frequently.

"I do some killer 1960s-era Drake format recreations," said Lopez, whose SBE certifications are as Certified Video Engineer and Certified Broadcast Networking Technologist.

The home radio studio will also serve as the site for some Webcasts the new president plans to commence covering topics of importance to society members.

New SBE President Vincent Lopez

"My goal as president of SBE is to leverage technology to provide our members with more educational, informational and networking opportunities, and to continue with our EAS and regulatory efforts," Lopez said. "I want to work to show (broadcast) management that engineers are valued members of their team and the broadcast community."

The Society of Broadcast Engineers, a professional organization of television and radio engineers with approximately 5,300 members in 114 chapters, has played a huge role in Lopez's professional career. He started attending SBE Chapter 22 meetings in Syracuse after visiting one of the chapter's fall conventions.

"I started to meet and network with people I met at the show. There were a bunch of terrific guys running the chapter then. I learned a lot from Jim Bernier, now with Turner Networks in Atlanta, Jim Peck with SCMS, and Conrad Trautmann,

(continued on page 8)

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Public Radio Audience Is Aging

NPR News Audience Grows While Classical, Jazz Listenership Stagnate, Study Finds

The non-com audience has long been dominated by baby boomers, those who came of age during the years of the Vietnam War, hippies and underground FM, and particularly by highly educated boomers, the oldest of which turn 64 on Jan. 1, 2010.

Educated boomers are likely to dominate the NPR news audience as they age.

The United States Census Bureau defines the demographic baby boom as 1946 to 1964, during which time approximately 76 million babies were born in the country.

In "The Aging Public Radio Audience," Dr. George Bailey of Walrus Research used AudiGraphics software to analyze spring Arbitron data from 51 FM public radio stations in the top 50 markets — those that generate 75 percent of pubcast radio listening.

He wanted to answer four questions:

- At what rate is the public radio audience aging?
- Does aging differ among formats?
- How do the dynamics of listening vary by format?
- What are the implications for future growth of listening and fundraising?

Walrus Research chose a 10-year period — spring 1999 to spring 2009 — to calculate the rate of aging for each format.

NEWS

The best news concerns audience for news formats.

Stations that have dedicated their format to NPR news attract an audience with a median age of 52, almost exactly in the center of the baby boom generation. Ten years ago the same set of NPR stations had a median age of 47. As seen in the second chart (page 7), as the median age for NPR news stations went up from 46 to 52 years, their employed audience declined from 77 to 70 percent from 1997 to 2009.

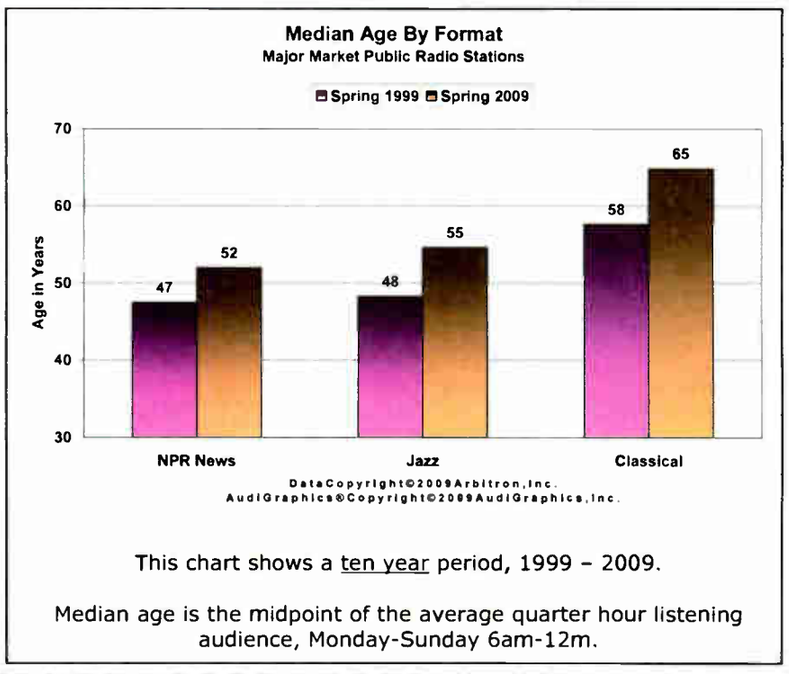
As of spring 2009, 19 percent of the audience for NPR news stations was generated by persons 60+ years old and not employed. For NPR news station listeners, retirement is top of mind.

By contrast, the audiences for jazz and classical formats are aging faster and those formats are not growing audience. The median age for jazz listeners is 55. Public jazz stations have been less successful at raising money from listeners, which Bailey attributes in part to the audience dynamics. There has been minimal growth in the size of that audience and more of its listeners are further down the road towards retirement than are news listeners. Twenty-three percent of the jazz audience is generated by persons who are 60 years or older and not employed.

CLASSICAL

The oldest public radio format is classical music; the median age of its audience has aged seven years over the last 10 years — to age 65. That means half of the classical audience are not boomers but seniors.

(continued on page 7)



This chart shows a ten year period, 1999 – 2009.

Median age is the midpoint of the average quarter hour listening audience, Monday-Sunday 6am-12m.

They Are the Names Behind the Pages

When You Read RW, You Take Part In a True Community of Professionals

As I have done for many years, I wish to thank the people whose editorial contributions made Radio World possible in the past 12 months.

These are the folks whose articles, opinions, letters, tech tips, photos, interviews and other contributions appeared in the 32 issues of Radio World and Radio World Engineering Extra since January 2009 as well as our supplements and Webinars. They include not only our columnists, writers and editors but the newsmakers whose views we've presented.

Imagine getting to spend time every couple of weeks with the experts listed here. That's what reading RW throughout the year is like.

Without these men and women, there could be no RW as you know it. With them, our publication constitutes a true community of radio broadcast professionals.

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If you contributed to RW and I missed you, my regrets. If you didn't and would like to in 2010, let me know. My thanks as well to the people behind the scenes at NewBay Media who produce Radio World, and to our many fine advertisers, on whose support we all lean in every issue.

Happy holidays to all!

NEWSWATCH

FCC FORM 323: The FCC pushed back the due date for its new broadcast ownership form to Jan. 11, 2010, from Dec. 15, 2009. In response to concerns about the need to provide a social security number, the commission is allowing filers to obtain a special FCC Registration Number just for Form 323.

WEGENER: The manufacturer planned to appeal if it was delisted by Nasdaq, after the stock exchange told Wegener its shareholders' equity didn't meet the minimum requirement of $2.5 million and that as of late November it had not met certain other benchmarks. Wegener had until Dec. 7 to get back into compliance but didn't anticipate being able to do so. A recent deal for Wegener to be acquired by Sencore fell through. Wegener provides digital video and audio products for broadcast television, radio, telco, as well as private and cable networks.

IHEARTRADIO APP: Clear Channel Radio says its iheartradio mobile application is available for Android devices. The app will work with one of Verizon Wireless' newest smartphones, the Motorola Droid. More than 4 million unique people have downloaded the iheartradio app, according to Clear Channel. The application carries about 400 stations, including local radio stations and digital-only channels. Version 2.2 of the music and radio app is also available for BlackBerry.

Selected content from Radio World's "The Leslie Report" by News Editor/Washington Bureau Chief Leslie Stimson. To receive the free, bimonthly e-mail newsletter, subscribe at www.radioworld.com/subscribe.

JOINT PARTIES URGE FCC TO APPROVE IBOC POWER COMPROMISE

The so-called "Joint Parties," a group of 17 commercial broadcasters and four transmission companies that sought a voluntary FM digital power increase, is urging the Federal Communications Commission to approve the compromise recently recommended by NPR and iBiquity Digital (Radio World, Dec. 2).

In a letter filed Nov. 10, the parties emphasize to the commission that 6 dB is an interim step and that their goal is to fully replicate their analog coverage with an increase of up to 10 dB.

"(W)hile some broadcasters will purchase transmission equipment to take advantage of the 6 dB improvement, others may delay purchasing the equipment necessary to upgrade stations until the final permissible digital power levels are established," states the group.

"The interim step proposed by iBiquity and NPR will hopefully result in an appreciable number of digital power increases, which in turn should enhance the record in support of an eventual across-the-board 10 dB discretionary escalation."

I also notice that the make-up of the group has changed a little since its members originally petitioned the commission a year ago for the digital power increase.

American Public Media, Radio One and WNYC Radio have fallen off the list of broadcasters, while the Broadcast Traffic Consortium, Nassau Broadcasting and Sacred Heart University have joined the group.

The remaining broadcast members are Backyard Broadcasting, Beasley, Black Crow, Bonneville, CBS Radio, Clear Channel, Commonwealth, Cox Radio, Emmis, Entercom, Greater Media, Journal Broadcast, Lincoln Financial and NRG Media.

While it's not surprising the broadcast groups have filed in support of the compromise — some of them had a hand in advising NPR and iBiquity on the deal — it is interesting to note the radio groups that left were mostly non-coms, possibly reflecting the struggles over this issue before the détente.

INTERFERENCE COMPLAINT CRITERIA 'ESSENTIAL,' JOINT PARTIES SAY

A key part of the letter to the Federal Communications Commission from the Joint Parties regarding their support of the digital power increase concerns the interference resolution system agreed upon by NPR and iBiquity and recommended to the agency.

The Joint Parties stressed the interference resolution criteria pertains to "legitimate, well-documented complaints of ongoing, harmful, interference" within a station's protected contour. "It can't be some random complaint," one engineering source told me when I was reporting on the compromise.

According to the agreement reached by NPR and iBiquity, the system kicks in when two stations cannot agree on how to resolve interference.

The complaining station "must include interference reports from a minimum of three complainants and evidence of ongoing rather than transitory harmful interference within the station's protected contour, describe any test measures used to identify IBOC-related interference" and document the extent of the interference, according to the proposal.

The Media Bureau would then have 90 days to resolve the complaint. In the event that doesn't happen that quickly, the interfering station would reduce its digital to power to –14 dBc, and continue reducing in steps all the way back down to the current –20 dBc digital power level until the inter-

ference complaints stop.

The Joint Parties have asked the commission to establish specific requirements, including the criteria proposed by NPR and iBiquity, that must be satisfied for an interference complaint to be legitimate and eligible for action, and at the same time, weeding out other complaints that neither the commission nor the "complained-of" station should be obligated to devote their resources.

They ask the commission to examine and resolve legitimate complaints quickly, "as no one benefits from a protracted complaint resolution process."

Assuming all stations use the NRSC IBOC mask compliance measurement guidelines as they raise their power levels, who are the likely "complainants"? Most listeners won't realize that new noise they hear instead of the signal they used to hear could be IBOC interference. Therefore, they won't complain. They'll just tune to a different station.

We'll have to see how this is going to work; some AMs would say the current complaint process, on which I understand this is patterned, doesn't work so well.

PUBCAST

(continued from page 3)

Although 63 percent of the classical audience was employed in 1997, by 2009 employment was 47 percent. In fact, 46 percent of the classical audience is now generated by persons who are not employed and at least 60 years old. There has been no growth in the size of the classical audience over the 10-year period studied, except as public radio has been able to purchase failing commercial classical stations, Bailey notes.

Age and life stage explain why the classical audience is mostly listening at home, rather than away. The end of employment may have an impact on their willingness to contribute money to stations.

IMPLICATIONS

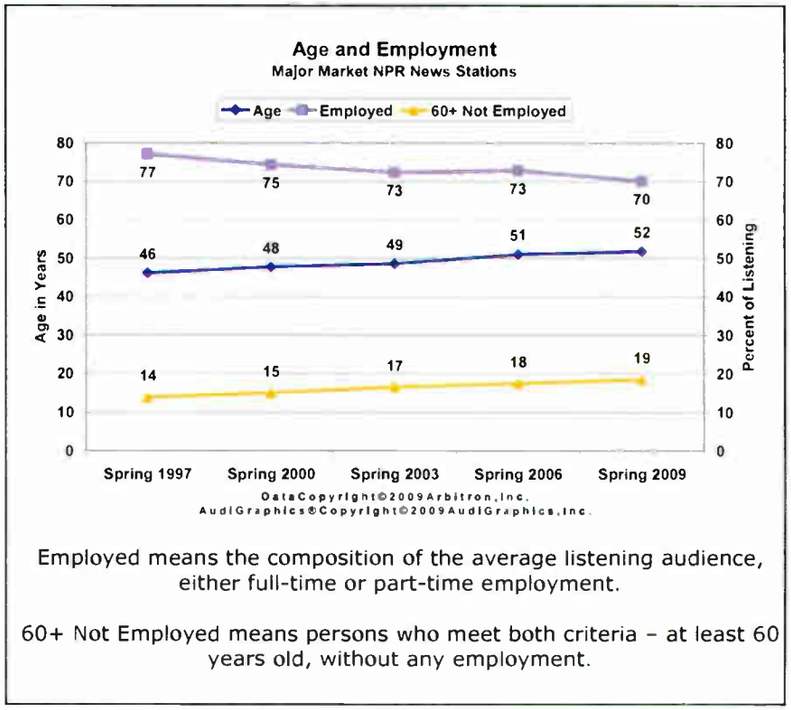
In fall 2008 NPR news benefited from interest in the Obama campaign; but tracking the size of the audience going forward has been complicated by Arbitron's changeover from the diary to the Portable People Meter.

Bailey says the PPM, just like the diary, finds listeners to be highly educated, affluent and beyond middle age.

Unlike classical or jazz stations, NPR news stations have brought in more listeners over the study period.

Accordingly, educated boomers are likely to dominate the NPR news audience — and more so the contributors — as they age into their retirement years.

— Leslie Stimson



Employed means the composition of the average listening audience, either full-time or part-time employment.

60+ Not Employed means persons who meet both criteria – at least 60 years old, without any employment.

This chart shows how the audience for NPR news stations has been moving into the next stage of life.

SBE PRESIDENT

(continued from page 1)

now with Dial Global in New York City, during those early meetings," he said.

Lopez, a member of SBE since 1991, held the positions of secretary, vice chair and then chairman at SBE 22 in Central State New York.

"I look on this experience (of being national president) the same way as leading Chapter 22, but on a national level. I'm working with an excellent board of directors and hope to learn a lot from them."

LIFE-LONG LEARNING

Lopez began his one-year term with the nonprofit organization in October. He has been a member of the national SBE board of directors since 2000, most recently serving as vice president. Lopez succeeds Barry Thomas.

The national SBE board is responsible for the development of policy and determines the programs and services the society provides its members, Lopez said, with the focus remaining on education.

The SBE recently hired Kimberly Kissell to grow SBE educational initiatives, specifically, the group's online educations lineup.

"We are expanding the course content of SBE University and are hoping the make the Leader Skills course available online in a revised format," Lopez said. SBE also will continue its RF Safety course online.

The radio industry's technical challenges, including HD Radio, will continue to be addressed by SBE, Lopez said.

"HD Radio is in many ways similar to the DTV conversion that (TV) just went through. There were a lot of unknowns and technical challenges to overcome. Many SBE members stepped up to provide education and information, not only to the public but to fellow engineers. SBE University will be one of the tools we'll use to help engineers and the industry.

"SBE prides itself on developing the best customer service professionals in the industry. We listen to the need of our customers and respond enthusiastically with creative solutions to build long-term relationships," Lopez said.

As the radio industry and FCC consider boosting HD Radio power levels, the SBE's work in the area will be directed at "providing the vital information, training and certification through our DRB specialist certification, publications such as 'HD Radio Implementation' and on-demand courses through SBE University," Lopez said.

The organization is watching the Federal Emergency Management Agency's development of an improved Emergency Alert System closely, Lopez said. At its October board meeting, SBE voted to join OASIS, a worldwide standards organization FEMA has selected to set standards for the next generation of EAS.

"Look at the track record of the past and current systems — CONELRAD, EBS, EAS. Each one was better than its predecessor, but still not good enough to do the job needed," Lopez said. "The designers of the next-generation EAS need to look at this and go forward to create a comprehensive useful warning system."

Work also continues at SBE on the so-called "white spaces" debate, which Lopez said could have a huge impact on radio and television broadcasters.

"Our specific emphasis is related to the broadcast auxiliary services [BAS] because of or important frequency coordination program," Lopez said. "We know broadcast engineers will be left to pick up the pieces if many of the current plans proceed. Therefore, we have been active in education and advocacy on this issue."

Technology companies continue to lobby the FCC for permission to use so-called white space in the broadcast spectrum between allotted channels. Broadcasters have long expressed concern over increased interference, those familiar with the issue said.

The economy remains a concern for SBE as broadcast groups examine and reexamine every capital expenditure, Lopez said, forcing stations to identify efficiencies in workflows that allow them to make it easier for employees to remain productive while maintaining high standards.

INDUSTRY CONTRACTIONS

"What that boils down to is a need for every engineer to have good interpersonal skills with the rest of the team at their stations or facilities. SBE continues to offer our Leader Skills Seminar, which teaches engineers people skills that they can take with them back to their stations to put into practice," Lopez said.

SBE noted the announcement by Gap Broadcasting and Cumulus Media this year that the two groups will share engineering resources and engineers in four of their radio markets in an effort to reduce costs, Lopez said (Radio World, Oct. 7). The move essentially took work that had been done by one or more contract engineers in each market and moved it to a full-time Gap or Cumulus employee. Gap eliminated one full-time engineering position at one radio station in those markets. Similar agreements between other broadcast groups could eliminate more positions by combining jobs, Lopez said.

"First of all, we do realize that any business needs to run so that it can continue to profit and exist. However, ownership must realize that good engineering is valuable to their bottom line and needs to be considered in any strategic decisions moving forward.

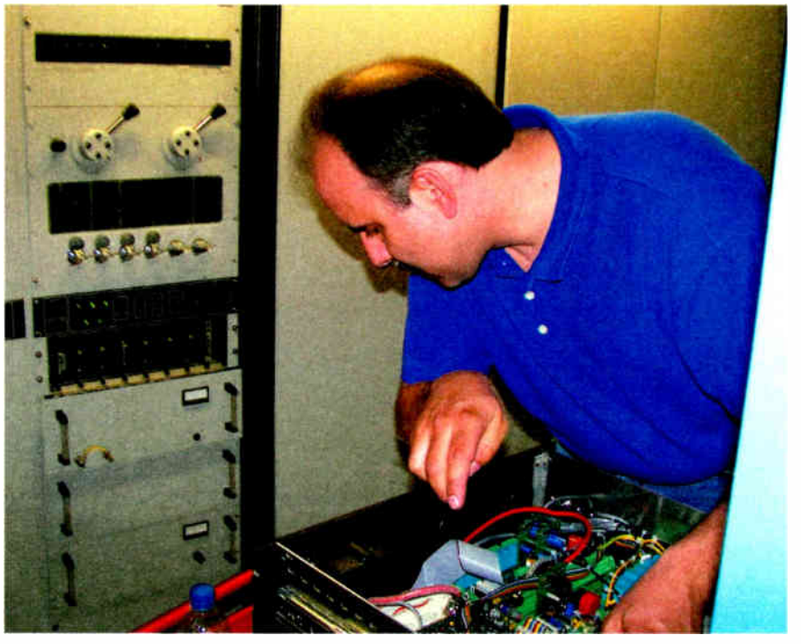
"I do think these kinds of arrangements will become more common, especially in smaller markets. Again, this demonstrates the need for engineering professionals to continue their education in the newest technologies to keep their skill set current."

Lopez, 47, is single and lives in Syracuse. He has an associate of applied science degree in radio and television from Onondaga Community College there and attended Syracuse University.

He began his television engineer career in 1983 at NewsChannels Cable in Syracuse working in production, and became Master Control operator at WSYT(TV) in Syracuse in 1987 and then Master Control supervisor in 1988. He moved into engineering in 1997 and became WSYT director of engineering in 2005.

Also elected to 2009–2010 SBE offices are Ralph Hogan, CPBE, DRB, CBNT, director of engineering for KJZZ(FM) and KBAQ(FM) in Tempe, Ariz., as vice president and Ted Hand, CPBE, AMD, 8-VSB, the chief engineer for WSOC(TV) and WAXN(TV) in Charlotte, N.C. as secretary.

Elected to a term as treasurer is Andrea Cummis, CBT, CTO, consultant and project manager for Media Project Partners in Roseland, N.J.



Lopez installs the strobe controller for a tower for WNYS(TV) and WSYT(TV). The stations, owned by Sinclair Broadcast Group, are in Syracuse.

NEWSWATCH

CH. 5, 6: The Minority Media Telecommunications Council asked the FCC not to accept applications specifying Channels 5 and 6 in the upcoming filing window for digital low-power TV and TV translators. The request is similar to those made by groups including NPR, Educational Media Foundation, National Federation of Community Broadcasters, Brown Broadcast, Finger Lakes Public Radio, Prometheus Radio Project and the Catholic Radio Association. MMTC supports earlier requests made by the Broadcast Maximization Committee calling for re-purposing Channels 5 and 6 for radio — extending the FM band to allow AMs to migrate to a better service band, as well as allow for more frequencies for NCEs and LPFMs. The new filing window begins Jan. 25.

2009 REVENUES: Radio stations were battered by the economy this year, and the industry will end 2009 with revenues of $13.3 billion, a 19 percent decrease from last year, according to an estimate by BIA/Kelsey. New money streams remain a brighter spot, though; the research company forecasts that online and, in particular, mobile will give radio a revenue boost in 2010 as stations embrace cross-platforms and begin integrating them into their sales strategies. In 2009 online revenues will bring the industry $382 million, up from $342 million in 2008, according to BIA/Kelsey analysts, who forecast the number will rise to $459 million in 2010.

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Left the Task for Another Day? Make That Day Today

We'll focus on some transmitter site issues in this column.

Allen Branch does contract work and handles engineering for a 10-station owner in Atlanta. He was called to work on a contract client's Harris/Gates FM-3H FM transmitter.

WORKBENCH
by John Bisset
Read more Workbench articles online at radioworld.com

The rig was running fine but ate a lot of 4CX250B driver tubes, according to the station owner. Allen investigated and found the BE FX30 exciter pumping out 12 Watts into the driver tubes. Eimac specs say to limit the drive to 2 watts for this tube.

It was a simple screwdriver fix to turn the exciter drive down. Think of the money he saved the station.

It's not only the driver tubes that will roast in the transmitter shown in Fig. 1.

That sharp bend on the blower output ducting is constrictive and will shorten final tube life. When the transmitter air is not exhausted properly, the heat takes its toll on components too.

Heat can cause problems such as cracked wire insulation and the resulting shorts, or broken bleeder resistors that are no longer protecting you against accidental shock.

A better choice would be a hood mounted a few inches above the transmitter to direct the air outside, as shown in Fig. 2.

Like many readers, you may supplement full-time income by doing side work, or perhaps you have a full-time contract engineering business.

Fig. 1: Avoid constrictive ducting on transmitter outputs.

Either way, running a business can be a pain, especially if you've completed work but not been paid.

I'm not a tax accountant, so check this tip out with your tax professional; but I'm hearing about more and more engineers getting stiffed by deadbeat managers and owners. It's not right, and there is a simple way to fight back.

Years ago, when I was partner in a contract engineering business, we bought most of our equipment from Bill Bingham's Northeast Broadcast Lab, which long since has been absorbed into the Harris family. (Bill and his wife Mary Lou are enjoying retirement in Florida.)

I was struggling with a deadbeat customer and Bill offered a suggestion to help me get my money. The technique worked for me several times. It's particularly appropriate for this time of year.

When someone owes you money and simply will not pay, send them a letter asking for their social security number, noting that you intend to file an IRS 1099-Misc, a miscellaneous income form, for the amount they owe. These must be filed next month, in January. The form is easy to fill out though your business must have a federal tax ID number.

Bill said the simple threat of a 1099 often was all it took to get paid.

It dismays me to hear managers and owners belittle their engineers. The dishonest ones who don't intend to pay you anyway figure you won't do anything about it. Most of us are engineers, not

Fig. 2: A hood over the transmitter exhaust port is a better idea, as seen above the Harris transmitter, center.

Fig. 3: Switching a transfer switch 'hot' causes this kind of damage.

Fig. 4: Inside a burned RF switch. RF has no mercy. Wire those interlocks.

collection experts. But filing the form lets them know you will not be bullied; they can either pay you or pay the tax on the money to the IRS. Most people don't want to deal with the IRS and will find it easier to write you a check.

If the deadbeat won't give you a social security number, that's fine: just write "refused" on the 1099. Don't delay, because this can only be filed for money owed for 2009.

Yes, if the guy won't pay you and you file the form, you won't get any money, but you will have the satisfaction of knowing they will be taxed on this income.

This is similar to the forms a mortgage company sends after someone defaults on a loan. Think you're going to walk away from a mortgage? Guess again! The amount on the 1099 will be the difference between the foreclosed sale amount and what was owed on the mortgage.

In my experience, most managers or owners would find the money. Our company used this technique three times and was paid twice. The third guy paid the tax ... but never messed with engineers again.

Now if the station is barely getting by, I wouldn't take this step: there's an unwritten rule about engineers doing some charity work, and I'm a big believer in that.

But if you're being strung along and it's obvious the client is making no effort to pay, you might try this technique. Good luck and let me know if you do.

Contract engineer John Ragsdale was called to a station with high reflected power on its FM. Things didn't smell right in the transmitter building, either, so John began to investigate.

Fig. 3 shows what he found when he removed the transmitter input to the RF switch!

As John looked further, he found that the switch had never been wired to the transmitter interlocks. No one confessed to switching the switch hot, but the damage was done. Fig. 4 gives you an idea of what the inside of a switch looks like after it's been smoked.

After the switch was repaired, John convinced the owner to allow him to connect the transmitter interlocks to the switch contacts properly.

A common mistake is to forget to connect the interlocks. New transmitter installations require a real investment in time, and an engineer's focus is to get things operational as soon as possible. If you left the connection of the interlock contacts for another day, make that other day today.

John Bisset marked his 40th year in broadcasting recently. 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.

'Twas the Night at the Site

A Christmas Poem for All Transmitter Engineers, Past, Present and Future

by James G. Withers

'Twas the night before Christmas and up at the site,
Not a creature was stirring, not the kind that can bite.
The gear had been checked and checked twice with great care,
In the hopes that on Christmas I'd be here and not there.

The GM was nestled all snug in his bed
While visions of dollar signs danced in his head.
The station was fine; I hung up my cap,
And planned to relax with a long winter's nap.

When there on the nightstand the phone raised a clatter,
Remote control calling, its mechanical chatter
Confirmed what I feared and knew in a flash:
The plates read "point zero." I'd just have to dash.

To the site with the moon on the new fallen snow,
I pulled on my boots and made ready to go.
When I got up the mountain the problem was clear
Some guy thought our building looked just like a deer.

With a dead RF final and drive way too hot
I knew in my gut what it was that got shot.
A hole in the tube! That'll cause it to fail.
"But where is the spare?" I started to wail.

On a shelf? In the cabinet! Where is that darned spare?
In a box marked "Still Good"? Nope, not even there.
I looked on the porch, on the shelf on the wall
I dashed this way and that way and dashed down the hall.

And then in a twinkling, I found what I needed
And did a quick check as the job was completed.
I pushed the plates on, and was turning around
When up the tube's chimney, smoke came with a bound.

I was frozen with fear, from my head to my foot,
As my clothes got all covered with ashes and soot.
A bundle of money had been flung up the stack
And I cursed that guy's gun hanging back in its rack.

My eyes were not merry, my smile likewise buried.
My cheeks were all bristly, my mood was still harried.
My droll little mouth was locked tight in a frown
As I worked toward "back on" instead of "still down."

The shorting rod shook as I gritted my teeth
And the smoke? It circled my head like a wreath.
Now, I have a broad face, some say a round belly
But there was no laughter that night, no bowlful of jelly.

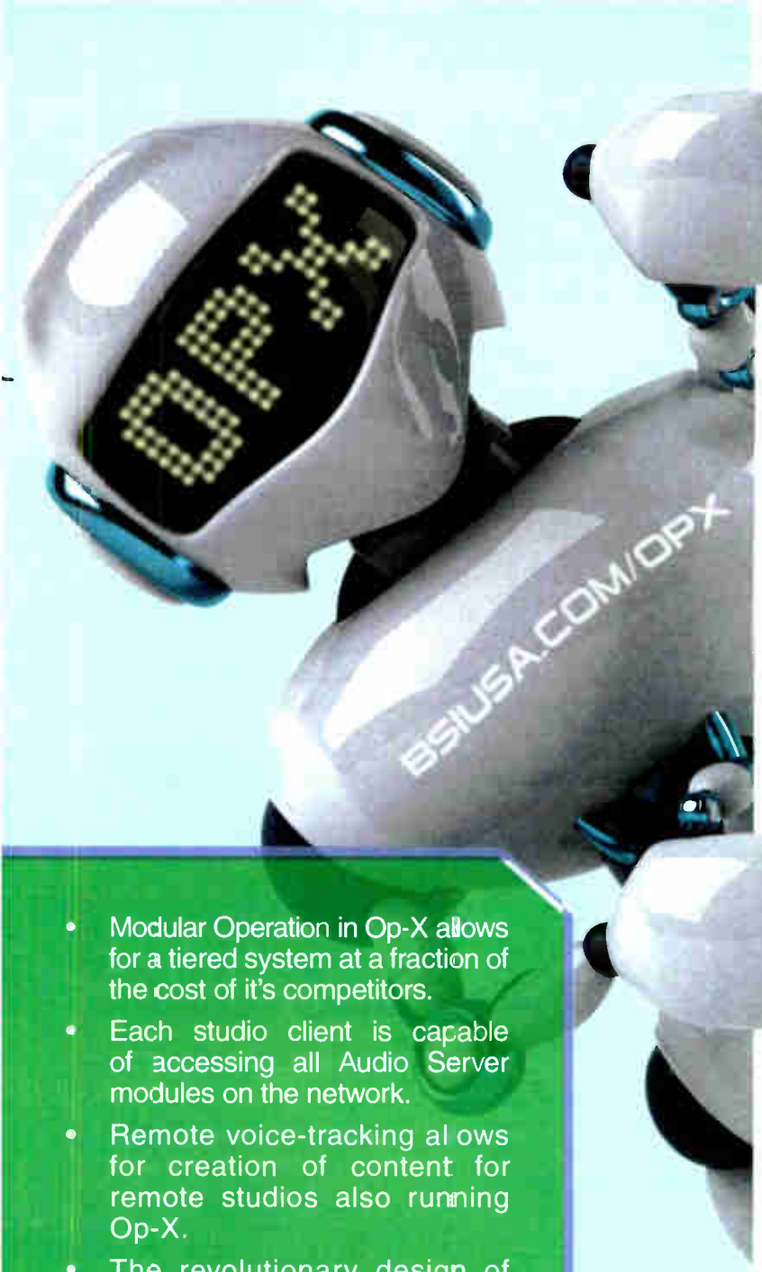
I was crabby and tired, not a Christmas Eve elf
And I yelled and I cursed and felt bad for myself.
In the blink of an eye and a punch of a button
I'd burned up big bucks, just all of a sudden.

I spoke not a word, went straight back to work,
And found a new tube; plugged it in with a jerk.
And keeping my finger real close to "Plate Off,"
Punched it back on with a small, nervous cough.

A spring in my step, I gave out a yell.
It powered right up! I was leaving this hell.
The sun was just up as I drove from the site
Merry Christmas to me; I'm done! ...

For tonight.

Stockphoto©Darrel Diederich



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-Leslie Whittle, Program Director
KRBE, Houston, TX

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Tough Times at Pleasure Beach

WICC Caught Vandal on Camera at Oft-Attacked Transmitter Site

BY JAMES CARELESS

Vandalism is an ongoing problem for managers of radio transmitter/antenna farms. The tower site of WICC(AM) in Bridgeport, Conn., went through a particularly bad stretch of it recently, with several incidents over the course of a few months.

During one attack last March, the station caught a break when a photographer snapped photos of a perpetrator atop the 300-foot freestanding south tower as the suspect gleefully tossed beacons and lights to the ground at Pleasure Beach.

Those photos, and an all-consuming fire at an abandoned cottage where the vandal allegedly had left a candle burning, helped police make an arrest. Local resident Kevin Stewart, 23, was charged with criminal mischief and criminal trespass.

'The photographer just happened to be walking along Pleasure Beach when he saw what was happening and took the photos,' Ed Butler said.

A damaged AC unit; graffiti on the generator shack.

"The photographer just happened to be walking along Pleasure Beach when he saw what was happening and took the photos," said WICC Chief Engineer Ed Butler.

"This helped us track down the suspect. Meanwhile, a video surfaced that someone shot of Stewart that day that included audio clearly linking him to the earlier attack on our tower [the previous September]. That attack seriously damaged our lighting and the transmission path on the ground. In fact, it knocked us off-air."

Butler says Stewart in the end reimbursed the station for damage costs it incurred.

However, after the arrest, WICC's transmission site was attacked yet again in April.

"At about 4:15 p.m. I received a call from Sonitrol Security reporting the sound of breaking glass and loud bangs coming from inside the WICC transmitter building," Butler says.

"The Bridgeport Marine Police and I responded to the transmitter. When we arrived, I found the whole transmitter and generator building had been spray-painted with graffiti. The air conditioner unit was ripped out of the front window and the board that covers up the glass above the air conditioner was also ripped out and the glass was broken."

The good news? Unlike an attack in September of 2008, "from what I can tell, they did not get inside the building." And although the perps were not captured on camera, they were apprehended in person. In fact, thanks to the Sonitrol alert, "The police and myself caught 15 teenagers from Norwalk, Conn., with spray paint cans in their backpacks."

VICTIM OF URBAN DECAY?

Because radio transmitter sites may be left unattended, they can be prey for looters and vandals.

"Yet we've never had problems with copper thieves," says Butler. "In fact, we've never really had problems with vandals until that guy attacked us twice for kicks last September and this March. The [last] attack was probably a copycat, after the kids learned how vulnerable our tower site is."

The long-depressed economy of Bridgeport may play a role. After boom times in the 19th and early 20th centuries, this once-prosperous factory town saw its factories close down in the 1970s and 1980s as work went elsewhere. The story that played out elsewhere in the Rust Belt did so in Bridgeport: As unemployment, poverty and crime rose, city tax revenues fell. After the only bridge to Pleasure Beach burned down in 1996, no

one could afford to replace it. Now only boaters and those willing to hike along the shoreline can get in.

When WICC — the call letters stand for "Industrial Center of Connecticut" — opened its two-tower transmitter site in 1936, life was different at Pleasure Beach. The area was home to a thriving amusement park and weekend seaside community that served Bridgeport and area. Its location not only gave WICC a transmission path that boomed into southern Connecticut and parts of Long Island, it made the cottage-like transmission building — where the engineer lived on the premises — a local attraction.

Today, Pleasure Beach is so deserted that it has been designated a "ghost town" by *www.ghosttowns.com*.

After the bridge was destroyed, the town of Stratford, which owned 45 cottages here, realized there was no longer any way to drive fire engines and ambulances into Pleasure Beach. So residents were evicted and the one-time summer fun center was left to local wildlife, hikers and boaters and vandals.

What buildings remain gradually are being destroyed by the elements and human malice; everything else is gone.

COST OF BUSINESS

Over at the WICC transmitter site, the live-in engineer is but a memory. Today, when heavy equipment is required at the site, it has to be ferried from Bridgeport using an amphibious landing craft.

Also lost to memory are the details that made this clapboard building look homey. The windows have long been boarded up, the wooden entrances replaced with steel doors and frames, and a tall fence with barbed wire has been erected around the site.

"But it's possible to get over the fence by throwing a blanket over the wire and climbing," says Butler. "That's how the people who got in the last three times did it."

In the wake of the latest attack on its transmitter site, Cumulus Media is trying to harden the site further.

"We could get extreme and build a steel and concrete bunker, I guess, but if people really want to get in, they're going to find a way to do so," says Gary Kline, corporate vice president of engineering and IT for WICC's parent. "So our goal now is to take whatever measures we can to deter most people from causing damage."

Clearly, the audio monitoring by Sonitrol Security that allowed Ed Butler to catch the April vandals is a help. But the fact that he has to boat to the site is a problem, as is its isolation and the number of unemployed local youth who apparently have nothing better to do.

Unfortunately for Cumulus Media, fighting the consequences of Bridgeport's urban decay has become a cost of doing business in this market.

MARKETPLACE

BE HIGHLIGHTS SCALABILITY OF FM TRANSMITTER

Broadcast Electronics says the "progressive" low-power STX LP FM transmitter offers scalability and flexibility for analog now and HD Radio transmission later.

"BE's STX LP transmitter is the first low-power FM transmitter scalable from 1 kW to 5 kW with a starting price below $7,000," it states.

"Extras such as an emergency backup controller, internal exciter and IP connectivity come standard in a three rack-unit footprint, making this low-power transmitter a small and economical solution for main, backup, single-frequency network or HD Radio operation."

For FMs broadcasting up to 5 kW TPO now and preparing for HD Radio later, BE offers the STX LP as a possible solution, noting it is able to handle the current –20 dBc digital injection as well as the proposed increase up to –10 dBc injection of analog power.

For information contact the company in Illinois at (217) 224-9600 or visit www.bdcast.com.

How Would Power Hike Affect SCA Receivers?

Testing by NPR Labs Suggests Significant Impact in Certain Circumstances

BY JOHN KEAN
AND DR. ELLYN SHEFFIELD

Host compatibility testing with listeners indicated a significant impact when higher IBOC power is combined with extended hybrid mode transmission, especially with less-costly SCA receivers.

DIGITALNEWS

That finding is part of NPR's IBOC coverage and interference analysis test findings filed with the Federal Communications Commission.

As part of its studies, the network conducted the first-ever tests on the impact of raising a station's digital power on reception of subcarriers of the FM analog host station and on the reception of FM analog subcarriers of neighboring stations. The Corporation for Public Broadcasting funded the tests.

The low injection level of SCA subcarriers makes them more sensitive than main-channel programming to the effect of IBOC interference.

The International Association of Audio Information Services had urged the commission to require impact studies on 67 kHz and 92 kHz subcarriers before allowing an across-the-board power increase.

The IAAIS represents approximately 100 broadcast outlets in the United States and Canada that use FM analog SCA transmission to distribute radio reading services programming for the visually impaired. The IAAIS was one of several stakeholders that NPR Labs invited to learn about and comment on its work plan, execution and results.

Radio World reported on the mobile testing results (Oct. 21, page 14). Below are excerpts from the FM IBOC host compatibility testing using analog FM subcarriers. We'll include excerpts of testing results of first-adjacent IBOC interference to SCA in an upcoming issue.

Overall, as Radio World has reported, the NPR Labs study identified a shortfall between an analog FM's coverage and its indoor digital coverage. IAAIS told the FCC it recognizes that existing digital coverage is inadequate for some stations and understands the need for an HD Radio power increase for these facilities.

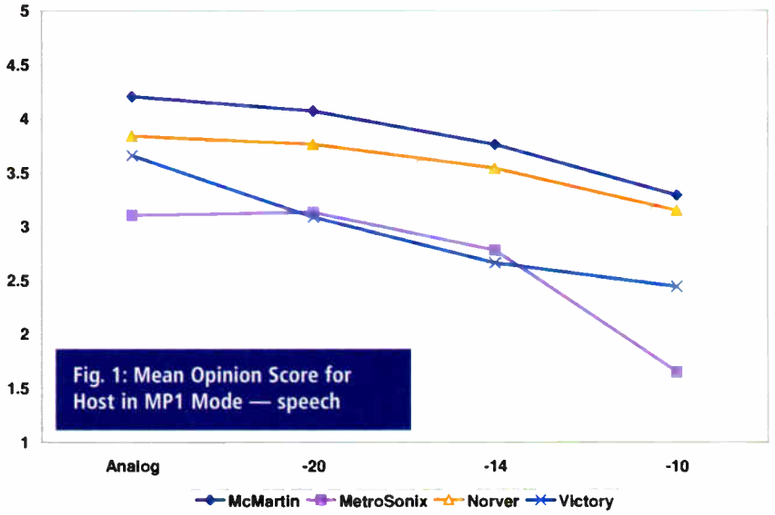


Fig. 1: Mean Opinion Score for Host in MP1 Mode — speech

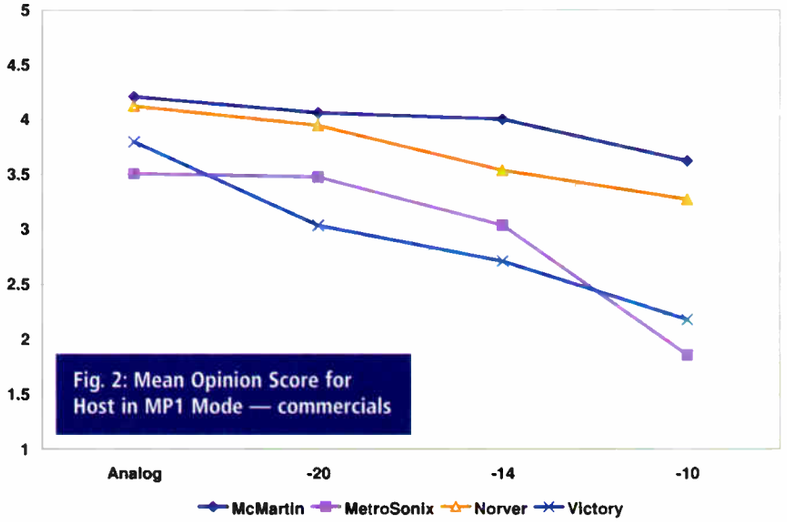


Fig. 2: Mean Opinion Score for Host in MP1 Mode — commercials

But the purpose of the study excerpted here was to determine whether a 10 dB increase in digital power will affect blind and low-vision consumers' ratings of radio reading service SCA broadcasts, and the protection ratios necessary to avoid harmful interference.

Objective testing for first-adjacent conditions indicated that IBOC interference was a minor issue, which was upheld in subjective testing. However, host compatibility testing with listeners indicated a significant impact when higher IBOC power is combined with extended hybrid mode transmission, especially with less-costly SCA receivers.

How much of a "hit" the subcarriers take is dependent on the type of receiver used; but in general, the tests show more expensive receiver designs may be needed to generate acceptable 67

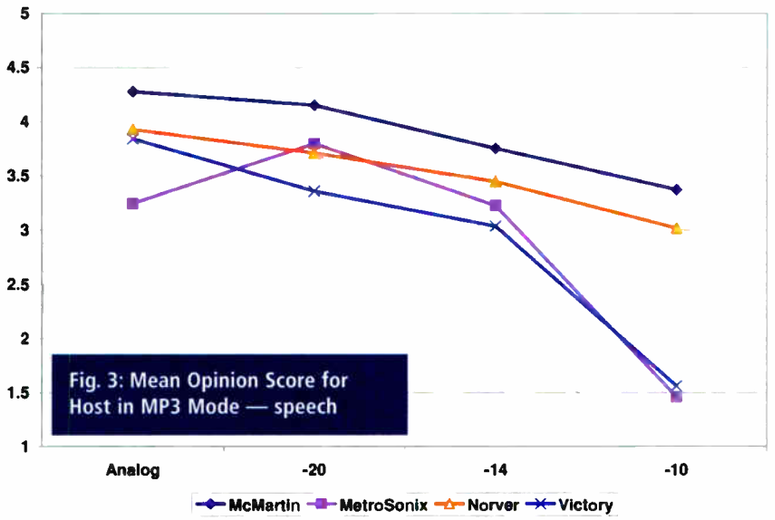


Fig. 3: Mean Opinion Score for Host in MP3 Mode — speech

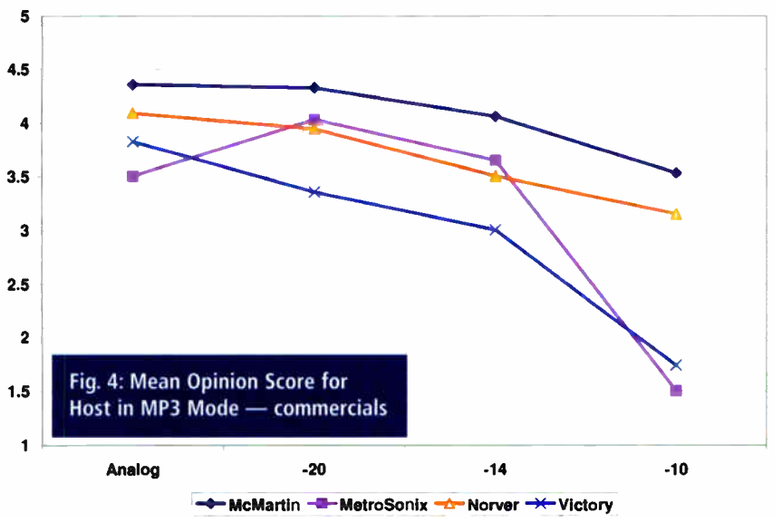


Fig. 4: Mean Opinion Score for Host in MP3 Mode — commercials

Figs. 1–4 show that MP1 and MP3 participants rated McMartin and Norver receivers between "good" and "fair" depending on IBOC power, while participants rated the MetroSonix and Victory (the only 92 kHz receiver) at or below "fair" at –14 and –10 dBc.

kHz performance, while reception at 97 kHz may be unacceptable at or above –14 dBc in all transmission modes.

GENERAL SCA RECEPTION TEST RESULTS

Tests of first-adjacent IBOC interference were measured first by instrumentation to permit tests of larger numbers of receiver types and RF conditions.

The results indicated that when SCA service areas are reduced by low-efficiency antennas provided with the table model receivers and building losses, the potential impact of high-power IBOC is limited to only the best of SCA receivers. Nevertheless, the SCA receivers were included in the subjective testing to verify the first-adjacent impact. Tests of host compatibility with elevated IBOC transmission power were prepared on the RF test bed and evaluated by listeners in a controlled subjective test.

HOST COMPATIBILITY FOR SCA RECEIVERS

The purpose of this test was to determine (a) how blind and low-vision consumers will rate received SCA audio samples as the IBOC injection level is changed in steps between –20 dBc and –10 dBc, and (b) the level at which consumers would begin to turn off the radio because of the impairment.

Since existing radio reading service receivers are audio band-limited, NPR ran a test similar to the 2004 Tomorrow Radio methodology, with standard consumer SCA receivers using blind and low-vision consumers.

The RF test bed setup was as follows: The SCA audio was produced from a CD deck, connected to the Moseley TFL-280 audio processor and Modulation Sciences Sidekick SCA generator for compression, pre-emphasis and peak limiting. The 67 kHz subcarrier was generated by an RCA SCA generator connected to the Moseley processor, and the Sidekick processor included a 92 kHz SCA generator.

The 67 kHz subcarrier output was looped through the Sidekick and combined with the 92 kHz subcarrier. The combined subcarriers were connected to the Telos Omnia 6EX+HD processor and stereo generator, which combined the subcarriers with the composite stereo signal. Only one SCA subcarrier was generated at a time, with the injection set to 9 percent (75 kHz peak=100 percent modulation), the 19 kHz stereo pilot set to 9 percent, and the stereo composite modulation set to indicate 105 percent peaks at a rate of no more than 10 per minute, as determined by the QEI model 691 modulation monitor when connected to the FM generator RF output.

The majority of radio reading service users live at urban or suburban locations, within 12 miles of the station. To represent typical reception, the RF signal power is set for two input levels equivalent to the FCC field strength at 20 km from a Class B (or Class C2) sta-

(continued on page 18)

READING SERVICES

(continued from page 17)

tion, with adjustment for building losses and a –10 dBd antenna, representing a medium signal, and at 5 km from a Class B, representing a high signal. To avoid increasing the number of conditions for the listeners, samples from both medium and high signal levels were randomly selected for the testing.

AUDIO

Reference audio was taken from radio reading services program recordings, read by radio reading service volunteers. Audio clips were prepared for IBOC transmission at each of three injection levels (–20 dB, –14 dB and –10 dB) and three IBOC transmission modes: MP1, MP3 and MP4, to four receivers, made by McMartin, Norver, and Metrosonix (67 kHz) and Victory (92 kHz).

A Fireface 400 digital I/O unit sampled the audio output of the receivers, which stored the recordings in 16-bit WAV files on a computer. The recordings were reproduced for listeners in the studio using the loudspeaker and cabinet of an actual SCA receiver. This was intended to ensure that the limited acoustic characteristics of the tabletop SCA receiver was heard by the test listeners, as in normal use.

When a station raises IBOC power, it will degrade the quality of its analog FM subcarriers in the form of increased noise and crosstalk.

PARTICIPANTS

Eighteen blind and 16 sighted individuals participated. Blind participants were recruited with help from IAAIS and the National Federation of Broadcasters. Announcements were made on the Washington Ear, a Washington-area radio reading service.

Announcements also were posted on message boards and e-mail lists geared towards individuals who are blind or visually impaired. Every effort was made to recruit a cross section of listeners based on their age and gender.

There were 11 male and seven female blind or visually impaired participants. Three participants were between 18–29 years old, two participants were 30–39, seven participants were 40–49, three participants were 50–59 and three participants were 60–69.

Testers tried to match the demographics of the blind or visually impaired participants as closely as time would allow. There were four participants aged 18–29, three participants age 30–39, six participants age 40–49 and three participants age 50–59.

TRIALS

Participants were presented with one audio clip at a time, after which they were asked three questions on the topics of overall sound quality, annoyance of background noise and whether they would keep the radio on or turn it off. They were encouraged to set the volume on the first trial of the test, after which the volume would remain constant.

They were first asked to rate the audio on a six-point scale that corresponds to the ITU-R recommended Mean Opinion Scale: excellent, good, fair, poor, bad and failure. Then they were asked how noticeable the background noise was on a five-point scale including extremely noticeable, very noticeable, noticeable, slightly noticeable and not noticeable. Finally they were asked whether they would continue to listen to the audio, using "yes" or "no."

Because over half of the participants were blind, they were not able to use the software that sighted participants used to log their responses. Thus experimenters played each sample and asked listeners to hold up their fingers to register their responses (1–5) for MOS and annoyance scores. If participants were trying to signify that something had failed or that they would no longer listen, they were instructed to give a "thumbs down."

Experimenters entered the data into an Excel spreadsheet while administering the test. The sighted participants used a computer to register their responses. E-prime stimulus presentation and logging software played the audio clips one at a time and then asked participants the same three questions that blind listeners received.

SPECIFIC RESULTS

MP1 and MP3 tests rated McMartin and Norver receivers between "good" and "fair" depending on IBOC power, while participants rated the MetroSonix and Victory at or below "fair" at –14 and –10 dBc. In MP4 mode (should it be released for future use), significant failures occurred at all injection levels with the 92 kHz Victory, while the McMartin, Norver and MetroSonix produced severe impairments above –14dBc.

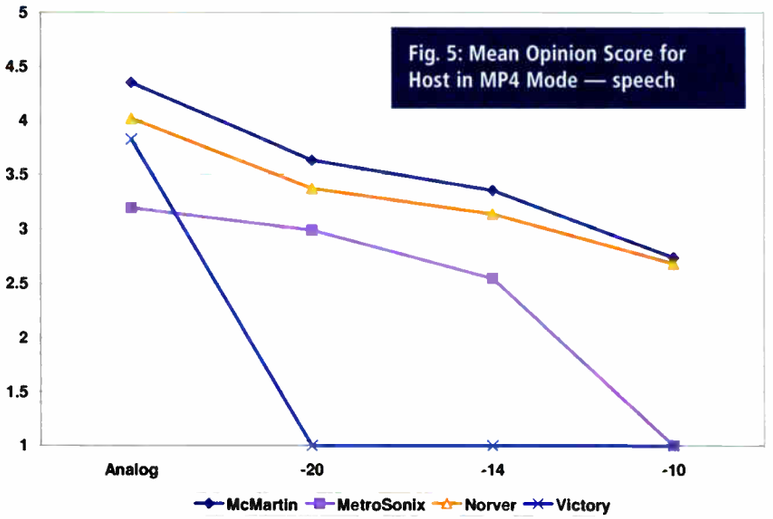
The study concludes that when a station raises its IBOC power, it will degrade the quality of that station's analog FM subcarriers, in the form of increased noise and crosstalk.

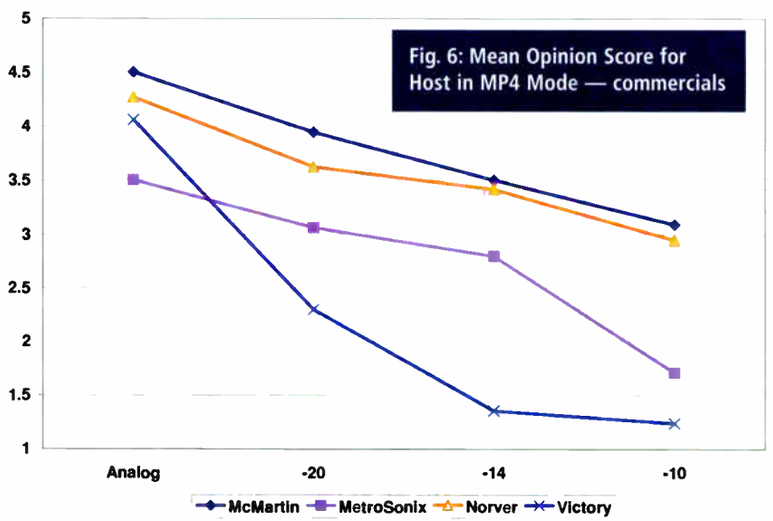
In general, the degree of impairment is receiver-dependent; but acceptable 67 kHz performance with high-power IBOC may require more costly receiver designs.

Regardless of receiver, 92 kHz reception may be unacceptable at or above –14 dBc in all modes of transmission.

These are excerpts from "Report to the FCC on the Advanced IBOC Coverage and Compatibility Study," a project led by John Kean, senior technologist for NPR Labs, and Dr. Ellyn Sheffield, Towson University assistant professor of psychology specializing in cognitive testing. To read the report, go to http://fjallfoss.fcc.gov/ecfs2/document/view?id=7020244643

Next time we'll look at the impact on reception of analog neighbors' subcarriers.





Significant failures occurred at all injection levels with the 92 kHz Victory in MP4 mode, while the McMartin, Norver and MetroSonix produced severe impairments above –14 dBc.

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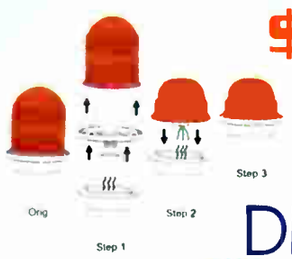


Dialight

Dielectric Cleans Up San Cristobal Hill

IberoAmericana Radio Chile Launches New Combined Transmission Facility

USERREPORT

BY JUAN CARLOS KRETSCHMER
Technical Manager
IberoAmericana Radio Chile S.A.

SANTIAGO, CHILE — Located high above Santiago on San Cristobal Hill, the Sanctuary of the Immaculate Conception is a spot revered by locals and a popular tourist destination. Also, as the second-highest point in the city, the hill plays host to numerous broadcasting and telecommunications antennas and towers.

As Chile's largest and most influential radio broadcaster, IberoAmericana Radio Chile recently was able to do its part to improve the aesthetics of the hill — and the quality of our FM radio signals in the bargain. A key element in the project was a new high-power broadband FM DCRM antenna system supplied by Dielectric Communications, a designer and manufacturer of systems for FM radio as well as television and mobile media broadcasting.

ACROSS CHILE

A division of Spanish media conglomerate Union Radio, IberoAmericana Radio Chile operates more than 1,200 translators and more than 140 stations.

In 2008, we responded to a request by the Catholic Diocese of Santiago, proprietor of the grounds on which the Sanctuary of the Immaculate Conception is located, for broadcasters to work together to consolidate antennas.

We participated with other broadcasters in a design scheme and launched a project to replace our previous multiple transmission sites with a single new facility, housing all of our broadcasting equipment together with a consolidated 330-foot braced tower.

In searching for an antenna technology vendor, we identified a number of requirements. The new tower would need to provide maximum transmission power with minimum height and offer bulletproof reliability. Plus, it would have to provide a sufficient power rating to enable multicasting of eight stations, and an omnidirectional azimuth pattern sufficient to cover the entire listening area of Santiago, Chile's capital city and the country's most important commercial mass media market.

Of the numerous European and American suppliers we considered, Dielectric Communications offered the best technical and economic solution. We were sold on its reputation for quality RF technologies and customer support. Its technical expertise in the FM radio realm is well known.

The two tetraplexed Dielectric systems are shown installed.

The room was designed for the Dielectric manifold combiner system, shown.

IberoAmericana Radio Chile's new transmission building atop San Cristobal Hill is designed to consolidate all broadcasting equipment for the transmission of 12 FM stations as well one analog and one digital television channel. Unique in South America, the new transmission tower houses two tetraplexed Dielectric antenna systems for broadcasting seven 10 kW stations and one 1 kW station, enabled by a sophisticated manifold combiner system custom designed by Dielectric. The transmission building itself occupies a much smaller footprint than our previous setup, thanks to Dielectric's patented manifold combiner that combines multiple radio frequencies into a single output.

The company designed the new tower to keep space, weight and wind load at a minimum and provide optimum radiation patterns. The system's design for both antenna and combiners ensures that transmitters can operate at total power with reliability and confidence. The variation of circular polarizations (left on one set and right on the other) increases substantially the isolation between radiating systems, to protect the signals of stations that are very close in frequency, as close as 400 kHz.

Thanks to this new transmission system, IberoAmericana Radio Chile has reduced its footprint on San Cristobal Hill from four towers carrying dedicated antennas for each station, to a single tower with two antennas that multicast all signals.

Our flagship radio stations — including Radio Imagina (88.1 FM), Radio Concierto (88.5 FM), Radio ADN (91.7 FM), Radioactiva (92.5 FM), Radio Rock & Pop (94.1 FM), Radio Uno (97.1 FM), Radio Corazón (101.3 FM) and Radio 40 Principales (101.7 FM) — have been able to maintain their market leadership by maximizing their coverage within Chile's largest and most cosmopolitan city. Just as important, our company is doing its part to preserve the beauty of one of Santiago's most treasured and frequently visited sites.

For information, contact Dielectric in Maine at (207) 655-8105 or visit www.dielectric.com.

TECHUPDATES

MINUTEMAN ENDEAVOR UPS PROVIDES PROTECTION

For important applications that require reliable power protection, Minuteman's Endeavor Series is a single-phase, true online, double-conversion UPS designed to support large loads for data centers, large telephone systems, broadcast and other mission-critical applications.

A perfectly regulated continuous sine wave output with zero transfer time offers guaranteed uptime and compatibility with all equipment types.

The Endeavor products feature a DSP-based control circuitry that allows programmability via the front-panel LCD/LED display. The unit can be monitored and managed with Minuteman's SentryPlus software or via an SNMP optional card.

Models available include a 6 kVA or 10 kVA tower or rackmount version. Either of these models can be configured to provide n+1 redundancy, or they can be paralleled to achieve up to 24 kVA capacity. In addition, the Endeavor Series has the capability of adding an unlimited number of external battery packs to obtain very long battery back-up run-times.

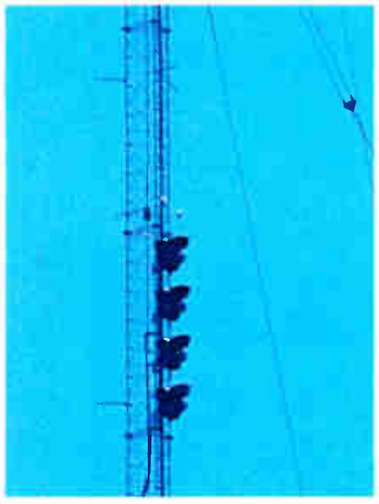
The units require a 208/220 V input and can provide 120 V output with an optional receptacle box. Featuring an emergency power off switch, maintenance bypass switch and a high 0.8 power factor, the Endeavor Series runs at maximum energy efficiency. Minuteman's three-year warranty includes coverage for the internal batteries.

For information, contact Minuteman Power Technologies in Texas at (800) 238-7272 or visit www.minutemanups.com

ERI AXIOM IDEAL FOR MARKET AUXILIARY APPLICATIONS

Electronics Research Inc. recently made available a four-bay version of its Axiom side-mounted master FM antenna for the full FM band.

The four-bay Axiom is available in configurations capable of handling input RF power levels of up to 112 kW,



for either single or combined FM signals. According to the company, the design is based on the Rototiller Series FM antenna element and offers an economical option for either main or auxiliary applications.

The four-bay model, as with other Axiom configurations, features rigid interbay transmission lines that resist ice damage and damage from severe weather and allow ease of assembly and installation. Axiom FM antennas are available with optional electrical deicers or radomes, for those areas that require additional icing protection.

The Axiom master FM antenna is also available in higher gain six-, eight-, 12- and 16-bay configurations.

For information, contact ERI in Indiana at (812) 925-6000 or visit www.eriinc.com.

KHLX Uses Jampro to Target Sacramento

Antenna Delivers FM Into Larger DMA With Strong Signal and Low Reflected Power

USERREPORT

BY GREGG GARCIA
Chief Engineer
KHLX(FM)

SACRAMENTO, CALIF. — I was up against a tight deadline. It was 4:55 Friday afternoon and KHLX(FM), Clear Channel Communications' new station going into the Sacramento market, was scheduled to go on air two days later on Sunday. But I needed some last-minute transmission line elbows and couplings to make it happen.

I called Greg Montano, my sales-engineering contact at Jampro Antennas, also located in Sacramento, and he arranged for me to pick up the missing links I needed after closing hours that night. It's certainly helpful having your antenna maker virtually in your backyard, but that's not the only reason with went with a new six-bay Jampro JHPC-RFR configuration for reduced low-angle radiation near KHLX's tower. We were doing a classic two-step move to get into the Sacramento DMA.

We moved KHLX from Susanville to Pollock Pines and did a station upgrade in order to serve the market with classic hits and news at 93.1 FM. Our company

KHLX's new Jampro antenna is on top of this tower.

purchased the Pollack Pines license for KJDX(FM), which we downgraded from Class C to a Class A station, and then upgraded that station by moving to Somerset, Calif., as a B1 at 20.5 kW ERP.

ISSUES

We had a great tower location that we would share with KCCL(FM), a Class A station owned by Results Radio Group.

KCCL was already using a Jampro antenna and we were impressed with their coverage. Since they were familiar with the site and conditions, we decided to have Jampro build us a duplicate antenna that could handle the higher power level; that turned out to be Jampro's JHPC, a high-power version of their Penetrator series rated 50 kW maximum input.

I called on Doug Tharp at SCMS for the transmission line as he had 2-1/4-inch available. For our TPO, calculated at 12.5 kW, 1-5/8 would be marginal and 3-1/8 would be overkill, but 2-1/4-inch is less used and more difficult to locate. Luckily, Doug had 300 feet at hand.

I really didn't shop the antenna in terms of price, but the cost looked reasonable. It was really our GM and director of engineering who wanted to go with Jampro because of past experiences.

Jampro performed pattern optimization tests and provided us with 10 plots to select from and we chose the one that we thought would provide optimal coverage of the desired area taking into account terrain considerations.

The antenna was delivered on time, without incident and the installation without issue, that is, until I realized we needed a few last-minute transmission line fittings. On Saturday we made the last few connections.

When I first fired the new transmitter into the line I was not sure what I was seeing. With 12.5 kW of transmitter power output there was less than 5 W of reflected power. I actually installed a through-line wattmeter just to verify what the transmitter, a new Nautel NV20, was reporting, and it agreed. There's no such thing as a perfect antenna, but the lower that number the better the match and it appeared to be a good one. Further, the coverage is impressive. The feedback on the signal that I have received from our management and our listeners has all been positive.

I am impressed with the antenna's performance. It went right up and we had no problems. It wasn't a last-minute project, but because of the permitting and the electric utility delays it came down to the wire. So it was nice that Greg Montano was able to help us out and that when we finally fired it up we didn't have any surprises.

For information, contact Jampro Antennas in California at (916) 383-1177 or visit www.jampro.com.

TECHUPDATE

BELL TOWER ADDS NEW 'POLE'

Bell Tower Corp. recently introduced the Hexpole as an alternative to monopole models.

The company cites a need in the industry for a self-supporting communications tower that can be manufactured, stored and transported in sections, that can be assembled on site and that provides the safety, wind-resistance and cost-effectiveness of a lattice tower, but with the smaller footprint and corresponding aesthetic appeal of monopoles.

The Hexpole is a hexagonal self-supporting tower, a six-sided structure made of steel lattice panels, which are assembled on site. The Hexpole tapers six inches for every 20 feet, making it slightly wider than a monopole but significantly slimmer than a conventional lattice self-supporter. Therefore, it is expected that the Hexpole will be accepted by most building departments as an alternative to the monopole when a lattice self-supporter has been denied.

The primary advantages of the Hexpole over the monopole, other than safety, is the ease of manufacturing, shipping and erection. Erection is done with conventional tower erection equipment without the need of hiring a 200-ton crane to erect it. Unlike a monopole, modification for expanded capacity is achieved without torch cutting or welding.

Additional features are the internal line support system that also serves as interior structural bracing. This feature provides installers adequate room for routing, grounding and supporting transmission lines. The lattice design allows climbers easy access to all sides of the mast and an external climbing ladder incorporated into the bracing pattern provides a safer work environment.

For information, contact Bell Tower in Oklahoma at (918) 789-9020 or visit www.belltowercorp.com.

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PowerClamp Takes Mystery Out of Failures

Henry Engineering Helps Engineer Solidify Transmitter Performance

USERREPORT

BY ART VANDELAY

LOS ANGELES — My experience with Henry Engineering's PowerClamp Transient Voltage Surge Suppressor units began in 1988, although at that time they were known by the name Sine Control TVSS.

I am the contract transmitter engineer for KWVE, a 25,000 watt FM station in San Clemente, Calif. For several months, the station was experiencing a problem with the transmitter, which was located on a mountaintop that's two-hour drive from the station's studios.

The problem was simple but annoying: Almost every Thursday morning at about 8 a.m., the transmitter would throw its main breaker and the station would go off the air. This would require someone to drive up to the site, reset the breaker and get the transmitter back on the air.

Every time this happened, we'd try to locate evidence of whatever caused the breaker to trip, but nothing was ever found. The local utility company was contacted, under the assumption that the problem was power line-related. They ultimately issued a 23-page report, explaining that it wasn't due to anything the utility company was or wasn't doing.

About that time I was contacted by a representative of Sine Control International. They claimed to have the solution to the problem in the form of a highly effective surge suppression device.

We had tried other "surge suppressors" with no improvement in the situation. Since we were at our wit's end, I agreed to try one of their units. It was installed. The problem went away and never returned. Ever since, I've been a big fan of these units, which are now marketed by Henry Engineering as the PowerClamp.

SMOOTH SAILING

A few years later, I became chief engineer of KPWR, one of Los Angeles's major FM stations. They were using a pair of older CCA transmitters. They too had the occasional problem with one (or both) transmitters tripping the main breakers. And again, someone (usually myself) had to drive up the mountain to reset the breaker. Since "I had seen this movie before," I installed a PowerClamp Series 8 surge suppression unit. Again, the problem went away and never returned.

PowerClamps eliminate power line surges and glitches that cause tripped breakers and serious damage to transmitter plant equipment.

In 1992 we upgraded to a new transmitter plant on Mt. Wilson, the 6,000-foot mountaintop that serves Los Angeles with most of its FM and TV signals. I installed a pair of Continental 816R3B transmitters at this site, which also housed another FM transmitter and a TV transmitter. Taking a clue from my past experiences with mountaintop power, I installed a PowerClamp Series 8 surge suppressor on the transmitter's AC power input.

It paid off. A few months later, there was a significant power line surge. The surge (or whatever it was) caused my transmitter to "hiccup," but come back on the air after a few seconds. There was no damage. The other FM and TV transmitters in the same building sustained serious damage. They were off the air for several days until repairs could be made. The cost of their repairs greatly exceeded what I spent on the PowerClamp TVSS unit.

I currently am the engineer manager for the Los Angeles cluster of several broadcast facilities under common ownership. Being responsible for 13 radio stations means my time is limited, and there is no room for "taking chances." For this reason, I have installed PowerClamp units on virtually every transmitter for which I'm responsible. At one transmitter plant, we previously had experienced unexplainable off-air episodes about once every four to six weeks. Since the PowerClamp unit was installed, we haven't had such an occurrence in over a year.

I've also noticed an increase in tube life. Our Harris transmitter used to consume final tubes at a rate of about one per year. After installing a PowerClamp unit, tube life has increased. We're now 16 months into a tube and it's still going strong. I can only conclude that keeping voltage spikes out of the tube is having this positive effect.

I'm convinced that PowerClamp TVSS units are well worth their cost. In my 20+ years of first-hand experience, they have repeatedly demonstrated their ability to eliminate power line surges and glitches that cause tripped breakers and serious damage to transmitter plant equipment. And apparently they maintain their effectiveness, since the unit that I installed at KWVE in 1988 is still working well.

For information, contact Henry Engineering in California at (626) 355-3656 or visit www.henryeng.com.

The author of this article wrote under a pseudonym to comply with his employer's policies about endorsements.

TECHUPDATE

AM WARNING SIGNS FROM ANTENNA ID

Antenna ID Products now makes the AMDPSA24, a large heavy-gauge aluminum 24-by-24-inch AM transmitter sign, saying it was prompted by requests from broadcasters.

The sign fills requirements of the FCC to warn the public (and potential vandals) away from entering a high RF area. Additional wording may be added at no extra charge.

For information, contact Antenna ID in Pennsylvania at (610) 458-8418 or visit www.antennaID.com.

TECHUPDATES

NEW AVIONICS OFFERS ADAPTIVE DEFROST CONTROL FOR ANTENNAS

New Avionics Corp., maker of optical ice sensors, has updated its baseline Model 9734 sensor head with a new heater option that provides adaptive defrost control for antennas and other equipment.

New Ice*Meister Model 9734-HTR option uses two radiant heater panels, one on either side of the sensor probe, to melt ice and reset the host ice control system after ice detection and defrost-cycle initiation. Adaptive defrost control allows ice control systems to cycle back and forth across the ice formation threshold in real time, adapt to actual circumstances and apply heater power only when there's ice, not when there's no ice.

Adaptive defrost control can protect antennas and other facilities from accumulating ice, save significant amounts of energy and extend the life of antenna heaters.

Heater panels are temperature-limited to a mild 50 degrees Celsius for personnel safety. There are two operating modes: Ice Alert for minimum residual ice or Saturation Ice for minimum energy consumption. Heater panels are anodized aluminum, fitted on the inside with resistance heaters and thermal switches. They run on 24 V, 1 A maximum. Maximum possible system power budget is < 30 W. Ice Alert and No Ice states are mutually exclusive, and if the host system ever sees them both in the same state, a system fault is indicated.

The 9734-HTR system consists of three parts: 1) An Ice*Meister optical sensor head, potted with two-part epoxy; hermaticity is assured. 2) Two lightweight shielded blue cables of four AWG 24 color-coded wires connect the sensor head to the user interface; cables operate down to –70 degrees C. 3) The interface system, in an easy-to-install DIN rail box, offers visible LEDs that indicate icing status and SPST relay contacts that mimic the LEDs. Host systems monitor the relay contacts without concern for system ground loops

The 9734's 35 mm DIN rail instrument box measures 6 x 4.5 x 3 inches. It's ideal for radio equipment rooms, where ease of installation, visibility and access are important. The box is plastic, and has a spring-loaded latch at the back that snaps onto a pre-installed 35 mm DIN rail. No tools are required unless no DIN rail is available, in which case the box can be screwed to a bulkhead. Interface box connections to the sensor head and host system are made with a screwdriver.

For information, contact New Avionics Corp. in Florida at (954) 568-1991 or visit www.newavionics.com.

SHIVELY SHOWS NEW DIPOLE

The Shively Labs 6020 broadband dipole is one of several new antenna lines recently introduced. It is designed to be deployed rapidly, either singly or in branch fed arrays — ideally suited for standby or emergency situations. It is rated at 5 kW per dipole with a 7/8-inch EIA connector. A single 6020 offers an input VSWR, out of the box, under 1.25:1 at the band edges, and much less within the mid-band frequencies.

Shively Labs also has introduced an additional line of broadband FM panels, based around the 6020 dipoles, designed for either square or triangular towers. Panels are available in circularly polarized and linearly polarized versions, suitable for lower powers and providing significant savings in costs when compared to the existing 6014 and 6016 high-power panels.

According to the company, both the dipoles and the panels are designed to be "flat-packed" for ease of shipment, offering broadcasters an efficient, versatile antenna system at low cost that can be deployed rapidly, whenever and wherever needed.

For information, contact Shively Labs in Maine at (207) 647-3327 or visit www.shively.com.

KINTRONIC LABS DEBUTS ANTENNA ANALYZER

Kintronic Labs' new Array Solutions Model VNA 2180 is a two-port antenna analyzer.

This low-cost, lightweight instrument facilitates measuring antenna impedance (magnitude and phase) and two-port filter transmission measurements in the 5 kHz to 180 MHz frequency range. The instrument is connected to a PC that is supplied separately and on which plot parameters, such as impedance, SWR, S11 and S21 can be displayed over any specified frequency range within the 5 kHz to 180 kHz band. The test frequency is generated digitally.

A 12-bit analog to digital converter digitizes the raw data. This avoids non-linearity associated with diode detectors, and results in very good dynamic range and linearity for accurate magnitude and phase measurements, the company said.

Impedance measurements can range up to 10 kohms. The sign of the phase angle indicates either inductive or capacitive reactance without ambiguity.

The RF generator also can be used as a signal source for testing receivers. Measurements can be made at ground level and translated as if they were at the antenna feedpoint by using the refer to antenna function. The impedance at the antenna itself can be read with the VNA 2180 located in the shack at the receiving/transmitting end of the coax. The cable can be any length.

Digitized data is sent to the PC via an optically-isolated USB port. Numeric values can be read from the graph data using the mouse-controlled cursor. The scan data can be saved to disk or printed to compare before and after results. It also can be imported into spreadsheet programs for further analysis.

For information, contact Kintronic Labs in Tennessee at (423) 878-3141 or visit www.kintronic.com.

Harris Impressed by Phase Technologies PT355

Transmitter Manufacturer Tests Out Three-Phase Converter, Likes What It Sees

USERREPORT

BY TERRY COCKERILL
Radio Product Line Manager
Harris Broadcast Communications

QUINCY, ILL. — In July 2009, Harris evaluated a new product available to the market from Phase Technologies, the Phase Perfect Digital Phase Converter.

Many manufacturers' power supply designs, modern and legacy, incorporate a linear type power supply. Linear type supplies consist of a contactor(s), transformer, rectifiers and filter components such as capacitors and inductors. While this design is robust and exhibits benefits such as high-current or voltage capability, high efficiency and high-load isolation to line transients, a downside is they often have fixed single-phase or three-phase input power configuration.

DILEMMA

This often creates a dilemma when a broadcaster acquires a three-phase transmitter and only single-phase power is available at a site.

Many times, the option of converting the site to three-phase electrical service is not financially practical if the broadcast facility is a considerable distance from three-phase service. Seeking a solution, Harris contacted Phase Technologies to request a Phase Perfect model PT355 phase converter for evaluation.

A Phase Perfect converts single-phase to three-phase power in a "high leg" delta configuration specifically for such three-phase power equipment applications. Two legs pass directly through, while a third leg is internally generated. According to the performance specifications, the generated leg has very low distortion and voltage balance within 1 percent. Overall efficiency of the converter is 97 percent, better than the rotary design.

Steve Mathiesen at Phase Perfect addressed any potential skepticism by explaining that the units are UL tested and certified and rugged enough for broadcast applications. Designs similar to the PT355 have undergone extensive testing by a military contractor that uses power conditioners for field operations in Iraq and Afghanistan.

With a rated output of 55 A, the PT355 was deemed appropriate for the 10 kW FM application after review of the demand requirements and a quick consultation with the manufacturer. Since the generated leg is a "high leg," all 120 VAC loads, such as building lights, must be derived from the original two single-phase to neutral feeds, while the third leg to neutral is not used.

Our evaluation only included operation on the original shipping pallet. The unit was delivered with dimensions of 26 inches high x 19 inches wide x 14 inches deep and weighed just over 110 pounds. With only a two-inch side and six-inch top and bottom spacing requirement for cooling, the wall-mount unit can be considered small, relatively lightweight and easy to install.

One immediate noticeable difference was its quietness. The noise level of the electronic version is an improvement to the traditional rotary phase converter; the unit produced only a faint buzzing sound even at a 120 percent load.

A second appreciable difference is that the unit provides an instantaneous balanced three-phase output AC voltage once provided an AC input within the normal input operating range of 187–260 volts. The restart time of about 12 seconds was simply cumulative with the restart time of the transmitter we tested. While any delay is undesirable, even a small interruption in power causes a longer total restart time. This is an important advantage because it simplifies the integration of the phase converter and transmitter as a system.

DELAY

Specifically, the instantaneous application of balanced three-phase voltage removes the requirement in some applications to add a time-delay circuit to delay the transmitter from coming back on after an AC outage until the rotary version is fully "at speed." Without the delay, applying a full load while the rotary version is not at full-voltage output develops excessive current that may subsequently open a fuse or trip a circuit breaker, requiring a visit to restore service.

We connected the single-phase input through a variable power transformer and adjusted the AC input throughout the rated operating range. During each scenario of exceeding high- and low-AC line, as well as single and multiple short and long power interruptions, the transmitter seamlessly completed an AC restart sequence.

Fusing on the single-phase input and three-phase output is a requirement. While the Phase Perfect has over-current protection to shut down the output should it exceed the maximum current rating, output fusing is still recommended for safety. This added disconnect ensures power is completely removed and proper lockout/tagout procedures can be put in place prior to servicing. This also provides ease of maintenance when the disconnect is placed near the transmitter.

Harris has deployed three units for broadcast applications. Two are operating with Harris transmitters, one of them for radio in the United States and one for TV in the Philippines. The radio user is Joe Puma at WNED(FM), a Class B 6 kW station operating a Harris Z12HD+ HD Radio transmitter. Joe has reported similar experiences with no surprises, quick installation, clean output voltage and excellent regulation, and can't imagine a better service from his utility provider. Joe states he did witness an AC outage, and the return to air time was acceptable.

Harris is now evaluating higher-power models on varying loads such as those common with AM broadcasts. Phase Perfect models are available with rated output up to 160 A.

For information, contact Phase Technologies in South Dakota at (605) 343-7934 or visit www.phasetechnologies.com.

TECHUPDATE

SUPERIOR OFFERS BVR REGULATOR

Superior Electric has created a new voltage regulator family for the Stabiline AC automatic voltage regulator series, the BVR line.

The BVR line will handle voltage sags, surges, undervoltages, overvoltages, most any voltage irregularity likely to be encountered at a transmitter site.

The BVR units use a new patent-pending solid-state "step" regulating design to eliminate full load carrying transformers and servo-motor control schemes.

Units are three-phase and available in (208Y/120 VAC, 60 Hz) in amperages of 100 A, 200 A, 400 A and 600 A and (480Y/277 VAC, 60 Hz and 415Y/240 VAC, 50 Hz) in amperages of 100 A, 200 A, 400 A, 600 A, 800 A and 1200 A.

All BVR series feature Individual Phase Control for maximum protection of all connected loads. Input voltage range connection styles are ±15 percent for 1 to 3 percent adjustment and ±30 percent for 2 to 6 percent adjustment.

For information, contact Superior Electric in Connecticut at (860) 507-2025 or visit www.superiorelectric.com.

TECHUPDATE

CROSSED FIELD ANTENNA PRESENTS A NEW STICK

The Crossed Field Antenna is a type of transmitting antenna for use solely in the distribution of an AM radio signal. The design has been the subject of scrutiny and debate among engineers for some years. CFA Ltd. hopes to submit test results of a U.S.-built CFA to the FCC for approval within the next four months.

For now the product is not type approved and cannot be used in the United States. The company's Robert Richer said 10 CFAs are in operation in Egypt.

Typically, an AM transmitting site requires large amounts of increasingly valuable property. The land is used for the placement of the transmitting tower or towers, and for the installation of guy wires and for the ground system.

The CFA requires none of this. It is a relatively small device, typically no more than 3 percent of the size of a comparable tower, and it has no ground system. It requires no lighting or painting of the sort mandated by towers that present an aircraft hazard. Because it is such a small device, guying requirements are virtually nonexistent. Its small size also makes it much less vulnerable to wind or ice damage, and of course, there is minimal terrorism hazard.

The immediate advantages are that that a station operator can get rid of large tracts of valuable land, and can eliminate the considerable expense of maintaining the tower or multiple towers normally associated with AM broadcasting.

Small size means that a CFA can be mounted on the roof on an existing transmitter building. It can be mounted on the roof of an inner city office building, closer to the population center served by the station. The design of the antenna means that there is minimal near-field radiation, and thus, none of the radiation hazards normally attendant with the use of a driven mast antenna.

For information, contact CFA Ltd. in Connecticut at (860) 677-9688.

PRODUCTS & SERVICES SHOWCASE

SHOWCASE

TECHUPDATE

THOMSON'S SMALL-FOOTPRINT ANTENNA SYSTEM UNDERGOES MAJOR UPDATE

Designed for shortwave use, Thomson's High-Performance Rotatable Curtain Antenna (HP-RCA) from its Grass Valley division has undergone a major technical update.

Combining the advantages of the Thomson Rigid Rotatable Antenna design with those of a balanced RF feedline, the newest model HP-RCA 4/4 antenna features increased bandwidth, greater reliability, ease of assembly and improved efficiency, which the company says creates significant economical advantages.

Based on a rigid dipole array and a tubular shaft, the HP-RCA 4/4 is a back-to-back arrangement of a low-band and a high-band curtain antenna equipped with a reflector screen. With an overall weight of approximately 200 tons, the maximum survival wind speed amounts to 125 mph and the maximum operational wind speed to 75 mph. The antenna needs an area with a radius of less than 120 feet to operate to any azimuth and can rotate 180 degrees in less than three minutes.

By optimizing the configurability for far distant coverage, the complex switching and tuning system in the tubular shaft was replaced with an optimized balanced feed system. This not only reduces considerably the cost of the antenna, but also eliminates the need of additional baluns and transformation lines.

The coaxial line passing through the pivot bearings has been upgraded by a twisting balanced feeder. In combination with a switch, this feeder allows unlimited rotation of the antenna in any direction.

The new composite insulators at the feed point of the dipoles are more rugged in assembly and operation than the older ceramic insulators. In addition, the new, 42-foot dipoles are now split in the middle, simplifying transportation and assembly.

The enhanced design of the antenna's power splitting and dipole feed system provides for outstanding bandwidth performance, Thomson says.

An automatic lubrication system with an electrical lube pump provides for additional ease of maintenance of the turnable drive unit.

For information, contact US Thomson/Transmission & Mobility/ North America in Virginia at (703) 981-9188 or visit www.thomsongrassvalley.com.

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TUBES

Are Ch. 6 Protection Rules Still Needed?

NCE-FMs Have Waited More Than Patiently for Their 'Turn at Bat'

BY LAURA MIZRAHI

The Petition for Rule Making by National Public Radio to repeal Section 73.525 of Federal Communications Commission rules pertaining to the protection of TV Channel 6 by NCE-FM

COMMENTARY

stations has garnered a good deal of support, particularly among the consulting engineering community and NCE-FM broadcasters.

Those opposed to its repeal are, not surprisingly, a few remaining Channel 6 DTV facilities (most notably ABC and WPVI-DT, Philadelphia) and some LPTV Channel 6 facilities hoping that the commission will continue its current policy requiring full-service NCEs to protect those facilities and proposals.

NPR makes some excellent points in its NPRM, among them:

- The current protection standards were adopted in 1985 and were based on conditions at that time with the expectation that the standards would be interim in nature. However, the rule has not been revisited in the intervening 25 years.

- Digital television (DTV) receivers are substantially less vulnerable to NCE-FM induced TV 6 interference than analog receivers tested 30 years ago, which formed the basis for 73.525 protection standards.

- Demand for NCE-FM service has steadily grown while the demand for TV 6 full-service facilities has declined.

- Elimination of Section 73.525 would allow numerous NCE-FM stations to increase their service area.

NPR submitted two technical documents to the FCC in September 2008 detailing its study of Channel 6 receiver interference, the first in-depth studies since the 1979 FCC conducted studies, which formed the basis for the Section 73.525 Rules enacted in 1985.

These studies showed a reduction in interference to DTV receivers compared to that currently assumed by the analog protection rule. Simply put, the improvement factors based on current receiver technology are so significant that supporters of the rule's repeal believe the public interest is best served by taking these changes into account at the earliest possible opportunity.

The NPR proposal is particularly important to NCE broadcasters due to the disparate and sometimes uneven application of TV 6 protection standards by the Media Bureau regarding full-service NCE applications.

For instance, the dismissal of the KEKL(FM), Mesquite, Nev., application in January 2009, based on the application's failure to address potential interference to LPTV station KVPX(LP), represented a heretofore unexpected requirement for NCE stations given the fact that protection to LPTV facilities is not spoken to in Section 73.525.

> **NPR's** proceeding deserves serious consideration by the commission.

Additionally, Section 73.623(f) requires new DTV allotments on Channel 6 to demonstrate that no new interference would be caused to existing NCE-FMs but this requirement does not appear to be adhered to especially by the LPTV service.

Shortly the FCC will begin accepting and processing additional applications for new Channel 6 DTV LPTV facilities. The situation is somewhat dire now due to the existence of a number of Channel 6 LPTV applications filed in the August 2009 initial rural filing opportunity.

Once the Jan. 25, 2010 filing opportunity commences, the NCE-FM service will be potentially impacted, on a nationwide basis, in terms of both major change applications and minor facility changes. This impact is associated with the requirement that Channel 6 DTV facilities be protected and also the fact that existing NCE-FM facilities may not be protected by the LPTV filings.

It is believed, as of this writing in early December, that the Media Bureau staff may no longer require protection of Channel 6 LPTV facilities. A Public Notice addressing NCE-FM protection of Channel 6, and LPTV Channel 6 protection of NCE-FM facilities, has not been released, so broadcasters are cautioned to inquire before taking this assumption at face value or proceeding to file applications with the FCC.

Should a Public Notice to this effect not be released prior to the commencement of the Jan. 25 LPTV filing opportunity, NCEs that haven't previously filed are strongly urged to submit late-filed comments in support of the NPR proceeding.

NCE-FMs have waited more than patiently for their "turn at bat." The NPR proceeding deserves serious consideration by the commission.

Laura Mizrahi of Communications Technologies Inc. has been involved in broadcast consulting engineering for more than 20 years. Questions of a broadcast technical nature can be sent to lmizrahi@commtechrf.com.

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It's Time for an AM Radio Revival

Rather Than Give Up, Do What Radio Traditionally Does Best

BY STEPHEN WINZENBURG

Reports of the death of AM radio are not only greatly exaggerated but extremely premature.

COMMENTARY

Recent articles have claimed that AM is no longer "relevant" and that its analog technology keeps people from listening. Experts claim that AM has a small audience share and can't make money.

However, in some cities AM is not only alive but is surprisingly healthy. Take a glance at the Arbitrons and you'll find that almost half of the top 20 markets in America have an AM station ranked No. 1 or No. 2.

In one recent ratings survey, an AM station topped all the FM competitors in audience share in Chicago, San Francisco, Phoenix, St. Louis, Denver, Cincinnati and Cleveland. AM came in a close second in Los Angeles, Atlanta, Tampa and Boston. Even in New York City, four of the top 16 stations were on the AM dial.

It's true that in the overall listening statistics, 83 percent of listening occurs on FM, but a closer look shows that AM's erosion is rather slow. The current 17 percent share of the audience is only slightly less the 20 percent AM had 20 years ago. It has been able to retain most of its audience with an increase in formats like talk, sports and Spanish. Considering that owners have abandoned popular music on the AM band, it's surprising that it hasn't lost even more market share.

Inside Radio's count shows that formats with a large majority of their stations on the AM dial are sports, adult standards, ethnic, pre-teen and some religious, such as black gospel. News/talk

stations are listed as being 62 percent AM while Spanish radio is now close to a 50–50 split.

Of the 23 predominantly FM formats listed by Inside Radio, many have almost no presence on the AM dial. Rhythmic AC and rock have zero AM stations while alternative rock, classic rock, R&B and CHR have single-digit numbers.

IT'S NOT ABOUT AUDIO QUALITY

When I ask students in my college classes if they listen to AM, it's no surprise that 95 percent say no and many say they have never tuned in to an AM station — ever. The only exceptions are the middle-aged male non-traditional students who enjoy sports and talk.

> **The solution** is not to give up AM for dead, but to rethink how to attract people to it.

Young people listen to contemporary music and if there is talk they want it to be funny. That's because they don't want to think and they use audio to escape their troubles.

Those in the business who cry over the fact that the young demographic has abandoned AM need to realize that it's not just due to the analog sound quality — many of them have never even listened to an AM signal to know what kind of quality it is! It's more about content. They are drawn to the listening device that helps them escape and makes them feel part of their peer group.

Namely, there's nothing that motivates them to turn to the AM dial because they perceive it to be made up of boring serious talk or music their friends would never be caught dead listening to.

It's not about audio quality — right now those 20-year-olds are walking around noisy college campuses listening to music coming from tiny earplugs. They are watching three-inch music videos on a laptop with terrible sound. To them it's about content — they will tune to something worth listening to that their peers are talking about.

The solution is not to give up AM for dead, but to rethink how to attract people to it.

It's going to take a different model — something like Radio Disney has done in getting pre-teens to turn on the AM dial. Disney has chosen to look beyond the bottom line and use the stations as an opportunity to promote its own recording artists, cable channel and movies. It's one of the reasons Hannah Montana sells out concerts, the Jonas Brothers have topped the pop charts and the "Wizards of Waverly Place" movie beat almost everything else on television in August.

But when the pre-teens start to grow up, those same listeners have to switch to FM to continue their pop music fix. Why not bring young adult programming back to the AM dial?

CHALLENGE YOUNG MINDS

Start brainstorming options that might draw listeners.

Have music companies program their own stations; put some unusual satellite formats on the AM dial for those who don't want to pay to listen; program the audio from TV shows that they watch, such as talk shows and games shows; or take the most popular podcasts off the Internet and put them on a broadcast station.

Then challenge the young minds who are the future MTV producers or "Daily Show" writers or Fox animators to create programming that will work for audio. Use AM stations as a training ground for radio by using college kids and high schoolers who can Twitter their friends and promote themselves on Facebook. Many are already doing their own Webcasts or do shows on small noncommercial stations. And schools would love the opportunity to partner with local commercial broadcasters.

Get beyond the idea that "it can't make money" and realize that there are many radio stations (non-commercial FMs, LPFMs, automated AMs) that can stay on the air despite small budgets. They survive because they serve a segment of the population with programming that someone is willing to support.

Now is not the time to give up on AM but instead to do what radio traditionally has done best: Come up with creative new ways to attract listeners.

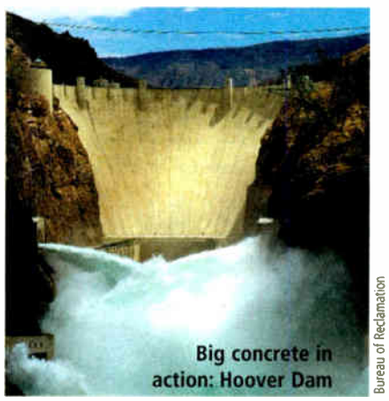
Stephen Winzenburg is a communication professor at Grand View University in Des Moines, Iowa, and has worked at 16 radio stations, including WHO(AM).

READER'S FORUM

A CONCRETE EXAMPLE

Reading his article in the Nov. 4 issue by Charles S. Fitch, several points about concrete and its history came to light.

I had not been aware that the secrets to formulating what we know today as Portland Cement had been lost following the time of the Roman Empire. Fascinating stuff, great article.



Big concrete in action: Hoover Dam

Bureau of Reclamation

I want to thank Mr. Fitch for assiduously distinguishing between concrete and cement. I'm afraid there are far too many folks out there who use the word cement when referring to concrete. I can almost hear Buddy Ebsen referring to the see-ment pond in the back yard of the house in "Beverly Hillbillies."

An architecture professor I know and respect made it clear. There is no such word as see-ment. The word is cement, and it is used to make concrete. Further, concrete is not cement, and is certainly not see-ment. Mr. Fitch correctly explains how cement is used as an ingredient in concrete, then correctly separates the terms throughout the article.

It's like the word "console." What is a console? Is it an audio mixer? Is it the piece of furniture the mixer sits on? Is it an arrangement of icons into a user interface on a computer screen?

Words can be confusing. In my humble opinion, an audio mixer is a mixer, a piece of furniture the mixer may sit upon is a desk or a bench, and a user interface is a GUI, an application desktop, an operator interface, anything but a console. And cement is an ingredient used in making concrete.

At least it makes communication simpler when one word is not confused with the meaning of another.

Tom Norman, CPBE
Sr. Engineer
Burst
Centennial, Colo.

CORRECTIONS

The Nov. 18 issue Buyer's Guide gave the incorrect URL for Inovonics' Web site. The company is at *www.inovon.com.*

The story about video tools by Al Peterson in the Nov. 18 issue misidentified his employer. Peterson works for the Radio America Network.

OPINION

IS IT THE BEST WE CAN DO?

CBS Rebroadcast Strategy Invites Scrutiny

A new idea put forth by CBS Radio attracted our attention recently. It involved the programming of a few of the group's HD Radio multicast channels with retransmission of signals from some of the group's other, out-of-market stations.

CBS's popular New York all-sports station WFAN(AM) now appears on HD-3 channels in Orlando, Tampa and West Palm Beach, Fla.; and the similarly sports-formatted WBZ(FM) in Boston now turns up on WTIC-HD3 in Hartford, Conn.

On the West Coast, CBS set up a bilateral arrangement wherein alternative-formatted KROQ(FM) in Los Angeles also airs on a multicast of KSCF(FM) in San Diego, while KSCF's hot AC content appears on KAMP-HD2, Los Angeles.

We reacted positively to these moves for their innovation. Any new ideas regarding multicast programming, and HD Radio applications in general, certainly are worth a try right now.

But after reflection, we also wonder if this may present an instance of the industry's inability to grasp the value of new technology and its unfamiliarity with how it can be applied to serve today's audiences.

The CBS strategy is not without merit. Many Florida listeners have current or traditional ties to New York and its sports teams (spring training and the Grapefruit League included). And regional expansions in New England and Southern California might make sense in a different way.

Further, we are not surprised when we see a radio company look to its existing content resources, trying to populate various new channels in unusual ways. If CBS has strong brands in certain markets, why not extend those brands?

But we wonder if such "repurposing" is really a good use of multicast spectrum.

In a world where the Internet makes access to distant radio stations literally child's play — increasingly, even for mobile listeners — this move could make broadcasters appear out of touch, reinforcing the Rust Belt image that much of the younger audience harbors about our medium.

That feels like a quibble. But we also wonder whether this move ultimately will run afoul of regulation, since one could argue that it violates the spirit of localism (a sensitive topic in regulatory circles these days) and the prohibition of broadcast signal retransmission (although a "superstation" designation might be invoked to allow it). One SoCal competitor to CBS has filed a request for declarative ruling with the FCC on the matter and further argues that importing the San Diego signal puts CBS over its limit of allowed signals in the L.A. market under current ownership rules.

Most important, we feel that while this programming idea may be new, the broadcast content is anything but. This isn't even "repurposing" — it's simply retransmitting. We couldn't fault a casual observer for concluding that radio, handed a raft of new channels through its HD Radio multicasts, is nevertheless tapped out of fresh ideas so it is recycling its greatest hits — or reinventing itself as a national broadcast service.

If CBS's idea catches on, we could see a fast-food syndrome blossom in U.S. radio — not just running the same formats in many markets, but actually airing the same content, and localism be darned. ("Hey, it's still a local service, it's just not your market's ...")

Not using new local channels for new local programming ideas feels like a lost opportunity and might invite further criticism that radio is not putting its spectrum to best use for local service. The strategy at least invites such questions.

— Radio World

LIVE AND LOCAL

I think the most obvious way for AM to make an impact is to be live and local. There are obvious examples, WGN, WBT. But I also remember working for the owner of a couple of AMs near my rural college in North Carolina.

READER'S FORUM

Even into the late 1980s, his stereo oldies AM in a tiny market held a 10.5 share in the county report, while the one FM in town, also oldies, held a 3. And his AM was a daytimer.

The AM was live and local, sign-on to sign-off, and the day was extended when we got a whopping 12 watt nighttime authorization.

His plan, way back then, was to acquire stations and adopt whatever digital standard developed. Then he would have the equivalent of a group of FM stations. Since that took so long, he sold out to buy his station elsewhere, and took stereo AM with him.

If AM would take more of a community approach, and put local voices on the air, they could gather younger demographics and develop loyalty that turns into longer TSL.

Tim Kimble
Alexandria, Va.

THANKS FOR AM FEATURE

Big kudos for the Oct. 7 edition of Radio World, specifically the *GM Journal* feature about AM radio.

I think the responses you chose to print were varied and showed a great understanding of AM radio and its problems. The solutions suggested also showed a lot of thought and understanding.

I too took exception to Randy Stine's earlier article but knew you'd have more than enough responses to the contrary without mine. Last year, *two of the top three* billing stations in the nation were AMers. How was this possible in light of Stine's pronouncement?

I did have to chuckle however over the letter from Fred Weinberg on page 36. He made one small error. His quote was, "AM radio is not dead. Many AM programmers, however, are brain dead." This should be amended to "most" AM programmers.

Keep up the good work.

Jerry Arnold
Director of Engineering
Midwest Communications/WPRS(AM)
Terre Haute, Ind.

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3. Redundancy is critical. A typical WheatNet-IP installation has multiple levels of redundancy. Each BLADE holds the complete map of the entire system within its onboard memory – we call it distributed intelligence – a system with 50 BLADEs has 49 backups with failover in the event of a failure. Cisco Stackwise technology provides redundancy in the central core TOC switch. A WheatNet-IP/E-Series console studio complex can stand alone, even if the TOC goes down, with backup analog or digital program audio feeding a back end router independent of the core Gigabit infrastructure.

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