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INSIDE

NEWS

- The Leslie Report is going to the dogs. — Page 10



ENGINEERING

- How a BlackBerry and some quick thinking bailed me out on remote. — Page 17

STUDIO SESSIONS



- Al Peterson finds the Audio-Technica BPHS1 suitable for that sportcast ... or Skypecast. — Page 24

OPINION

- Ears to Our World has distributed radios to schools and communities in nine countries in three continents. — Page 34



Skyscraper Could Affect FM Signals

Planned 67-Story Building Draws Scrutiny From New York Engineers



Building renderings by Pelli, Clarke, Pelli Architects

NEWSANALYSIS

BY RANDY J. STINE

NEW YORK — A developer's plan to build a new 67-story building in midtown Manhattan is drawing a closer look from FM broadcasters worried that the structure could partially block their radio transmissions from atop the nearby Empire State Building.

The skyscraper, named 15 Penn Plaza, is to be built just two blocks from venerable Empire, home to

(continued on page 3)

The planned tower at 15 Penn Plaza is shown at dusk in an artist's rendering. Empire State Building is at left.

'Don't Handicap Local Broadcasters'

Raise Ownership Limits, Owners Say; Others Think Listeners Would Lose Out

BY LESLIE STIMSON

WASHINGTON — Broadcasters are telling the FCC that current radio ownership limits inhibit their options for responding to changing market forces. For that reason, and because of increased competition, many stations

— especially in smaller markets — are facing grave economic difficulties, they argue.

They want to see ownership limits reduced or eliminated. Regulators, they say, also should eliminate the "sub-caps" that limit how many stations in

(continued on page 7)

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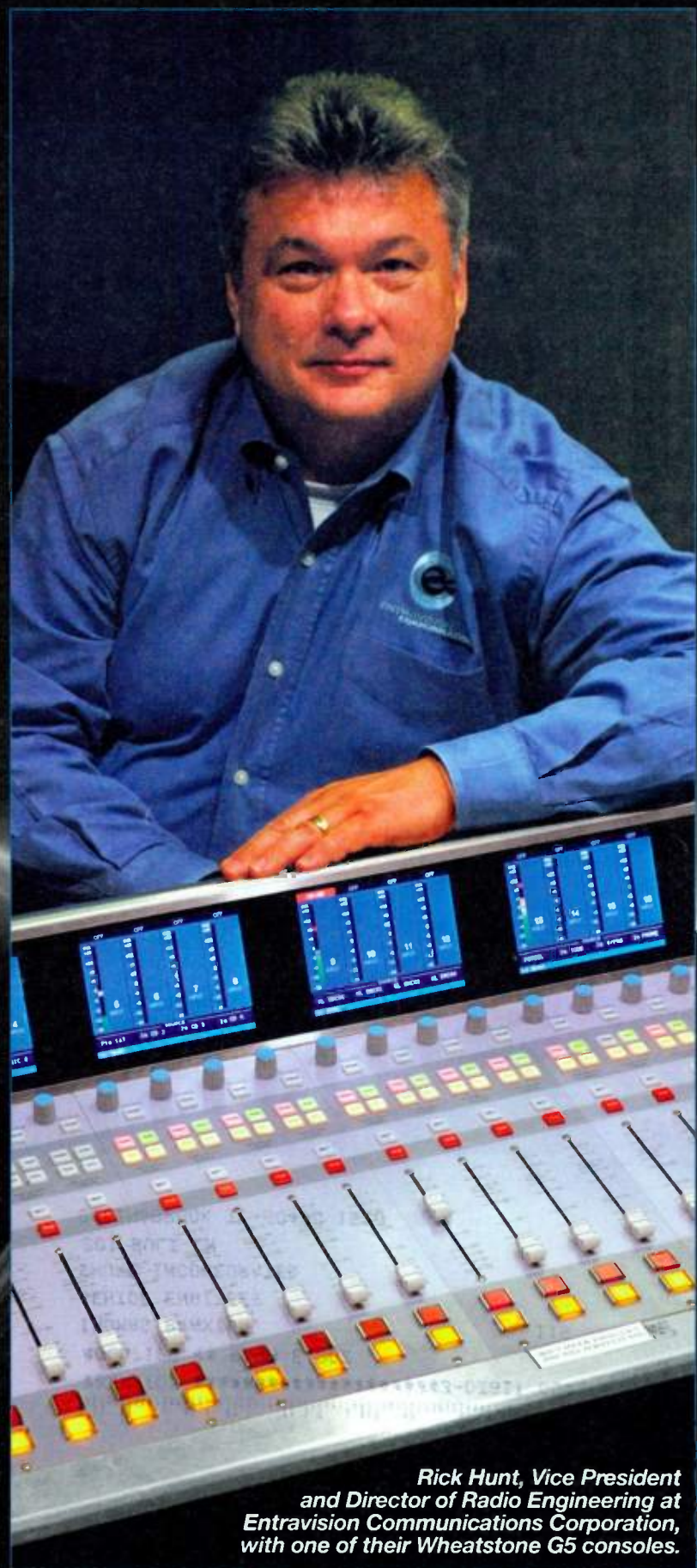
Entravision currently has Wheatstone TDM systems in 5 of their markets – including Los Angeles where 27 surfaces provide programming for their eight Los Angeles area transmitter sites and seven satellite uplink networks.

Rick Hunt, Vice President and Director of Radio Engineering at Entravision Communications Corporation knows that taking chances with unproven or ad-hoc technology simply isn't feasible – that the ultimate cost of using less than the best can be detrimental not only to day-to-day operations but to their overall success.

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*Rick Hunt, Vice President
and Director of Radio Engineering at
Entravision Communications Corporation,
with one of their Wheatstone G5 consoles.*



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15 PENN

(continued from page 1)

most main FM and television broadcast antennas in the city.

Vornado Realty Trust is the developer behind the proposed \$3 billion project, which has gained city council approval but likely is years from completion. Company officials have indicated construction will begin once major tenants are confirmed for the 1,190-foot building. By comparison, Empire is 1,250 feet, plus a 204-foot antenna structure.

Vornado, which says it's one of the largest owners and managers of real estate in the United States, has 28 office properties in New York City, many in midtown.

The building's designer, Pelli Clarke Pelli Architects, is known for designing some of the world's tallest buildings, including the Petronas Towers in Malaysia.

Vornado officials have not indicated an interest in building rooftop broadcast facilities atop the new tower, according to observers.



The Empire State Building is home to 19 FM stations and most of the city's digital television transmitters. Many radio and television broadcasters migrated there after the collapse of the World Trade Center's twin towers in the attacks of Sept. 11, 2001 (see sidebar).

Multipath issues are nothing new in the city because of its monstrously tall buildings, but the proximity of the skyscraper to the Empire State Building — approximately a quarter-mile — raises a red flag for some in the broadcast community.

Any nearby obstruction to FM signals from Empire could have a major impact on the radio market, observers said. New York generates the second-most revenue among radio markets in the country, according to BIA/Kelsey.

Some local observers agree that 15 Penn Plaza could "cast a significant signal shadow" southwest of the city, and in particular affect listening in the suburbs.

Jim Stagnitto, director of engineer-
(continued on page 6)

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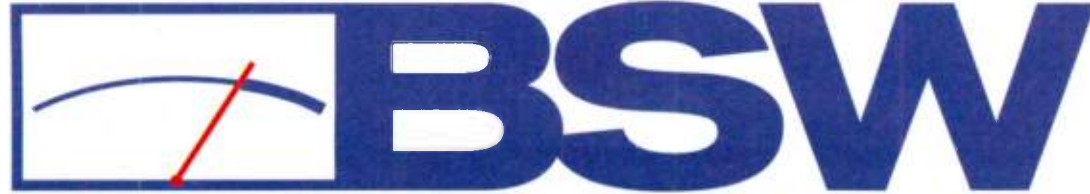
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Street Level Renderings



Single-Tenant Building



Multi-Tenant Building

Vornado Realty Trust shows street-level plans in these Pelli Clarke Pelli architectural renderings prepared for the New York City Council Zoning Subcommittee.

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Pix From a Novelty Radio Nut

The photos on this page come from the "Novelty Radio Handbook," aimed at collectors and published by Schiffer Books. In 2007 I placed a review copy of this book in a stack of other radio-related publications to tell you about, then forgot about it.

Finding it again today, I thought I'd share some of its 600 or more images. The book is by Debby Weaver, who married into a family of yard sale and flea market lurkers; her father-in-law Ray Weaver owns more than 1,000 such radios. The book sells for \$29.95 at www.schifferbooks.com.

You would buy this book for one of two reasons: either because you're a collector of such radios, and the photos and prices will help you keep track of their market value; or because you just like to smile. Anyone who enjoys the world of radio will find their lips twitching upward when looking at some of the radios the Weavers have turned up.

FROM THE EDITOR



Paul McLane



This hand grenade radio also is a cigarette lighter.



An AM radio that 'mirrors its product very closely.'

The real thing (almost): A radio that looks like a Coke machine. 8 inches. I want one.




Controls and speakers are on top of this FM radio, which stands 6 inches high.








Peace! Victory! Dick! The former president stands almost a foot high.

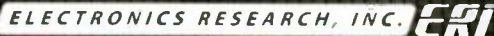




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THIS ISSUE

OCTOBER 6, 2010

NEWS

- Skyscraper Could Affect FM Signals ... 1
- 'Don't Handicap Local Broadcasters' ... 1
- Pix From a Novelty Radio Nut ... 4
- 'Transmitter Dogs' Serve Faithfully ... 10
- News Roundup ... 10



FEATURES

- Workbench: Plan Tower Projects
- Conservatively ... 12
- Will It Work When Called Upon? ... 15
- My BlackBerry, the Phone Hybrid ... 17
- Can You Find the 1 kW Transmitter in This Room? ... 18
- Who's Buying What ... 20



STUDIO SESSIONS

- AES Preview: Audio for Past, Present and Future ... 21
- Marketplace ... 23
- Light on the Head, Heavy on Sound ... 24

GM JOURNAL

- A Toast to the Lounge Sound ... 26
- Launch Your Format, Not Lame Excuses ... 29



OPINION

- Reader's Forum ... 33
- In an Internet World, Radio Lives ... 34



When you push a button, one of the Yes/No lights goes out on the 'Decision Maker' radio, above.



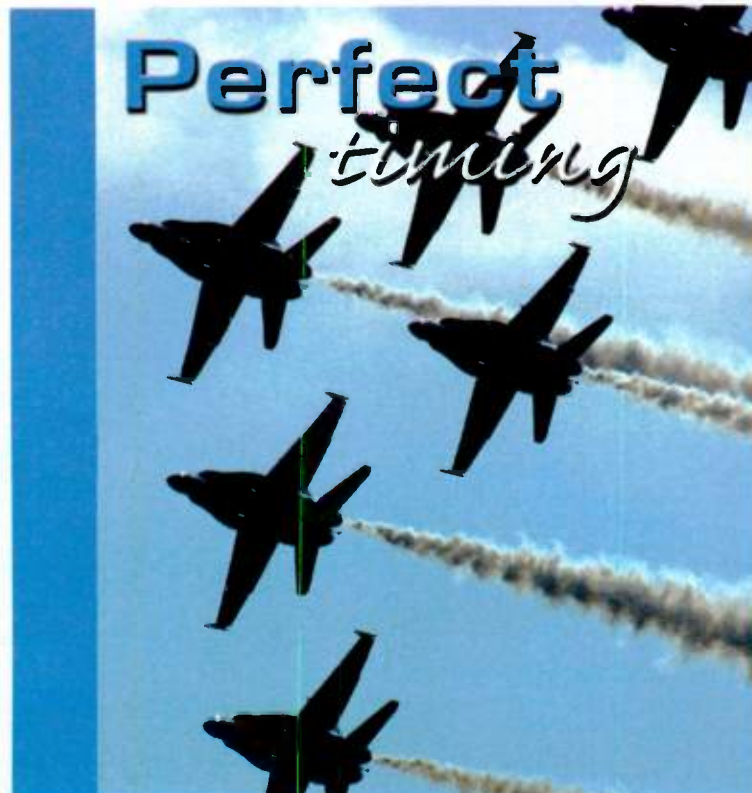
This AM/FM radio is in the shape of a pool table; the ball rack controls the volume, the cue stick is the tuning dial.



I think I drank out of this back at St. Anne's Elementary School! The straw on this half-pint AM/FM radio is an antenna.



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(continued from page 3)

ing for New York Public Radio, is concerned about both of his FMs at Empire, WNYC(FM) and WQXR(FM).

"WQXR is a low-power Class B and will be especially susceptible to multipath in New Jersey. I'm very concerned. And without a predictive study to examine, we really don't know how bad it could be," Stagnitto said.

"It would be a fairly expensive study, but it could make for a good argument on behalf of all the broadcasters [at Empire]."

WATCHING CLOSELY

Tall buildings and mountains that disrupt radio signals sufficiently can cause multipath, in which a listener's radio receives multiple waves of the same signal.

Several broadcast engineers in the city declined to discuss potential interference issues, citing their tenant relationship with management at the Empire State Building.

Josh Hadden, director of engineering and IT for Clear Channel Radio/New York, said, "We are studying the different potential impacts the building could have on us. We are watching the development of the plan closely."

All five of Clear Channel's FMs have transmission facilities on Empire.

Signal reflection will be another concern for broadcasters at Empire, said Tom Ray, vice president and director of corporate engi-

neering for Buckley Radio's WOR(AM) in New York City and a Radio World contributor.

"There certainly could be some reflection in the opposite direction that could cause multipath," he said.

Another broadcast engineer in the city believes the new building "won't create a real concern" but notes it will be difficult to test for potential issues in advance of construction.

"There will be some dramatic shadowing on the west side of Manhattan (from Empire) by the new building, but there isn't much there anyway. You have Penn Station, the post office and then the Hudson River, and that's about it," the engineer said.

A different broadcast engineer raised the issue of radiofrequency exposure posing a risk to the inhabitants of the top floors of the Vornado Realty Trust building because of its proximity to the Empire broadcast platform, but said the risk could be minimized by using RF-proof glass and non-radiating metal on the top floors of the new building.

Empire's owners, including co-owner Anthony Malkin, objected to plans for the new building, arguing it would adversely impact the skyline of the city and infringe upon the building's historical status. The Empire State Building, declared a landmark by the city's Landmarks Preservation Commission in 1981, was completed in 1931 and had its first broadcast antenna added in 1951. Empire officials declined comment for this story.

EMPIRE, DURST FACILITIES GREW AFTER 9/11

New York City's broadcast communications infrastructure was altered dramatically following the terrorism attacks of Sept. 11, 2001. Dozens of radio and television broadcasters that lost facilities when the twin towers collapsed scrambled to find vertical real estate alternatives.

Since then, Empire's rooftop facilities have grown to include nearly every radio and television broadcaster in the city. There remains talk among market observers of a rebuild of the master FM antenna at Empire.

"That antenna was not designed originally for that many radio stations. Then you add all of the primary television antennae, which sit on top of the master FM, and it's likely you need a new tower," said one broadcast engineer familiar with the facilities.

"Talks are getting a little more serious now. It's down to the financial issue of who will pay for what."

The Durst Organization completed a broadcast antenna project atop the Condé Nast Building at 4 Times Square in midtown Manhattan in 2004. That site is used primarily as an auxiliary platform for radio broadcasters and some television stations. Durst officials, like those at Empire, declined comment for this story.

The One World Trade Center project in lower Manhattan, formerly known as the Freedom Tower, is ongoing and could be completed during 2012. The Metropolitan Television Alliance, a coalition of a dozen television stations in New York City area displaced in the collapse of World Trade Center twin towers, had said its members intended to use several of the top floors of One World Trade Center for broadcast and antenna facilities. However, plans for a rooftop television antenna project there have never been finalized, according to observers.

— Randy J. Stine

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OWNERSHIP

(continued from page 1)

one service, AM or FM, an entity can own. Right now, in the largest markets (those with 45 or more radio stations), one entity can own up to eight stations and not more than five in one service.

Proponents say the current restrictions are outmoded and arbitrary, and that radio has tried to survive despite

of ever-increasing debt loads, nor consumers, who get bland programming as a result of all that cost-cutting.

FCC commissioners are studying public comments as part of a media ownership review, the fourth such proceeding since passage of the seminal legislation 14 years ago. Comments to Docket 09-182 were due in July.

To say that these reviews of ownership limits are contentious would be

FCC and the Federal Trade Commission have been considering as well. A draft FTC report mentions ideas such as a "national fund for local news," paid for by taxes on broadcasters, consumer electronics companies and advertising. The FCC expects to issue its report on this topic by year-end, according to FCC Commissioner Meredith Baker.

Baker, a Republican, suggested in a speech to the National Religious Broadcasters in September that rather than a "bailout" or "quick fix," the FCC should focus on revising its media ownership caps.

She said such "strict limits" may be outdated. "I encourage discussions about how we can better tailor our rules to the current media marketplace," she said. It's uncertain if her fellow commissioners will allow more deregulation. One, Democrat Michael Copps, has long been vocal against such changes.

Many who filed comments addressed both ownership limits and the future of journalism. What the commission says in the journalism report could signal how it will handle the ownership limits.

Most companies commented on television ownership limits or on the cross-ownership ban that affects newspapers, television and radio. A small portion of those commented on the radio ownership limits. Here are excerpts from those:

NAB: CRITICS IGNORE REALITY

Several executives contributed to the NAB filing. Topping the list was Jane Mago, its executive vice president of legal and regulatory affairs, who wrote:

The current local radio limits were established nearly 15 years ago in a less competitive marketplace, before the emergence of satellite radio, online streaming, and iPods and MP3 players.

According to numerous studies, common ownership of radio stations has produced greater programming diversity and has not significantly affected advertising prices. In light of the increasingly fragmented audio marketplace and the financial challenges facing local stations, especially during the recent severe recession, the commission should continue the process of relaxing the local radio restrictions. ...

[O]pponents of reform ignore the effects that the emergence of innumerable online, as well as mobile, outlets have had on the advertising marketplace. Virtually no mention is made of shifting advertising revenues from traditional to online media, or the effects this shift is having on the viability of

(continued on page 8)

The current local radio limits were established nearly 15 years ago in a less competitive marketplace, before the emergence of satellite radio, online streaming, and iPods and MP3 players.

— NAB

a deep recession and new threats like Internet radio in the car, where it once dominated.

Consumer groups generally oppose loosening radio's restrictions. They say ownership consolidation that swept the industry after passage of the Telecom Act in 1996 hasn't benefited anyone — neither broadcasters, who need to keep squeezing costs to shoulder the burden

an understatement. Two of the three since '96 have resulted in orders relaxing one or more ownership rules. Currently, litigation arising from the 2006 ownership review order continues in a federal appeals court. It's unclear how the timing of the pending litigation could impact the commission's review process.

Related to ownership is the future of news media and journalism, which the



OWNERSHIP

(continued from page 7)

local stations and newspapers and their services to the public.

Indeed, to the limited extent that opposing parties acknowledge the recent economic conditions of broadcast stations at all, they merely claim that stations have experienced a cyclical downturn and are well on their way to economic recovery. ...

These claims are at odds with reality. Although revenue projections for broadcasters are up for 2010, after very difficult years in 2008 and 2009, SNL Kagan projects that neither radio nor television station ad revenues will, even by 2019, recover to the level of ad revenues for broadcast stations in 2006. ...

Opponents of reform would have the commission ignore these market changes, stating that "it is not the FCC's responsibility to prop up the broadcast industry." It is, however, the FCC's responsibility to ensure that its own rules do not unnecessarily handicap local broadcasters by disadvantaging them in the marketplace and hindering their ability to compete against other outlets, including subscription-based ones.

CLEAR CHANNEL: HIGHER CAPS (IF ANY)

Clear Channel Communications Senior Vice President of Government Affairs Jessica Marventano offered this:

Even if the commission decides to retain local radio ownership rules in some form, despite the overwhelming evidence that no limits are necessary, it should at least modify the rules to reflect the reality of a transformed audio marketplace.

First, the commission should create two new ownership "tiers," increasing from eight to 10 the number of stations a single entity may own in markets with between 55 and 64 stations, and from eight to 12 the number of stations that a single entity may own in markets with 65 or more stations.

Such a modification would have very limited impact, either in terms of geographic scope or broadcast radio ownership concentration in a market. Yet it would provide significant relief to group owners operating in the largest markets, where competitive pressures are the greatest, and such relief could manifest itself in improved public service and terrestrial radio technology to markets of all sizes.

Moreover, the establishment of additional ownership tiers would provide a desperately needed stimulation of transactions and capital for the broadcast radio industry. ...

In 2006, Clear Channel owned 1,168 stations — or 8.5 percent of all licensed stations in the U.S. Today, however, Clear Channel owns 857 stations, or 5.9 percent of radio stations. The remaining 94.1 percent of stations are owned by thousands of companies and individuals, making the radio industry one of the least consolidated of the country's major industries. ...

Sirius XM has continued to make inroads in the auto market. ... At the end of 2009, there were 27 million satellite radios installed in U.S. autos, of which only 11.6 million were active. This difference in installed vs. active

It is not the commission's job to protect industry profit margins.

— Free Press

devices gives Sirius XM new opportunities to "remarket" its services to non-subscribers and to buyers of previously-owned vehicles.

As such, satellite radio persists as a significant competitive threat to terrestrial radio, which, until recently, has been considered the platform that "dominate[s] the car." This threat is exacerbated by the commission's local radio ownership rules. While a single entity can only own eight stations in the nation's largest radio markets, Sirius XM is able to transmit 300 audio channels into even the smallest radio market.

LEVINE: LOWER CAPS, NOT HIGHER

Saul Levine, president of Mt. Wilson FM Broadcasters, licensee of stations KKGQ(FM), Los Angeles and KGIL(AM), Beverly Hills, Calif., told the FCC:

Reducing the caps locally and nationally is the only way to preserve meaningful competition. Leaving the caps as they now exist or raising the caps will further reduce the number of independent stations, further reduce the number of station owners, further reduce competition and further function as a catalyst for anti-competitive activity. ...

Specifically, Mt. Wilson suggests that the current cap of eight stations in the largest markets be lowered to five stations, not more than three in the same service with comparable reductions in the smaller markets.

ENTERCOM: ELIMINATE SUBCAPS

This comment is from John C. Donlevie, executive vice president and secretary, Entercom Communications Corp.:

[T]he subcap requirement is not supported by today's broadcasting environment and can be an impediment to better utilization of the AM band. One of the reasons for the adoption of the subcap was to protect AM radio.

Whether or not this had any basis

in the past, with the advances in technology over the past years that have improved the ability of AM radio to compete in the marketplace, there is even less validity to this position. These technological advancements include, among other things, online streaming, the implementation of HD technology and the ability for an AM station to use an FM translator to augment the broadcast of its signal.

AM radio does not need the protection originally intended by the subcap restriction. The fact that many of the top stations in large and small markets are AM stations, undercuts any argument that AM will flounder if the subcap was removed.

FMC: OPPOSED TO RELAXING LIMITS

From Future of Music Coalition Policy Director Michael Bracy:

Only the few radio station owners with enough capital to buy additional stations benefited from deregulation. Station owners consolidated their operations on a local level, frequently running a number of stations out of a single building, sharing a single advertising staff, technicians and on-air talent.

In some cases, radio station groups have further reduced costs by eliminating the local component almost entirely. Using satellite feeds and regional content managers, some stations consist simply of a broadcast tower and a part-time technician who controls feeds from regional or national offices, rebroadcast-

ing them to local audiences.

These group owners are benefiting from economies of scale, but what are the drawbacks? Local DJs and program directors have been replaced by regional directors, or even by voice-tracked or syndicated programming, explaining a marked decrease in the number of people employed in the radio industry.

Listeners are losing as well. With an emphasis on cost-cutting and an effort to move decision making out of the hands of local station staff, much of radio has become bland and formulaic.

FREE PRESS: RESIST THESE OVERTURES

Free Press Policy Counsel Corie Wright wrote:

[W]e urge the commission to resist industry overtures to further relax the multiple ownership limits, and to instead maintain or tighten current ownership limits to best promote the public interest goals of diversity, localism, competition, and efficient use of the spectrum. Companies that have made poor business decisions should not be rewarded with permission to engage in even more media consolidation that would further injure competition and diversity among local media outlets.

It is not the commission's job to protect industry profit margins. It is the role of the commission to promulgate and enforce rules and regulations designed to promote competition, diversity and localism so that the public interest, convenience and necessity are served.

NABOB: CONSOLIDATION HURTS MINORITIES

James L. Winston, executive director and general counsel for the National Association of Black Owned Broadcasters, commented:

Consolidation of ownership in the broadcast industry has been a direct cause of the 40 percent drop in the number of minority companies owning broadcast stations. Any further relaxation of the commission's multiple ownership rules would exacerbate the already dismal lack of minority ownership in the broadcast industry.

The commission should reinstate its "flagging" policy for identifying excessive concentrations of ownership in local radio markets, and require all assignment and transfer applications to provide information on the impact of the transaction on diversity in the local radio market.

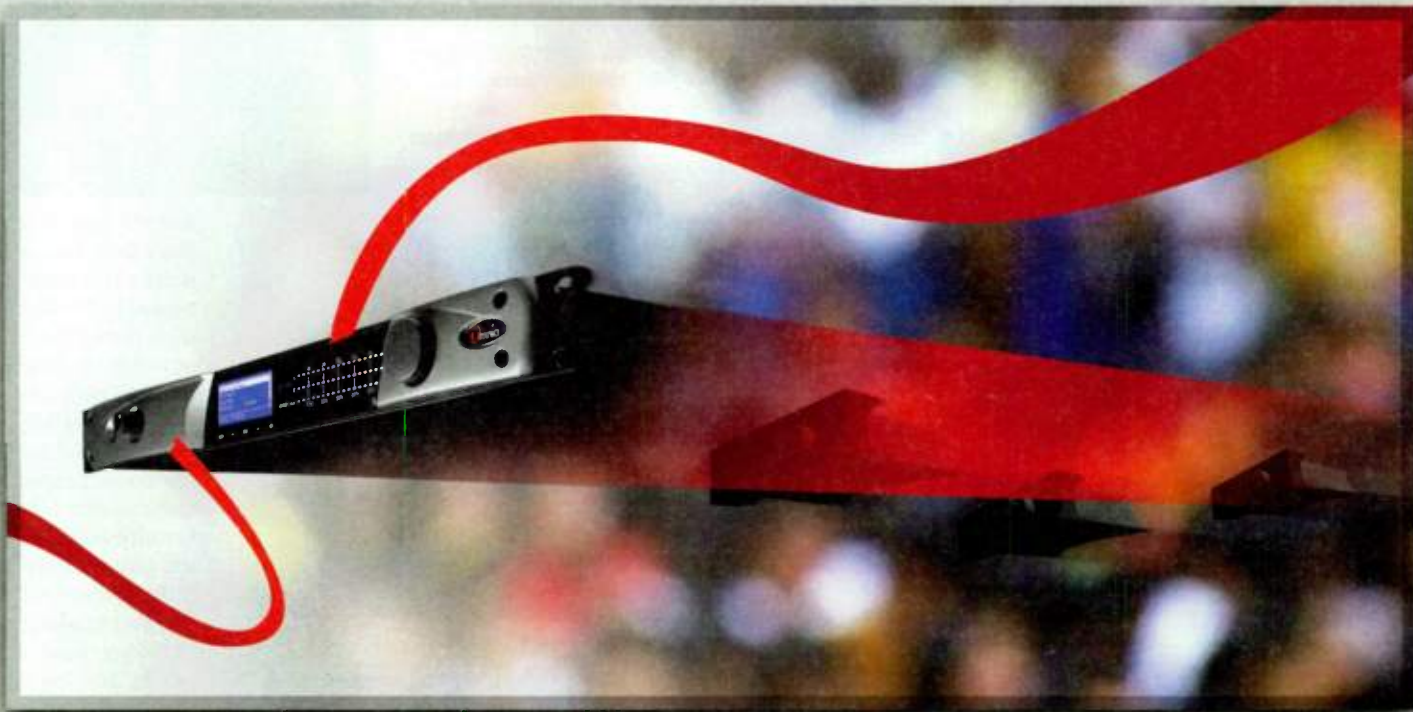
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'TRANSMITTER DOGS' SERVE FAITHFULLY

Many engineers take their dogs with them so as to have a buddy or two alongside for the ride out to a remote transmitter site.

A telecom and radio engineer in Texas whose dog recently passed away described his faithful companion of 10 years to other engineers on the Pub Tech radio listserv. Chris later characterized Max to me as a "transmitter dog" who could be intimidating "but was a big play puppy."

Following up on the online pooch discussion, I contacted Chris Boone, who started in radio in the '70s as assistant chief engineer of KLVI(AM), Beaumont, Texas in his late teens. He found his dog Max at the former KLIF(AM), Irving, Texas transmitter site in 2001.

Chris had Max, a Rottweiler-German Shepherd mix, for 10 years. "I never regretted taking him home ... and when I went to other tower sites, he went with me and was always

careful not to get into anything energized."

Max was recently euthanized due to a spinal injury. He's shown here at about 1-1/2 years old at the KTVT Channel 11 tower in Cedar Hill, Texas.

Chris has had several radio gigs over the years, including chief engineer of KDMX(FM) and KEGL(FM) in Dallas-Fort Worth. He still does IT/telecom and radio work while serving as the Society of Broadcast Engineers' local frequency coordinator.

Other engineers I reached out to described their "transmitter dogs."

Dan Houg, chief engineer of KAXE(FM), Grand Rapids, Minn., has a German Shepherd named Bee. Dan says he can leave her in the car — windows down, of course — and "she'll park herself in the driver's seat and wait patiently, upright behind the wheel." As soon as Bee sees Dan, she moves over to the passenger side.

If she accompanies him on a transmitter site visit,



Bee

he just has to say a simple "Let's go" when it's time to get back in the car.

"In addition to my traveling companion, Bee is my car security system on parts runs," Dan tells me. "I can leave my toolbox, laptop, etc. out in the open with the windows down. Car and dog stay cool, no one enters!"

George Nicholas, director of engineering for NRG Media, wanted to honor his English Springer Spaniel, Murphy, seen here on a consolidation



George Nicholas, left, & Murphy

project in Stevens Point, Wis.

"Murph was getting up there in age and liked to find a spot (usually right where you needed to work) and just fall asleep." George says his boss was great about Murphy traveling with him, as it allowed the NRG engineer more time to be away from home. The local staff loved her visits, he recalls, and said "at one point, she even had her own locker, at floor level, of course, where the staff would occasionally stick dog biscuits."

Murphy passed away in January of 2009, just shy of her 17th birthday.



Callie, above left, and Betsy at the KUWG(FM), Gillette, Wyo., site in front of the Harris Z4HD transmitter.

Shane Toven, director of engineering for Wyoming Public Media, says Callie, a former shelter dog, is a Black Lab/Chow/Rottweiler mix who goes with him on lots of site visits.

"I had brought her out to a local commercial

My own veteran radio dogs: Biscuit, far left, Rye and Cinnamon



AM/FM combo I do some work for and left her in the truck with the windows down. She usually lays nicely on the front seat and waits for my return. This time, however, I looked out the door of the engineering shop down the hall and who do I see patiently sitting at the front door of the station grinning at me with a tennis ball in her mouth? You guessed it ..."

Shane has another rescue dog, Betsy, a Beagle and Whippet mix. She's more "energetic" than Callie so she doesn't come to the transmitter sites with Shane quite as often. But when she does, he says Betsy's favorite activity is burrowing her snout into holes in the ground sniffing for various critters.

Betsy sounds like my three toy poodles, Biscuit, Rye and Cinnamon — all siblings.

Do you have a transmitter dog? Tell me about him or her, and send a photo to Lstimson@nbmedia.com.

NEWSROUNDUP

RADIO RELEVANCE: The dashboard of tomorrow will be IP-connected, customizable and much different from today's precious auto real estate; so radio needs to focus more on staying relevant in the dash, says researcher Mark Ramsey. In his survey, about two-thirds said they would listen to just as much local radio as they do now if they had Internet access in their dashboards; 34 percent said they would listen to less.

EAS-LIKE AD: BP pulled an ad for subsidiary Arco that used what sounded like EAS tones. The SBE said the ads included the phrase "This is a test" and then a simulated eight-second burst that tripped some encoders/decoders at monitoring stations. Media Monitors released a report indicating the ads aired mostly on the West Coast through late September.

RADIO-CAPABLE CELL PHONES: NAB commissioned a Harris Interactive poll of 2,587 adults and found that two-thirds of respondents would listen to a built-in radio. CEA President/CEO Gary Shapiro says CEA agrees that some consumers may want phones with FM receivers, and some already do. However it failed to ask whether Americans want the government designing their phones.

Simplicity Made Smarter



Pilot LOGITEK

DIGITAL CONSOLE

Less than a decade ago building infrastructure at even the most modest radio facility was difficult and costly. Today, AoIP is making it possible to replace miles of cables and closed systems with routers that use standardized network protocols. The **JetStream Mini** brings you the benefits of this new technology, and nothing is easier to use, faster, or less expensive. Add a **Pilot** control surface that includes the basic operating features your staff will need and you have the most cost effective AoIP networked audio system available.


The Pilot is easy on the eye and the budget and like the **JetStream Mini**, Logitek has built it with ease of use and durability in mind. The Pilot is a tabletop control surface that includes all of the basic engineering features your staff will need- and more- including 4 Program busses, 3 monitor sections and 24 mix minus busses. It is available in frame sizes for 6 to 24 faders.



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Plan Tower Projects Conservatively

We Don't Want to Be Asking Whether a Crash Could Have Been Avoided

Subotech Lead Engineer Sim Mangga shares these tower photos with *Workbench* readers.

While traveling to another site, Sim was alerted to this failure and snapped some pix. Typically, microwave link towers like these are only 100 to 150 feet high. This site wasn't even a month old.

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Winds apparently were to blame; we can't know whether poor rigging or materials contributed as well. Sim says a witness reported hearing odd sounds or vibrations when the wind blew, even before the installation had been completed.

Certainly, though, these pictures remind us again that, when planning a tower, we should be conservative when estimating conditions the structure may endure; and we should use the best available materials and crews. We don't want to be asking ourselves after the fact whether this could have been avoided.

I'm always amazed at the physical forces such disasters bring. Look closely at the misshapen holes, where bolts ripped right through the steel.

Sim Mangga can be reached at manggasim@yahoo.com.

Jon Bennett, retired market engineer for Cox in Richmond, Va., writes that there has been another rash of copper theft in his area: he asks *Workbench* readers for their suggestions.

The police told Jon there have been break-ins at power company sub sta-

tions as well as broadcasting facilities. Several office complexes have had outside air conditioners stolen, as many as 10. The problem is not just a broadcaster's issue.

Workbench and RW have published several articles that discuss this problem in recent years (type "copper theft" into the search box at radioworld.com). I can offer a few ideas here and hope you will

add to the list.

For broadcast applications, the first action item is a group effort involving your local SBE chapter.

Go through the phone book or search the Web for junkyards and scrap metal yards that are likely to buy copper strap or coax in your area. Meet with management and explain the severity of this

(continued on page 14)



Figs. 1: The remains of this tower were scattered by high winds. In the fourth photo, we can see where bolts securing the angle iron ripped through the steel.

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Lots of I/O • Built-in audio connections make setup simple.

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- **Four analog inputs and six outputs** with 24-bit, 256x oversampling A/D converters for connection of CD players, recording devices, headphones and monitors, *et cetera*.
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- **Four GPIO ports**, each containing 5 inputs and 5 outputs, for start/stop control of audio sources, on-air lamps and other studio accessories.
- **Livewire™ ports** for single-cable connection to Telos phone systems, Omnia audio processors and other Axia gear — as well as broadcast equipment from partners like DAVID Systems, Netia, WinMedia, Zenon Media and others. See the complete list at AxiaAudio.com/partners/.

Simple networking •

Use PowerStation to build a stand-alone studio, or network as many as 4 studios without external switches. There are **16 built-in Ethernet ports**, including 2 Gigabit with SFP ports for networking with fibre. Axia is easily scalable — for larger networks, just add a core switch; Axia networks can handle as many as 10,000 stereo channels.

Fanless operation •

PowerStation is silent and fan-free. These large, extruded heat-sinks ensure cool operation.

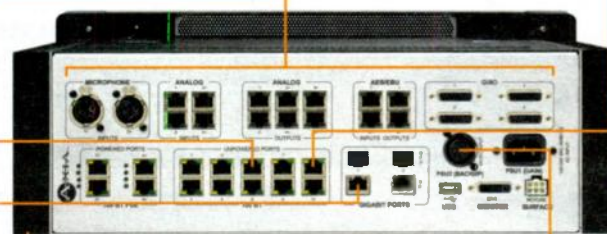


Built like a tank •

This is Element. It's **built for heavy use**, with avionics-grade switches, heavy-duty optical encoders, silky-smooth, dirt-resistant conductive-plastic faders, high-impact Lexan module overlays and specially-designed switch guards that prevent accidental operation. All this is housed in a frame made from thick aluminium extrusions designed for rigidity and RF immunity. To read more, visit AxiaAudio.com/Element/.

Simply scalable •

Add a **PowerStation Aux** to double your Mic, Analog, AES and GPIO I/O. If that isn't enough, simply plug in Axia Audio Nodes for even more I/O.



Redundant Power •

Do your plans demand a **backup power supply**? No problem. Along with audio I/O, PowerStation Aux adds redundant power with automatic switchover.

Show Profiles • Make and save snapshots of talent's **favorite mixer configurations** and recall them instantly, with just the press of a button.

Automatic mix-minus •

Complicated clean feeds are gone; Element **constructs them for you** — one for every fader. Phone callers and remote hosts hear only what they need to hear, with no need for operator intervention.

Voice processing+EQ •

Element **saves the expense** of outboard processors: Omnia™ processing can be applied to every Mic and Codec channel. Headphone processing is also built in, for times when it isn't possible to monitor your broadcast signal directly. 3-band parametric EQ can be applied to every channel, too, via software or drop-in module controls.

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Operators don't have to take their eyes off the console — Telos multi-line phone systems are **controlled right from the surface**.

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AxiaAudio.com

WORKBENCH*(continued from page 12)*

crime. In fact, a motorcade of station vehicles showing up makes a point.

I heard that one chapter assembled 1-by-3-foot boards on which it mounted samples of contraband cable, copper, radial wire, etc. They added a notice that the FBI should be contacted if any of this material were to show up.

The chapter then gave one board to each scrap metal company, asking management to post it prominently.

Don't forget to include some station T-shirts as a thank you for their cooperation. Getting scrap yards on your side is a good first step.

I've got mixed feelings on publicizing the awareness program. Some feel it may encourage more vandalism; the call is yours. However, you may deter someone by pointing out the imprisonment and shock/death hazards.

Next, find out what others are doing to prevent the problem in your market.

Security cameras, fencing and alarm systems can all discourage theft. One engineer told me he added a large sign at the entry driveway, threatening fines and imprisonment and stating that any theft or vandalism to a broadcast facility is a federal offense. He feels this step has made would-be thieves think twice

before entering his facility.

Several companies provide a Cat-5 or fiber-optic alarm cable, to be looped through fencing, ground strap and ground plates. When broken, it triggers an alarm. This proactive solution is expensive; lower insurance premiums may offset the cost.

Thanks, Jon, for reminding us that this is an ongoing issue. Jon Bennett can be reached at jbennett08@verizon.net.

E-mail further suggestions to johnpbisset@gmail.com, or fax them to (603) 472-4944.

Contract Engineer Ron Gnadinger just had a visit from the FCC to one of the five radio stations he handles on the Michigan peninsula.

The inspector drove 600 miles to check out a complaint that the LPI wasn't sending monthly EAS messages. Ron showed the inspector all posted licenses and the auto-logging for the transmitter and EAS.

The inspection resulted in one ding: The station log did not prove that the chief operator had checked the EAS gear or indicated it was functional.

How would you have handled the interaction with the inspector? How could this violation have been avoided?

Ron has been a busy guy. Last December, we showed a picture of a transmitter being exhausted into a

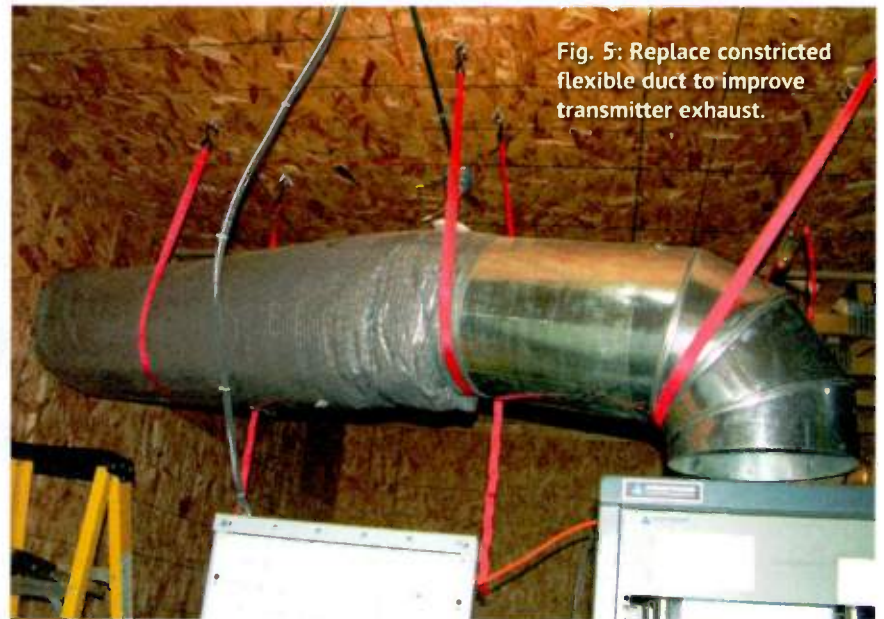


Fig. 5: Replace constricted flexible duct to improve transmitter exhaust.

crimped flexible duct. The "snorkel" not only constricted the exhaust air, but it was just hanging over the PA exhaust vs. actually being attached to the transmitter (you can see it at www.radioworld.com/article/92332).

Fig. 5 here shows the work Ron did when he was called in to relieve the transmitter PA exhaust back pressure and provide a less restricted exhaust path, resulting in better cooling.

Ron writes that he drools over some of

the larger-market sites, but reminds readers that even on a limited budget, realistic solutions are available.

Reach Ron Gnadinger at rong@up.net. John Bisset marked his 40th year in radio in broadcasting recently. He works for Tieline Technology. He is a past recipient of the SBE's Educator of the Year Award. Reach him at johnpbisset@gmail.com. He can be reached at (603) 472-5282. Faxed submissions can be sent to (603) 472-4944.

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Will It Work When Called Upon?

Make Sure Your Backup Power Generator Can Get Back Up

BY MARK PERSONS

When it comes to backup power generators, lack of maintenance means lack of reliability.

TECHTIPS

How many times have you heard about a power outage in which a generator failed to start? It is a common tale. Generators, often referred to as gensets, are a serious maintenance item.

Make power generator upkeep part of your maintenance routine.

TESTING, 1,2,3

Most important: Test every genset online, monthly.

Test for 15 minutes. This gives the engine plenty of time to come up to full normal operating temperature. Anything



Mark Persons. 'Gensets are a serious maintenance item.'

less and you are setting yourself up for failure when the power goes out.

Your genset may have a timer to run on a weekly basis. Yes, you can exercise the engine that way; but I recommend against having it go online without an engineer present to pick up the pieces when things go wrong.

BATTERY CONSIDERATIONS

You need to think ahead to avoid problems when replacing a battery. Explosions can and do happen when well-intentioned people do the wrong thing around batteries. All it takes is an accidental short from the positive battery terminal to ground to cause one.

Put the generator control into the off position, so there is no way for it to start during the work. Turn off the battery charger. Disconnect the *negative* battery terminal *first*.

This may go counter to your electronics thinking. Look at it this way: If you

are working on the positive battery terminal while the negative is still connected to ground, an accidental short to ground could draw many thousands of amperes of current, resulting in a battery explosion. Ouch!

With the new battery, connect the positive cable first, the negative last.

Mark the date on a new battery for easy reference.

Often the positive battery terminals become corroded first. I don't know why, they just do.

(continued on page 16)



A corroded battery terminal. Often the positive battery terminal corrodes first.

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GENSET

(continued from page 15)

This is not the time to go in with a metal brush to do the cleaning. I use a plastic dustpan brush and a Shop-Vac with a plastic hose when cleaning around batteries.

After cleanup and when installing a new battery, use battery terminal protection of some sort. I use a red liquid that comes in an aerosol can, available at many battery stores. The goal is to keep ugly corrosion from growing on a battery terminal. That oxide often will increase resistance to the cable connected to the battery. It is a bad scene, just when you need 100 amperes of current to start the engine.

COOLANT

Many gensets have sensors for water level in the radiator. If the level is too low, they will shut down, usually after running for just a few seconds.

Since most gensets have coolant heaters, it is normal for the coolant to boil off with time. My feeling is that genset manufacturers go overboard in keeping the engine hot on a 24/7 basis at your expense for the electricity.

A typical heater is 1,000 or 1,200 watts. I like to see two coolant heaters wired in series. They will draw half the

power and still keep the genset engine warm. Caution: You may void a genset manufacturer warranty if you do this.

CRITTERS

Mice are common in my part of the country. They can crawl through holes about the size of a human finger. Mice like to chew on wire insulation and can cost money, not to mention reliability. Best to keep them critters out.

I use and recommend 1/4-inch hardware cloth. It is like window screen but made of galvanized metal with openings just 1/4 inch across. The product is available from hardware stores and easy to install over openings to a genset.

OTHER STUFF

Diesel engines have a fuel water separator. Best to bleed off water whenever you do maintenance.

If you find rust on an engine oil filter, you know the filter has been in service for more than a year or two. I recommend replacing the filter at least once every two years. Some mechanics do it annually.

Lubricate a new oil filter rubber seal with oil before installing it. This will keep it from leaking.

Dedicate a clipboard with a maintenance checklist to each genset you have.

Shown on this page is a list that can be modified to fit your situation or site. A printable copy is on my website under Tech Tips/Miscellaneous.

I don't sell Kohler backup power generators but I am a real believer in them. The proof comes when you have an uninterruptible power supply as a part of the generator load. My experience is that any UPS is happy with the power generated by a Kohler.

If you discover anything odd while

doing your monthly maintenance, talk to someone who can give you answers. A genset service company is a good place to start. Remember, a genset is no good if it won't do the job when it is needed.

See you further down the road. I'll leave the soldering iron on for you.

Mark Persons W0MH is certified by the Society of Broadcast Engineers as a Professional Broadcast Engineer and has more than 30 years experience. His website is www.mwpersons.com.

Backup Power Generator Maintenance Checklist

For generator at: _____ site.

Engine Hours at start: _____

At end of work: _____

Monthly Maintenance

Check generator for mice and other environmental problems: _____

Feel the engine block to see if water heater is working (if liquid cooled): _____

Look for any fluid leaks: _____

Run for 15 minutes under load: _____

Battery Voltage: _____ Volts before starting,
_____ Volts while running

Oil pressure: _____ Lbs

Engine temperature: _____ Degrees F

Fuel tank level: _____ %

Annual Maintenance

Check/replace carburetor air filter: _____

Check/add engine coolant: _____ (if liquid cooled)

Quarts: _____

Check/add water in battery: _____

Run engine for 10 minutes then replace engine oil and filter: _____
Quarts _____

3-Year Maintenance

Replace battery

5-Year Maintenance

Run engine for 10 minutes, then:


Replace coolant: _____ (if liquid cooled)

Quarts _____

Signature: _____ Date: _____

Comments:

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My BlackBerry, the Phone Hybrid

How a Mobile Device and Quick Thinking Bailed Me Out

BY BRIAN CLARK

As an engineer, you must be knowledgeable in many fields of study. You must also be prepared for the unexpected.

FIRSTPERSON

However it doesn't seem to matter how well-trained you may think you are; something extraordinary is likely to come your way, without warning and at no extra charge.

An example presented itself during a recent early-morning, nationally syndicated remote broadcast of "The Tee It Up Show" that I engineered from Moorpark Country Club in Moorpark, Calif., for the Tee It Up Radio Network.

I drove out to the resort on a Thursday afternoon a few days prior to the broadcast to meet with the client, Leslie Moore, to scout a setup spot and to test our broadcast lines.

I tested both the main broadcast POTS line and the secondary telephone hybrid POTS line. Both worked just fine. I drove away feeling confident that things would run letter-perfect on the morning of the broadcast.

OUT OF POT LUCK

Then came 4 a.m. Sunday, broadcast day.

When I plugged my equipment into both lines on the banquet room wall jacks, only one of the POTS lines was active. My immediate thought was to establish the connection to the studio and continue setting up before the hosts of the program arrived; then I could begin the adventure of trying to find another active POTS line at the golf resort.

Once set up for the show, I tracked down Rick Siemons, my contact at the country club, to see if he had insight as to another active POTS line that we could use for calls during the show.

Rick walked me to the far south end of the banquet hall 150 feet away, into a snack bar where golfers could get quick refreshment before tackling the next hole on the course.

In the snack bar near a drive-through-style window were a phone on the wall and another jack below it with a glorious device connected, a credit card machine.

This gave me instant hope of an active POTS line. I immediately plugged in and ran the 150-foot phone cable to my main broadcast table on the far north wall. Once connected, I plugged my phone in.

I heard a non-standard dial tone but when I dialed 9 I could get an outside line. At first I thought this was an analog line off of a PBX system because of the

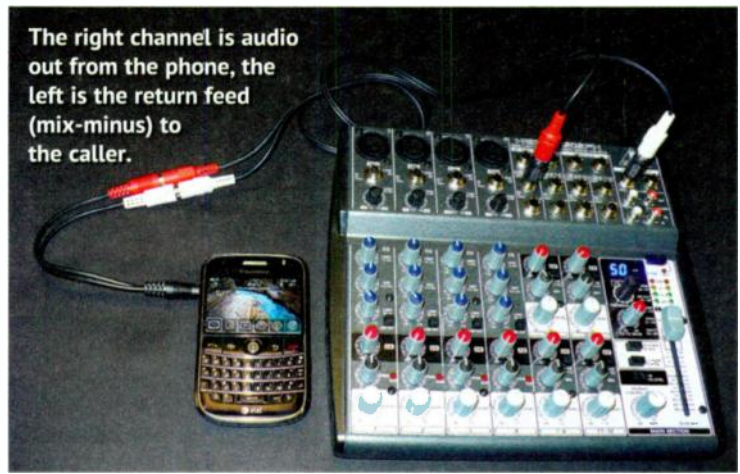
behavior of the dial tone. I soon realized, though, that this was a digital line and would not work.

At that moment the hosts began to arrive. I continued to troubleshoot with growing concern.

I wouldn't have been too worried if calls were not so important to this program. But if we couldn't take calls during the live broadcast, the situation would have been bad.

Now it was getting very close to air time, 15 min-

(continued on page 20)



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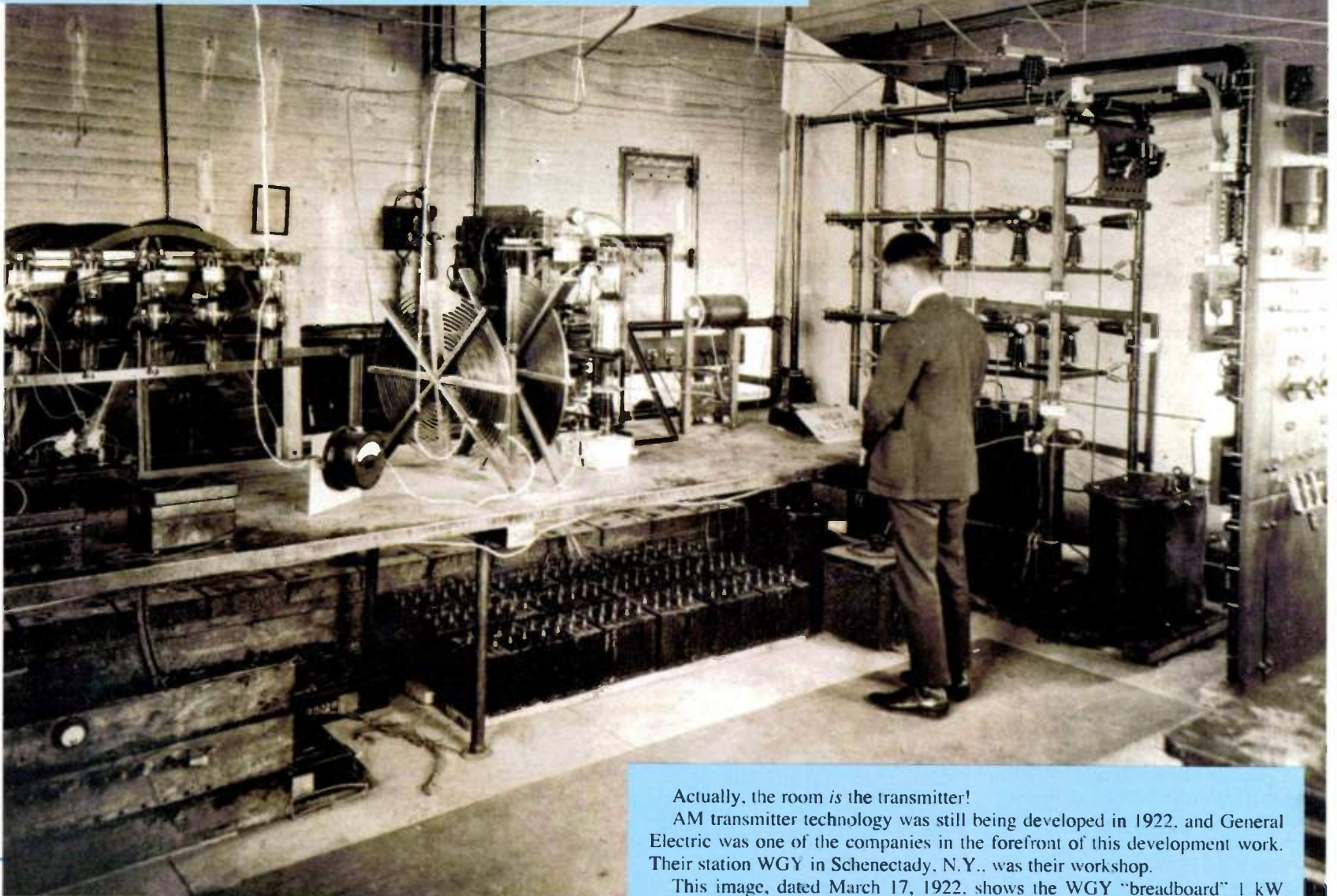
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Can You Find the 1 kW Transmitter in This Room?



Actually, the room *is* the transmitter!

AM transmitter technology was still being developed in 1922, and General Electric was one of the companies in the forefront of this development work. Their station WGY in Schenectady, N.Y., was their workshop.

This image, dated March 17, 1922, shows the WGY "breadboard" 1 kW transmitter in Building 36 of the GE Schenectady plant. The antenna was a "T" type wire antenna on the roof.

WGY, which shared time with other local stations on 360 meters (833 kHz), claimed to be the most powerful station in the country at the time, and received reception reports from as far away as Cuba. They later increased the output of this transmitter to 1,500 Watts and then to 5,000 Watts by adding more tubes in parallel to the ones seen here. It was used until 1924 when WGY built its new site in Rotterdam, N.Y.

A close study of this image shows the power control panel at the far right. Behind the panel are the power transformer and reactor and eight horizontally-mounted tubes (early rectifier tubes?). The filter capacitors are in rows underneath the table. There is one large tube in the center of the table (modulator?) and an array of at least five RF tubes on the left (a later photo shows this was subsequently increased to 14 tubes). There is an RF ammeter sitting on the table, and the output coupling transformer consists of two pancake-wound coils mounted on wooden legs. The coupling would have been adjusted by moving one of the coils. All the high voltage and RF conductors are open tubing hanging over the head of the operator.

OSHA would certainly not approve this installation today!

John Schneider is a lifelong radio history researcher. This is one in a series of photo features from his collection. Write him at jschneid93@gmail.com. Comment to radioworld@nbmedia.com.

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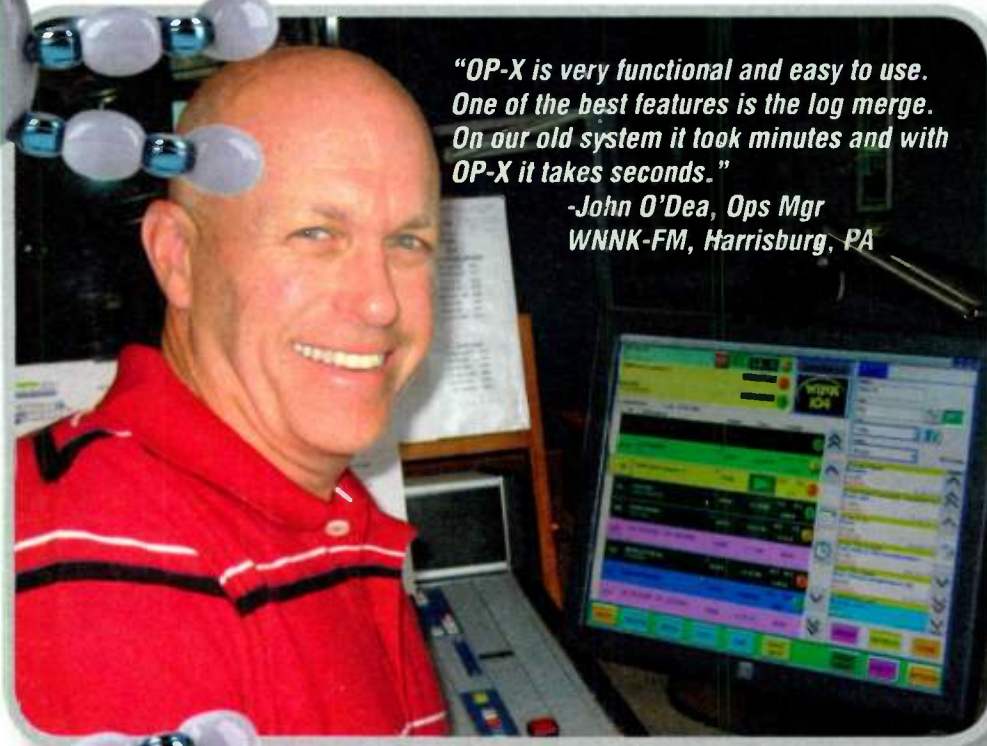
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"OP-X is very functional and easy to use. One of the best features is the log merge. On our old system it took minutes and with OP-X it takes seconds."

*-John O'Dea, Ops Mgr
WNNK-FM, Harrisburg, PA*

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- Share serial devices from any machine using the Op-X Serial Server.
- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.



AUTOMATION

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



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BLACKBERRY

(continued from page 17)

utes. I continued to look for a good old-fashioned POTS line like Grandma Bell used to make. No such luck.

I informed the hosts of the possibility that we may not be able to take no calls during the show. They didn't want to think about that possibility and asked that I keep trying.

Shortly, Adam Gottfried, one of the hosts, yelled out that we had three minutes to air.

At that moment I looked down at my

broadcast table and my eyes fell on my BlackBerry 9000 sitting on the table. I began to ponder.

It had a 1/8-inch jack on one side, normally used for connecting a wired headset. I didn't know the pinouts of the jack, but I had an audio cable with a 1/8-inch male TRS connector on one end and two male RCAs on the other end.

I grabbed that cable and two female RCA-to-male TS 1/4-inch adapters. I connected them to the RCA end of the cable.

With the cable assembled, I plugged the 1/8-inch male connector into the side of my BlackBerry. I connected the

W(19" / 2) x 14 + 8W = C11

**You don't know
what that means?**



It's not rocket science, the C11 Audio Codec is compact, versatile and extremely energy efficient.

The entire range of fourteen C11 MAYAH products delivers a unique combination of functions that provide optimal performance at an attractive price.

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Moreover, there is a unit which contains a redundant power supply unit with two Hot Swap PSUs in 19" supporting up to 8 C11 devices. Technical adaptability is a key highlight: whether a G.711/22, Layer 2/3, Eapt-X or an AAC HE and ELD, even linear and AES/EBU transparent, all these formats are available. Besides Ethernet, there is 4 BRI ISDN, ASI, 2nd Ethernet, UMTS/3G and POTS/PSTN, depending on the model. All advanced versions offer storage capability on an SD card or USB stick, e.g. for logging, warning signals or regionalization.

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right-channel 1/4-inch plug into an input on my audio mixer and the left-channel 1/4-inch plug into Aux #1, so I could produce a mix-minus to the caller.

One minute to air, I asked Adam if he would help me perform a test call with me, but it was too late.

Quickly I called a test number from my contact list to verify that I had the left and right cables connected properly. Moments later I heard faint audio, so I believed that I had things rigged right.

Then Adam hit the show's opening audio piece on his laptop. "Tee It Up" Producer Alex "Foghorn" Fish began to call the first guest on the BlackBerry to put them on hold.

I still didn't know for sure if using a BlackBerry for phone calls would work sufficiently, but I had no other options.

A couple of minutes later Adam announced that a guest would be on in a minute; then he said, "Let's bring on Laird Small and let's see if our phone

lines are working." Small is a well-known golf instructor.

A second later we heard our guest. His level was low at first, so I quickly increased the volume on the BlackBerry. Now he could be heard loud and clear.

Hosts Al and Adam Gottfried were ecstatic and gave me a nice mention on-air. I was excited because everyone was so happy that this last-minute idea had worked. The quality of the calls was as good or better than that of a conventional POTS call, and the system worked for the remainder of calls during the broadcast without a hiccup.

I would recommend bringing along a fully charged BlackBerry or the like to any live remote broadcast — not just for communicating with your studio, but in case you find yourself in a similar predicament. Something to tuck into your pocket — and your toolkit of ideas.

The author is engineering manager of Radio Disney network operations.

WHO'S BUYING WHAT

Tieline Technology's Report-IT Live codec app for iPhone was used to broadcast coverage of the delivery to Australia of the first of 24 F/A-18F Super Hornet fighter jets purchased from the United States, to the **Grant Broadcasters** radio network. River 949FM broadcast four hours of live audio over wireless 3G from Amberley Air Force base in Queensland to the studio. ...

The Bradley Broadcast Division of SCMS Inc. recently completed a full-station equipment order for **Basoga Bains FM**, for a new 5 kW FM station in Jinja, Uganda. Principal Moses Baleyku began this project to provide FM service to an underserved area of his country. The equipment list includes products from **Moseley, Jampro, AEQ, Andrew, Sony** and **TASCAM**, comprising a complete FM transmission facility and three computer-based studios. ...

Jampro said **Radio Voice of Vietnam** installed another of its antenna systems as part of a nationwide network upgrade. The recent system includes a high-power eight-bay, 32-panel JFVD broadband vertically polarized flat-panel FM broadcast antenna, constant impedance FM combiner and rigid transmission line. ...

Recent sales by **Logitek Electronic Systems** include **JetStream** console engine/IP audio networking to **KACU(FM)** in Abilene, Texas; **WLKG(FM)** in Lake Geneva, Wis.; **KMOJ(FM)** in Minneapolis; and **Stanford University's KZSU(FM)** in Palo Alto, Calif.

Audio for the Past, Present and Future

129th AES Expands Its Focus on Stream Formats & Facility Design

BY BRETT MOSS

As the fall turn of the broadcast trade show season gets its wind, eyes turn to San Francisco and the AES show, more accurately the 129th AES Convention, Nov. 4-7, at the Moscone Center.

For show veterans it is a paradise of audio goodness with sessions and floor exhibits running the range from basic audio theories to the latest in digital technology. Applications cover studio to live sound to installation to broadcast. A bonus is that several audio and engineering "all-stars" will be there to impart their wisdom.

Chairman of Broadcast and Streaming Sessions David Bialik listed several sessions of note, with topics including listener fatigue and retention, stream formats for content delivery networks, broadcast facility design, audio at the Olympics and audio processing for streaming.

"'Listener Fatigue and Retention' is a session we started a few years ago to study how to keep the audio appealing to the listener. 'Stream Formats for CDNs' is a very important topic for streamers and will discuss the need for a standard among other things.

"'Broadcast Facility Design: Attending to the Details' will feature John Storyk and other architects, designers and is always standing room only. 'Audio for the Olympic Broadcast' is a great case study of a multimedia production. The audio processing sessions have the designers and users of audio processors discussing technology and technique. Due to different needs there are separate sessions for radio and streaming."

"AES conventions have seen a consistent increase in attendance from broadcasters." Executive Director Roger Furness said. "Our presentations are relevant to their immediate concerns, and our panelists are highly respected members of their community."

He said Bialik's insights into pressing concerns have been prescient. "The AES has earned a reputation as an invaluable forum for topics that impact heavily on broadcasters."

GHOST OF RADIO FUTURE

There's no arguing that radio is changing rapidly, on almost every front. Change is evident in production and distribution/transmission.

David Bialik will host a panel looking at "Innovations in Digital Radio." Be careful to specify which David you

What: 129th AES Convention

When: Nov. 4-7

Where: Moscone Center, San Francisco



Who: "The largest gathering of audio professionals and enthusiasts on the globe, attracting delegates from over 100 countries ... Workshops, tutorials, technical papers and the exhibition floor provide attendees with a wealth of learning, networking and business opportunities."

How: www.aes.org/events/129

How Much: Full program w/ advance registration is \$345 for AES members, \$465 for others; see website for students, exhibits only and other variants

are addressing during the Q&A session, because joining him will be David Layer of the NAB, David Wilson of the Consumer Electronics Association and Dave Casey of DTS, as well as consultant Skip Pizzi and Steve Fluker of Cox Radio.

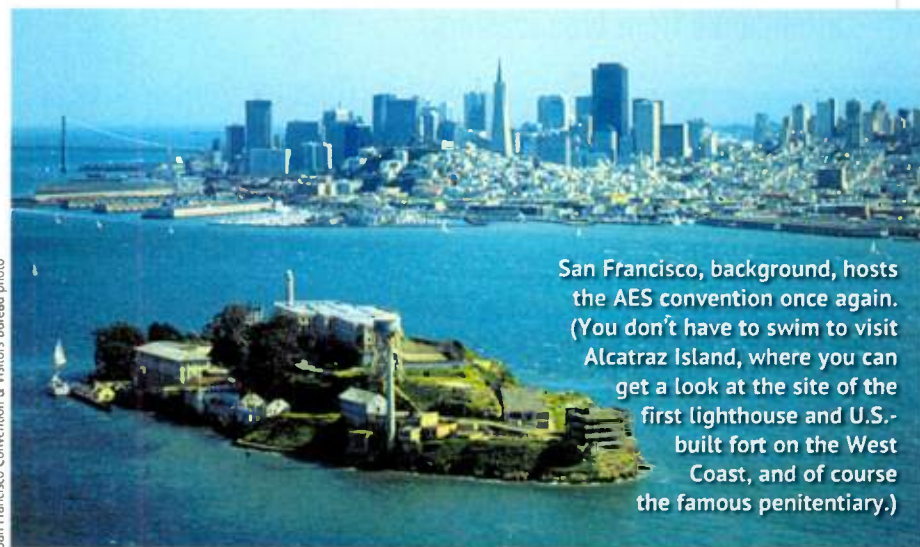
Long-time Radio World contributor Tom Ray, vice president and corporate director of engineering for Buckley Broadcasting, will helm "Audio Processing for Radio." Guests will be Bob Orban of Orban, Frank Foti of Omnia and Jeff Keith of Wheatstone Vorsis. Looks something like a '27

Yankees of audio processing.

Ray said: "We're looking to have a nice, hopefully spirited discussion about processing for AM and FM radio — why we do what we do and the way we go about it. We'll also be discussing the advances and control advantages of digital processing over analog processing."

"Many who belong to AES handle and mix audio in a controlled environment: a movie theater, television home theater, recording. With broadcast radio, we can never be sure where our product will be listened to — in the car, on a construction site, on the kitchen table — and therefore need to process what some consider excessively. But there is a reason for that, and we hope attendees come

(continued on page 22)



San Francisco, background, hosts the AES convention once again. (You don't have to swim to visit Alcatraz Island, where you can get a look at the site of the first lighthouse and U.S.-built fort on the West Coast, and of course the famous penitentiary.)

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AES

(continued from page 21)

away with that understanding.”

A similarly themed session, targeted for streaming, will be run by Optimod refurb wizard Bill Sacks. Internet streaming presents different problems and considerations in comparison to traditional processing for broadcast; with streaming becoming more widespread, the topic is of growing importance.

GHOST OF RADIO PAST

When is there too much processing and when not enough? Too much or too little can lead to listener fatigue. Tired listeners turn away from a station or even radio as a whole.



AES panels attract engineering firepower. Shown last year, from left rear: David Bialik, Dom Bordonaro, Andrew Mason, Jim Johnston, Frank Foti, Tim Carroll and Marvin Caesar; front, Jim Starzinski, Ken Hunhold and Thomas Lund.

AES conventions have seen a consistent increase in attendance from broadcasters.

— Executive Director Roger Furness

CEA's David Wilson, whose commentaries appear in *Radio World*, will lead a group of experts examining "Listener Fatigue and Retention." He'll be joined by Foti, Sacks, George Massenburg — a Grammy Award-winning engineer, inventor of the parametric equalizer and studio designer — Sean Olive of Harman, J.J. Johnston of DTS and Sam Berkow, founder of acoustic design firm SIA Acoustics.

IP promises to be another strong topic with several sessions devoted to the subject.

Kirk Harnack of Telos Systems will

team with Igor Zukina of Streamcom to take a look at PungaNet, a nationwide IP audio distribution network in New Zealand linking scattered studios into a cohesive unit. Zukina wrote about PungaNet, which he designed, in *Radio World's* Aug. 1 issue.

"While high-quality, low-latency IP audio technology is gaining wide acceptance within broadcast studios, its application over wide-area networks, and even over the public Internet, is not widespread," Harnack said.

"Recently a network of cultural radio stations, spread across much of New

Zealand, implemented a terrestrial IP audio network. More than a one-to-many network, however, Iwi Radio's PungaNet allows stations to publish, share and subscribe to high-quality stereo programs. Distribution can be one-to-many, but may also be one-to-one, or completely ad-hoc with instant setup and teardown of channels and distribution sizes."

Also focusing on IP networking will be a session with Pizzi and Steve Church of Telos, "Audio Over IP: A Tutorial." The two recently co-authored a book on the subject. In the same vein is "Audio Performance in Streaming," moderated by David Prentice of Dale Pro Audio, and "Stream Formats for Content Delivery Networks," moderated by Ray Archie of CBS.

Sessions also will look at "Audio

for Newsgathering" and "Careers in Broadcasting." The latter includes Steve Lampen of cable maker Belden (yet another RW contributor) and William Blum, station engineer for KBLX(FM).

The show also will feature sessions with television/video audio applications. Radio personnel may find themselves having to deal with nontraditional topics like lip sync and loudness, given the convergence of distribution platforms.

Beyond broadcast and media streaming, the convention technical program includes sessions and events on live sound, game audio, standards and historical events.

The exhibit floor is open Nov. 5-7 and will feature companies peddling their audio wonders, some futuristically digital, some decidedly contemporary and a few with sepia-toned ear candy. A lot of new toys make their debuts at this show.

For those itching to get outside of the Moscone Center and see something new, Technical Tour Co-Chairs Jessica Livingston and Jeff McKnight have cooked up visits to local San Francisco audio sites, especially live sound/entertainment venues. Top pick for techies probably is the visit to Dolby Labs to see what Ray Dolby's team is working on these days.

If those are not enough to keep you occupied, given that you wangled a trip to San Francisco don't forget that the City by the Bay is famous for its restaurants; and you can head north, across the Golden Gate Bridge, and point your car toward the wineries of Napa Valley.

BROADCAST & STREAMING SESSIONS

The convention will link three panels in a dedicated streaming track, according to Broadcast & Streaming Sessions Chair David Bialik: "Since our last convention we have witnessed the rapid, almost universal embrace of streaming. The resolution of issues such as stream formats is becoming increasingly urgent."

This list of sessions is preliminary; see final list on-site:

STREAMING

"Stream Formats for Content Delivery Networks"
 "Audio Processing for Streaming"
 "Audio Performance in Streaming"

BROADCAST

"Gaining Methods and the New Loudness Recommendation EBU R 128"
 "Broadcast Facility Design: Attending to the Details"
 "Innovations in Digital TV"
 "Innovations in Digital Radio"
 "The Lip Sync Issue"
 "Case Study of Punga Net: Uniting Radio Stations Across a Country"
 "Audio for the Olympic Broadcast"
 "Careers in Broadcasting"
 "Audio for Newsgathering"
 "Audio Over IP: A Tutorial"
 "Listener Fatigue and Retention"
 "Loudness, Metadata, Concerns for DTV"
 "Audio Processing for Radio"

PRODUCT SPOTLIGHT

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MARKETPLACE

MISSING LINK FOUND:

Digigram's IQOYA line of codecs has a new member, the *Link/LE.

This is a simpler, decode-only variation on the *Link. It supports G.711/G.722, MPEG 1/2, Layers II and



III, AAC and standard PCM. Enhanced apt-X is available as an option. The system uses Digigram's FluidIP codec engine for more reliable IP performance across two RJ-45 connections. For main audio fail-over an SD card, designated input or programmed IP address can provide backup audio.

The *Link/LE is N/ACIP and SNMP compliant.

Info: www.digigram.com

DRIVING THE BLUES:

New from Joe Klinger and the crew at JK Audio are the BlueDrivers, a pair of Bluetooth interfaces that utilize XLR connectors.



The BlueDriver-F3 plugs onto a dynamic microphone or into a mic-level output of a mixer and interfaces with a Bluetooth-enabled cell phone or headset, thus acting like a Bluetooth-based wireless transmitter. A 1/8-inch output can be routed to a recorder.

The BlueDriver-M3 plugs into the mic input of a mixer and will receive a Bluetooth signal from a cell phone or headset. A 1/8-inch input on the BlueDriver-M3 will accept an input from a mixer headphone output and duplex transmit it to the cell phone or headset.

Both feature mini USB jack for power or take a Li-ion battery.

Info: www.jkaudio.com

SOLID CHOICES FOR RECORDING:

Denon has added to its solid-state recording offerings with the DN-F450R and the DN-F650R.

Both units record to SD or SDHC cards, while the DN-F650R will record to USB drives as well. They also share basic recording features such as mark placement, record level controls, 1/4-inch headphone outputs and controls.

The DN-F450R is a half-rack unit or desktop unit.

The rackmountable DN-F650R has XLR balanced con-

nectors, pitch control (±12 percent), a USB keyboard input, USB output for computer use and tape-style transport controls.

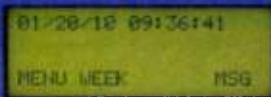
Prices: DN-F450R \$599; DN-F650R \$799.

Info: www.d-mpro.com



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WORKBENCH
by John Bisset

**EVERY ISSUE
RADIOWORLD**

Light on the Head, Heavy on Sound

This Audio-Technica Sports-Type Combo Is at Home on Air and Online

PRODUCT EVALUATION

BY ALAN R. PETERSON

Mic-headset combinations typically are associated with sports play-by-play and live remotes. But innovations in audio over the Internet have opened up a

new need for broadcast headsets.

The cost of a microphone-headset combination can range from less than \$20 for simple consumer VoIP units up to several hundred dollars for top-of-the-line sports headsets you see on NFL telecasts.

Parked comfortably in between those extremes is the Audio-Technica BPHS1, a stereo headset with a comfortable fit and a great-sounding dynamic mic

element. The MSRP is \$279, but it can be had for less than \$200 through your usual favorite sources.

CONSTRUCTION

The BPHS1 starts with stereo elements in sealed earcups, each element scoping out to 20 kHz for clarity. The plug is a full 1/4-inch TRS type, a surprise if you are anticipating the stock 3.5 mm plug and adapter combo so common today.

The use of stereo elements means you can hear the talkback from the studio in just one ear instead of both.

mal audio leakage from your partner in the booth. News-talk stations doing live field interviews can pack two of these in place of large mics, stands, separate headphones and all the extras that sometimes never make it into the remote bag.

But also stated topside, new technologies mean new uses. Many talents associated with Radio America programs

The BPHS1
microphone bends to
your will, as it were.



The dynamic cardioid low-Z mic has a large low end (primarily due to proximity) and a bright peak for intelligibility centered just under 8 kHz. This is a mic that will cut through the cheers at the basketball broadcast. The dynamic element means you won't be sweating a phantom supply or a battery to stay on the air.

Further, the mic is mounted on a flexible rubber-coated gooseneck to bend and shape exactly where you want it. At one time, mic booms on certain headsets were permanently bent and all you could do was slide it back and forth. No longer. The BPHS1 microphone bends to your will, as it were.

The cable terminates in an XLR mic plug, and again that 1/4-inch stereo headset plug, and can be detached from the headset for replacement or repair. Good idea: all headphone cables eventually get rolled over by chairs and some are easier to put back into service than others. While it looks as if this cable can take a little punishment, I would spring for a spare cable (BPCB1) now for use much later.

And because pop filters are the first things to wear away or fall off, the company wisely included three mic pop filters with the BPHS1.

YOU'RE LIVE!

As stated at the top, the BPHS1 is ideal for sports broadcasts. The tight cardioid pattern on the mic means mini-

frequently participate via Skype, the popular telephone/"picturephone" Web application.

Where inexpensive electret mics might be adequate for Skype calls, we require broadcast-quality audio, and a better mic invariably means a better end product. Anyone "Skyping" back to their studios would be wise to consider a mic-headset combo such as the BPHS1 combined with an XLR-USB adapter such as the Shure X2B.

Such a use will also demand a proper headphone connector. In an unusual twist, that will mean a *reducing* adapter, going 1/4-inch to 3.5mm.

SUMMARY

Unlike familiar, bulkier headsets like the Koss Pro4AA with its manly threaded stud, the BPHS1 has a modern look and light feel. For some, maybe too light. People with smaller or narrow heads may find the set a little loose if they are moving quickly to follow play action.

But for clarity, ease of travel, comfort and snap-on simplicity of replacement, the Audio-Technica BPHS1 is a fine performer. Good price too.

For information, contact Audio-Technica in Ohio at pro@atus.com, (330) 686-2600 or www.audio-technica.com.

Alan Peterson is assistant chief engineer and production director for the Radio America Network in Arlington, Va.

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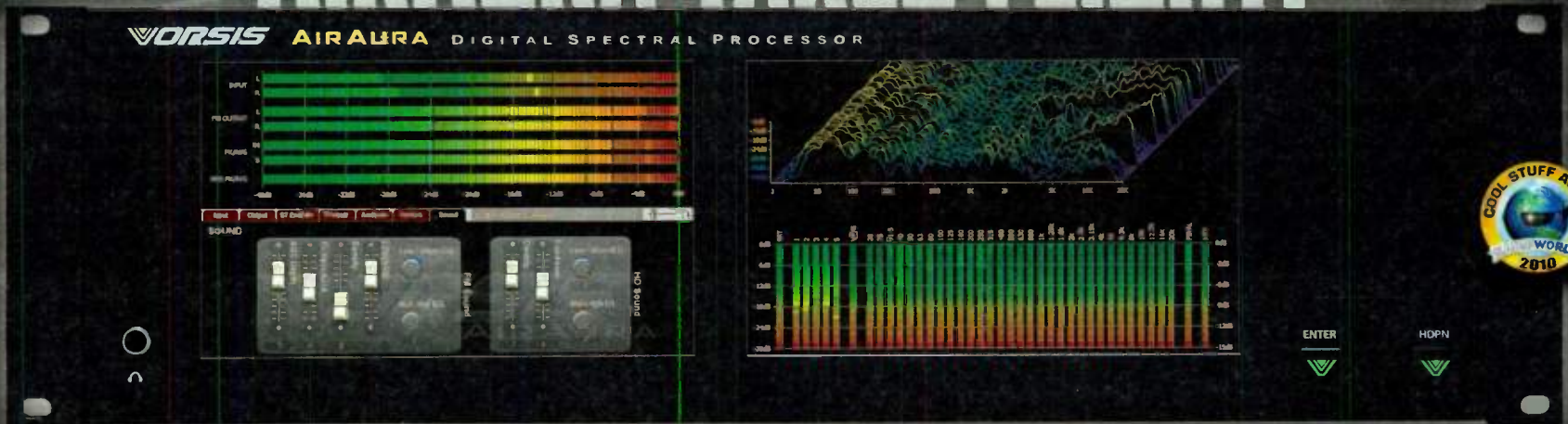
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A Toast to the Lounge Sound

'Martini in the Morning' Offers Local Sensibilities for a National Audience

BY MEL LAMBERT

Internet radio is enjoying a rocky reality. Despite its potential for interactive, on-demand access, few portals have achieved audience reach that comes close to conventional, over-the-air outlets.

INTERNET RADIO

"The secret of our success," says Brad Chambers, chief creative officer and founder of MartiniInTheMorning.com, "is that we have created a unique presence that serves a targeted community.

"Rather than positioning ourselves as just a radio station or a website, Martini is a 'new standard' for our listeners' lifestyle, where we feature the greatest songs ever written delivered in a variety of audio formats for iPhone, BlackBerry or Droid handheld devices, Nokia smart phones and Windows



Brad Chambers. 'We are a radio station created in the image of those great community radio stations.'

Media-equipped smart phones."

Established four years ago by Standard Media Group, "MITM" operates from

studios in North Hollywood, Calif., delivering MP3-, WMA-, Flash- and AAC-format streams at a variety of data rates.

Staff includes Executive Assistant Miriam Garfield, Merchandising Manager Heidi Streif, Technical Manager Al "The Engineer" Taddeo and IT Manager Jeff Morrison, plus on-air personalities/announcers, Harry Young, John Van Kamp, Kitty Collins and Rod West.

BEYOND NOSTALGIA

"Martini is about a lifestyle that encourages travel, dining out, cocktails and contribution to the community through various charities," Chambers said.

"The station plays contemporary adult standards. But we are not era-specific nor nostalgia-based; our material can come from any decade. We look for artists that offer unique interpretations of contemporary classics that were popularized by the likes of Frank Sinatra, Dean Martin and Sammy Davis Jr., for example, and other from those key '40s, '50s and '60s decades."

On one recent day, the site featured the likes of Jamie Cullum, Jane Monheit, Michael Buble and Diana Krall as well as Sammy, Dean and Frank.

"Our criteria are song, artist and production/performance. Anything that meets two of those three will be on our playlist.

"For example, Eric Clapton and B.B. King singing 'Come Rain or Come Shine' or Rod Stewart singing 'Someone to Watch Over Me' — we are just as likely to play interpretations of classic songs by such people as Harry

Connick Jr. and other current artists than the originals.

"In other words, we are not playing up nostalgia for that 'Rat Pack Era,' because our playlist is new music for much of our audience. It is, after all, the most American of music."

Chambers worked for nine years with Clear Channel as director of programming distribution and technology and PD/morning personality with KLAC(AM) in Los Angeles; he was at Jacor/Clear Channel in Boise, Idaho, as regional operations director, and Clear Channel as director of programming distribution and technology based in Covington, Ky. He also has worked with Dame Media at WRBT(FM) in Harrisburg, Pa.; Imprint Records in Nashville; and Susquehanna Radio/KPLX(FM) in Dallas.

"The average age of a Martini listener is 49," Chambers said, with 55-64 as the next largest segment, followed by 35-44.

"This is a good demographic, since it represents a group of people that is interested in music which pre-dates their childhood and reflects a lifestyle choice. And our targeted community is international, not just local; we have regular listeners in Europe, Africa and Asia.

"Unlike most Internet radio stations," he continued, "MartiniInTheMorning.com is no jukebox — a string of songs, one after another.

"We are a radio station created in the image of those great community radio stations. And our community is not defined by a city limit, county line or by the signal limitations of the radio transmitter. It is defined by a lifestyle, a passion for the music we play and an ability to come together and be a part of something bigger than itself.

"The station sets itself apart from the Internet by being a real radio station with personalities, contests, even commercials, avoided by some stations in favor of listener subscriptions and other such financial models. We separate ourselves from our broadcast cousins by limiting commercial content."

Currently, the portal carries up to four minutes of commercials per hour.

Arguing that syndicated radio remains a viable proposition, Chambers plans to offer the MITM format free-of-charge to HD Radio multicast channels.

"The future of radio lies on the Internet," he said. "But HD Radio could survive with the right content; listeners are not interested in recycled content [from over-the-air channels], or heavily automated formats being offered as an alternative. Real-time, interactive programming will win out every time. HD is viable if there is something worth listening to.

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"Radio has always been a one-way process," Chambers offers. "At Martini, we aim to make it two-way, through listener participation on our highly interactive website, and via remotes. We also see that listener passion is an advertiser benefit, and a differentiation from our immediate competition."

VIDEO TOO

MITM's signal path starts at a Wheatstone D-75 digital console that handles mic sources and outputs from a Prophet Systems rig that stores digitized music cuts, PSAs and station liners.

"The console's analog outputs connect to an Orban Optimod-PC 1101 PCI audio card that is housed in the streaming PC," said Technical Manager AJ Taddeo. "I use a light-compression preset — 'Greg Open' — which gently tightens up the station's deliverables

without sounding heavily processed.

"The MP3 and related streams are created by our SOS commercial-insertion system, while the AAC-plus and Flash streams are generated by an [Orban] Opticodec-PC 1010 application" offering output rates of 32 and 64 kilobits per secone. The Flash-compatible media facilitates an "FM quality" stream that carries pre-launch video commercials, while a 96 kHz stream is intended for UStream listeners.

A separate audio-video stream with an in-studio webcam carries a separate 96 kHz Flash-format stream. "MartiniVision accounts for maybe 20 percent of our listeners," Chambers says. "They are very vocal when it goes down." MP3 and WMA streams are at 64 kbps.

The portal cites an average audience approaching 600,000 total monthly listening hours.

"We need between 1.25 and 1.5 million listening hours per month to make money," Chambers says with a wry smile. "Our community is growing, but not fast enough to become competitive with commercial, broadcast radio.

"Currently, 10 percent of our audience is mobile, listening in the main on [Apple] iPhones in their cars and SUVs. The iPhone has completely changed our listening potential, and is growing rapidly. As more automobiles are made available with in-dash Internet radio, we see this number increasing even more quickly.

"We are also looking at developing a custom app for the iPhone that will also enable us to capture listener metrics, which is problematic at the moment with no standard reporting process. National accounts — which is where our core revenue will come — look for local as well as wide coverage. Our streaming mechanism [and region-specific advertising insertion software]

will let us handle that requirement. We can also develop local text messaging for our UStream material. But we remain in the top 2-3 percent of individual Internet radio stations.

"North America is our core audience, and one that attracts national advertising; the foreign coverage is a bonus and good entertainment for our U.S. and Canadian listeners. We surprised a lot of our audience the other day by reading out a weather forecast for Nairobi, Kenya."

Responding to the inevitable rainbow question of what three wishes he would like to see granted for Martini in the Morning, Chambers pauses and takes a deep breath.

"First, we could use a benevolent investor," he replies. "And then a liquor sponsor, to support our lifestyle trajectory. And, thirdly, an even playing field for Internet radio, so that it can compete with conventional radio and satellite delivery. Currently, our per-use music fees are under threat and we are prevented from playing complete albums.

"MartiniInTheMorning.com is the soundtrack for a lifestyle," Chambers concludes, "and for a community that might appear to have little in common. But when they turn on the radio or browse their personal music library, or participate in a walk-a-thon to fight breast cancer, it turns out there is much that brings them together as a community."

Mel Lambert says he has been involved with production and broadcast industries on both sides of the Atlantic for more years than he cares to remember. He is principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry. Reach him at mel.lambert@mediaandmarketing.com.

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How did I do it? I planned it!

I'll tell you how in just a moment, but first I'd like to make the point that the launch of a new morning show — or a totally new radio station — is a moment in time most of us rarely get to see over the span of our careers. These opportunities are precious and must not be wasted.

'THEY'LL LOVE US'

I feel sorry for managers who flip a switch, use the word "new" and expect the market to find and love the product immediately.

When you hear someone tell you that "we're doing a soft launch," you're really hearing code for "We don't know what we're doing and we have no plan," and "People will find us when they scan the dial and they'll love the new us."

Your launch plan starts with a timetable.

Another lame excuse you'll encounter revolves around not having enough time: "We've got to get this on right away. If word leaks out in the market, someone may beat us to the punch."

Your launch plan starts with a timetable. That timetable begins at the end of your research and extends to approximately six months after your launch date.

(You researched the niche you're about to fill, right? If your answer is no — read: "no budget" — you're embarking on a dangerous mission with limited intelligence ... and yes, the pun is intended.)

As soon as the research is complete and your format decision is made, the search begins for talent, beginning with your morning show. This assumes you already have the right program director for the format.

Hopefully your format consultant (in or out of house) knows the playing field already and presents you a short list of prospects.

A word of caution: Never try to convince a talent the job is right for them. If they're not on fire to come to you, most of the time you're asking for trouble. So much of talent success has to do with personal motivation; the last thing you want is a laundry list of complaints when they don't achieve instant success.

And while you start your launch with a morning show, don't stop there. Hire someone — even if it's voice-tracking — for every daypart. Don't fall back on the "we don't have time" or "we'll do that later" excuse.

At the stage you're searching for talent, you're laying out the marketing plan. The actual execution of this plan does not begin until the station is on the

air. It makes no sense to blow money telling people that a product is coming when they can't sample it yet.

If you have no budget, you will have no serious share of advertising voice — and while I will recommend some inexpensive methods of getting the word out, there is no substitute for real marketing using mass media, no matter the market size.

PROMO POWER



Mark Lapidus

In your mix of advertising the new product, try to own a medium. Don't spread yourself thin by buying a few TV spots, a couple of billboards, a bit of direct mail and some transit.

Instead, buy all the billboards you can afford and no TV. Or put it on three TV channels with a lot frequency.

(continued on page 30)

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FORMATS

(continued from page 29)

The one exception is laying out some dough — you don't need a lot — on Google search words that fit your new format and your new website. For many that will mean buying the core format artists. The good news is that although you'll pay for clicks, now you're at least hitting potential listeners.

PUT THE WORD OUT

Inexpensive marketing methods to consider include:

1) A Facebook campaign — beginning with sign-on and offering a fantas-

tic prize, like the chance to win a (traded) car for everyone who "likes" your Facebook page.

- 2) Talent appearances at any major event they can host.
- 3) Traded spots with your local cable company.
- 4) Promos or coverage on your other cluster radio stations when you've got alignment that makes sense. For example, if you have a talk or news station and you're launching a music station, you will be able to move cume and it won't sound out of place, as it might on another music station.

If it fits the new format to do so, map out a few stunts that will draw attention. Pace them over a few months.

They don't all have to be outrageous. A stunt can be as simple as setting up a bed in the middle of busy shopping center and doing a broadcast from it on Saturday from 10 a.m. to 2 p.m.

Other items to map out include your sales tactics, complete with client launch party; media partners with whom you can exchange content or trade marketing; and public relations outreach with newspapers, websites and non-profits.

So ... how *did* I manage to promote a new morning show on a competitor's station?

A morning show and a cup of coffee

have a lot in common. They wake you up. Both can be bold. People will want to sample each one every morning.

We wrote the commercial using the talent names as the coffee brand. I hired an agency to place the ads. I waited until the first ad ran and then called the local newspaper to tell them the story about how we pulled a fast one on a competitor.

The spot got yanked immediately, but we got ink and buzz. And yes, we did make and sell the coffee — with the proceeds going to a local charity.

Mark Lapidus is president of Lapidus Media. Contact: marklapidus@verizon.net. Promo Power articles are archived at radioworld.com.

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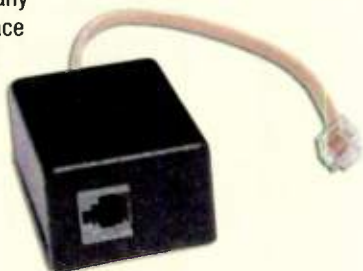
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& some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email ronwtamm@yahoo.com.

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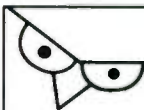
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RADIOWORLD
Equipment Exchange

EARS

(continued from page 34)

For example, because of our strong partnerships, money otherwise spent on travel can be put into shipping costs, thus getting more radios to more areas of the world with less donated funds.

So far, our scope is limited only by our financial resources. Yet we're not simply focusing on expansion; ETOW is establishing strong, lasting bonds with our schools and teachers so as to better serve their needs long term. We endeavor to replace their equipment and batteries as needed.

SIMPLICITY

Radio World readers will have already guessed (of course!) why we use radio instead of, say, computers, for information access.

It is because much of the world does not have the communications infrastructure to support access to the World Wide Web and other dynamic media sources such as digital television, wireless networks or even electric power or phone. Political instability, meanwhile, can undermine even the written word.

But radio is simplicity itself. All one needs is a modest yet capable receiver, and one has instant access to local and world media.

So far, every teacher with whom we've worked already knows something about radio; indeed, many have an intricate knowledge of broadcast schedules.

But in these places it can take up to an entire week's wages to pay for a set of batteries. That's where our wind-up radios become vital; we effectively eliminate this cost, giving them steady access to information.

And the reports we have received back

from the field have been overwhelmingly positive: Teachers in rural Cameroon are able to teach current events. Blind children in rural Belize can listen to the outside world and hear music and languages they've never heard. A remote community in southern Sudan was able to listen to reports of their burgeoning country's recent election. Children in Haiti and families in Chile learned where to go to get food and medical care and information about loved ones affected by the quakes.

As fellow radio enthusiasts and broadcasters, you already know that radio is a remarkable tool; allow me to convince you that it is a powerful teaching tool, as well.

Just as radio taught me, and opened my mind, it can teach others. Please join us; we can shape the world of the future. Ask, as I did, *how can I help?* And spread the word: Tell your family, your friends, your clubs, your community centers, your colleagues, your employees. If you work for a broadcaster, tell them about us. Post us on your blogs. Mention us over the air. Tell everyone you know: *In an Internet world, radio lives!* Children's futures are still written on the airwaves.

Listen and learn. It's a simple idea, but to some young people, it can mean the world. Together, we can make it happen.

Want to help us give the gift of radio? Visit <http://earstoourworld.org> or write us at P.O. box 3230, Cullowhee, NC 28723. Your personal interest, or that of your local radio club or business, could put radios in a school or village in the most remote corner of the world.

The author is executive director of Ears to Our World, which was profiled in the Wall Street Journal Magazine in May.

READER'S FORUM

MORE ABOUT IEEE BTS

Thank you for including Randy Stine's excellent article on the upcoming 60th IEEE Broadcast Symposium in the Sept. 1 edition of Radio World.

This event is open to both members and non-members of the IEEE, and if anyone is interested in attending, they should register early in order to get a reduced registration fee.

On Wednesday evening, Oct. 20, we have another reception in addition to the Manufacturers Reception; and the Association of Federal Communications Consulting Engineers has its annual AFCCE Fall Social on Friday, Oct. 22 following the IEEE Broadcast Symposium.

Finally, as one of the organizers of this year's symposium I would like to give particular thanks to the sponsors of the Manufacturers Reception. As of Sept. 10, the sponsors are Dielectric (host of the reception), DSI RF Systems, ERI, Harris, Jampro, Kintronic Labs, Myat, Shively and Stainless LLC.

Thomas B. Silliman, P.E.
President
Electronics Research Inc.
Chandler, Ind.

NEWS
IEEE 60th Annual Broadcast Symposium
BY RANDY J. STINE
ALEXANDRIA, VA.—Organizers of this year's IEEE Broadcast Symposium are excited to announce a multi-day event with a dynamic industry with constantly evolving technology.
The symposium, Oct. 20-22 in Alexandria, Va., will feature technical sessions, including an afternoon session of the IMBEC, power management and potential associated components, and a panel discussion on the FCC's latest broadcast rules.
Broadcast engineering experts Ron Rankin, Ben Dawson and Grant Mitchell will be among those who will speak. The symposium is sponsored by the Broadcast Engineering Society of the Institute of Electrical and Electronics Engineers.
Attendees will participate in sessions, research and technology at sessions, including an afternoon session on the special interests of engineers on the radio side of the industry, who will discuss the "importance" of transient noise, and Tom Schmitt, president and chief executive officer of Dielectric, will be the year's keynote speaker. The symposium is a part of the IEEE Broadcast Engineering Symposium.
"We had a lot of interest this year in topics specific to radio, with the change in digital power levels and talk of using different standards for emergency services (EMER) has generated a lot of interest."
The speaker is Tom Wozniak, president of Westport Research, Inc.
MULTICASTING
For those who prefer technology with a personal touch, the symposium is a great opportunity to attend the Broadcast Engineering Society's Reception, a pre-symposium event sponsored by the Association of Federal Communications Consulting Engineers (AFCCCE) on Friday, Oct. 22 following the IEEE Broadcast Symposium.
"This will give the engineering community an idea of the current state of the industry," Silliman said.
The goal of the symposium is to provide the technical developments in broadcast engineering, Silliman said.
Last year's keynote speaker will include James O'Neil, technical director of TV Technology, who will discuss the state of the industry of radio technology, and Jim Martin, director of engineering, maintenance and operations at the U.S. Department of Defense.
"The industry is doing a lot of different things with frequency right now,"

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In an Internet World, Radio Lives

'Ears to Our World' Believes Children's Futures Are Still Written on the Airwaves

COMMENTARY

BY THOMAS WITHERSPOON

For as long as I can remember I've been passionate about radio.

From my earliest childhood memories in the 1980s during those final fading days of the Cold War — of my dad tuning in WWV in Fort Collins, Colo., on his dad's vintage RCA 6K3; of falling asleep listening to my then-old-fashioned

spectives I heard in my vicarious radio journeys, and from these sprang my own opinions, hopes, beliefs. Radio became my teacher—a teacher who gave me, in my formative years, a global perspective.

I would have to say that radio has shaped my life. I suppose that's why radio recently has become a mission for me.

RADIO, THE ONLY LINK

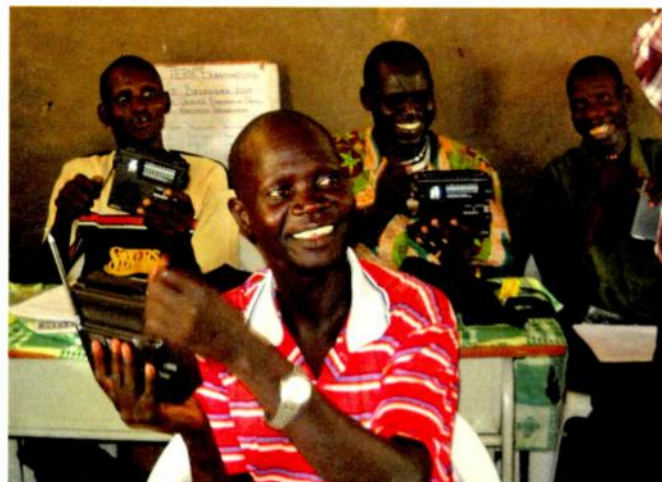
Today, I am the founder and director of Ears to Our World, a grassroots charitable organization with a simple

ment of our dear friends at Universal Radio and the extraordinary magnanimity of Eton Corp., who donate our wind-up world-band radios, we are honored to have, in just two years and on a budget of less than \$3,500, distributed radios to schools and communities in nine countries on three continents — in Africa, Eastern Europe, Central and South America, and the Caribbean — as well as to both Haiti and Chile, where the dissemination of information through radio has been life-saving.

How have we done this? Through partnerships with other reputable established non-profit agencies just like us, that already help struggling schools through-



Presenting a radio to the principal of G.H.S. Ntumbaw in Cameroon. Wind-up radios are invaluable in places where a set of batteries might cost up to a week's wages.



A teacher with an ETOW radio in Bor County, Southern Sudan. 'Radio is simplicity itself,' author Thomas Witherspoon says. 'All one needs is a modest yet capable receiver, and one has instant access to local and world media.'

AM transistor radio; and of drinking in all those mysterious DX stations I heard over shortwave and medium-wave ... I was the sort of kid (a throwback to a former generation, one might say) who couldn't get enough of radio.

In those days when cable TV and video games and the first PCs upstaged and supplanted radio in nearly every American household, even in the blue collar town in which I grew up, it was nonetheless radio that captured my imagination, and taught me early on that everyone has a story. Radio taught me, too, that each voice is different in his or her consideration of what's meaningful or newsworthy. I learned to understand or at least appreciate the diverse per-

objective: distributing self-powered world-band radios to schools and communities in the third world, so that kids, not to mention those who teach them, can learn about their world, too.

I want others — children and young people, especially — who lack reliable access to information, to have the world of radio within their reach.

More specifically, Ears to Our World works in rural, impoverished and sometimes war-torn or disaster-ravaged parts of the world, places that lack reliable access to electricity — let alone the Internet — and where radio often is the only link to the world outside.

The heart of our mission is to allow radio to be used as a tool for education, so we give radios to teachers, who, in turn, use the radios in the classroom and at home to provide real-life, up-to-date feedback about the world around them. Many of our teachers have used radio to teach language skills, social science, basic literacy, music appreciation and much, much more.

Ears to Our World is a budding organization. But through the encourage-

ment of our dear friends, as we do, in *freedom of* and *access to* information.

Creating these partnerships was an important move: in the very remote regions we serve, extending our assistance demands persistence, financial resources and logistical support, times 10. And often a great deal of patience.

Just shipping radios to other countries usually involves detailed arrangements with national and regional governmental authorities (for example, to waive duties or taxes); once the radios arrive, safely distributing them to these remote areas can also be costly and complex.

Our partner organizations often have laid the groundwork in these regions and have established reliable connections with communities in them. Their need is for resources — like radios.

By working cooperatively with other established organizations, we find we're able to distribute radios much more cost-effectively, too. In other words, we can operate on a shoestring budget so that donations are used wisely and to their fullest extent.

(continued on page 33)

CORRECTION

The Sept. 8 story "Armstrong Wasn't the Only One" misidentified the author of "Edwin Howard Armstrong: Man of High Fidelity" as Lansing Lamont. The book's author was Lawrence Lessing.

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IMAGINE YOURSELF SAYING "IT'S ABOUT TIME!"

Preface... Clear your mind. All that anxiety that you've come to associate with the typical AoIP network install is going to leave you now... Think of cool clear water flowing into the coffee maker and the sound of sprinkles hitting fresh, hot donuts... OK. Ready?

1.OPEN

Confront your boxes. You know they're there. They know they're there. But only YOU have the power to change that. Go ahead... open them.



10:03am

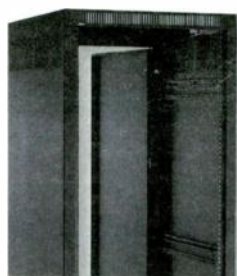
2.LOOK

Take a good look at what's in the boxes. You've got a control surface mixer item and rack mount BLADE something or other. They sure look pretty. And they are. Using this stuff you are gonna be a chick magnet. Or a guy magnet. Whatever, you are going to be IN CONTROL. Cool part is, THAT is only moments away!

10:09am



Every BLADE has all the information about your entire network stored in it. Should any part of the network go down, the rest continues to function perfectly. Simply plug in a new BLADE and you'll be where you started in moments!



3.RACK EM UP

Rack mount the rack stuff. OK, we're going to be brutally honest here. THIS SINGLE ONE STEP takes the longest of the entire setup process (unless you have a REALLY dull knife in step 1). Of course you'll need your own rack and screws, but hey, if it's a deal breaker, we'll work it out.

10:20am

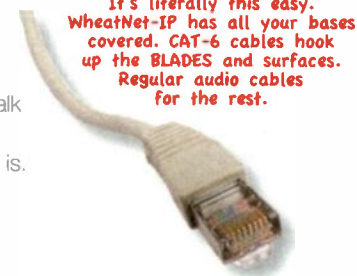


4.PLUG IN

Time to hook them up. You knew it was coming. Your little tummy is wrapped around your throat. I mean, it's gotta be a real hassle, right? Interfacing these things? Setting them up? Getting them to talk to each other? Somebody get me an antacid.

Wait... is that a CAT-6 cable? You know what that is. And that's all it takes? Mmm Hmm. Yep. You bet.

11:02am



It's literally this easy. WheatNet-IP has all your bases covered. CAT-6 cables hook up the BLADES and surfaces. Regular audio cables for the rest.

5.PUSH THE BUTTON

OK. Everything all hooked up (meaning, is the CAT-6 cable plugged in)? Great. Now we're gonna configure the system. We start by turning it on. Then?

Um... that's it. It configures itself. Every piece talks to every other piece and does what it's supposed to do. What? Doesn't EVERY IP Audio system do it that way?



WheatNet-IP does ALL the work of configuring your system EVERY BIT OF IT! It knows when you are adding on or when you are taking something out. You concentrate on content. We concentrate on getting it where it needs to be.

11:05am

6.IT'S WORKING!

You've got a system! From here on out, it's just like the analog stuff you're used to. Except ultimately more flexible. And much more reliable. And better sounding. And completely expandable. And such a joy to use. Yes - you heard it - I said A JOY TO USE! (Bet you never thought you'd hear an IP system described that way. Certainly not one from the other guys)



11:06am

7.CELEBRATE

Time for that cup of coffee and donut we talked about in the preface. Let's face it...the whole process was painless. AMAZINGLY PAINLESS. So painless, you are already up on Facebook and Twitter talking about what a stud muffin you are with your technical prowess. Don't get cocky, kid. But DO enjoy a delicious coffee and donut. And remember, next time you even think about installing new gear, you've gotta call your Uncle Wheaty...



11:07am

8.SLEEP EASY

With a WheatNet-IP system, rather than having to be on the phone to who-knows-where in the middle of the night, you can take your emergency engineers off the clock and let them get a good night's sleep. We ARE here, 24/7, in beautiful New Bern, North Carolina, and if you need us, we'll talk to you all night long. But with Wheatstone's reliability record, chances are much greater that those visions of sugar plums will just keep dancing in your head.



3:40am

AoIP ADVANCED...

It's great to be able to say you invented something (whether you did or not). Turning that invention into a viable, workable solution for modern applications is what's needed if we are going to take this technology to the next level. The status quo was a pretty good starting point - but taking it out of the vacuum and into the workplace requires a fresh, objective yet passionate approach to advance it.

WheatNet-IP certainly advances it, making your workflow everything it should be. We cost the same or less. We can handle 10 times the bandwidth. We are far more reliable. And we're poised for THIS decade as well as the NEXT one. We're Wheatstone! This is what we do! What else would you expect?



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