

# RADIOWORLD

MAY 4, 2011

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World photographers Jim Peck, Bob Kovacs and Mary Ellen Dawley (clockwise from lower left)

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## Anti-'Bird Kill' Plan Still Rankles Some

Here's What People Are Saying About the Pending Requirement for Environmental Assessments

BY LESLIE STIMSON

**WASHINGTON** — The debate over whether towers kill migratory birds has been a contentious issue at the commission for at least eight years and has taken another twist.

### FCCRULES

The FCC has drafted rules and procedures designed to ensure that environmental effects of proposed towers — including their impact on migratory birds — are considered before a tower is built or substantially changed; and it has been taking comments on those proposed rules.

After conservation groups opposed the FCC's tower siting approval process three years ago, a federal appeals court said the commission had to offer the public "a meaningful opportunity" to ask for an environmental assessment study for proposed towers.

The new draft procedures parallel an understanding reached in 2010 by communication providers, including NAB, the Wireless Association, tower companies and conservation groups.

Under the draft, the public would be able to comment on environmental effects of a proposed tower. The FCC staff would consider those comments and determine whether an environmental assessment is required.

If needed, the EA would have to be completed before tower registration; those now are filed concurrently.

The commission initially would require an EA for requests to register towers of more than 450 feet. However, the FCC said it may modify this requirement after further study. Towers between 351 and 450 feet would be reviewed for a possible EA requirement on a case-by-case basis.

These requirements will apply not only to new towers but also to construction that makes a "substantial increase in size" of a structure. That includes not only height but also tower width or the area excavated around the tower base. Substantial changes in tower lighting also would trigger these requirements.

Comments to WT Dockets 08-61 and 03-187 were due May 5. Here are some of the comments that had been filed as of April.

**American Bird Conservancy,  
Defenders of Wildlife &  
National Audubon Society:**

Millions of migratory and other bird species are killed at communications towers and related structures every year. ... [S]tudies corroborate that there are population level impacts on many bird species and harm to endangered

(continued on page 6)



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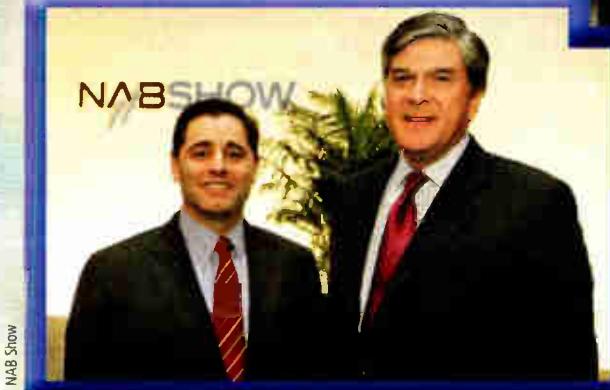
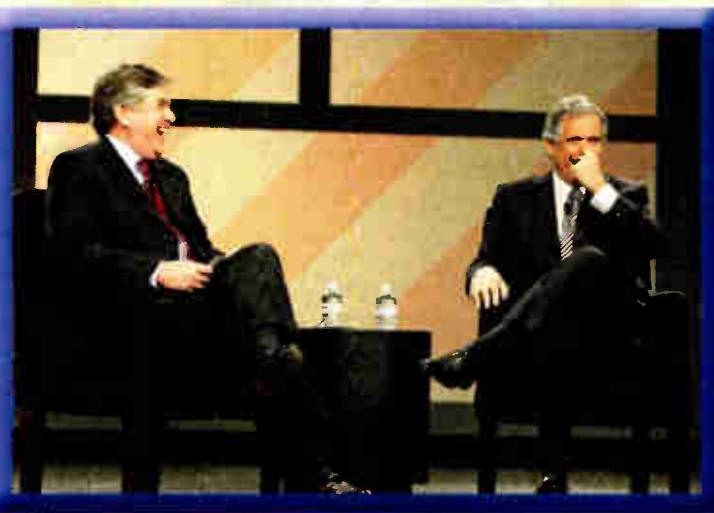
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# NABSHOW™

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The National Association of Broadcasters sought to portray a united industry front by showcasing CBS President/CEO Leslie Moonves, right. CBS rejoined the association last year. "We came back because I thought, 'This is the guy who I want to follow into battle,'" Moonves said, referring to NAB President/CEO Gordon Smith, left.

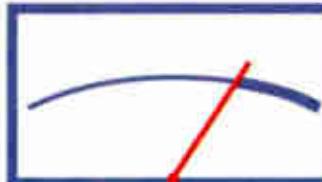


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Less joyful was the reception for FCC Chairman Julius Genachowski, who explained why the commission wants the ability to conduct voluntary incentive auctions. (RW Engineering Extra Technical Editor Michael LeClair blogged: 'Mr. Genachowski is clearly brilliant and a pleasant enough speaker. I would not want to debate him. He has already studied everything and knows all the facts and answers. He will even tell you why your arguments are worthless. Before you have a chance to state them.')

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The rollout of CAP-compliant EAS is a tense topic for many broadcasters, with a fall deadline approaching. Competitors Harold Price of Sage Alerting Systems, below left, and Bill Robertson of Digital Alert Systems listen as federal regulatory officials speak.



Photo by Jim Peck



Jim Gorman, president of Gorman-Redlich, gives a demo to Amanda Mintz from Make Communications of the company's EAS products. Equipment manufacturers have argued over whether CAP converters are a suitable path to compliance with new FCC rules.

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Burt West Voice Overs, Aptos, CA

# We Go Where the News Is

A Moderately Improving Economy Gives a Boost to the Mood at NAB

We give a great deal of attention to the NAB Show in the pages of Radio World.

The reason is simple: NAB is where a great deal of our industry news is made each year.

Radio's leading engineers speak there about their projects and ideas. Radio's top decision makers meet there to plan their business strategies. Radio's regulators come, speak and take your questions there (well, some of them take questions). Radio's best equipment makers introduce their new products.

By giving you a flavor of all of these topics over several issues, I hope to help you be better prepared to do your job throughout the coming year, especially if you couldn't attend.

This issue features photos from the show. My thanks to Radio World's photographers Jim Peck, Bob Kovacs and Mary Ellen Dawley, whose pix not only appear here but were published online each day during the convention. Visit RW's website daily during the 2012 convention and you'll see more of their work.

Subsequent issues feature our con-

vention news wrapup; digital radio coverage; news from the Public Radio Engineering Conference; Radio World "Cool Stuff" winners; and our summer product preview/post-show equipment special.

## INCREASED SNR

I don't love conventions, particularly in Vegas. But I enjoyed myself more at the show this year than I have in some time.

cover this sprawling event in a limited amount of time.

It was a pleasure to sense a feeling of rebound, even if it is a modest one. It was also a good convention for Radio World and NewBay Media, as evidenced by our strong presence and the recognition we received in the annual INKY Awards.

Radio World blogger and engineer Phil Simon wrote during the convention about the increased attendance and

**It was a pleasure to sense a feeling of rebound, even if it is a modest one.**

Partly that's because the economy is better, therefore the mood is more positive among equipment shoppers and sellers who populate the show floor.

Partly it's because I am more organized, and enjoy more good staff and freelancer support than ever in trying to

generally improved vibe: "The SNR has very much increased this year, especially compared to shows in the last several years. When capital projects are put on hold for too long, aging equipment and older technology have a way of getting even. Stations and groups by necessity cannot put off the inevitable.

"Many need to be buying replace-

## FROM THE EDITOR

Paul McLane



ment transmitters, antennas and studio gear," he continued, echoing a theme I heard too. "Many of the folks with the big console and transmission equipment booths as well as the smaller accessory vendors are feeling a welcome change in attitude. Station decision makers are more willing to be writing orders this year. And that's a good thing for the industry and our audiences."

You can read Phil's review of convention themes, including his own list of hot products and his thoughts about daunting challenges facing AM HD Radio, at [radioworld.com](http://radioworld.com) in the Blog box.

Phil was very upbeat about the show attendance. My take is somewhat more restrained; while show traffic was certainly good the first day or two, I didn't see the crush on the radio floor all week that I recall from the 1980s and early 1990s. But even though I find it hard to believe the show drew almost 93,000 people, as NAB estimated, I'd go along with its report of a 5 percent increase this year.

You'll also find show thoughts on our blog page from Radio World Engineering

(continued on page 10)

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NewBay Media took home nine of the 11 INKY Awards given in 2011 for media that cover media technology. Standing, from left: Awards creator Lauren Darr of LOI International; Lifetime Achievement Award recipient Stevan B. Dana, founder of IMAS Publishing/Radio World; Eric Trabb, accepting for "Excellent Editor (TV/USA)" Tom Butts of TV Technology; "Kick Butt Sales Rep (TV)" Vytas Urbonas; Chriss Scherer, accepting for "Unsung Behind the Scenes Hero (Radio)" Erin Shipps of Radio Magazine; Inky; "Fab Freelancer" John Bisset of Radio World; "Excellent Editor (Other Categories)" David Keene of Digital Signage; Carmel King, accepting for "Stupendous Staff Writer" James O'Neal of TV Technology and Radio World. Front: "Excellent Editor (TV/International)" Mark Hallinger of TV Technology Europe & Asia Pacific; "Unsung Behind the Scenes Hero (TV)" Caroline Freeland; "Excellent Editor (Radio)" Paul McLane of Radio World.

Photo by Jim Peck

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MAY 4, 2011

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**NEWS****NEWSROUNDUP**

**INDECENCY:** The Obama administration asked the Supreme Court to review the FCC's indecency policy. The DOJ is asking the court to overturn lower rulings that found the agency's indecency policy "unconstitutionally vague." Several cases challenging the commission's indecency policy are winding their way through various courts and the FCC says its indecency rules are basically in limbo as a result. Broadcasters would welcome clarity; they've been saying for years the FCC's policies about indecency are vague.



**NAB RADIO CAMPAIGN:** NAB launched a lobbying effort to educate listeners "about the benefits of radio-enabled mobile devices in providing local news, entertainment and emergency lifeline information." The initiative uses on-air and online resources to encourage listeners to seek out cell phones with broadcast radio capability. The website [www.RadioRocksMyPhone.com](http://www.RadioRocksMyPhone.com) provides information about the role radio can play during emergencies.

**CHIP MANDATE OPPosition:** The wireless industry, CEA and the RIAA support a resolution introduced in the House that opposes government mandates for FM chips or "any terrestrial broadcast chip in mobile devices including phones, smartphones and tablets." Reps. Darrell Issa (R-Calif.) and Anna Eshoo (D-Calif.), introduced H. Con. Res. 42. CEA President/CEO Gary Shapiro stated: "Requiring today's digital phones to include an analog FM chip makes as much sense as requiring them to include a telegraph."

**'PLEDGE-FREE STREAM':** KQED is offering listeners a way to "turn off" a fundraiser with a pledge-free stream. By donating \$45 by May 5, members receive access to a pledge-free stream that will enable them to listen on a computer or smartphone without interruption for the duration of the spring fundraiser. The alternate, second live stream carries regular KQED radio programming without fundraising breaks. Once a listener donates, they receive a special access code to the Internet stream, which they can listen to using up to four browsers, accommodating listening from home or the office.

**BUICK UPGRADES DASH:**

GM's Buick is offering IntelliLink in certain 2012 models. It joins sister GM brand Chevy in selling a wireless connectivity and customizable entertainment option, as does Ford with its "Sync" and Toyota with "Entune." IntelliLink too uses a wireless Bluetooth or a USB connection to connect to a large touchscreen display. The system works with a Bluetooth-enabled smartphone, USB flash drive or digital audio player. It also integrates control of Pandora Internet Radio and Stitcher SmartRadio apps. IntelliLink will be available on all Buick sedans in 2012 and every Buick in 2013.



**HD SEMINAR:** Harris broadcast will hold a four-day HD Radio seminar at its Quincy, Ill. manufacturing facility beginning May 16. The event is free, including lunch. The course covers options for planning and managing a station's migration to HD Radio, including updates on elevated and asymmetrical sidebands. Contact Keith Mullin at: [kmullin@harris.com](mailto:kmullin@harris.com).

**SURROUND SOUND:** 750+ stations are using DTS Neural Surround Sound, according to parent company DTS, which said its HD Radio technology surround sound content initiative involves partners American Public Media, Minnesota Public Radio, "JazzSet" with Dee Dee Bridgewater from NPR Music, the Cleveland Institute of Music and others. Programs such as "JazzSet" and "Performance Today" use DTS Neural Surround Sound equipment by DaySequerra to encode live and recorded 5.1 surround sound mixes for stereo HD Radio broadcasts over existing stereo transmission infrastructures.

**SPACE WEATHER:** Due to budget cuts, NOAA's Space Weather Prediction Center plans to end its space weather message broadcast on Sept 6; the broadcast airs on radio station WVV on minute 18 and on WWVH on minute 45. SWPC says the information remains available via other channels and at its website: [www.swpc.noaa.gov](http://www.swpc.noaa.gov). SWPC generates space weather alerts, watches and warnings. The center invited e-mailed comments and questions to [swpc.wvv@noaa.gov](mailto:swpc.wvv@noaa.gov).

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# BIRDS

(continued from page 1)

species caused by communications towers and related structures such as television and radio stations. Tower height, tower lighting, tower support structures (i.e. guy wires), location and lighting of related structures are all key factors in these bird kills. Each of these variables must be evaluated in terms of direct, indirect and cumulative impacts. ...

Alternatives for constructing and managing communication towers can save birds without compromising the commission's wireless communications mission or aviation safety. Reasonable alternatives to be studied include ... requiring changes in lighting schemes to less impactful alternatives (e.g., turning off steady burning lights or at a minimum synchronizing blinking lights) whenever permitted by the Federal Aviation

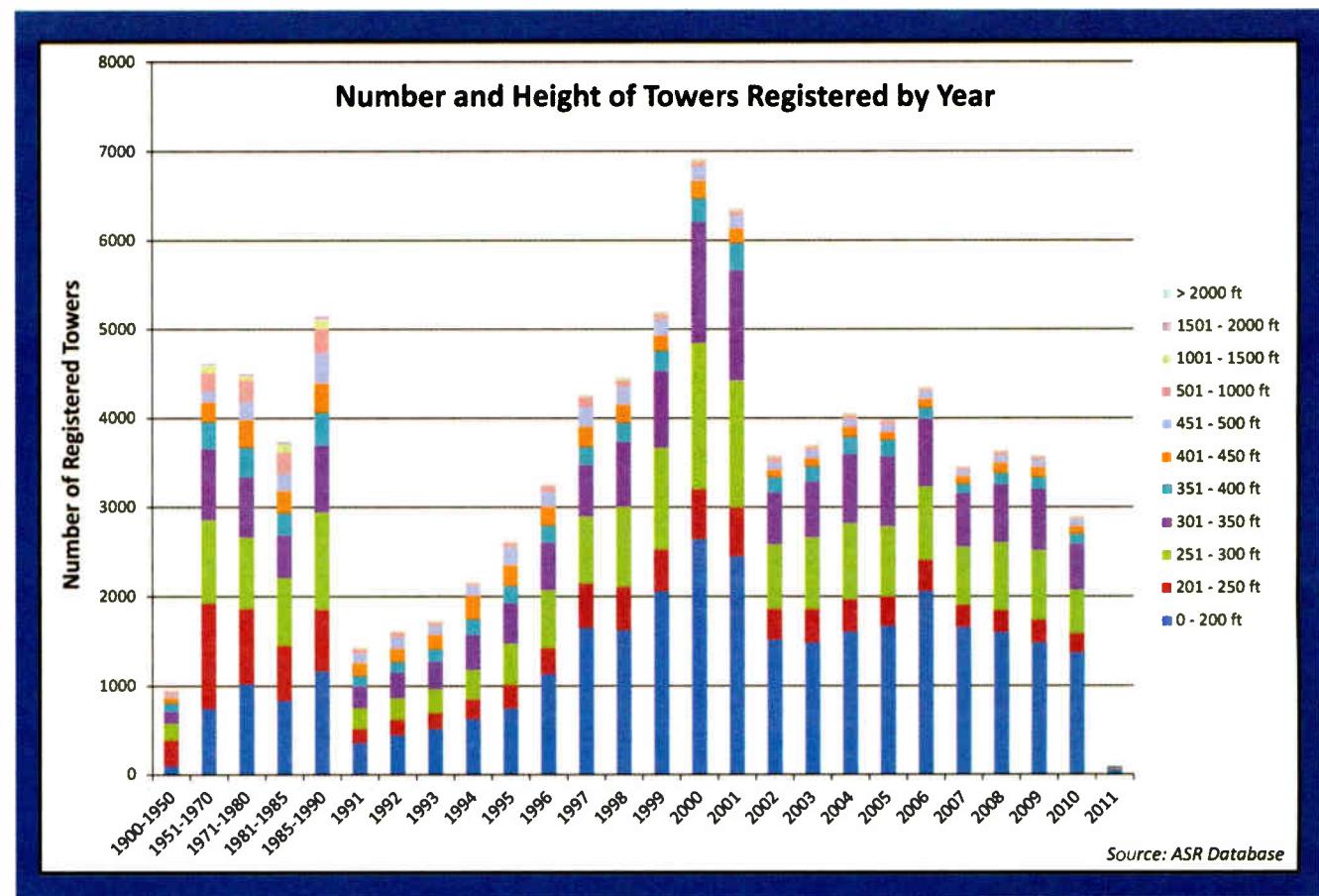
**'In 2005, the FWS estimated that 4 million to 5 million birds are killed at communications towers each year.'**

Administration; promoting collocation of antennas and shorter towers without guy wires; requiring heightened scrutiny for proposed towers in environmentally sensitive areas; providing guidance on lighting of associated structures; putting FCC personnel in charge of identifying and evaluating environmental effects of proposed towers instead of allowing tower registration applicants to do it; and adopting an interim approach to registering towers while the commission conducts its environmental analysis and proposes and finalizes revised rules for the ASR program. ...

In 2005, the FWS [Fish & Wildlife Service] estimated that 4 million to 5 million birds are killed at communications towers each year. ...

Lighting, height, support system and location of communication towers are key factors in bird kills at towers. The impacts — especially for neotropical songbirds — increase with overcast conditions or inclement weather. ... Birds lose natural navigating cues and orient with the tower lights, circling the towers and eventually dying of exhaustion or collision with towers or support systems. ...

As a FWS official noted: "Light appears to be a key attractant for night-migrating songbirds, especially when



Source: ASR Database

Source: FCC Antenna Structure Registration (ASR)

nighttime visibility is poor, cloud ceilings are low, fog is heavy, or various other forms of precipitation are associated with either passing or stationary cold fronts." ...

The role of aviation safety lighting is a critical factor to be studied. Aviation safety lighting for towers over 200 feet is controlled by the Federal Aviation Administration through its advisory circulars, which describe lighting styles and specify permissible styles based principally on tower height, and FAA policy guidance. ... Towers with solid red lights (L-810s) combined with flashing red lights (incandescent L-864s) cause most avian mortality, including nearly all mass mortality events.

**NTCH Inc.**  
Wireless Company  
*Submitted by law firm Fletcher, Heald & Hildreth:*

To date, much of the evidence presented to the commission has been anecdotal or undocumented. Those environmental and wildlife organizations who seek more rigorous review of tower construction (the "bird community") have suggested that literally millions of migratory and other birds are being killed each year due to communications towers. ... The suggestion that wild animals are being killed in large numbers is therefore something that, if true, would be of serious concern. In our experience, however, there is no factual support for this proposition, and the result is quite

the opposite. ...

NTCH's personnel report that they never see any dead birds around the towers. Literally, *none*. Surely if millions of birds were colliding with the towers and dying there would be some evidence of carcasses at the base of the towers. ... On the contrary, what we do regularly find are the carcasses of rodents which have been caught by the birds and eaten and their remains dropped at the foot of the towers. Many

**'NTCH's personnel report that they never see any dead birds around the towers. Literally, *none*.'**

there. It is also not clear why birds would fly into towers of that height but not buildings of similar height.

In any case, what is clear is that if there is a problem at all — and that remains an open question in our minds — the problem is limited to very tall structures. Towers of 300 feet or less categorically do not have an adverse impact on birds, and therefore no remedial measures or pre-screening of such towers for bird impact is called for.

It may also be that bird problems are limited to particular regions of the country or particular flyways that migratory birds use. If the facts bear that out, the remedy should be targeted only at those particular areas where the problem exists. Tower construction in parts of the country with little birdlife, no demonstrated problems or no migratory bird paths should not be impaired or delayed by measures that only apply in other regions.

**Marcia Pradines**  
Acting Chief  
U.S. Fish and Wildlife Service  
Division of Migratory Bird Management:

The service appreciates the opportunity to continue working with the FCC, a relationship that was spurred by a large single-night kill of up to 10,000 Lapland Longspurs and other birds at four adjacent communication towers and a nearby, lighted outbuilding near

(continued on page 8)

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# BIRDS

(continued from page 6)

Syracuse, Kan., in February 1998. ...

The service now protects and manages 1,007 migratory birds. Each time a protected bird strikes a communication tower and is killed or injured, the collision represents an unpermitted "take" under the Migratory Bird Treaty Act. ... While yet to be validated in wild breeding birds in North America, radiation from

# NEWS

retrieved from a Baltimore, Md., radio tower in 1948. Later, Mayfield (1967) attempted to estimate nationwide bird-tower-collision mortality. During the 1970s, the service's Bureau of Sports Fisheries and Wildlife raised upward the previous mortality estimates of Mayfield (1967) where Banks (1979) then estimated average annual mortality at 1.25 million birds/yr. This represented the best and most scientifically valid estimate of tower mortality at the time.

To update Banks' FWS mortality figure, Evans (1998) and the service (Manville 2001a, 2001b, 2005) adjusted the Banks estimate to account for increasing numbers of towers since 1979, resulting in the service's current estimate of 4 [million] to 5 million birds killed/yr. at all U.S. towers. ...

We specifically recommend the following:

- Avoid use of any L-810 steady-burning red lights on new towers being constructed, towers whose broadcast licenses expire and must be re-issued, towers being replaced and where L-810 side lights burn out (replace with strobe or blinking lights). Pending FAA's update to their current (2007) lighting circular — which we are advised will occur in the near future — all L-810 lights should be extinguished and all L-810 lights should be removed as part of any retrofit.
- Use minimum intensity, maximum "off"-phased red strobe (or strobe-like), white strobe or red blinking incandescent lights with no L-810 sidelights. Use of red or white color and use of strobe vs. blinking lights were not statistically different in several previously conducted studies (Gauthreaux and Belser 2006, Gehring et al. 2009).

**The impacts of communication towers on migratory birds have been reported in the U.S. scientific literature for more than half a century.**

cellular communication towers in Europe is being documented as a problem for nesting birds, resulting in reduced recruitment, poor chick survivorship and mortality around cellular communication towers where nesting is occurring (Balmori 2005, Balmori and Hallberg 2007, and Everaert and Bauwens 2007). ...

The impacts of communication towers on migratory birds have been reported in the U.S. scientific literature for more than half a century. Aronoff (1949) first reported several hundred migratory birds that were

- Where new towers are to be constructed, or where repair or upgrade of towers will result in increased tower height, where practical attempt to keep towers under 200 ft. AGL in height, be of monopole or lattice design, and contain no guy wires and lights. This represents the service's recommended "gold standard" and the environmentally preferred alternative for tower placement.

**Donald G. Everist, P.E.**

**Cohen, Dippell and Everist, P.C.**

*Professional Consulting Engineering Services:*

The undersigned is licensed as a Professional Engineer in the District of Columbia and has been in continuous employment with this firm or its predecessors for over 40 years. During these 40 years, he has been physically at numerous broadcast sites, often for weeks at a time. These site visits have been throughout the continental United States in various seasons and under different weather conditions. During this period, no birds were observed hitting towers or their guy wires. These towers ranged from several hundred feet in height to 2,000 feet. ...

In the 1960s, all AM, FM and TV transmitter sites were manned with personnel during times the station was in operation. This practice continued for many years and there is no recollection of reports of bird strikes.

While the above observations are not a scientific study, it does support a conclusion that if this does occur, it is not a widespread event.

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# SBE Supports an Advanced Skill Set

Society Sets Out a New Résumé Goal:  
Certified Broadcast Networking Engineer

BY JIM BERNIER

It's been almost 10 years since the SBE Certification Committee rolled out the Certified Broadcast Network Technologist level.

## SBENews

It has become one of the most popular certification levels — which is really no surprise to those of us on the Certification Committee who helped develop it. We saw the emergence of computer networking within broadcast facilities and sought to find a way to help broadcast engineers meet the new challenges associated with computer networking.

It was a two-pronged approach. First was the development of the certification level itself. We decided that it would be a standalone certification — an individual could make application and take the exam without holding any other SBE certification. An applicant would still need to be involved within the broadcast industry or allied fields in order to be eligible.

The second element was developed by Terry Baun, CPBE, AMD, CBNT.

Terry wrote and presented a class on broadcast networking and the implementation of both computer systems and their networking.

He presented this class many times in many cities in the United States. After the class, participants had the opportunity to sit for the CBNT exam. And most were able to pass, which should not have been too surprising since Terry was one of the authors of the CBNT exam question pool.

### ADVANCED SKILL SET

Much of the material covered in those early days is considered rudimentary by today's broadcast networking requirements.

As more equipment within a broadcast facility has integrated network interfaces for either control and/or media/data distribution, the networks themselves have become more complex.

The added concerns about network security for either the protection of assets or maintaining the integrity of the computer network itself have taken the skills required for a broadcast engineer



**Jim Bernier**

to maintain such systems beyond what CBNT was intended to review.

In early 2010 the SBE Certification Committee decided that a new certification level needed to be developed to meet this new challenge.

Certified Broadcast Networking Engineer is expected to be introduced for 2011. It will be equivalent to a five-year certification level, such as

tables, SAN, NAS, cloud computing and more, topics that are permeating the broadcast technical environment and that broadcast engineers are being required to understand.

It was decided not to offer this as a "specialist" certification level so that it could be standalone, as the current CBNT is, if the applicant so desired. Also, because we are hoping to appeal to an emerging segment of engineers within the broadcast community, the plan allows an IT professional working within broadcasting to achieve a certification level sponsored by SBE and become more deeply involved in the broadcast engineering aspects.

A test rollout of this new certification level is expected to be conducted this fall.

**'Certified Broadcast Networking Engineer'**  
will delve into deeper networking and IT issues such as firewalls, DNS, DHCP, VLANs, NAT, routing tables, SAN, NAS and cloud computing.

CBRE or CBTE. It is expected that applicants already will have the basic competencies tested with the CBNT exam.

Certified Broadcast Networking Engineer will delve into deeper networking and IT issues such as firewalls, DNS, DHCP, VLANs, NAT, routing

with a full introduction shortly thereafter.

*James T. Bernier Jr., CPBE, CBNT, is chairman of the SBE National Certification Committee. He is director of maintenance, design & engineering for Turner Entertainment Networks, TBS Inc., Atlanta.*

## MCLANE

(continued from page 4)

Extra Technical Editor Michael LeClair. Michael was particularly pungent about the speech by FCC Chairman Julius Genachowski. ("Mr. Genachowski is clearly brilliant and a pleasant enough speaker. I would not want to debate him. He has already studied everything and knows all the facts and answers. He will even tell you why your arguments are worthless. Before you have a chance to state them.")

Michael also wrote, "I had one exhibitor tell me this was their best show ever. It's a welcome change from the last two NABs, which at times had a grim feeling to them. Our industry is beginning to swing back from a down cycle and the good feelings are contagious."

"Need more proof? Here's my informal Happy Hour metric to consider. Starting around 5 p.m. every day, various exhibitors roll out ice barrels filled with cold beer. Trays of tasty appetizers soon follow. While most affairs are for invitees, no one is taking names, and if I were so inclined I could make a pretty good bar crawl, winding my way from the South Halls and back to the Hilton — where I would find a line of models giving away free shots of aged scotch. Not to mention a number of hospitality booths in full swing

by early evening.

"Shades of NAB past? I think so, and I'll raise my glass in a toast to that."

### THEMES

Bandwidth was a big topic — who has it; who wants it; whether there's enough of it to the car or mobile devices to threaten the business model of traditional broadcasters. Industry leaders speculate about where the FCC will go with its idea of voluntary spectrum auctions and how market tension between broadcasters and wireless companies will play out.

Radio is not directly involved with that right now; but any broadcaster needs to pay attention to this overarching theme because what happens to TV spectrum can happen to radio too.

Emergency alerting was on a lot of minds, for reasons obvious to anyone who must meet the CAP compliance deadline later this year. Vendors told me that although some stations have installed new gear (a quarter to a third of all stations, by various estimates), others — including several large groups — have yet to commit to a specific hardware solution.

It'll be interesting to see whether the EAS supply chain can support a rush of last-minute orders, and whether the FCC will extend the deadline for stations that have ordered gear. (I predict "yes" to both

questions but suggest you not wait til the last minute regardless.)

Another theme: Engineers at Cumulus and Citadel are wondering how the pending acquisition of Citadel will affect them; but execs find it hard to answer those questions even in private, because they're constrained from even talking to one another at upper levels until the acquisition is finalized.

On the product floor, equipment makers continue to reflect economic realities by offering more budget-savvy solutions. Simpler and more affordable offerings proliferate, particularly in consoles, FM transmitters and antennas, studio cabinetry and automation. We also continue to see a profusion of apps for controlling broadcast gear.

Meanwhile, managers of automation vendors whispered intensely among themselves about a current patent claim involving music on hard drive technology — one that could end up costing broadcasters money. Others scoffed, calling the claim specious.

And more products are coming out to help radio stations produce and stream video — pushing us further toward that time when all of us — magazines, radio, TV, social media, Facebook users — are all simply "multimedia content providers."

You'll read more about these topics in RW's coverage in this and subsequent issues.

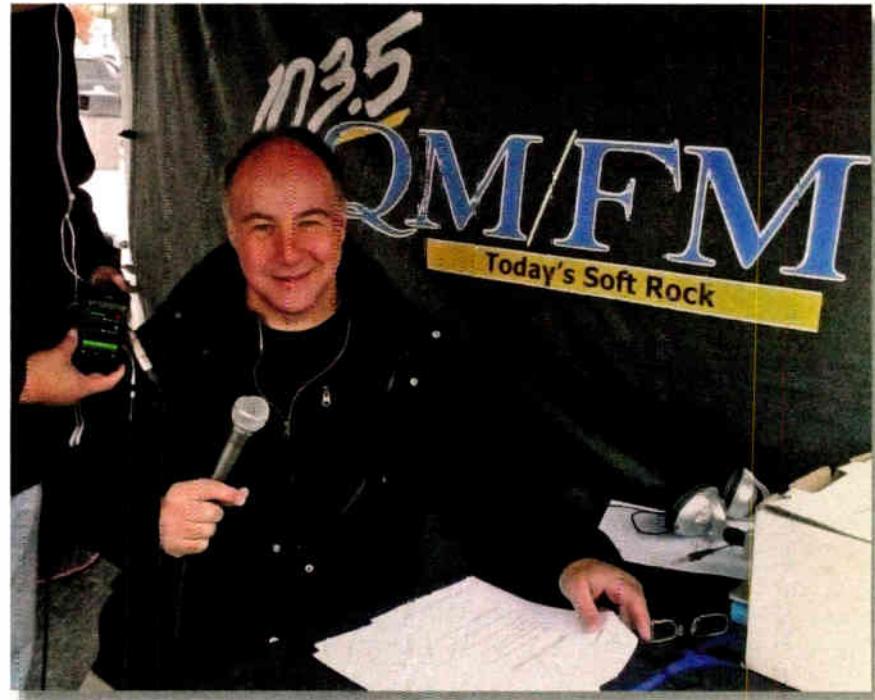
# Report-IT Enterprise Revolutionizes Newsgathering for Chum Radio

“

**Our experience has been amazing using Report-IT Live Enterprise Edition – it has revolutionized the way we approach live remote broadcasting.**

Chris Larke, Broadcast Engineer, CHUM Radio Vancouver

”



Radio Host Ray Grover uses Report-IT

Using Report-IT over wireless 3G networks or Wi-Fi for live remote broadcasts is a breeze and we no longer need to check for ISDN or POTS lines before a broadcast.

Our setup time for remotes has been reduced immensely and our announcers love using a wireless Live IP codec that is small enough to fit into your pocket. We can configure every setting from the studio end and all a reporter or announcer needs to do is open the app on their iPhone and connect at the touch of a single button.

We use Report-IT to broadcast our afternoon show live on-location, as well as sports interviews and reporting. Our sports reporters often use it to file reports via FTP and our producers can get these reports to air long before any other station.

We have a few advertising clients that like to voice their own spots but scheduling the client's time with studio time is often a challenge. The simple solution was to get the client to download the app for free and voice their spot using Report-IT. The quality of the built-in microphone on the iPhone 4 is excellent for this type of voice work and clients can FTP the 20kHz audio back to the studio at the touch of a button!

Chris Larke, Broadcast Engineer, CHUM Radio Vancouver



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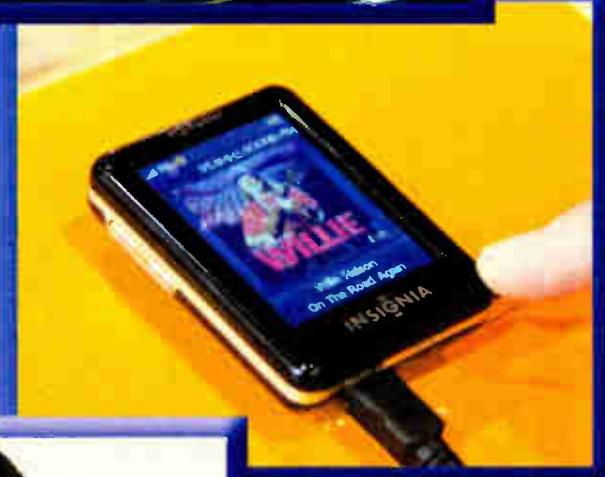
Radio was one of several special themed 'pits' on the exhibit floor. Here, Andy Giefer of Artistic Engines talks about Internet radio and activities of the technical committee of the Internet Media Device Alliance, including guidelines on how metadata is presented.



FCC Commissioner Meredith Attwell Baker appeared at NAB. She recently called for an overhaul in how the commission reviews communications mergers like NBC/Comcast and Sirius/XM.



The MyFord Touch System with HD Radio-enabled iTunes Tagging, above. The vehicle is a 2011 Ford Edge; the demo is tagging a song.



The Insignia HSD02 displays the Artist Experience feature in the HD Radio booth.



Beth Tepper, senior VP of integrated marketing and promotions for Premiere Radio Networks, described how the organization used video and telepresence services to help country stations participate remotely in coverage of the CMA Awards.

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Omnia.9  
BY LEIF CLAESON

## FEATURES

# Get to Know That New EAS Box

Also, a Tip to Help Your Pump or Generator Start Reliably

**T**om Lange of Tecs Plus LLC reminds us that the new CAP protocol deadline means upgrades of current EAS equipment. One popular model is the Sage 3644 Digital Endec. Here's a way to bench-test and configure a new 3644, getting to know it before it is installed at the station.

## WORKBENCH

by John Bisset

Read more Workbench articles online at [radioworld.com](http://radioworld.com)

Like all EAS systems, the old Sage 1822 and the new digital 3644 need to monitor assigned stations for EAS functions. The best solution is to test with the installed EAS receivers, but removing these from the site essentially would shut down the existing EAS system.

You can use inexpensive car stereos with good sensitivity and selectivity fed with a good FM antenna for this bench-testing phase.

Some car stereos provide line outputs but present a problem when the only outputs from the car stereo are the ones driving the speakers!

An alternative is the use of portable/boom box radios or component stereo receivers, but both would also need protection from overdriving the Sage unit.

The Sage manual stipulates that audio input levels on the monitor inputs must not exceed 2 VRMS, and 10V levels will destroy some of the components in the unit. An isolation device, such as the 60-480 Adjustable Line Output

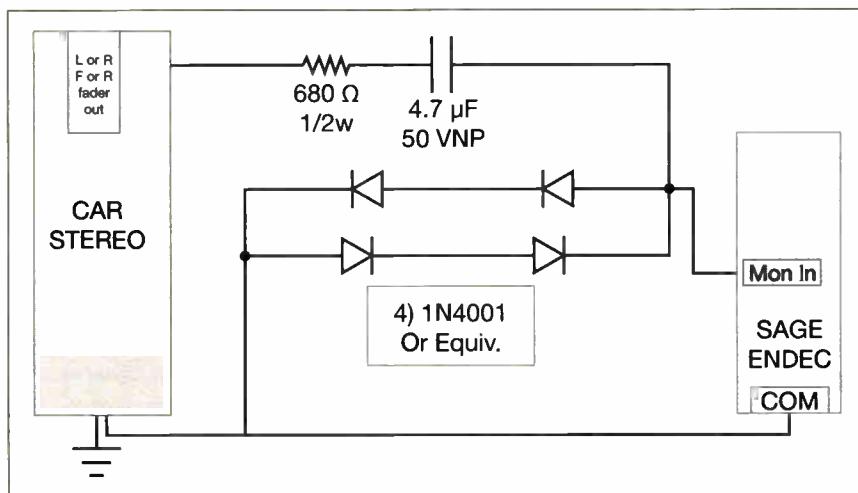


Fig. 1: A protection circuit for the Sage Endec.

Converter from MCM Electronics, is a good first step. In addition, the circuit featured here will protect the Sage inputs from excessive signals.

Ideally the car stereo provides RCA line outputs. However, if the MCM isolation unit is not being used, the 4.7  $\mu$ F non-polarized capacitors, shown in Fig. 1, will block the DC component from the car stereo's power amplifier.

Tom suggests feeding this circuit with audio from the receivers before connecting it to the EAS unit to ensure that the circuit is working properly. The best bet is to monitor with an oscilloscope and observe an approximate maximum +/- 1.2 V peak swing (2.4 V peak to peak) when the circuit is driven into clipping.

The exact value of this voltage will depend on the diodes and, to some degree, the ambient temperature. The 680 ohm resistors provide current limiting for these clipping diodes and the car stereo itself. Refer to the schematic shown in Fig. 1, as well as the completed protection circuit shown in Fig. 2.

In operation Sage recommends input levels between 0.75 V and 2 V. Follow the procedure outlined in the manual and monitor input voltage at all times while adjusting levels once the receivers are connected to the unit.

By keeping levels close to the lowest working level, you will keep clipping and distortion at a minimum. Tom has bench-tested the new model 3644 with a record-

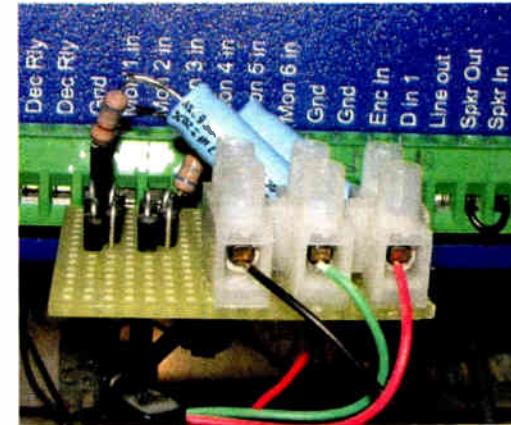


Fig. 2: The completed input protection circuit.

ed RMT and an off-air RWT with audio levels as low as 100 mV with success.

Tom provides technical services for the transmission equipment at WSHS(FM), a student-run Wisconsin Public Radio affiliate station at North High School, Sheboygan. He can be reached at [ecsplus@yahoo.com](mailto:ecsplus@yahoo.com).

Ethanol-based gasoline can go bad if stored for even a short period of time.

Harry Bingaman is director of engineering for Sunbury Broadcasting; he also does contract work. He has a generator for contract clients and has experienced bad fuel firsthand.

He might use his generator twice a year, so to prevent starting issues he has been using a fuel additive called Sta-Bil. But recently a firefighter friend told him about ToolFuel.

Fire departments use pumps and generators, some of which sit unused for long periods. ToolFuel, marketed specifically to fire and emergency services, contains no ethanol. The company promises "infinite shelf life."

The product is pricy and you may have to go to a fire equipment supplier to find it. But according to Harry's firefighting friend, ToolFuel is the way to go.

Sounds like a good investment if you need your gasoline-powered emergency pump or generator to start reliably. Learn more at [www.toolfuel.com](http://www.toolfuel.com).

Harry can be reached at [kc3qhhmb@aol.com](mailto:kc3qhhmb@aol.com).

Dennis L. Benjamin is a member of the Des Moines, Iowa, SBE chapter. He has been employed by SMARTS Broadcast Systems since early 2003; prior, he was a chief engineer. Among his many hobbies, Dennis is active in a number of Linux users' groups.

He notes that some engineers are having a hard time receiving LP1, LP2 and National Weather Service feeds for their EAS equipment. Recently he was looking for a way to listen to NWS and discovered the Weather Underground website, which provides links to NWS audio

(continued on page 16)

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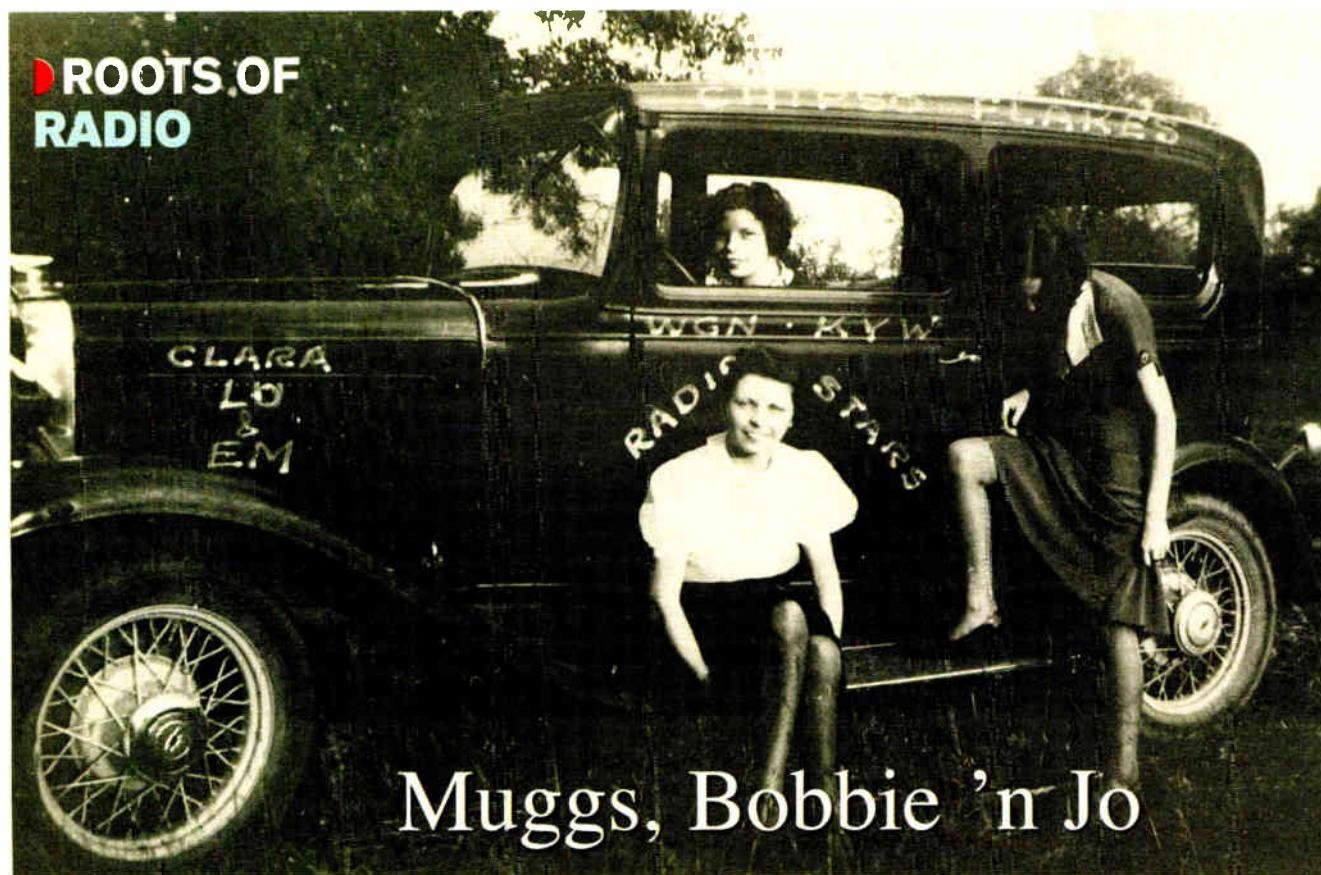
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## FEATURES



## Muggs, Bobbie 'n Jo

BY JOHN M. HOLT

You might think this is a photo of Clara, Lu and Em, the radio stars named on the side of the engine.

Actually, it shows three of my four aunts, Louise (Muggs to us), 19, in the car, Lorraine (Bobbie), 21, seated on the running board and Josephine (Jo), 23, standing — flappers all. I date the picture to spring of 1931.

The girls had nothing to do with the radio show "Clara, Lu 'n Em" but they were always getting into something, and likely marked the car up themselves. The family lived in southwest Michigan and would have listened to Chicago radio stations.

I found the photo in a family album and it prompted me to do some digging. For me, this image demonstrates the impact radio had by the early 1930s and how it was beginning to rate with movies for star status.

"Clara, Lu 'n Em" is considered to be the first radio soap opera. It started on WGN on June 16, 1930, and moved to NBC Blue (KYW) on Jan. 27, 1931, which is how I estimate the photo's date. Westinghouse moved KYW from Chicago to Philadelphia in 1934.

The program aired evenings until Feb. 15, 1932, when it moved to 10:15 a.m. — and set the precedent of daytime serials for women sponsored by soap companies.

Colgate-Palmolive Super Suds, a dishwashing soap, was the sponsor when it moved to daytime on NBC Blue; some references say Colgate-Palmolive

sponsored it even earlier. Chipso Flakes (see the car's roof) was a Procter and Gamble product for washing clothes in machines. It may have been a sponsor prior to 1932, though I find no references to that.

Procter and Gamble became the biggest sponsor of soap operas, but Colgate-Palmolive is thought to be the first. Prior to "Clara, Lu 'n Em" moving to the daytime slot, cooking and household hints programs dominated the limited daytime schedule on network radio, according to the website Old-Time Radio.

"Clara, Lu 'n Em" also is thought to be the first show to run a contest. You could send in two Super Suds 10 cent box tops, or one 20 cent top, and hope to win a new Packard automobile worth \$1,000. The Encyclopedia of Old-Time Radio dates the first premium to 1933, when you could mail in a box top and receive a spoon from the 1933 Chicago World's Fair. "Clara, Lu 'n Em" World's Fair spoons are available on eBay today.

"Clara, Lu 'n Em" was developed in 1925 as a skit by sorority sisters at Northwestern, Louise Starkey, Isobel

## WORKBENCH

(continued from page 14)

feeds. See [www.wunderground.com/wxradio/index.html](http://www.wunderground.com/wxradio/index.html)

Dennis was impressed with the listings of NWS for every state.

Then a thought crossed his mind that may help stations having a rough time receiving their assigned LP1 or LP2 or even NWS via scanner or programmed standard weather radio. Why not about assign a low-resource computer to pick up a simple Web stream provided by NWS or your LP1 or LP2?

You can do this in Linux, Windows, Mac or even UNIX. You get to recycle an older computer; even a netbook could be dedicated to such a service. All you need is an Internet connection and the ability

NOAA Weather Radio					
Total Stations: 1,8 Total Listener: 97					
State	City	CallSign	Frequency	Source	Listeners
AK	Barrow	KPBM	15.000	NWS	1
AK	Nome	WVNO	15.000	NWS	1
AZ	Ft. Huachuca	KFEL	14.000	Weather	1
AZ	Flagstaff	KAFZ	14.000	Weather	1
AZ	Globe	KAZG	14.000	Weather	1
AZ	Prescott	KAZP	14.000	Weather	1
CA	Alameda	KADN	14.000	Weather	1
CA	Los Angeles	KALW	14.000	Weather	1
CA	Long Beach	KALB	14.000	Weather	1
CA	Palo Alto	KAPL	14.000	Weather	1
CA	San Francisco	KAFB	14.000	Weather	1
CA	Santa Barbara	KASB	14.000	Weather	1
CA	San Jose	KASJ	14.000	Weather	1
CA	San Luis Obispo	KALO	14.000	Weather	1
CA	San Pedro	KASD	14.000	Weather	1
CA	San Simeon	KASX	14.000	Weather	1
CA	Stockton	KASR	14.000	Weather	1
CA	Visalia	KAVI	14.000	Weather	1
CA	Yakima	KAYK	14.000	Weather	1
CO	Boulder	KBOU	14.000	Weather	1
CO	Denver	KDNF	14.000	Weather	1
CO	Fort Collins	KFCO	14.000	Weather	1
CO	Greeley	KGRY	14.000	Weather	1
CO	Loveland	KLOV	14.000	Weather	1
CO	Montrose	KMRO	14.000	Weather	1
CO	Rocky Ford	KRFY	14.000	Weather	1
CO	Wheat Ridge	KWRG	14.000	Weather	1
DE	Wilmington	KWIL	14.000	Weather	1
FL	Jacksonville	KJAX	14.000	Weather	1
FL	Melbourne	KMBR	14.000	Weather	1
FL	Tampa	KTPA	14.000	Weather	1
FL	Tallahassee	KTFS	14.000	Weather	1
FL	West Palm Beach	KWPB	14.000	Weather	1
GA	Atlanta	KATL	14.000	Weather	1
GA	Augusta	KAGA	14.000	Weather	1
GA	Athens	KATH	14.000	Weather	1
GA	Decatur	KDCR	14.000	Weather	1
GA	Hartford	KHFD	14.000	Weather	1
GA	Kennesaw	KKNS	14.000	Weather	1
GA	Lawrenceville	KLAW	14.000	Weather	1
GA	Marietta	KMTR	14.000	Weather	1
GA	McAllister	KMCF	14.000	Weather	1
GA	Midway	KMDW	14.000	Weather	1
GA	North Fulton	KNFX	14.000	Weather	1
GA	Norcross	KNCR	14.000	Weather	1
GA	South Fulton	KSFY	14.000	Weather	1
GA	Stone Mountain	KSMC	14.000	Weather	1
GA	Woodstock	KWDY	14.000	Weather	1
HI	Honolulu	KHOU	14.000	Weather	1
IL	Chicago	KCHI	14.000	Weather	1
IL	Springfield	KSPN	14.000	Weather	1
IN	Indianapolis	KIND	14.000	Weather	1
IN	Terre Haute	KTHZ	14.000	Weather	1
KS	Topeka	KTKA	14.000	Weather	1
LA	Baton Rouge	KBRG	14.000	Weather	1
LA	New Orleans	KNOE	14.000	Weather	1
LA	Shreveport	KSHV	14.000	Weather	1
MD	Baltimore	KBAL	14.000	Weather	1
MD	Washington	KWBZ	14.000	Weather	1
MI	Ann Arbor	KANN	14.000	Weather	1
MI	Detroit	KDET	14.000	Weather	1
MI	Flint	KFLN	14.000	Weather	1
MI	Grand Rapids	KGRD	14.000	Weather	1
MI	Kalamazoo	KKZM	14.000	Weather	1
MI	Lansing	KLNG	14.000	Weather	1
MI	Marquette	KMKT	14.000	Weather	1
MI	Michigan City	KMCY	14.000	Weather	1
MI	Midland	KMLD	14.000	Weather	1
MI	Muskegon	KMUS	14.000	Weather	1
MI	Port Huron	KPHR	14.000	Weather	1
MI	South Bend	KSBN	14.000	Weather	1
MI	Whitefish Point	KWFP	14.000	Weather	1
MI	Youngstown	KYNG	14.000	Weather	1
MO	Kansas City	KKCI	14.000	Weather	1
MO	St. Louis	KSTL	14.000	Weather	1
MS	Jackson	KJCN	14.000	Weather	1
NC	Charlotte	KCLT	14.000	Weather	1
NC	Raleigh	KRLG	14.000	Weather	1
NC	Winston-Salem	KWSL	14.000	Weather	1
ND	Grand Forks	KGRD	14.000	Weather	1
NE	Omaha	KOMA	14.000	Weather	1
OK	Oklahoma City	KOKC	14.000	Weather	1
PA	Philadelphia	KPDI	14.000	Weather	1
SD	Sioux City	KSCY	14.000	Weather	1
SD	Sioux Falls	KSFY	14.000	Weather	1
SD	Yankton	KYAN	14.000	Weather	1
TN	Nashville	KNTN	14.000	Weather	1
TX	Amarillo	KAMR	14.000	Weather	1
TX	El Paso	KEPN	14.000	Weather	1
TX	Houston	KHOU	14.000	Weather	1
TX	San Antonio	KSAT	14.000	Weather	1
UT	Utah	KUTA	14.000	Weather	1
VA	Arlington	KARL	14.000	Weather	1
VA	Richmond	KRCH	14.000	Weather	1
WA	Seattle	KSKA	14.000	Weather	1
WA	Spokane	KSPN	14.000	Weather	1
WA	Tacoma	KTCM	14.000	Weather	1
WA	Walla Walla	KWWA	14.000	Weather	1
WI	Milwaukee	KMIL	14.000	Weather	1
WV	Morgantown	KMGR	14.000	Weather	1
WY	Cheyenne	KCHY	14.000	Weather	1

Fig. 3: The Weather Underground website provides links to NWS audio feeds.

Carothers and Helen King. When the three couldn't find jobs during the Depression they took the skit to WGN in 1930.

The show came to an end in 1936 when Isobel Carothers died from pneumonia at the age of 32. The others decided not to continue, though they revived it on CBS in 1942 with another former sorority sister, Harriet Allyn.

**My aunts, flappers all, were always getting into something.**

It didn't last long. Allyn went with the show into syndication with another Chicago radio personality, Fran Allison, but the 1945 effort didn't thrive either.

A sad note is that within a few months of Isobel Carothers' death, her brother Wallace Carothers committed suicide by drinking a concoction of lemon juice and potassium cyanide. Wallace was a chemist for Dupont who had developed neoprene in 1930 and nylon in 1934. What else might he have come up with we'll never know.

You can hear audio of "Clara, Lu 'n Em" at [www.archive.org/details/ClaraLuEm](http://www.archive.org/details/ClaraLuEm).

Information for this article came from "On the Air: The Encyclopedia of Old-Time Radio" by John Dunning, Oxford University Press, 1998, and the websites [nnlb.com](http://nnlb.com), [www.old-time.com](http://www.old-time.com) and Wikipedia.

*The author is director of engineering and operations for WAMU(FM) at American University in Washington.*

to schedule an auto-start of a stream playback from the NWS.

The audio usually would be unbalanced (depending on the audio card configuration), but it would be a rebroadcast of the same NWS feed for that location (some may vary depending on state).

Thoughts and further suggestions can be addressed to [dennisbenjamin@gmail.com](mailto:dennisbenjamin@gmail.com) or to Workbench at our usual address: [johnpbisset@gmail.com](mailto:johnpbisset@gmail.com).

*John Bisset marked his 40th year in radio in broadcasting recently. He works for Tielene Technology and is a past recipient of the SBE's Educator of the Year Award. Reach him at [johnpbisset@gmail.com](mailto:johnpbisset@gmail.com) or (603) 472-5282. Fax to (603) 472-4944.*

*Submissions are encouraged and qualify for SBE recertification credit.*



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That's the Telos connection. And only Axia gets it. Axia: the console that talks Telos.



[axiaaudio.com](http://axiaaudio.com)

## FEATURES

# Constantine Brought a Smile to His Business

Vendors and Clients Recall a Man Who 'Crackled' With Humor and Energy

BY TOM VERNON

Art Constantine, a veteran of broadcast equipment marketing and sales, is remembered for his industry expertise, positive outlook and engaging sense of humor.

A motorcycle accident claimed the lives of Constantine, 64, and his wife Lisa Schub, 53. The accident occurred around 10:30 a.m. on Saturday March 19 at an intersection in southern New Jersey; according to the website PhillyBlurbs.com, their motorcycle collided with a New Jersey State Police cruiser responding to an accident.

Constantine is survived by children Gabe of Mt. Laurel, N.J., and Rachel of Philadelphia, and a sister, Judith Constantine, who lives in Tucson, Ariz. Younger brother Robert perished in a motorcycle accident years ago.

Constantine was vice president of sales and marketing for ATI Audio Inc.; Schub handled administrative duties of the company. Together, they ran the sales end of the business out of their West Berlin, N.J., home. Manufacturing is done in Nogales, Ariz.

Through the years Constantine worked for a number of other equipment manufacturers, including DaySequerra, Moseley Associates, APT, Fidelipac and Modulation Sciences. He also worked in trade publishing, selling advertising for Radio World and Radio Guide.

Prior to joining ATI Constantine worked as a sales executive for Musicam USA where, to help sales, he developed a series of seminars to introduce customers to codec technology and demonstrate that they were capable of transmitting and receiving high-quality audio.

## EARLY REMOTE

Constantine had a lifelong interest in radio. He and a childhood friend would communicate through telephone wires run between their houses through the sewers.

His formal training in radio began while he was attending Villanova University near Philadelphia. There he worked as a DJ at college station WXVU. He orchestrated one of the station's first remote broadcasts, reportedly stringing together every mic cable he could find to reach the roof of a parking garage where a local band was playing.

From the mid-1960s to the late '70s, he ran his own business doing record hops in the Villanova area. At the time

he was also doing live recordings of remotes for area radio stations and DJs. He worked with iconic personality Jerry Blavat and other announcers from WFIL and WIBG. Constantine fondly recalled the time WIBG brought the Beatles to Philly for a live concert; he did the recording and in the process met John Lennon.

Clive O'Brien of Australian firm EAV Technology Pty. Ltd. remembers traits that made Constantine successful.

"Art was meticulous with his sales presentations, and had various versions to suit different audiences. They were all word-for-word perfect, and he would

study the reactions of visitors to get it right. I would often sit with him while he rehearsed, asking him the sorts of

## FRIENDS AND FAMILY

News of the deaths of Art Constantine and Lisa Schub prompted numerous postings to Radio World's blog. Read them at [www.rwonline.com/blog/115834](http://www.rwonline.com/blog/115834).

### Excerpts:

The radio industry is indeed small, but in it are some lovely, friendly, industrious and frankly funny people, and Art was one of those.

He hosted a tour of Moseley sales reps to Mexico in the '80s. At the end of the trip, he stood at the door to the plane to welcome each of us aboard. He was wearing a T-shirt printed with the image of a pilot's uniform and a beanie cap with a propeller on top. Then the real pilot arrived, and he was NOT amused! That was the Art that we will all miss.

Lisa was a rare and wonderful human being. She was intelligent, loved road trips, giggled when she laughed and was always interested in a good discussion or telling a story. She went out of her way to make friends and keep them close.

I vividly remember a day at Moseley when Art turned up for work in a plaid jacket that would have embarrassed any pizza parlor employee and which garnered endless ribbing ... so, being Art, of course he turned it inside out and wore it that way out the door to lunch.



questions he might receive from potential buyers."

David Day, president of DaySequerra, which at the time owned ATI, hired Constantine as director of sales for ATI.

"Art was tremendously positive in his outlook," Day said. "Along with that was a determination to close the deal, and he would not take no for an answer. He was always incisive, witty and on-point."

"Others sometimes look at trade shows with a sense of apprehension. But not Art. He looked forward to them the way a kid looks forward to Christmas morning."

Many who visited those shows returned his enthusiasm and recalled Constantine's booth as one of their favorite stops. That sentiment was typified by longtime friend Dick Burden, president of Burden Associates. "Whatever booth Art was at was always one of my first stops at the show. No matter how crazy or busy it was, he always had time to talk, and I think everyone who saw him left with

(continued on page 22)



ATI Audio remembered Art Constantine and Lisa Schub in its booth at this year's NAB Show.



# WHY MORE BROADCASTERS are choosing Nautel

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# CONSTANTINE

(continued from page 20)

a smile on their face."

Constantine went beyond the bounds of his job description to help customers. Jim Peck, regional sales manager at SCMS and Radio World photographer, recalls, "I needed a replacement phenolic terminal strip for an ATI distribution amp that had been out of production for years. Art dug around the old stock till he finally found one and sent it to me free of charge."

Constantine, friends say, took the

time to learn how the technology worked so he could better support customers. He enjoyed explaining how things work and in some ways was as much an educator as a salesman.

## GENUINELY FUNNY

However, what colleagues mention most is his irrepressible sense of humor.

"He was a genuinely funny guy," said Judith Gross, former editor of Radio World. "Art just had a unique and humorous way of looking at the world. He could walk up to a complete stranger and 30 seconds later they'd be

laughing together about something."

New Jersey-based cart machine manufacturer Fidelipac capitalized on his funny side with a series of print ads that appeared in the 1980s. One pictured Constantine wearing lederhosen to commemorate a company trip to Germany, carrying a large stack of cart machines. The campaign was helped by Constantine's distinctive appearance, likened by some to Gene Shalit or Avery Schreiber.

In a Radio World Q&A article about tape cartridges in 1983, Constantine wrote, "Although the person in the ads

bears a strong resemblance to me, I have no recollection of posing for them. I was rolled up in a bag while asleep, and drugged."

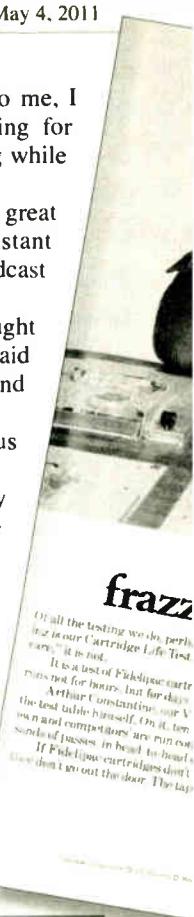
The ad campaign was a great success and gave him instant face recognition in the broadcast industry.

"For the longest time, I thought Constantine was Fidelipac," said Tim Schwieger, president and CEO of BSW.

Occasionally, his humorous side got Art into trouble.

Dave Chancey of Moseley Associates recounted a phone call from a customer who was interested in a PCL-606/C STL system and asked Constantine for a religious discount.

"Art asked him what religion. The customer replied Methodist. Art joked, 'We give religious discounts to everyone but Methodists!'



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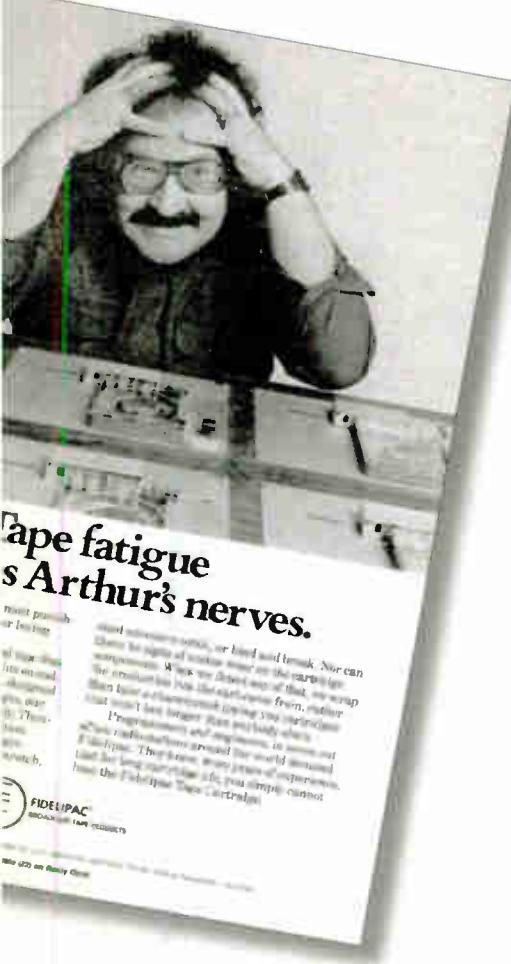
**Others sometimes look at trade shows with a sense of apprehension. But not Art. He looked forward to them the way a kid looks forward to Christmas morning.**

— David Day

"In actuality we ran just about all sales through distribution. But the customer was furious, hung up and called the CEO. Art had to explain the story in detail to a grim-faced boss. And he still had that smirk on his face throughout the conversation."

He was well-known in broadcast circles internationally as well. O'Brien recalls a trip Constantine made to Sydney for a SMPTE trade show.

"We were meeting him for a harbor tour. Art was quickly spotted as the gentleman with a broad black mustache, longish black hair, a bright multi-colored shirt and colored pants that rang out 'American tourist.' To complete the picture, we gave him a broad-rim Akubra hat, and he was the talk of the tour."



## MARKETPLACE

**BIG TOWERS:** Tower Consultants Inc. and Hoenninger Engineering LLC, both with experience in tall towers, recently they'll be working together more closely. Tom Hoenninger, the former vice president of operations and chief engineer at Stainless LLC and now owner of Hoenninger Engineering, will work with TCI to offer a wider range of tower engineering capacity and expertise, the companies said. Hoenninger Engineering provides professional structural engineering services. Tower Consultants Inc. is a tower engineering and turnkey project management company. It was founded in 2005

by Jean-Alain Lecordier, a former VP of engineering with Kline Towers, and Greg Kelish, former VP of operations at Spectrasite Broadcast Group. It has worked on approximately 750 projects since.

**DENVER RF:** RF Specialties of Texas opened a Denver office run by broadcast engineer Jim Schoedler. Owner Dan Sessler said the fourth office in the Texas division of RF Specialties will represent the company and its products throughout the Midwest. Schoedler most recently was chief technology officer for Rocky Mountain PBS, a statewide public television network.



Jim Schoedler

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### WHAT THEY LOVED

Constantine had many interests. He and Schub traveled extensively, most recently to Spain and Italy. In earlier years he rented a motorcycle and toured extensively in the Southwest. He enjoyed camping and horseback riding.

In the early 1980s he developed an interest in flying, pursued it until he earned his pilot's license and bought a Piper Warrior. He would take people for sightseeing flights and rented his plane to others who could not afford to purchase an aircraft.

"Art loved geeky stuff," Gross said, "and he liked to understand how things work, so for him it was just a natural thing to do."

Since his teenage years, he had a keen interest in motorcycles. Friends said he loved to ride and enjoyed long road trips with Lisa. One of their favorite destinations was Boston, which is within weekend driving range of New Jersey. He owned a Honda Gold Wing and had it customized with a sound system, electrically-heated seats and an intercom system so driver and passenger could communicate.

"They loved their motorcycle and the freedom it provided for them," Schub's cousin Susan Derrickson posted in a comment to Radio World's blog. "She too was a light in this world. They found each other as kindred spirits who loved the great outdoors. ... Taken from us way too early, but doing what they loved."

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# A Water Tower With No Adverse Effect

Our Intrepid Technical Consultant Solves an AM Detuning Problem

BY MARK PERSONS

There I was, minding my own business, trying to stay out of trouble by keeping radio stations on the air. Then it happened: The phone rang.

## TECHTIPS

It was the owner of KBUN Radio in Bemidji, Minn., asking if it was OK for the city to build a water tower just 600 feet away from his 1450 kHz AM tower.

"Let's see now," I said, "600 feet at 1450 kHz, that's just under one wavelength!" Ouch. "How tall is this water tower going to be?"

"They say it is going to be about 165 feet in height," he answered.

"That's a quarter-wavelength at 1450. It is beginning to sound like an AM directional antenna," I said.

### WHAT TO DO

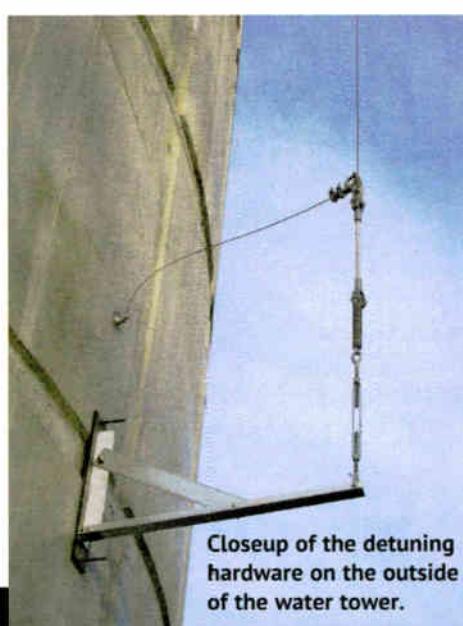
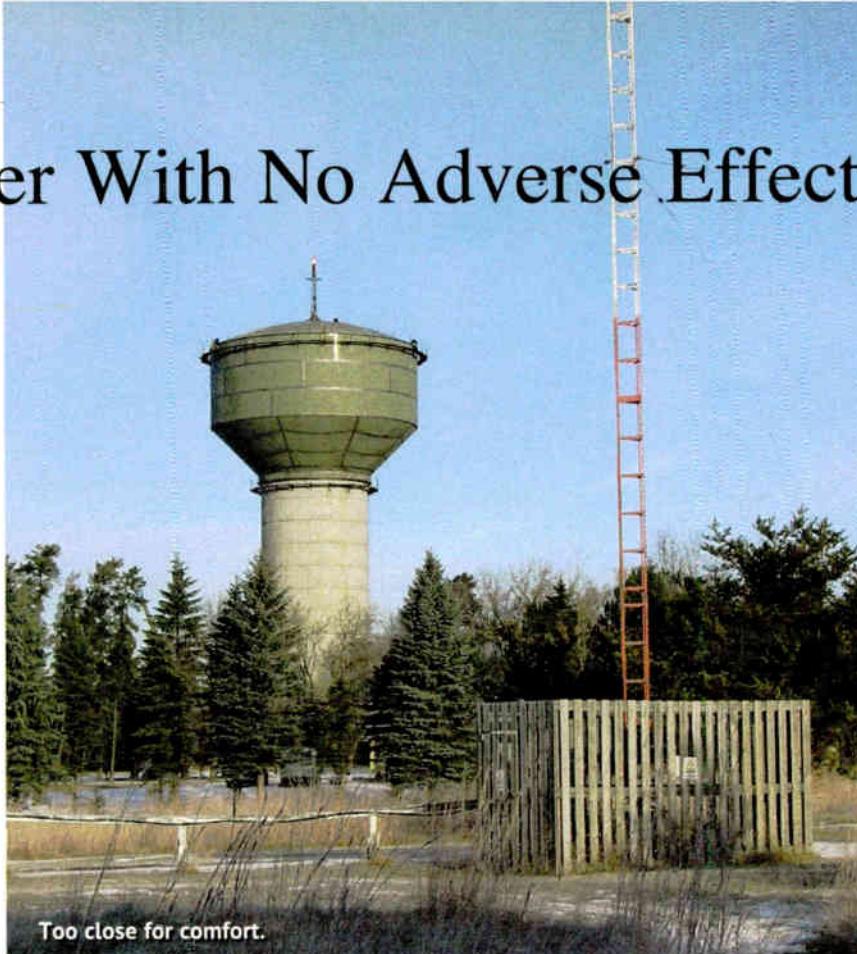
First let's look at FCC Rule 73.1692, which I mentioned in an RW article a few months back:

*"Where a broadcast licensee or permittee proposes to mount a broadcast antenna on an AM station tower, or where construction is proposed within 0.8 km of an AM non-directional tower or within 3.2 km of an AM directional station, the broadcast licensee or permittee is responsible for ensuring that the construction does not adversely affect the AM station."*

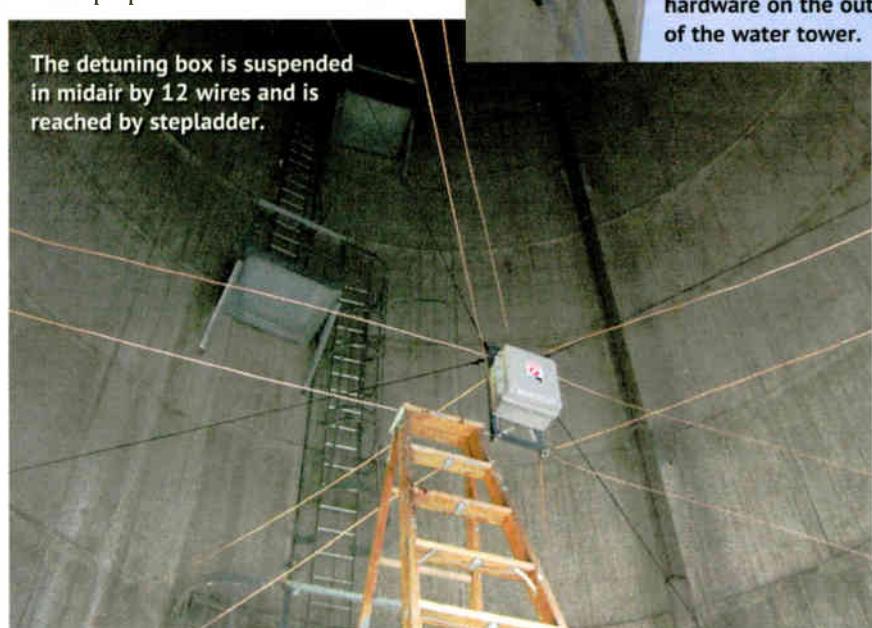
So the process began. Meeting at an architect's office. Meeting at city offices. Meeting with the radio station owner.

The proposed water tower had a

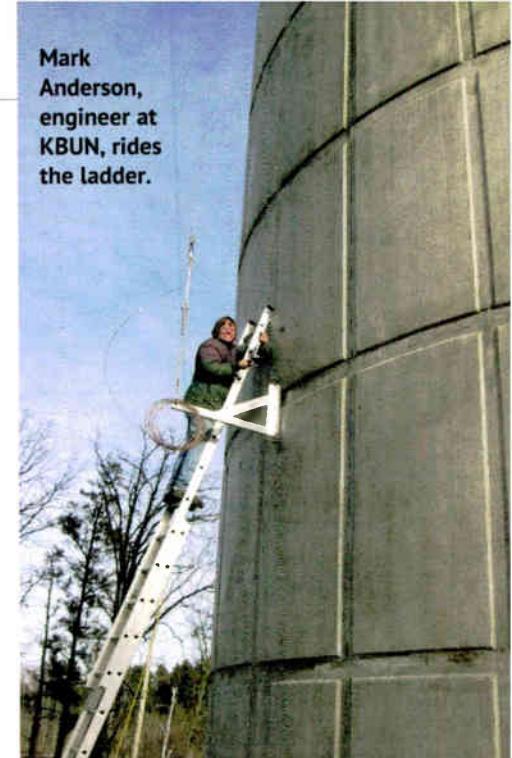
The detuning box is suspended in midair by 12 wires and is reached by stepladder.



Closeup of the detuning hardware on the outside of the water tower.



Mark Anderson, engineer at KBUN, rides the ladder.



The circuit presents a high RF impedance at the frequency of interest and therefore little or no current flows to ground at that frequency. If there was current flow, the structure would be a re-radiator.

When I detune a tower, I put an AM field intensity meter about 100 feet from the tower to be detuned. It is oriented to pick up signal from the tower while the meter's loop is set to null the direct signal from the broadcast station by being at 90 degrees from it. Most of what I see on the meter is from the re-radiator. I adjust the variable capacitor for a minimum reading on the field intensity meter, which is usually about a 20 dB null in the reading. To make this procedure easier, I run a metering cable from the field intensity meter DC meter output to a multi-meter where I am adjusting the variable capacitor.

Rough measurements showed the water tower carried enough RF current to make it and the radio tower a directional antenna, altering the field intensity to the north and south by about 20 percent. After equipment installation and tuning, the water tower was nicely detuned to become, in essence, invisible to the 1450 kHz AM radio frequency.

If any communications antennas are added to the water tower in the future, the detuning system will need to be retuned to keep the water tower structure on frequency.

You have heard of the Home Depot, where building supplies are available. Well, there is going to be a similar store chain opening soon that will specialize in resistors. Wire wound resistors, carbon composition resistors, surface mount resistors. You name it, they will have it. The store name is going to be the Ohm Depot!

Mark Persons WØMH 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](http://www.mwpersons.com).

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Photo by Kovacs/Dawley

Dom Bordonaro of Cox Media Group Connecticut chaired a session on the future of radio broadcasting. Topics included the next generation of radio content generation and delivery; migration of radio call-in shows to wideband audio; and the impact of consumer devices on radio content development and engineering.

Myat Sales Administrator Bea Porta presents the company's new 1-5/8-inch Coax Switch.

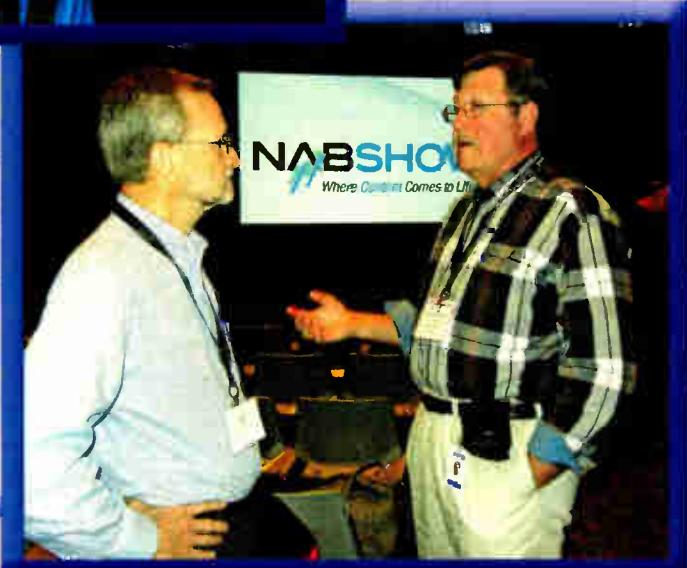


Photo by Jim Peck



Broadcast Engineering Conference attendees file out of the conference hall on Sunday.

Photo by Kovacs/Dawley



NAB Show attendance remains off its historic highs; but organizers say turnout was up 5% over last year, to about 92,700, of which about 28% were international.



Photo by Jim Peck

Bob Gehman, left, of Georgia Public Broadcasting and Roy Davis of Mississippi Public Broadcasting chat after a BEC presentation.

With so much attention focused on radio's future in the dashboard, it only makes sense that NPR Labs brought one along. Research Assistant Mike Eskenazi, left, and Manager of Strategic Technology Applications Rich Rarey highlighted the lab's work in accessible technology. The dual-view dash simultaneously shows the driver a GPS navigation screen, while the passenger sees a captioned radio display.



© NAB Show

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# Harris 3DX-50 Boosts AM Station

Bakersfield Station's Ratings Rise With Clearer and Stronger Signal

## USERREPORT

BY RUSTY BURCHFIELD  
Corporate Director of Engineering  
American General Media,  
**KERN(AM)**

**BAKERSFIELD, CALIF.** — The city of Wasco sits at the base of the San Joaquin Valley in south central California, a small community in a relatively flat and dry area of the state. The evidence of dust blowing through the region settles at the tower site of KERN(AM), a 50 kW station serving the Bakersfield metropolitan area.

Bakersfield, the largest city in the region, lies roughly 25 miles to the southeast and is home to the KERN studio. Owned by American General Media (AGM), KERN is tuned to 1180 kHz on the local dial.

The station had long been underperforming due to operation well below its allotted power level. AGM purchased the station in 2005 with the intention of rehabilitating its technical infrastructure, understanding the great potential of its signal strength.

The poor signal quality had much to do with a nearly 20-year-old transmitter that was broadcasting well under the station's 50 kW allotment. A thorough evaluation period led us to the Harris



3DX-50, a 50 kW solid-state AM transmitter, to help bring the station to full power while improving audio quality and on-air reliability.

### NEW SIGNAL

SCMS Inc. served as the supplier, recommending the transmitter for evaluation and assisting the engineering team of myself, the late Elliot Klein and Terry Gaiser on-site during the

simple installation.

Once in the building, connections for electrical, RF, audio and remote control were established easily. Plumbing, filtering and NRSC measurements were completed and the station was on the air at full power within the week.

The station has risen to the challenge since turning on the transmitter, often landing at the top of the local ratings due in part to much-improved market

coverage. Listeners from as far north as Gilroy and as far south as Long Beach, both about 160 miles away in opposite directions, can receive the signal. There has been a sharp increase in callers for contests and talk shows. Listeners that could barely hear the station clearly or not receive it at all now report strong signal quality and seem appreciative of the improvements.

The transmitter itself is rock-solid. It has lived through many lightning storms and the consistently strong winds that put the San Joaquin Valley dust into motion — without the slightest hiccup.

Simple reporting features on the front-panel GUI show consistent air temperatures and current draw from the PA modules. Internal cooling features keep consistent ambient temperatures even when the building's HVAC system goes down — critical for reliable operation in this climate.

The GUI is straightforward and simple to comprehend, even ideal for nontechnical personnel checking on the transmitter. Staff is alerted via alarm if tolerance levels are exceeded as defined over the GUI, making for timely responses to potential trouble. The 3DX-50 has interfaced well with our Burk ARC Plus system.

Harris put together a weekly and monthly maintenance plan to ensure the transmitter remains in top condition, and supplied paperwork outlining daily meter reading and reporting figures to monitor. An internal auto-servicing feature — essentially an integrated software package — seems unique to anything I've seen on the market. The software generates occasional reports that provide additional data for peace of mind. I have found that the transmitter remains consistent by simply keeping the filters clean. It is very simple to maintain.

The transmitter includes a Harris Dexstar AM exciter with several built-in remote control features that provide data that helps to determine the operating environment of the transmitter. Other

(continued on page 38)

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### ABOUT BUYER'S GUIDE

Radio World publishes User Reports on products in various equipment classes throughout the year to help potential buyers understand why colleagues chose the equipment they did. A User Report is an unpaid testimonial by a user who has already purchased the gear. A Radio World Product Evaluation, by contrast, is a freelance article by a paid reviewer who typically receives a demo loaner. Do you have a story to tell? Write to [bmoess@nbmedia.com](mailto:bmoess@nbmedia.com).

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## BUYER'S GUIDE

# Goldilocks Transmitters Serve San Diego

## Lincoln Financial's KIFM and KBZT Find That Nautel NV20s Fit Just Right

### USER REPORT

**BY BILL EISENHAMER**

Chief Engineer

Lincoln Financial Media Co.  
of California

**SAN DIEGO** — In 2008 KBZT(FM) and KIFM(FM) were slated for their HD Radio installations. Having a couple of years under our belts with our third station, we thought we knew where we were headed. As it turned out, 2008 became a very interesting and complex year for our facilities.

We'd just finished a rushed but successful studio remodel and completed a studio move. Now we had to plan for our HD installations. To add insult to injury we were in the middle of rebuilding an AM tower that had come down during a storm at the end of 2004.

Squeak in a Class A station HD installation for KSOQ, and we had a handful.

**PLANS**

The planning began with the location.

The KBZT and KIFM transmitter site was nice but the room was small and space was limited. Each Class B station runs a TPO of 10 kW and each must maintain a full-power auxiliary transmitter. The power level created the main headache as the transmitter had to be sized to maintain this analog output level and produce the required power for the digital.

The year began with us considering a handful of transmitters that were either too large as a single box or too large when combined, essentially requiring four transmitters to replace two.

Mounds of drawing configurations piled up. April arrived and the NAB convention gave us an opportunity to see what some of these beasts looked like and what they did.

Wandering the NAB floor for a specific goal was interesting. The typical reacquaintance session occurred whilst looking at the various transmitters.

Our company had a meeting with Nautel to see their latest and greatest. Jeff Welton, Nautel sales manager for Central USA, told us about the new NV40 solid-state transmitter. Being the assistant at the time, I hung near the rear of the group to allow the others (decision makers) to ogle the NV40 closely.

As Jeff's presentation continued, I began to size up the box. Power-wise it was too much for our needs. Physically it was still a bit too large. Yet the presentation was intriguing. As it wound down I commented from the rear of the crowd,

"Cut that in half and I may buy one."

The year progressed, more plans were configured, and a decision had to be made. I received information regarding the new NV20 transmitter from Nautel. Because I was doing the drawings and

ahead of schedule from Nautel on Dec. 10 and had it on the air by Dec. 19. Now we turned our attention to the NV20s.

The old transmitters were removed on Dec. 22 and we took delivery of the new ones on Christmas Eve late in

our ability to diagnose and troubleshoot the untested network during this time.

The second transmitter aired on Jan. 29. Due to some interesting issues with the second transmitter it took until Feb. 13 to go on air in full FM + HD. As with any new product we experienced minor issues, but nothing that threatened the on-air performance. Bohorquez was there for the on-air debut; Marchand and the rest of the Nautel crew were at the



space planning, the dimensions were directed to me. Two NV20s were a perfect physical fit, plus the price was right.

I reported back to Nautel that if they could be delivered within our required time schedule, they would fit our needs perfectly.

As the year moved into the third quarter the drive to install ramped up. I found myself promoted to chief engineer. Now the project was fully in my hands, along with the AM tower construction and our Class A station HD Radio installation.

I called up Jeff to find out what we'd recently submitted for purchase and what our timeline was, because until my promotion, I hadn't been in the loop regarding final purchase once planning and drawings had been completed. Jeff gave me the rundown and I supplied the required information for the transmitters. As it turns out we also purchased a Nautel V1-D for the Class A station. The price was right, the size was right.

**LIKE CHAMPS**

Now the delivery had to be right. All the equipment was required on site no later than Dec. 31. We were assured that it would be, including the V1-D.

December 2008 became quite busy. The construction of the AM tower was in full swing. Storms were delaying everything.

We took delivery of the V1-D well

the afternoon. J.R. Rogers, director of technical services and IT manager for Lincoln Financial Media, and I sat waiting for the truck for nearly six hours in what had to be the coldest day in San Diego in years.

As typical with delivery companies, no tools to move the transmitters properly were available. By 4 p.m. we finally had the transmitters in place. The first two production models of the NV20 in the United States, serial numbers H103 and H104, sat in our transmitter room.

After a well-deserved weekend, we began installation of the transmitters. Working with e-mailed copies of a manual in progress, I had the first transmitter plumbed and running into a RF load on Dec. 31. Mind you it was FM-only, but it was running.

The second transmitter was plumbed and running, FM-only, into a load by the end of the second week of January 2009. We were ready to have Nautel come out and commission the boxes. I had great support from the Nautel technical staff and Scott Marchand, FM project leader. Any question was answered in a timely manner.

The first NV20 was on the air Jan. 28, 2009. One of Nautel's customer service technicians, Nelson Bohorquez, was on-site for commissioning.

J.R. and I both learned much about the nuances of creating the HD during this exercise. We also impressed Nelson on

ready. It was a big deal. I appreciate all the help from the staff.

Since installation, we have performed a number of software updates that were easy to perform, some of which were intermediate to final releases. A beta test site, if you will. Actually, a "reality" test site, as it turned out.

We monitored the transmitters closely and reported anything that may need attention. We gave suggestions.

In our curiosity we experimented on access to the Engine of one exciter. We clicked on the "wrong" answer and crashed the card. A timely repair from Nautel corrected the issue.

We experienced a loss of phase one night, as the local power company blew a fuse leading to the site. When I arrived, both transmitters were still on air and running at reduced power. The auxiliary transmitters were dead. I was shocked.

I love the Nautel AUI and remote accessibility; it is a great tool. With VPN and Web access, I can monitor the transmitters anywhere. The logging keeps me informed of any potential issues.

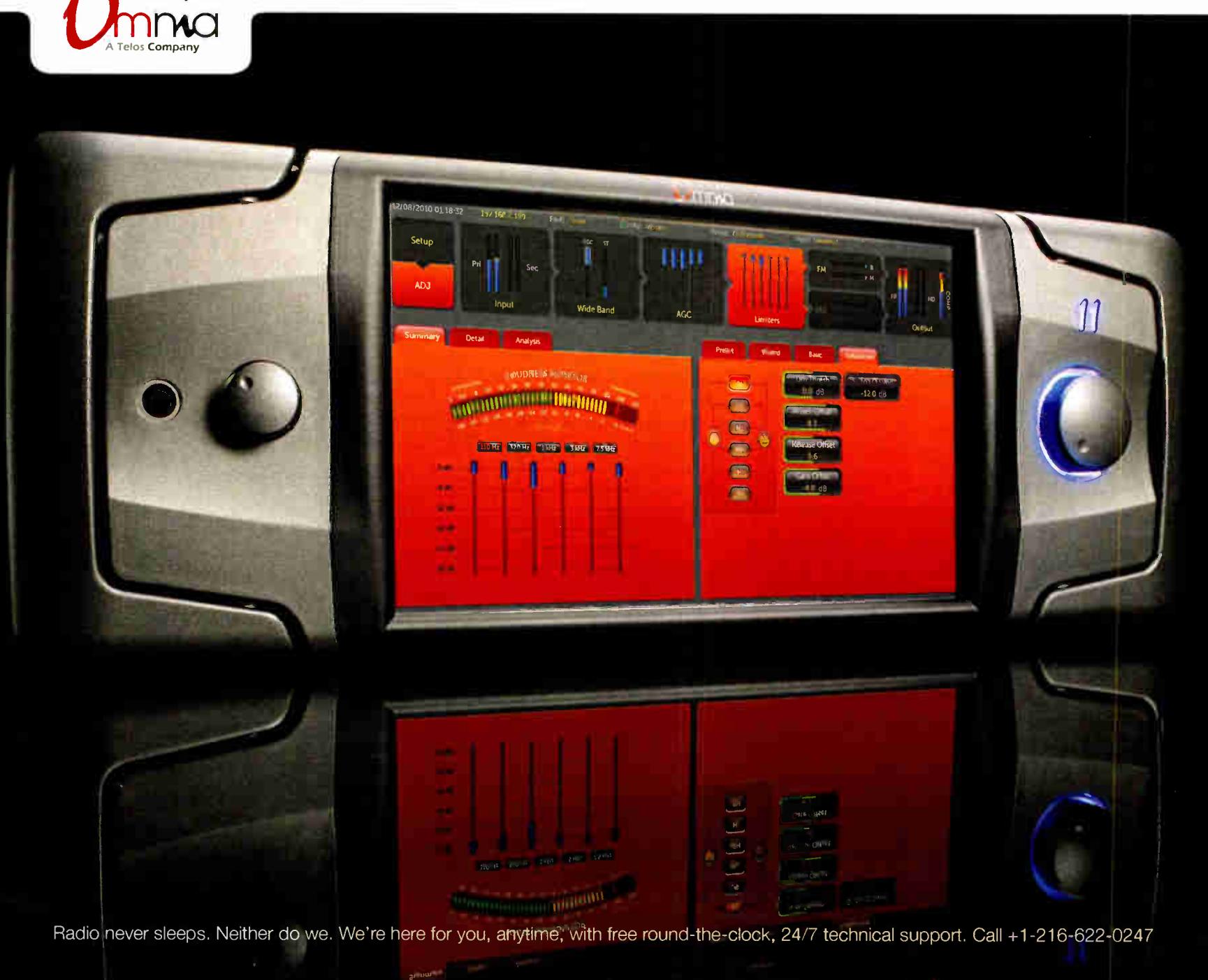
Two years later the Nautel NV20s are running like champs. We upgraded our HVAC to accommodate the heat load. We continue to monitor the transmitters. They work. Thanks for the support, Nautel.

**For information, contact Chuck Kelly at Nautel in Nova Scotia at (902) 823-2233 or visit [www.nautel.com](http://www.nautel.com).**

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## BUYER'S GUIDE

# Staradio Group Chooses BE STX LP

Broadcaster Is Located in the Seat of Transmitter Manufacturing

## ► USER REPORT

BY PHIL REILLY  
Chief Engineer  
Staradio Corp.

**QUINCY, ILL.** — Staradio Group is located in the seat of transmitter manufacturing country, Quincy, Ill. So when we went in search of a new low-power FM transmitter for our station in Diamond, we didn't have to go far.

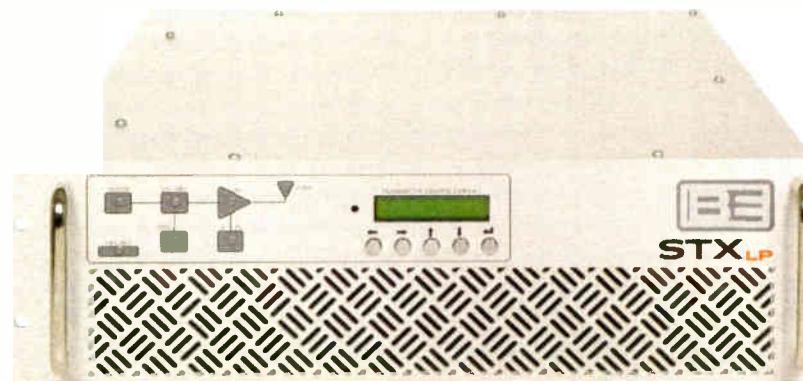
We checked out all the low-power FM transmitters on the market, and chose Broadcast Electronics' STX LP for our classic rocker WYKT(FM), which is licensed to nearby Wilmington, with the transmitter in Diamond.

The station had been due to get a new transmitter for some time. We had resorted back to an older tube 3 kW transmitter after a 2 kW solid-state FM purchased proved problematic. We were changing out tubes to the tune of \$1,500 every 12 to 15 months. But with the opportunity to move to a nearby cellular building on the same tower site as our existing transmitter building, our contract engineer, Don Kerouac with Midwest Broadcast Services, and I decided the time was right to move up to a new transmitter as well.

### CONSIDERATIONS

Transmitter size and cost topped our list of considerations. Don is a huge fan of BE transmitters, and I've had success with the company's studio automation and high-powered transmitter line.

We decided to take a closer look at BE's newest, the STX LP solid-state transmitter. At just 13 RUs, the 3 kW version was sized well below competing



I routinely log on to my computer and, using the STX LP's IP connection, check on readings.

models, important for our site. Our new landlord has a 12-by-20-foot building at the tower site that he rents out to various companies. We had just 8 x 3 feet to work with, and that had to hold our new transmitter plus backup transmitter. The STX LP 3kW and our backup 2.5 kW transmitter barely fit into the space.

It helped that the STX LP included an internal FM exciter and backup controller, another space- and budget-saver. I also liked the fact that this transmitter has remote control through IP connectivity. I manage eight stations for Staradio throughout Illinois and Missouri and I like to have online access to transmitter

readings and control at all times.

I didn't think twice about the STX LP being fairly new in the world of transmitters. I don't mind trying new products, as long as I know the manufacturer. Given our experience with BE, we were confident that we would get quality customer service when we needed it.

I ordered our STX LP 3 kW transmitter rack-mounted. When it arrived, I was impressed at how compact the system was: the main STX LP 1 kW unit, two 1 kW amplifiers, a combiner, AC power

panel and a box with the cables. I was able to pick it up (it wasn't heavy at all) and move it easily into place.

Before the transmitter arrived, we'd plumbed the site. We pulled the 1-5/8-inch line from the old building and ran it to our new transmitter site. It took a matter of minutes to slide the transmitter rack in place and plug in the power. I asked BE to configure it so that when we slid it into place in the new building, I could plug in the power and go.

For setup, I was glad to see that there was enough room on either side of the transmitter to work, and with the STX being pretty much software monitoring, it was easy to know what was going on with it. We had it running in no time. I kept noticing throughout installation how software-controlled this transmitter is. Outputs of the amplifiers connected to the combiner with N-connector cables. Overall it was an easy setup.

We've had the transmitter on the air since late last year without issue. I routinely log on to my computer, and using the STX LP's IP connection, check on readings.

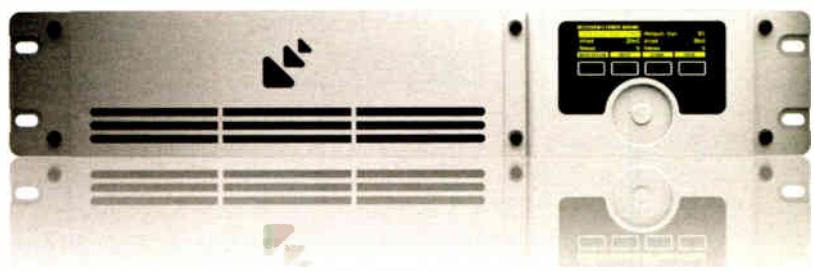
Best of all I haven't had to change one tube since putting this transmitter on-air.

For information, contact Tim Bealor at Broadcast Electronics in Illinois at (217) 224-9600 or visit [www.bdcast.com](http://www.bdcast.com).

## ► TECHUPDATE

### APTUS IS THE NEW RANGE FROM BW BROADCAST

BW Broadcast says its Aptus range of FM transmitters delivers a multitude of functionality in a single multipurpose box.



Not just an FM transmitter, the Aptus line ranges in power from 300 W to 2 kW. They offer built-in IP codecs, based on the BW Broadcast IPCA1 audio over IP codec, control, functionality and monitoring taken from the RBRX1 and multi-band audio processing straight from the BW Broadcast audio processor range.

According to the company, with the built-in IP codec, processing and monitoring platform, users now only need the one box to sound great, stay on the air, be aware of any problems and receive audio straight from the studio. The new family works from the platform of the award-winning RBRX1 and is VRP-enabled.

VRP is a new way of managing BW Broadcast products; it is a Web portal enabling users to manage and interact with their products, share presets across a network of units and status-check their products, from a single log-in.

Standard features include an onboard RDS encoder, built-in backup audio, built-in stereo generator and sophisticated notifications.

For information, contact BW Broadcast at (866) 376-1612 or visit [www.bwbroadcast.com](http://www.bwbroadcast.com).

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## BUYER'S GUIDE

# Bext Is Multitasking for Clear Channel

**FM Transmitter Configured For Multiple Missions Deep In the Heart of Texas**

## USER REPORT

BY GIL GARCIA  
Technical Director  
Clear Channel Radio Austin

**AUSTIN, TEXAS** — I am technical director of Clear Channel Radio Austin and national disaster coordinator for Clear Channel.

Over the course of many years we have had good results with Bext gear. Back in 2008 when I took over the Austin cluster, the purchase of a Bext transmitter was underway, to add a medium-power FM transmitter for mission-critical, multi-station backup in the Austin, Texas market.

We found that some of our old aux backups might fail along with those main antennas at other sites, so we decided to look at Bext again.

### COMPACT

Bext has an interesting compact line of efficient, solid-state FM transmitters up to 30 kW, including a unit that could handle 7 kW in a small rack on wheels which I could move around by myself! (Ed. Note: Bext says

*(the series is now available in versions offering up to 15 kW in the same-sized 20 RU rack cabinet, and up to 30 kW in a taller, 40 RU rack cabinet.)*

In my case space was a critical issue since the room already housed a main, aux and an HD Radio transmitter, so the roll-around fit the bill. We decided that a 7 kW power level with its small footprint would cover our needs, and we purchased the Bext FB 7000 FM transmitter.

The objective was to build a system capable of supporting our Clear Channel stations 96.7 KHFI(FM), 98.1 KVET(FM), 100.7 KASE(FM) and 102.3 KPEZ(FM), all located in Austin.

Like other transmitters we had purchased from Bext, the model type we chose offered features that were useful in achieving our objective.

The solid-state PA section is totally redundant, with a dual-PA module configuration. Inside each module there are multiple power supplies and multiple RF sections; even in the unlikely event of something going wrong it will stay on the air at reduced power rather than being completely off the air.

The PA is broadband and the exciter section is programmable to any frequency in the 88 to 108 MHz FM band. This allows these transmitters to be used not just for primary transmitter applications, but also as a backup for multiple stations. When we have a mission-critical station that would really need to be ready to get back on the air at a moment's notice to restore a signal, the Bext



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## BUYER'S GUIDE

### TECHUPDATE

#### R&S DEMONSTRATES SCX8000 FAMILY

The R&S SCx8000 family of low- to medium-power transmitters from Rohde & Schwarz covers all broadcasting frequency ranges.

The R&S SCA8000 transmitter for the VHF frequency band supports the digital audio broadcasting standards DAB, DAB+

and T-DMB and is available for 200 W to 600 W output power. Units are compact, measuring four RU high, and allow network operators to set up a complete 600 W DAB/DAB+/T-DMB transmitter. With efficiency of up to 28 percent, these transmitters are said to reduce operating costs considerably.

The R&S SCL8000 L band transmitter attains powers of 400 W and 1,500 W for DAB, DAB+ and T-DMB. They offer efficiency in the L band of up to 22 percent and a compact design.

The 400 W DAB/T-DMB L band transmitter

requires only four rack units. Output power of 1,500 W can be implemented in only 19 rack units with four amplifiers, one control unit and one exciter. In this solution, coupler, splitter, harmonics filter and lightning protection are integrated into a single unit. The amplifiers are equipped as standard with twin power supplies. An optional third power supply can be integrated to enable network operators to increase availability.

For information, contact Rohde & Schwarz in Maryland at (410) 910-7836 or visit [www.rohde-schwarz.com/us](http://www.rohde-schwarz.com/us).



FB 7000 would be used for that purpose.

This transmitter, when needed, is hooked up to a transfer switch connected to our broadband antenna, which covers all of our FM station frequencies. We just dial in the frequency of the station that needs a backup transmitter on the air.

Making these transmitters more user-friendly is that we can easily reassign the frequency and power level of operation even remotely. All we need to do is connect to the transmitter using any PC, use the standard HyperTerminal function built in to Windows, and "tell" the transmitter when to turn on, what frequency we want it to come up on and at what power level. No need to load any software on the PC. I can access my password-protected transmitters from any PC anywhere.

The FB 7000 is efficient and will keep our power bill in check. Speaking of electrical, we like that it can be rewired in the field easily for either single- or three-phase.

The duty of this particular 7 kW Bext unit is to cover all four of my FM stations at the KHFI main location on an 800-foot tower. We simply reassigned the audio feed off our ISDN unit corresponding to the one station we want, and we are on. It could also be offered as a pay-as-needed service to other stations that may need an occasional emergency solution, as long as ours are covered.

Thanks to Bext, we can cover our own needs as well as help a fellow station in trouble across town should the need arise. And we know that given the record of Bext gear at Clear Channel, this transmitter will serve us well for many trouble-free years. As a regional engineer, I had Bext transmitters shipped to many of my markets, with satisfied engineers and general managers that could keep their stations on the air through major storms and disasters.

Whether it is for a good backup, main transmitter or even translator needs, I give Bext a thumbs up. And the price is good too.

For information, contact Paula Matthews or Tino Romagnoli at Bext in California at (888) 239-8462 or (619) 239-8462 or visit [www.bext.com](http://www.bext.com).

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- Redundant cooling fans

#### Scalable

- 1 kW base scalable to 5 kW

#### Connectivity

- IP connectivity allows access anywhere, anytime
- Optional advanced remote GUI for monitoring and event logging

#### Compact

- 1 kW blocks at just 3 rack units and 40 lbs
- Rack mountable in factory or at your site



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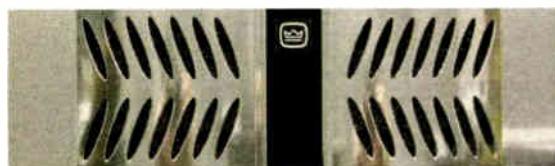


## BUYER'S GUIDE

## ► TECHUPDATES

## CROWN BROADCAST OFFERS NEW PRODUCTS

Crown Broadcast IREC has added three products to its FM product line.



The FMD-1 (shown) is a lower-cost digital exciter solution with a simple upgrade path to HD. The FMD-1 can work with standard Crown analog amplifiers or Crown's LA series linear amplifiers.

Also, Crown Broadcast has updated its internal receiver in its FM-R line to a high-end DSP-based product that will offer higher sensitivity, separation, selectivity and overall audio quality. The CT-1 receiver will be available in Q3.

Last, Crown will now offer the Crown RMS-2 IP-based internal remote management system. The RMS-2 can also be preset up at the Crown facility at time of order allowing the user to have a virtual plug-and-play product for installation at the broadcast site.

For information, contact Crown Broadcast IREC in Indiana at (866) 262-8972 or visit [www.crownbroadcast.com](http://www.crownbroadcast.com).

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## ECRESO SPAWNS NEXT GENERATION

Ecreso has launched a "next generation" line of FM transmitters based on a new digital modulator and covering power ranges up to 10 kW.

At the core of the range is the Helios NextGen, an exciter that incorporates an FM Band "Direct to Frequency" digital modulator for high signal quality and performance.

Available in 20 W or 100 W versions, the Helios NextGen can be used as a standalone transmitter to broadcast analog FM programs in a frequency range between 87.5 and 108 MHz. For higher power requirements, it can be combined with the Goliath NextGen, an updated FM amplifier based on sixth-generation MOSFETs and delivering up to 65 percent efficiency.

For medium-power applications (750 W to 2.5 kW), broadcasters can opt for an integrated "Compact" solution that combines the Helios NextGen modulator into the new Goliath NextGen amplifier unit to reduce space, cabling and hardware requirements.

The Helios NextGen exciter offers features such as RDS encoding and automated audio backup. A front-panel with LCD screen can be used for local configuration and the unit can be controlled remotely with a Web server, SNMP, RS-232 or GPIOs.

Products within the new line are protected against overheating, VSWR and lightning.

For information, contact Ecreso/WorldCast Systems in Florida at (305) 249-3110 or visit [www.ecreso.com](http://www.ecreso.com).



## HARRIS

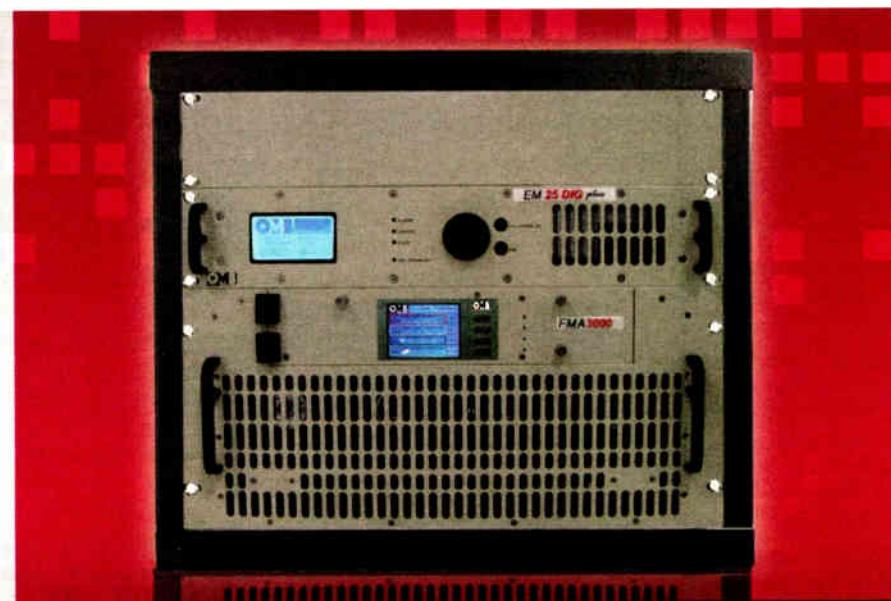
(continued from page 30)

equipment connected to the transmission operation includes Kintronic Labs antenna tuning units and phasors and Inovonics modulation monitors. Harris appears to have considered external equipment connections in the transmitter design for enhanced signal monitoring and processing.

Harris and SCMS have been ideal vendors. Harris field technicians respond quickly to inquiries and also review transmitter readings over the phone on a monthly basis. SCMS understood the transmitter the station required to be competitive and stable, and provided excellent customer service throughout the process. The assistance of Elliot Klein, a broadcast engineer for more than 60 years, and local engineer Terry Gaiser was much appreciated prior to and during the installation.

We couldn't be more pleased with the result.

For information, contact Brian Clifford at Harris in Ohio at (800) 231-9673 or visit [www.broadcast-harris.com](http://www.broadcast-harris.com).

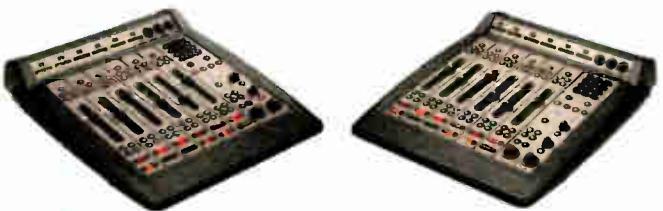
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**Deal #1:** Building a small studio? Buy two Axia Element consoles — any size — and we'll give you a 12-line Telos Nx12 system, with Desktop Director phone set and Assistant Producer screener software. That's a **\$5,295.00** value.

**Deal #2:** Bigger studios earn you an even bigger deal! Buy four Element consoles — any size — and you'll get the hot new Telos VX broadcast VoIP system everyone's talking about. That's a VX Engine that can handle up to 50 phone lines, two VSet12 phone controllers, and VX Producer software. That's a complete package worth **\$10,480.00** in goodies, gratis.

How long will this deal last? Frankly, we don't know. But you should probably snap it up before someone comes to their senses. Oh, and even though it's our "NAB Special," you don't have to come to NAB to get it — just call us!



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Video is becoming more of a presence in the daily work lives of radio professionals. Dave Pearce of CCS/Musicam USA explains features of the Ikusnet portable video audio codec to Larry Rutzler.



Photo by Kovacs/Dawley



Photo by Jim Peck

Andy Skotdal, president of S-R Broadcasting Co., owner of KRKO in Everett, Wash., is introduced by CBS Radio Senior VP of Engineering Glynn Walden. East Coast resident Walden at first referred to the station as 'WRKO,' and Skotdal jokingly corrected him.



The Copper Development Association promoted effective electrical practices to prevent damage from lightning strikes. Ann Hudick holds a former AC disconnect, evidence of poor planning regretted in hindsight.

Photo by Jim Peck

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Paul McLaren, Leslie Stinson  
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When you make a booth sign, why not use the materials you've got on hand? Dielectric Communications is now operating under the name of SPX Communication Technology.

Crystal Radio Award winners hoist their trophies.

From left: Jared Mims, program director for Saga Communications; Tom English vice president/market manager, WRVW(FM); Dave Vagle, general manager, KIKV(FM); Pete Booker, president and CEO Delmarva Broadcasting Company; Whitney Mueller, Research and Development Director, KRLC(AM); Gary Buchanan, president/COO Three Eagles Communication; Dave Daniels, air personality, WDBR(FM); Sylvia Cariker, community service director, KUZZ(FM); Allan Miller, managing partner, WRHI(AM); Dale Thornhill, vice president and COO, Commonwealth Broadcasting.



© NAB Show



Raymond Kraemer III, VP of marketing and sales for TWR Lighting, describes features of the L450-864 FAA LED Dual Lighting System.

Photo by Kovacs/Dawley

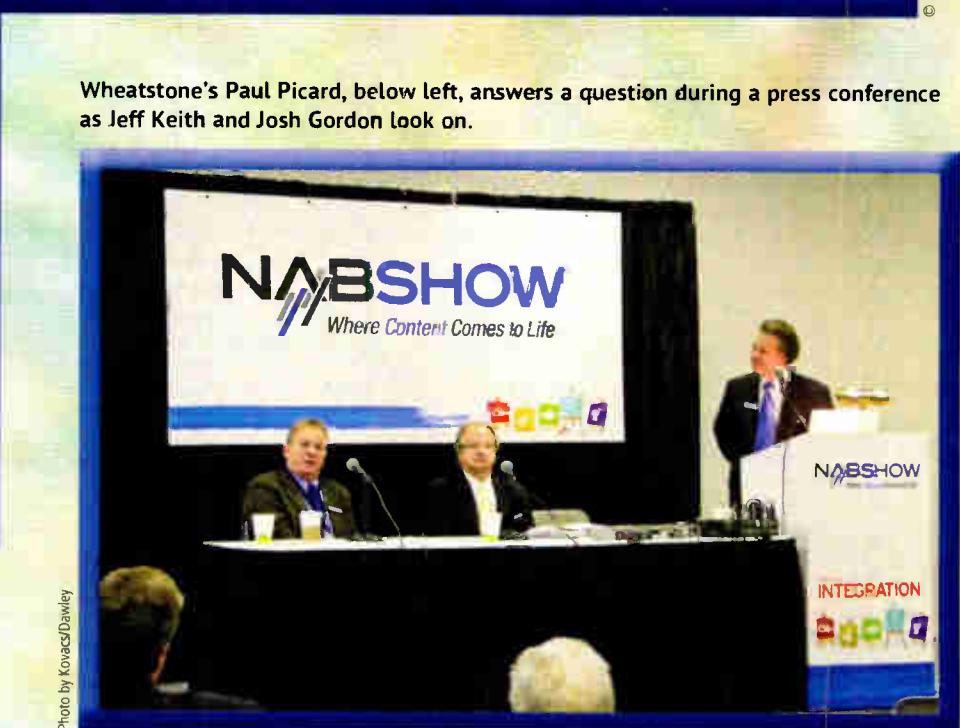


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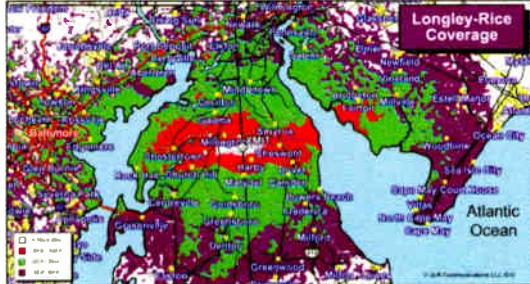
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2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or [audiovg@gte.net](mailto:audiovg@gte.net).

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# 'Hey ... We Already Gave at the Office!'

Smith Says Broadcasters Are in Full Battle Mode to Protect Spectrum

*Excerpted from the remarks of NAB President/CEO Gordon Smith in his State of the Industry address at the NAB Show in Las Vegas.*

At NAB, we're not worried about technology; we're excited about the digital world that is reinventing broadcasting. We're not worried about revenues; broadcasting has bounced back from the worst recession in history.

But we worry about those who would damage our business. And about government in a rush, or over-reaching — that, we worry about.

Less than two years ago, broadcasters gave up more than 25 percent of TV spectrum and spent \$15 billion transitioning from analog to digital television. That was our cost of leaving Howdy Doody analog and moving to high-definition and multi-channel digital. We embraced this digital future so that we could offer dazzling HD programs and multicasting; so we could offer consumers more choices and deliver content on different platforms, such as sending video to smartphones, tablets and laptops.

We spent these billions because we knew we needed to remain relevant to new generations, who expect to get their content on the go. Now, less than two years later, wireless companies want another 40 percent of TV spectrum.

Hey ... we already gave at the office! So we are in full battle mode to protect

broadcasters from being forced to give up spectrum involuntarily.

If a station simply can't make it and it volunteers to sell its spectrum, that's fine — as long as it doesn't harm another station that wants to stay in business and is excited about the future. The problem is that what is voluntary for the

architecture. Even the wireless companies themselves concede they will need to eventually use some of their spectrum in a broadcast-type architecture, specifically for sending mass-appeal video content to smartphones.

Broadcasting already has the architecture, and it's worked for more than

**Ladies and gentlemen, there is not enough spectrum in the universe to replace our one-to-many broadcast system to a one-to-one transmission architecture.**

former could become involuntary for the latter. It concerns us that the FCC could forcibly relocate a broadcaster, crowd channels closer together, reduce their coverage, destroy innovation for viewers, increase interference or otherwise degrade their signal.

This endangers our digital future, and violates President Obama's promise to prevent a world of digital haves and have-nots.

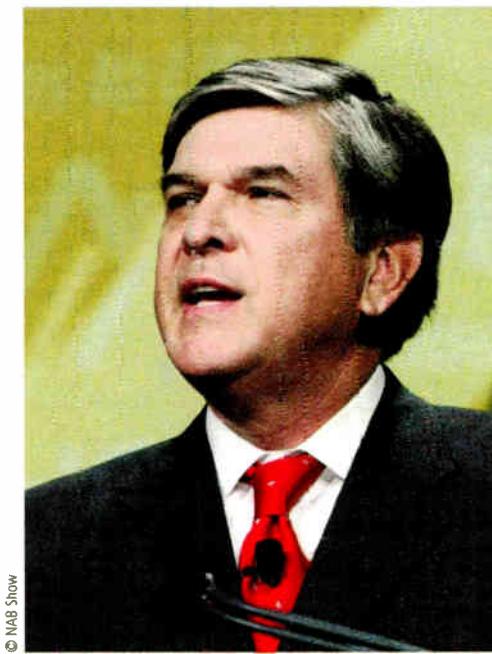
Ladies and gentlemen, there is not enough spectrum in the universe to replace our one-to-many broadcast system to a one-to-one transmission archi-

60 years. What sense does it make to take spectrum that is being used efficiently and use it less efficiently?

Is that a public good?

And where exactly, other than dense urban markets like New York and L.A., is this great spectrum shortage? It's certainly not in rural America.

Wireless carriers are talking about a "looming spectrum crisis" these days. For whatever reason, they seem to have found a sympathetic ear in Washington. Sounds spooky, but the truth is what they really have is a capacity crunch — not a spectrum crisis.



© NAB Show

**Gordon Smith. Isn't it ironic that a former Republican senator is urging the Obama administration not to lose sight of an important segment of its political base?**

The fact is there has been more spectrum allocated to mobile broadband than there is capital to deploy it.

What is needed to address the capacity crunch is more investment in towers and infrastructure, and receiver standards that maximize the use of the huge swaths of spectrum that wireless carriers have already been allocated. But apparently they have determined that it is cheaper to buy our TV channels at auction than to build out their networks. Hence, spectrum crisis.


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## OPINION

One needn't look any further than the recently announced AT&T and T-Mobile merger to see my point. In announcing their deal, corporate executives stated that one of the greatest benefits of the proposed merger is that AT&T's network capacity would *double* by adding T-Mobile's already built towers in urban areas.

Moreover, recent press reports indicate that certain companies licensed to provide mobile broadband service are simply not making the necessary investments to deploy their service, but instead are sitting on more than \$15 billion of spectrum they aren't using.

Why? Because in the words of one of those CEOs, it's a good inflation hedge.

Spectrum should not be used for speculation.

I'm not saying there will not be future demands for spectrum to satiate consumers' want for more reliable wireless service, but before anything is done, we believe a respected third party, like the Government Accounting Office, should conduct a comprehensive inventory of what spectrum is out there and *more importantly*, how much of it is being used today.

Won't that help us know the best way to meet America's communications and spectrum needs?

What is there to fear from a comprehensive inventory unless you don't want people to know what you really have or how you're using it?

There's a lot at stake here. So why *rush*? Once spectrum is reallocated and local TV stations are gone, they won't be coming back. And at what cost to the 43 million people that rely exclusively on over-the-air television for free?

They don't have cable. They don't have satellite. And their numbers are growing, not declining, as evidenced by the growing pay TV cord-cutting phenomenon embraced by younger, tech-savvy viewers. In fact, many who depend on free over-the-air television are older, lower-income, minority and rural viewers. One in three Spanish-speaking households, for example, depend totally on over the air.

Isn't it ironic that a former Republican senator is urging the Obama administration not to lose sight of an important segment of its political base? They shouldn't be forgotten so that urbanites can have faster downloads of the latest game or gimmick. . . .

Now, don't get me wrong. There are some pretty useful apps out there — I have many on my iPad. But my point is this: Should we risk weakening a broadcasting system that serves a real purpose in American life, a system that is a pillar of our communities for the chance to play more games on our iPads?

Recent projections show the demand for smartphone capacity is likely to

slow — mainly because wireless providers want to charge you a fee, while broadcasting comes to you for free. And "free" is better than "fee."

Another reason may be that while some apps are fun, they are not important to everyday life and their novelty wears off. I've got 100 apps on my iPhone, and I use only five or six with any regularity.

But I guarantee that none of those apps comes close to matching what broadcasting contributes to local communities.

### Technologically agile, beneficial to the community and free – so what's not to like?

So, what we're saying to the government is keep voluntary, voluntary. Broadcasters have a unique identity. We are important voices in our local communities. We live where we broadcast, and we reflect the values of those communities, large and small across the country. Our competitors say broadcasters are "squatting" on this spectrum. A more legitimate concern is that our competitors will end up "squandering" this spectrum simply for higher fees. . . .

#### FREIGHT TRAIN

Finally, let me talk about radio. Last year we stopped the legislation that would impose a performance tax on local radio stations. This was a freight train headed for passage.

The White House was for it. Congressional leadership supported it. Both the House and Senate Judiciary Committees had passed it. This put radio in a position of maximum peril.

One of my former colleagues, a congressman who was running for the Senate, once told a town meeting in Mount Pleasant, Michigan: Keep your expectations low because Congress doesn't have all the answers. "Congress," he said, "is not the sole repository of wisdom."

Now, I think he meant repository, but I have to tell you, the rank and file of 260 members of the House of Representatives — Republican and Democrat alike — with grassroots engagement, by radio and television working together, really came through.

With their help and that of broadcasters across America, we brought the freight train under control by seeking a good faith, workable agreement with the music industry, while at the same time aggressively opposing the bill as written. Our objective was to make certain

that if something passed, it provided a bright future for radio.

We offered to compensate record labels and performers if they would help us get broadcast radio on every future cell phone, which is important not only for entertainment, but more importantly, to provide the public with an effective emergency alert warning system.

In the end, the record labels rejected our offer, but the performance tax bill also died. We remain open to discussions. We're still at the table, and we hope the other side comes back.

By the way, the context of our approach marked a stark divergence from the past.

Until last year, NAB was viewed on Capitol Hill as "The House of No" — almost no matter the issue — which is not a long-term strategy for success, especially when trying to navigate the political minefields in Washington.

In politics, we always say you can't beat something with nothing. With this new flexibility, we now find ourselves in a position of greater strength and credibility among policymakers. And this will serve us well, I think, as we shape radio's future, which remains very bright indeed.

Now in closing, let me say again in the words of Eddie Fritts:

Broadcasting is a miracle technology, still giving great value to and doing great

good for the American people. The world of the future must include broadcasting and broadband without degrading either.

Finally, this thought. If you look around the world right now, you will see we are involved in three wars. You will see people trying to recover from an economic meltdown and keep their mortgages from going under. You will see incomprehensible suffering in Japan. You will see Middle East dictators, thugs and emirs trying to hold on to power amid turmoil.

Broadcasters obviously cannot alleviate these harrowing events, but we provide our listeners and viewers with the information our communities need to know during times of crisis like these. Every day we make a positive difference in our communities, local station by local station. We provide an anchor to communities when often there seems to be little to anchor them.

As I said last year, the centrifugal forces of modern life are fraying the bonds that tether our citizens to their communities. Broadcasting keeps our citizens connected to our communities and gives those communities coherence.

That is a public good that we provide. The enduring value of broadcasting is not something that policymakers should take lightly. And I assure you that NAB will continue to make that case in Washington.

## READER'S FORUM

### PULL-OUT FRIDAY

In response to the Leslie Stimson article of Jan. 12, "Report Explores Message Service for Analog AMs":

After decades of enduring all the engineering attempts devised to improve AM radio, I think I have discovered a simple solution. It is perfect for small-market stations and costs no money at all. Installation is simple and does not require referring to a manual or a consulting engineer. Suddenly, your station's fidelity will double. Your signal will sound deep-bodied, full and musical. Even balding gray-haired guys in baseball hats (like myself) will notice the difference!

What could this new solution be? Certainly nothing could be as wonderful as HD Radio. Isn't it amazing how one technology could improve on something as innovative as AM stereo and inspire America to buy all-new radios to hear hundreds of new channels imported from other markets or spewing out music like an iTunes Shuffle? (While we are on the subject, can you tell me where I can get an AM HD Radio?)

I know! I know! Maybe it's the

new FASTROAD QPSK/BPSK data system! (Radios don't reproduce audio under 550 Hz anyway!) Considering AM radio's current fidelity, I might actually need a digital display to remind me I'm listening to Rush Limbaugh. Unfortunately, it's just another *fast road* off a cliff in the plummeting demise of AM radio.

My friends, there is hope. Remember when you would pull out a button on your car radio and push it back in to create a preset? That time has come again!

Let me rally America's station owners to a new day of freedom and autonomy: "Pull-Out Friday."

On Friday, July 1, 2011, let's celebrate *our* independence from the corporate machine that corrupts and dirties the band we grew up on.

AM station owners: Remove your NRSC filters, C-QUAM and IBOC encoders, narrow pass-band filters and heavy processing. Let AM radio sound just as wideband beautiful as you remember it as a kid!

Paraphrasing the old spiritual: "Go down, AM, way down in radio land, tell old Struble, let my radio go!"

Karl Zuk  
Katonah, N.Y.

Photo by Jim Peck



**Ben Dawson of Hatfield & Dawson Consulting Engineers wore this belt buckle at the NRSC meeting. It came from a decommissioned RCA transmitter rack in Portland, Ore., circa 1963.**



Photo by Jim Peck

**The NAB Store was amply stocked with 'Yeah, you go, broadcaster!' items. This 'microphone' is all of 6 inches tall and has a radio inside.**

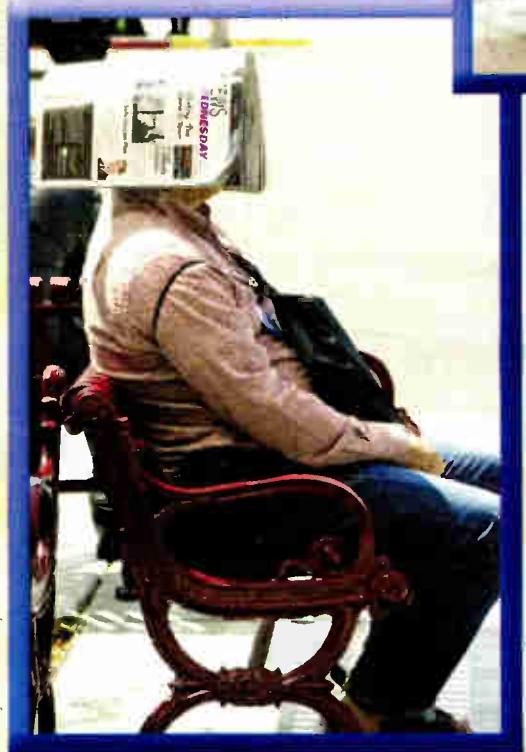


Photo by Kovacs/Dawley

**Almost time to go home.**



**CBT Systems makes nifty air lights, shown here in the Broadcasters General Store booth.**



Photo by Jim Peck

**Self-propelled and seemingly self-directed, 'Sprocket' engages the public in the Harris booth. He had a human companion, but his voice and control came from a cramped closet in an 'undisclosed location' equipped with a wireless video/audio receiver.**



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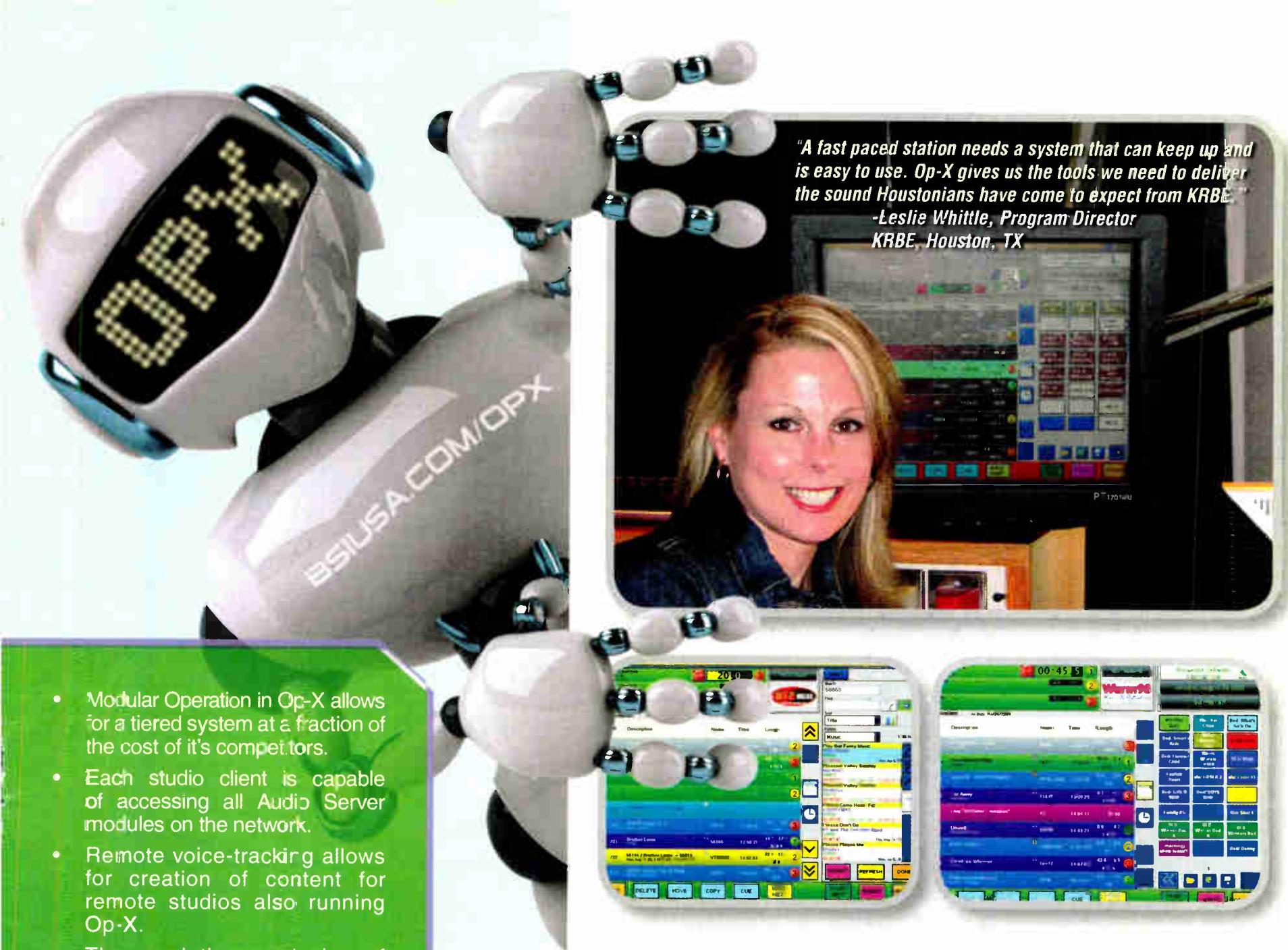
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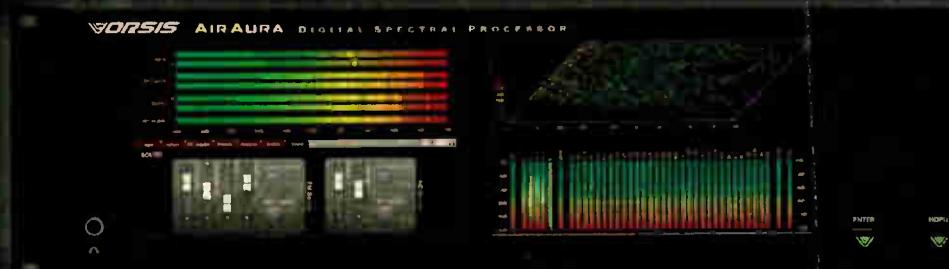


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