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SiriusXM opens its mics in Miami

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Low-power opportunities

The FCC gets ready to open the first window for new LPFMs in a decade.

What's your sign? Are you sure?

Gregg Skall explains the FCC's tower and transmitter signage requirements.

Small leaks sink great ships

In Workbench, learn about a leak detector that can be powered over Ethernet and will send you an email if things are about to get wet.

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Great new RF installs

I get to live a little vicariously

Paul McLane
Editor in Chief

I think I had more fun putting together "Great New RF Installs" than any of the other 108 ebooks Radio World has published to date. Or at least as much.

Maybe it's because broadcast towers and transmission facilities retain a romantic aura for me (which you may have sensed from the series of great tower photos we've been publishing recently).

The magic of "big steel" may feel even stronger for me because while I've been inside many radio studios, lobbies and rack rooms, I'll never go up atop any of those really tall sticks. (No, really. ... Tall buildings yes, tall steel nope.)

So it was fun to collect 14 case studies about broadcasters who have put up new towers, installed new antennas, increased power or otherwise improved their signal footprints.

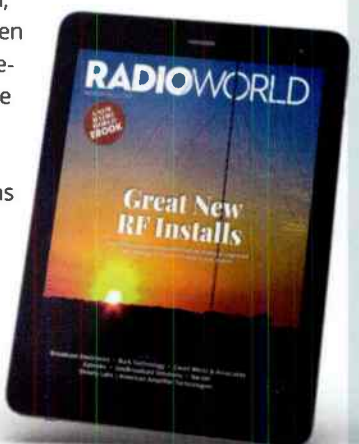
I learned about one broadcaster that had its transmitter site first destroyed by fire and then destroyed again by flood only a few weeks later, as well as its determination to get back into service with a beautiful new RF plant.

I was able to publish a photo of our longtime friend (and Excellence in Engineering Award recipient) Mike Starling standing in a transmitter room, wearing summertime shorts and boat shoes, celebrating the flip of WHCP(LP) into full-power WHCP(FM) on Maryland's Eastern Shore.

I learned about a tower crew supervisor who left his mark at the project site where Audacy moved WXBK(FM) 8 miles closer to Manhattan. The supervisor is named Mr. Kitty and he left his pawprints in the concrete there.

I learned about big-budget jobs and little-budget ones. If a given project involved a massive new seven-around, two-layer panel FM antenna, the next one might have been accomplished with hand-me-down gear and a very simple RF chain. I got to talk with more than a dozen super engineers or installers. It was just fun and I'm glad to be able to share their stories.

You can read it at *http://radioworld.com/ebooks*.



THIS ISSUE

Correction

In the Aug. 2 issue we misstated the admission policy for the Midwest Broadcast & Multimedia Technology Conference. Admission for OAB/IBA/KBA/MAB members and SBE and SMPTE members is available at an early bird rate of $50 through Sept. 1. A pass for the Exhibitor Showcase is available for $30.

Newswatch AM Mandate Bill Advances

The Senate Commerce Committee in July approved the "AM for Every Vehicle Act" and sent it to the Senate floor. The bill would mandate AM radio in new cars and has garnered significant bipartisan support.

Above
Sen. Ted Cruz makes a statement during the hearing, in which he said the legislation had "overwhelming bipartisan support" on the committee.

The legislation was introduced by Sen. Ted Cruz, the ranking Republican on the committee, and Sen. Ed Markey, a Democrat who has been vocal about the future of AM in cars. "I thank Sen. Cruz for his partnership as we work to cut through the noise and uphold access to AM radio as we plug into our clean energy, all-electric future," Markey said.

The legislation was passed in a voice vote. While not every senator's vote was recorded, Sen. Gary Peters, a Democrat from Michigan, asked that he be recorded as opposed. U.S. automakers, headquartered in his state, oppose the bill.

The legislation would direct the National Highway Traffic Safety Administration to issue a rule requiring automakers to maintain AM broadcast radio in their vehicles without a separate or additional payment, fee or surcharge. It says AM should be clearly visible on the vehicle's dashboard; and until the new standard would take effect, cars lacking AM radio receivers would have to be labeled as such for buyers.

The bill also would direct the Government Accountability Office to study whether alternative communication systems could fully replicate the reach and effectiveness of AM broadcast radio for alerting the public to emergencies.

Consumer Technology Association President/CEO Gary Shapiro called the committee vote "an unprecedented and unnecessary attack" on consumer choice and the free market.

"Instead of advancing free-market principles, the committee has now gone on record in support of Washington forcing private-sector businesses to sell a product that most consumers don't even use or want," he said. "Hopefully Congress will ultimately come to its senses and let consumers — not Washington — decide what they want in their new cars."

Above
KXRW(LP) in Vancouver, Wash., is "dedicated to delivering quality programming with an emphasis on local voices." In the studio, from left, are Faith Spencer, Zane Thomas, Steven Glickman and Amanda Lynn Deal.

Writer

Randy J. Stine

Radio World's lead news contributor wrote in July about the work of SECCs to submit updated EAS plans.

An LPFM window this fall presents opportunities

The low-power service has seen a slow erosion in numbers of late

The possibility of winning a license to operate an FM radio station might appeal to many small community groups. But low-power advocates say launching an LPFM is expensive and that it involves multiple challenges and a steep learning curve.

The FCC's announcement that it will open a filing window in November to take applications for new LPFMs — the first such opportunity since 2013 — is welcome to community radio boosters.

The low-power service was created by the commission in 2000 when it authorized a new form of noncommercial educational broadcasting with a maximum of 100 watts. Advocates have been pushing the FCC for technical upgrades to improve reception; some would like a boost to 250 watts, which is opposed by the National Association of Broadcasters.

Most LPFMs serve small communities and rural parts of the country with an approximate range of about 3.5 miles, according to the FCC.

LPFMs, ranging across the FM band from 88.1 to 107.9 MHz, are for schools, churches, non-profits, government or other educational institutions. Educational entities can file one application. Tribal governments can file up to two. State and local government agencies may file as many as they need within their jurisdiction for the purpose of public safety.

LPFM stations often fill a niche in a community, supporters say. The ideal is to be hyper local with an intriguing format. For instance KCJV(LP), licensed to Leon Springs, Texas, airs a non-traditional format playing B sides from oldies singles. Its branding slogan seems appropriate: "The Greatest Songs You've Never Heard."

The number of licensed LPFMs has fallen from its high. FCC data showed 1,989 LPFM stations on air at the end of June, down by 45 licenses over the past year. At one point a few years ago there were about 2,100.

"The number of LPFMs has, indeed, been trending downwards, and there are some good and bad reasons for this," said Jim George, founder of the online LPFM

Database, which tracks data on the FM service.

"The good news is that some LPFM operators took advantage of the FCC's 2021 noncommercial filing period and applied for full-power stations in their communities, so some have turned in their LPFM licenses.

"In addition, some LPFMs just couldn't make it through the pandemic. A majority of LPFMs have little to no budget and depend on underwriting or contributions from their listeners. The financial strain of the pandemic hurt a lot of operators and while some soldiered on, others just couldn't make it."

Dozens of LPFM stations are on the membership roster of the National Federation of Community Broadcasters, according to Sally Kane, CEO of the organization.

Kane says the success of any LPFM boils down to some crucial foundational elements.

"The biggest challenges they face seem to be limited organizational capacity for fundraising, experience with nonprofit governance and finding a steady and reliable flow of content to broadcast," Kane said.

NFCB provides its members administrative resources and professional development opportunities. It had not seen an uptick in potential licensees seeking information about the new LPFM filing window as of July, a few weeks after the window was announced.

Realistic expectations?

Paul Bame, engineering director for community radio group Prometheus Radio Project, partly blames the pandemic for the recent decline in the number of LPFM stations.

"Over the years, I've seen single-champion stations fail when the champion gets tired of it or move on, and sometimes that happens within otherwise-healthy nonprofits. Some stations ran out of money, for example they had an unsustainably large tower-rental bill and no affordable options."

Some LPFM applicants may have unrealistic expectations about the coverage area of a 100-watt FM station and the related ability to fundraise, Bame said.

"I encounter people with both realistic and unrealistic coverage expectations compared to the supposed nominal 5.6 km range. But to make that more complex, in the field I see different stations' coverage range from 2 to 14 miles, so who's to say what's realistic?"

In some cases LPFM coverage is curtailed by translators or HD interference within the LPFM's primary service area, said Todd Urick, director of nonprofit advocacy group Common Frequency. He noted the boom in the number of FM translators serving AM stations.

"LPFM signal quality and sustainability has deteriorated with the abundance of cross-service FM translator licensing. LPFM distance-based engineering methodology is outmoded and never contemplated this. The issue could be strategically addressed [at the FCC] by a modest power upgrade and migrating to a contour-based engineering methodology like translators," Urick said.

Above
Sally Kane of the National Federation of Community Broadcasters

Above
Todd Urick of Common Frequency

How to File

The FCC Media Bureau in late July released the application form and announced the procedures and rules. At *radioworld.com*, search "LPFM window" to find the article "Here's What to Know About the November LPFM Window."

LPFMs are not protected from interference from full-power stations and are considered secondary to existing and modified full-service FM stations. The LPFM must accept interference from primary stations, even if the LPFM station predates the primary station.

The most common question Urick has heard about the filing window is simply "Is a channel open near me?"

There are 8,935 FM translators and boosters, according to the latest FCC count; the commission does not report those two separately.

The opportunity for new LPFMs in major urban areas is limited, in part because of the increase in translators granted in the AM revitalization push. But experts say there are still plenty of places in the United States where LPFMs will be available.

The opportunity is expected to be significantly larger than the availability of reserved band NCE FM channels in the 2021 filing window. Just how many new low-power FM licensees will result from the filing window, set for Nov. 1–8, is unknown.

Most observers predict there will be thousands of applications. In 2013, the FCC received about 2,800 LPFM applications.

"Zeitgeist and artistic identity"

Among the arguments cited by early opponents against an LPFM service was that stations might run roughshod over FCC rules and policies, pirate-radio style.

Chaos did not break out on the FM band. And while some LPFM stations have been dinged for airing commercials — in July KRIM in Payson, Ariz., agreed to pay a $20,000 penalty for airing for-profit announcements over a two-year period — technical issues are more likely to be the focus of FCC enforcement, said Jim George.

"I've seen where some are transmitting from a location other than their licensed location and/or using higher power than they're authorized."

Another consultant reported cases where LPFM stations have not made necessary filings with the FCC such as transfers of control, silent notifications or participation in the EAS National Periodic Tests.

Proponents believe that the best LPFMs have validated the entire concept of such a service.

"I think the broadcast industry tends to be critical about the technical performance of LPFM and never views the success stories in terms of local content," said Urick.

He pointed to stations such as KUZU Denton, Texas; KWNK Reno, Nev.; KFFP Portland, Ore.; and WXNA Nashville, Tenn., which he said have "impressive community involvement with a mosaic of programming that reflects the music and culture of the cities — a commitment that commercial radio lost decades ago. LPFMs like these encapsulate the energy, zeitgeist and artistic identity of the cities that have made the radio service completely worth it."

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Above
Logo of KSVG in Bakersfield, Calif. Its frequency has since changed to 103.5.

Some community groups that lost out in 2013 may have lost interest due to the long wait between filing windows.

But Michi Bradley, founder of REC Networks and longtime LPFM advocate, says her group has already received inquiries from secular and faith-based organizations, from Puerto Rico to Hawaii. She says lots of groups still see potential in LPFM.

"With the continued decline of AM radio and the threats of losing AM receivers in cars, this may be a good opportunity for public safety agencies, which have specific carve-outs in LPFM, to be able to obtain FM facilities for use as Traveler's Information Stations," Bradley said. "There also will be opportunities for tribal entities to obtain stations."

Advocates recommend that someone hoping to seek an LPFM consider using a consultant for preparing the application and filing the paperwork. There have been changes in FCC policies and rules since the 2013 window, including a new application filing system and the use of directional antennas.

"Even though the FCC insists that LPFM must remain an easy service, much to its detriment, we always suggest that applicants get hired help," Bradley said.

"While it may be possible for an application to be filed unassisted in some cases, many more cases — such as those where there are second-adjacent channel short spacing — require someone who has access to systems that can determine field strength contours, understands the elevation patterns of various antenna configurations and understands the FCC's requirements for waivers."

REC Networks runs a website, LPFM.app, that checks potential availability. (Bradley cautioned that some online resources offering searches for low-power FM signals are intended for Part 15 short-range devices such as transmitters that plug into automobile lighter plugs and allow cellphone audio to be heard on an FM radio.)

Like everything else across the economy, most LPFM consultants believe the cost of building a startup LPFM will be significantly higher than in 2013. Bame of Prometheus says it is hard to peg the exact expense of founding a station.

"Until the (applicants) have some actual information about their needs, site and complications, $30,000 might be a good low initial fundraising target," he said. "With tons of DIY and knowledgeable compromises, it could be done for less."

Such estimates must include the cost of an EAS decoder. An LPFM also must use a transmitter that is FCC certified, with an FCC ID number valid for Part 73 use.

"There are many cheap imported transmitters on the market available through eBay, Amazon and the Chinese e-commerce sites that are not certified for LPFM use," said Bradley.

"Even some 'hand me down' broadcast gear, which may be permitted for use in the full-service and FM translator service, are not legal in the LPFM service. LPFM has a specific requirement."

Several experts contacted for this story said a pending book, "Low-Power FM for Dummies," will be a good resource for prospective LPFM licensees. The book is expected to be published in October, according to its listing on Amazon, but may be available sooner. Its author is Sharon Scott, co-founder and general manager of WXOX(LP) in Louisville, Ky.

Contour Methodology?

The accompanying article mentions the distance-based engineering methodology used by the FCC and a suggestion that it should migrate to a contour-based methodology.

Michi Bradley of REC Networks commented on that:

"LPFM having contours towards full-power stations where the existing distance separation requirements are not met would require an act of Congress because of the Local Community Radio Act," she wrote in an email, "although the commission could, if it chose, use contours for service higher than LP-100 as long as minimum distance separations are met and still remain within the statutory limitations of the LCRA, which is an argument REC made in the past.

"LPFM having contours towards translators is not specifically statutorily prohibited by the LCRA. This was one of the issues we raised in our previous LP-250 Petition for Rulemaking RM-11810, which was dismissed by the FCC as being 'too complex,'" she continued.

"The real issue is that the FCC needs to stop regarding LPFM as being this service that needs to be 'simple.' A majority of applications were handled with hired help. RM-11810 addressed that fact. There are things that can be done, but the FCC is not willing to do them."

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John Bisset
CPBE
The author is in his 33rd year of writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.

Someone's knockin' at the door (don't let 'em in)

Here's a tool to help smaller broadcasters protect their data

San Diego's Marc Mann was not surprised to read that Crawford engineer Stephen Poole had recorded numerous blocked network intrusion attempts in his log, as we described in July.

But Marc's eyes were really opened when he moved to a Synology mesh router system for his home office. The router manager's Threat Prevention feature can graphically show every probe and its automated blocking. It even provides a map to display the IP's origin.

The number of offshore attempts documented will make you angry. The image below right chronicles attacks over a seven-day period.

The volume of automated scans of Marc's network is staggering. It emphasizes the need to utilize and enforce two-factor and other security protocols. What's really crazy is that no IP port is immune to these threats.

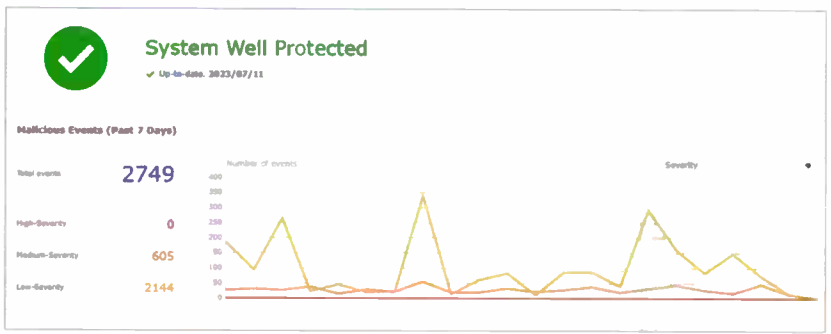
This is a "prosumer" software system, though Marc also uses Synology's NAS for all his backup and streaming needs.

At groups that have full-time IT departments, this may be a ho-hum observation, as they have professional-grade software keeping their stations safe. Synology's Threat Prevention allows smaller station networks to peer behind the scenes of what is being blocked and attempting to break in.

Synology says its purpose is to help businesses manage, secure and protect their data, "wherever access is needed from flash to disk to multiple cloud architectures." For more information, head to *https://tinyurl.com/rw-synology*.

Above
This "prosumer" software tracks network intrusion attempts.

Below Right
A seven-day event log is also provided.



Paging George Marti

Carl Esposito recently toured Independence Palace in Ho Chi Minh City, aka Saigon, a building that served as the

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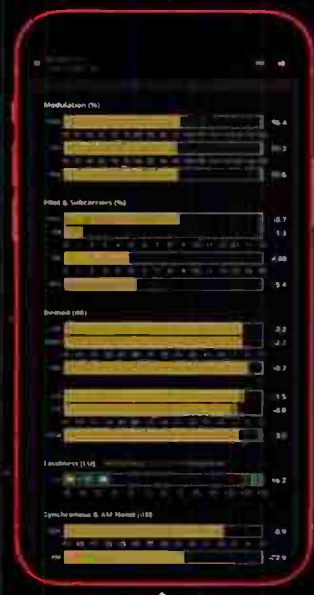

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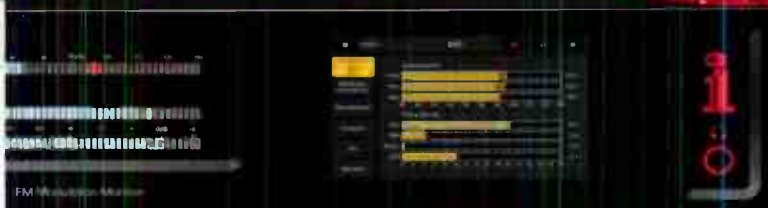

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Above
Marti RPU gear is on display in Ho Chi Minh City.

Right
E-Sensors' temperature and water detector display under normal conditions.

Below
An alarm is triggered if water or other fluid is detected.

presidential offices of South Vietnam until the fall of the city in 1975.

Visiting a display of old communications equipment in the building bunker, he was surprised to come across a piece of equipment that apparently had been left behind by U.S. forces. On the front-panel meter, the device prominently bears the name of a company based in Cleburne, Texas.

Carl was interested at first mainly because he had lived not far from Cleburne himself at one time. But a quick Google search also taught him that George Marti and his equipment are famous among broadcasters. He'd had no idea about Marti's career or the equipment that bore his name. At one time, Marti remote pickup gear was the standard for remote broadcasts.

How neat that the historic RPU is preserved in the basement of a government building in Vietnam. Perhaps a relic of the American Forces Vietnam Network or the American Radio Service? Share your ideas.

Small leaks sink great ships

Dan Slentz was searching for a reliable water and temperature monitor and came across E-Sensors' Advanced Water/Fluid Leak Detector. The model AQUO Xe can be powered over Ethernet and can be supplied with temperature and humidity sensors, as well as a relay control option.

Add a sensor like this to an elevated condensate pan to warn of flooding should the condensate drain clog. Note, the device will send you an email when it alarms, providing additional insurance beyond wiring it up to your remote control system.

The module costs $35 and can be ordered directly from E-Sensors at *https://eesensors.com/*.

A clean ATU is a work of art

Robert Leembruggen's first radio job was at 1110 KRLA back in 1985. Robert assisted with the install of the directional antenna units. He remembers placing two mothballs in the rear corners of each ATU after they were mounted. Even though the enclosures were new, the mothballs kept insects and vermin out.

Robert also joins others in recommending Simple Green as the best solvent/degreaser on the market. When Robert rebuilds an Optimod, he sprays both the chassis and the PC boards with Simple Green, then scrubs with a paint brush to remove all the grime. A hot water rinse concludes the cleaning, with amazing results.

After 16 years with Orban, Robert has launched his own service center. Drop him a line at *robert@leembruggen.com*.

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FCC Tower Registration sign courtesy Richard Tell Associates, radhaz.com

What's your sign? Are you sure?

What to know in 2023 about transmitter and tower site signage

Writer

Gregg P. Skall

Telecommunications Law Professionals PLLC

There remains considerable confusion regarding the FCC's tower and transmitter signage requirements. These are important for the safety of workers and passersby. As stations upgrade and make other modifications to their facilities, it is important that they understand and comply with the FCC's signage rules; and broadcasters who first learned the rules years ago should refresh on the most recent changes.

What is an antenna structure?

The rules apply to antenna structures, which are defined at §17.2 of the FCC's rules as any structure used to support antennas that transmit or receive radio energy, including the antennas and appurtenances mounted on them.

The rules apply from the time of construction until they are dismantled. The structure must be registered with the commission and obtain an Antenna Structure Registration (ASR) and comply with FCC notification requirements. See: §17.7.

Antenna Structure Registration

Once the commission issues the Antenna Structure Registration, the FCC Form 854R assigns a unique ASR Number to the antenna structure. The structure owner must then immediately provide all tenant licensees and permittees notification that the structure has been registered and a copy of either the Form 854R or the ASR number and a link to the FCC antenna structure website: *http://wireless.fcc.gov/antenna/*. This notification may only be done electronically.

Except in cases where the owner had been notified by a federal, state or local government entity that physically posting a notice would detract from the appearance of a historic landmark, an ASR number must be displayed conspicuously visible and legible from the publicly accessible area nearest the base of the antenna structure along the publicly accessible roadway or path. See §17.4(g). The rule requires that:

1. Where an antenna structure is surrounded by a perimeter fence, or where the point of access includes

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an access gate, the ASR Number should be posted on the perimeter fence or access gate.
2. Where multiple antenna structures having separate ASR Numbers are located within a single fenced area, the ASRs must be posted both on the perimeter fence or access gate and near the base of each antenna structure.
3. If the base of the antenna structure has more than one point of access, the ASRs must be posted so that it is visible at the publicly accessible area nearest each such point of access.
4. Materials used to display the Antenna Structure Registration Number must be weather-resistant and of sufficient size to be easily seen where posted.

The commission found the requirements to physically display licensing documents at the broadcast facilities were often ineffective. Transmission sites are often surrounded by security fencing that limits public access to any posted information and the requirement to post licenses at the transmitter site have been rendered obsolete by the internet, which allows the public to view ownership information remotely.

It concluded that this trend, together with the elimination of the broadcast main studio rule, has rendered the physical posting of licenses out of step with technology and its other rules.

Instead, the commission explained, broadcast station licenses and other authorizations are currently accessible online through several commission databases, including the commission's Licensing Management System (LMS), and Universal Licensing Service (ULS) as well as the Online Public Inspection File of full-power and Class A television stations and AM and FM radio stations.

> **Licensees are no longer required to post their FCC licenses at the transmitter site.**

Points 2 and 3 above bear emphasis. Where more than one publicly accessible access point exists, the rules require posting at each access point location and where a single perimeter fence surrounds multiple antenna structures, the registration must be posted at all access points, and at the base of the structure. This enables FAA and commission personnel, as well as members of the public, to identify a particular structure quickly and easily should it be necessary to report a lighting outage or other air safety hazard.

Transmitter site posting

Commission rules once required the posting and maintenance of broadcast licenses and related information in specific locations, including the transmitter site. Broadcast license posting was one of the oldest rules, predating even the establishment of the commission itself. The Federal Radio Commission promulgated the earliest iteration of broadcast license posting requirements as early as 1930.

Subsequently, commission decisions expanded the license posting requirements to require that records be kept and posted at specific locations, ostensibly to ensure that information regarding station authorizations, ownership and contact information was readily available and easily accessible to the commission and public but provided no explicit rationale for such rules.

In 2018 the commission eliminated the requirement to post broadcast licenses and related information in specific locations to further modernize its rules and stating it would remove unnecessary regulatory burdens that impede competition and innovation in the media marketplace.

Furthermore, orders and dispositions regarding station construction or facilities operation may be accessed through the commission's online licensing databases. Moreover, the contact information first responders need is readily available through the commission database and antenna structure registration numbers allow first responders and others to rapidly identify the owner of a tower structure.

Conclusion

The bottom line is that licensees are no longer required to post their FCC licenses at the transmitter site. Tower owners must provide all tenant licensees and permittees notification that the structure has been registered and a copy of either the ASR registration form or the ASR number and a link to the FCC antenna structure website. The ASR number must be displayed conspicuously and visibly near the base of the tower and at the closest publicly accessible location near the antenna structure base and at each access point location when more than one exists.

This column is for general information purposes only and should not be relied upon as legal advice pertaining to a specific factual situation. Legal decisions should be made only after proper consultation with a legal professional of your choosing.

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SiriusXM

SiriusXM opens its doors in Miami

The studio facility was built and brought online in about five months

SiriusXM officially opened its new Miami studios located in the Starwood Capital building on Collins Ave. in South Beach this spring.

The facilities include a 50-seat performance space and several "artist-first" radio and recording studios, in addition to office space.

"SiriusXM Miami serves our broad lineup of music, talk, entertainment and sports programming. Miami has always had a rich music and entertainment culture and is home to major stars and events like Ultra and Art Basel," said President and Chief Content Officer Scott Greenstein.

"Similar to what we've done with our studios in New York, L.A., Nashville and Washington, D.C., this is a state-of-the-art facility that will capture the character and culture of the city and make it accessible to listeners across North America."

Above
SiriusXM Miami is at 2340 Collins Avenue in Starwood Capital's newly opened Miami Beach headquarters.

Howard Stern opened the place with a three-day special in May. The week also featured shows hosted by LL Cool J, Andy Cohen, Pitbull and Tinx, among others.

The satellite company launched a Latin Pop channel called Hits Uno, inspired by Miami's musical culture and roots. (Singer Becky G, shown on the cover of this issue, was among the performers helping at the launch.)

Construction began last October and was completed in March.

Senior Distinguished Engineer Thom Mohrman was the designer and project manager. Nelson Architects handled architectural design under SiriusXM guidance, with McGowan Construction as the general contractor. The studio integration was by Broadcast Integration Services.

"SiriusXM Miami's studios are designed with graphic

stretchwall coverings and use lighting to effect branding and mood based on the channel or event in the studios," said Mohrman.

"The performance and recording studios feature video walls and LED monitors to accommodate custom branding and graphics."

Video walls in the performance studios are by Audio Visual Design Services. 3C Studios handled the graphic design for wall treatments and scenic design for the

Left
Howard Stern and Pitbull

Right
DJ Khaled and SiriusXM President and Chief Content Officer Scott Greenstein at "Salute The Sample" on SiriusXM's Rock The Bells Radio.

Top Left
SiriusXM Miami features a 50-seat performance space to host musical performances, talk programming, podcasts and events in front of live, intimate audiences.

Top Right
Carrie Underwood performs during a SiriusXM Town Hall Special for her channel "Carrie's Country" from the Miami performance space.

Middle Right
Jon Bon Jovi hosts a "New Jersey Album Special" on SiriusXM's Bon Jovi Radio with Mark Goodman from the Miami Studios.

Bottom Right
Jonas Brothers appear on SiriusXM Hits 1 from the performance space. Graphic stretchwall coverings and lighting effects in the performance space can be customized for each performance and mood.

performance studio, and Feldman Designs designed the lighting for that room.

Manufacturer MeCart built and installed prefabricated acoustically isolated studios.

"The SiriusXM Miami facility is based upon the concept of total virtualization and the utilization of IP-based audio and video transport," Mohrman said.

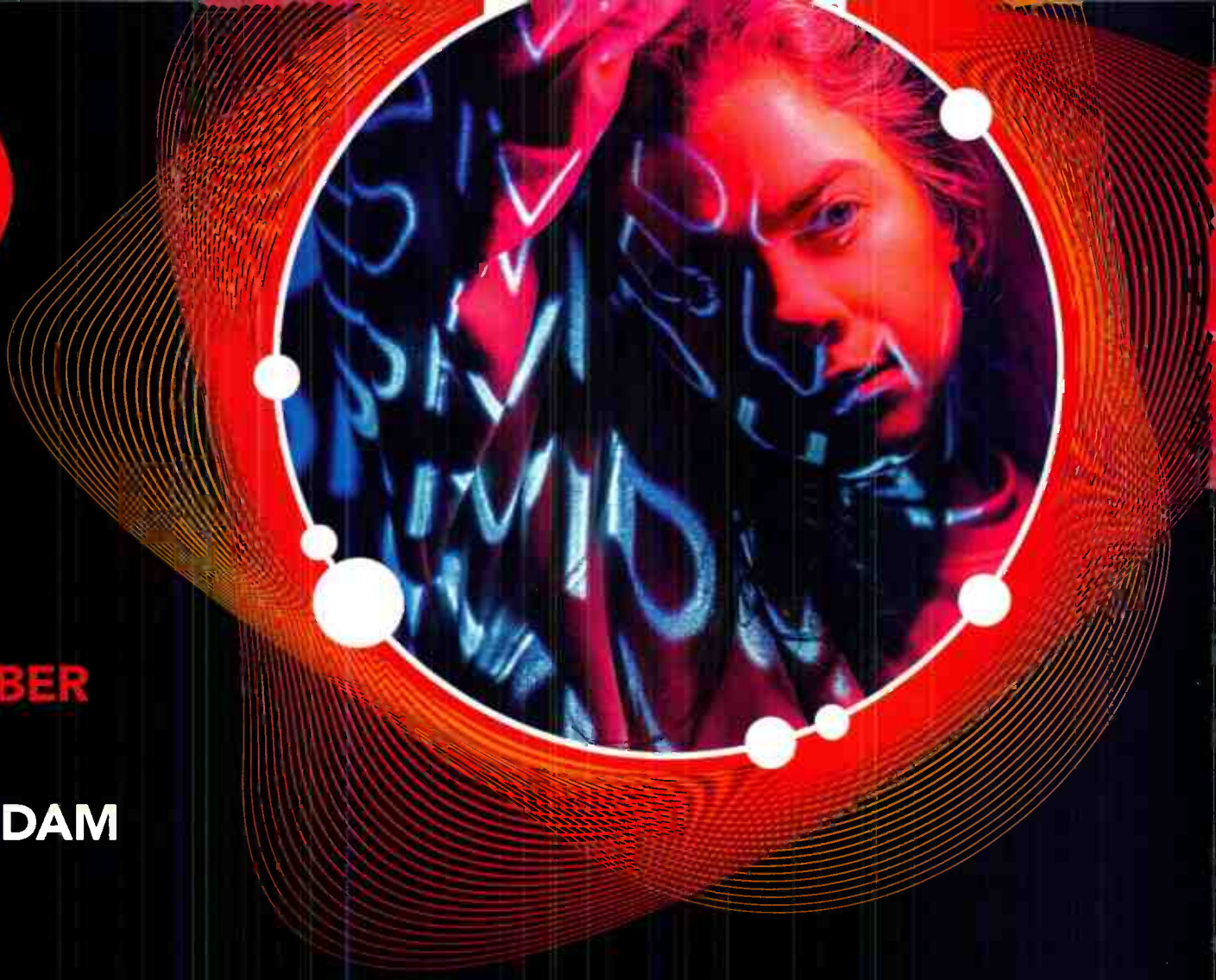
"The only physical computers being used onsite are computers using multi-touch operation or computers running software that are not virtual machine compatible."

The switch infrastructure uses Arista switches in a spine-leaf configuration. The storage for audio and video is on NetApp. Audio routing and studio mixers are Lawo PowerCore consoles using Ravenna AES67 audio between the devices. Automation/playback is an RCS Zetta system; audio editing is on Avid ProTools or Adobe Audition.

The performance studio uses an SSL System T S332 console with Dante AES67 audio for connections between the SSL devices and to the Lawo mixers. Video PTZ cameras and switcher are provided by Panasonic; the cameras are converted from SDI to 2110 IP video streams using Riedel SFP converters in the Arista switch infrastructure.

The video switcher is a Panasonic Kairos platform, providing switching, multiviewers, graphic capability, clip players and still store for graphics.

Other studio hardware includes Heil PR40 Microphones, Comrex Access Multirack IP Codecs, Tascam Flash Recorders and Telestream video recorders. The studio is serviced by SiriusXM's in-house engineering team.



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Some ideas in your search for engineers

Don't just run a help-wanted ad and then give up

Writer

Steve Tuzeneu

CBT

General manager/chief engineer, WIHS(FM), Middletown, Conn.

Torsten Asmus/Getty Images

It sounds like a movie title: "In Search of Engineers."

The story began back in 1996 when the FCC allowed corporations to own multiple radio stations. On the one hand, this was good for companies that wanted to own more radio stations in a given market; on the other hand, it wasn't so good for the people who worked for them.

Financial officers saw an opportunity to maximize profits by operating more stations with fewer staff members. As a result, many people lost their jobs, including engineers.

Engineers who had maintained one or two stations now had to be responsible for a dozen or more. The ever-increasing responsibilities of chief engineers had a big impact on morale. I personally knew a chief who left his job at a cluster of radio stations to take an IT job at a group nearby. He gets paid better and is on call only once a month.

It's becoming more difficult to locate an engineer to fill an opening. We've seen an increase in the number of help-wanted ads for engineers for both the radio and TV markets.

We are all painfully aware of the shortage of engineering help, but what is a hiring manager or director of engineering to do?

Start with the money

The first step is to evaluate the salary you pay an engineer.

As noted, some engineers are leaving the field to join the ranks of IT professionals for better pay and a much better working environment. That's your competition.

The average gross salary for a chief engineer is $55,000 a year. Perhaps that may seem like a fair wage; but consider the high cost of living in many parts of the country and the shrinking value of the dollar. It's not a lot of money for a job where you are on call 24 hours a day, seven days a week, including holidays.

Do some research on salaries for engineers; perhaps you could start with the Society of Broadcast Engineers, which has a good idea of what is a fair wage to pay your current or future engineer. There are radio groups paying very competitive wages. If you aren't, your opening could go unfilled indefinitely.

The next step is to evaluate how you treat your engineering help. Is he or she treated with respect or disdain? As an asset or a liability?

When you have to drop everything to get a radio station back on the air during your son's birthday or the annual family picnic, or at all hours of the night, it has a negative impact on morale. An engineer friend of mine was working all night at a transmitter site and came into work late the next morning, only to be reprimanded by his boss. A little appreciation and understanding go a long way.

Equip your engineer. Most radio stations and groups provide a vehicle for use by their chief; but I read a help-wanted advertisement for a chief engineer where the candidate was expected to use his or her own vehicle to travel to transmitter sites. I have my doubts that the station has filled that opening. Similarly I once worked for a group that expected me to sell off old equipment to raise the money for an engineering budget. That's not what an engineer expects to have to do.

Begin your search for your chief by placing an ad on the SBE website. It's free and is the first place many engineers look for work. You may also view résumés of engineers looking for work; there is a fee for this service, but if you really want to hire someone, it's worth it.

If listing your opening with the SBE doesn't get you

good candidates, try contacting the chairman of your local SBE chapter. It's possible the chairman will know who is looking for a job in your area. Maybe you could attend one of your local chapter's monthly meetings and announce your opening.

Also consider making a pitch for your opening at a local amateur radio club meeting. An amateur extra class ham would be a good candidate for your chief engineer position; any extra class hams know nearly as much as experienced broadcast engineers. Google "amateur radio club near me."

> **"We are all painfully aware of the shortage of engineering help, but what is a hiring manager or DOE to do?"**

Keep at it

Other places to promote your opening for an engineer could include colleges with engineering majors, vocational-technical schools or the Cleveland Institute of Electronics. Ask for the names of graduates or people taking broadcast engineering courses.

If you have tried these ideas and still don't have an engineer, consider training someone who is interested in becoming an engineer. The SBE has many educational programs, even a mentoring program for new engineers. The society might even be able to recommend someone in a mentoring program as your next chief. Visit SBE.org.

As a last resort, you could offer a job to an engineer at another station or group. If you can pay better, you might just have an interested candidate. A couple of radio groups contacted me about working for them, so I know this happens. Once in a while I learn about someone who's looking for a better situation, so you could contact me for a referral.

Be persistent. If all else fails, you may need to look around for a contract engineer or a company who specializes in radio broadcast engineering. You can find both through the SBE website or your local chapter chairman.

Other ideas? Tell us in a letter to the editor at *radioworld@futurenet.com* or contact me at *stuzeneu@sbe.org*.

The author began his career in 1973. He is an SBE member and an amateur radio extra.

Mark Lapidus
is a veteran multi-platform media and marketing executive.

Make life easier for your listeners

The frictionless future awaits — and that's not fiction!

I've been thinking a lot about friction lately.

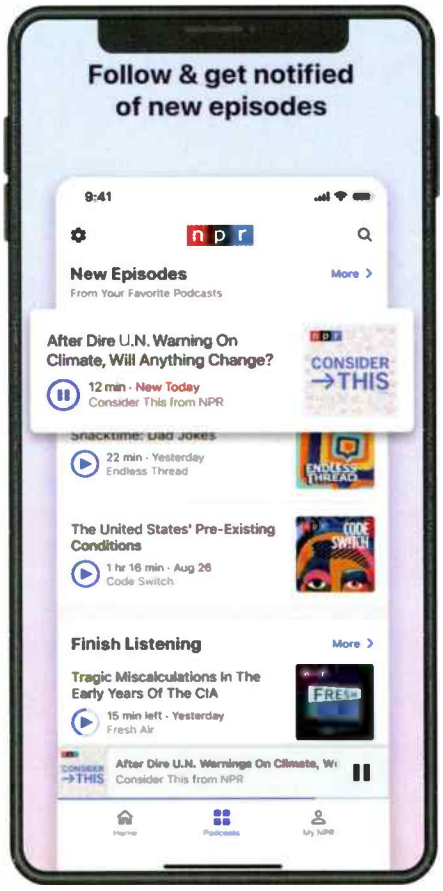
To clarify, it's become increasingly clear that the fewer obstacles placed in front of users, the greater the action and enjoyment. This explains a large part of Amazon's success, where you click, pay and get the stuff with fast and free shipping.

It also explains why passwords and double authentication are doomed thanks to biometrics and its future iterations.

A recent example of a friction-free phenomenon is when the social media world was rocked by the immediate success of Instagram's Threads app, which gained 100 million users in just five days. To put this in perspective, everyone had been blown away when ChatGPT hit 100 million in two *months*. And it took five *years* for Twitter to scale to 100 million users.

Whether Threads will turn out to be a long-lasting success will be seen. But how did Threads do it? Meta's 2 billion-plus Instagram users simply download the app and Threads automatically populates followers. In less than a minute, new Threads users are reading and posting. The interface is similar to Twitter, so even acclimating to Threads is frictionless for most users.

One of broadcast radio's greatest strengths is that it's already inherently frictionless. A user turns on the radio and presto! How can radio stations grow usage with minimal friction for listeners?



Here are a few frictionless presentations that some stations use but others have yet to embrace:

Not enough stations offer on-demand content. This allows the audience to listen to specific shows, or even segments, whenever the mood strikes. I've come to rely on NPR One, which allows me to skip stories and focus on what I enjoy most. The only odd part about the app is that it "penalizes" skipping; if one skips too much, they serve promotional announcements or sponsorship notices. I also enjoy entire shows on-demand using the app for WWOZ New Orleans. They have a two-week stream archive, a feature rarely found on other station apps.

Another contribution to the frictionless experience is the ability to download shows for off-line listening, especially for those traveling. At the very least, your high-profile morning show should be available on demand.

Seamless transitions between devices should also be in your future. Today it's only natural to begin listening on one device — like your phone — and then be able to pick it up from where listening was paused, whether on laptop, smart speaker or tablet. Not streaming on smart speaker yet? News flash: Smart speakers are not going anywhere. Too many smart homes already rely on them and their use continues to grow by over 20% annually.

Data should be frictionless on broadcast receivers and on apps, but often it is not. On a car radio, listeners should always see song and artist information displayed via RDS or HD Radio metadata. However, at least on RDS, the data often doesn't scroll properly, character spacing is poor or the station's previous format is still listed. And radio is truly missing out when this basic data isn't even turned on for broadcast or apps.

Each one of these and other frictionless experiences you provide is an opportunity to generate revenue from sponsorships. In ways not yet predictable, artificial intelligence will assist in providing frictionless experiences.

Right
The author likes how easy it is to use the NPR One app to find what he wants.

BW Broadcast Signs Up Progressive Concepts

Progressive Concepts has been named sole authorized dealer and service center for BW Broadcast equipment in the United States.

"Following corporate restructure, United Kingdom-based BW Broadcast is now in full production with improvements to existing products and new products being developed," Progressive Concepts said in its announcement.

BW Broadcast makes and sells FM transmitters, translators, rebroadcast receivers and audio processors. Relevant products are FCC certified and Industry Canada approved.

"Progressive can also announce that all new BW products supplied by them in the USA will now come with a groundbreaking four-year warranty," it said. For its part, Progressive Concepts, based in Illinois, was founded by Eric Hoppe in 1990. Its product lines include FM transmitters, AM and FM test equipment coaxial cables, antennas, towers, microphones, codecs and mixing consoles. In addition to its own branded gear, it represents manufacturers such as Radiologik, Barix, Deva, D&R, OC White, JK Audio, Altronic, Belden, Electro-Voice and Vectronics.

Info: https://progressive-concepts.com

ENCO Acquires DoCaption

ENCO expanded its captioning services with the acquisition of France-based DoCaption, which makes captioning, subtitling and ancillary data solutions for broadcast and AV.

The announcement marked ENCO's third business pickup in the past year, following the acquisitions of TranslateTV last July and Rushworks in January.

ENCO said DoCaption offers broadcast ancillary data solutions for encoding, conversion, transcoding and monitoring. DoCaption's products also include solutions for SCTE 104 metadata signaling and insertion for ad markers, SMPTE timecode generation for synchronization, scoreboard data encoding for venue displays and integrated open captions generators and keyers. Typical users include OTT channels, MVPDs and streaming services.

ENCO, based in Michigan, retained DoCaption's product line, intellectual property, staff and business operations based in Valence, France.

Info: www.enco.com/products/docaption

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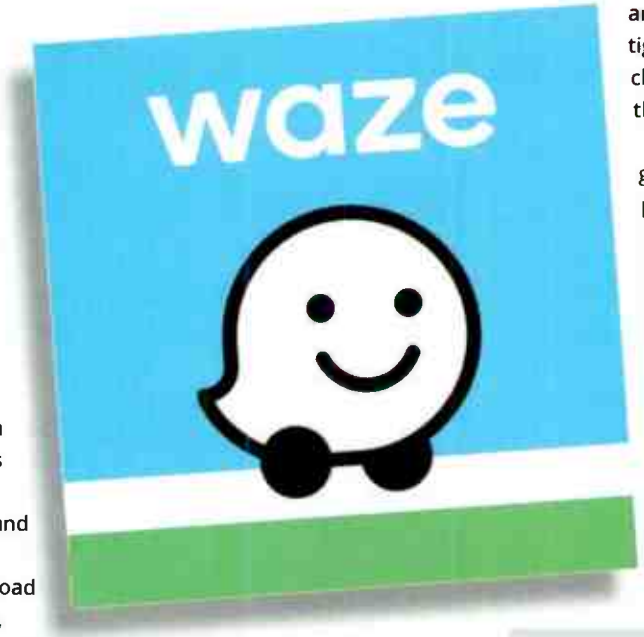
Why I don't trust Waze



Regarding "Traffic Reporting in the Age of Waze" *(http://radioworld.com, keyword Waze)*:

Here at KBUU(LP) in Malibu, we have been doing live traffic reports for the Santa Monica Mountains region during morning drive for nine years. And before that, I was an assignment editor at L.A. TV stations for 30 years.

Let me tell you how wrong Waze and the other automated apps can be.

First, they misread data. When a road is closed, as often happens out here, they read the lack of traffic as "smooth sailing" ... sometimes for hours or even days.

Second, Waze does not display the direction of heavy traffic. A crash affecting a freeway in one direction will show up on Waze as affecting both directions.

Third, Waze apparently relies on some sort of human being to draw red and white hash marks over closed roads. These are frequently incorrect, and very often the hash marks are not removed until 12 to 24 hours after the road has actually been reopened.

Fourth, Waze does not factor in things that cannot be detected electronically, such as a reporter's phone call to the sheriff to ask how long a road closure might exist. Or a glance at the TV chopper live shot showing that the downed power pole blocking a major route is actually a minor problem and will likely be cleared up very quickly. Or a tip from a listener.

Fifth, Waze does not factor in fire department dispatches. When traffic is affected by an incident, checking the fire department dispatches can tell you how long the road will be closed. Detours out here mean a two-hour drive around, and sometimes it's better for drivers to just hang tight. If it looks like it was a small housefire that closed the road, waiting is better than going all the way around.

Sixth, Waze reports of crashes are only as good as the drivers clicking the buttons on their phones. Particularly on freeways, this is very random. I can watch the CHP deal with a crash on their dispatch log at a certain interchange, describing exactly where it is, and the Waze crash alerts are miles away.

Waze is very good for one thing and one thing only, and that is a first alert. Its information is routinely bad, imprecise and not relevant.

Hans Laetz
General Manager
KBUU(LP)
Malibu, Calif.

More talent, less faking

Re "Daniel Anstandig addresses worries about AI and RadioGPT" *(June 21 issue)*:

So Daniel is telling us that radio is already mostly fake, and he's here to offer us a cheaper way to make fake radio? And it might sound better than voice-tracking and sweepers in some ways?

But then how do we differentiate ourselves, the OTA and IP streams, from the vast wasteland that is the internet, which is now almost totally fake?

What radio desperately needs is more talented people, not fewer. We need to reestablish our credibility with the public and not continue down this path that began in 1996 with the new law and the horrible consolidation it encouraged.

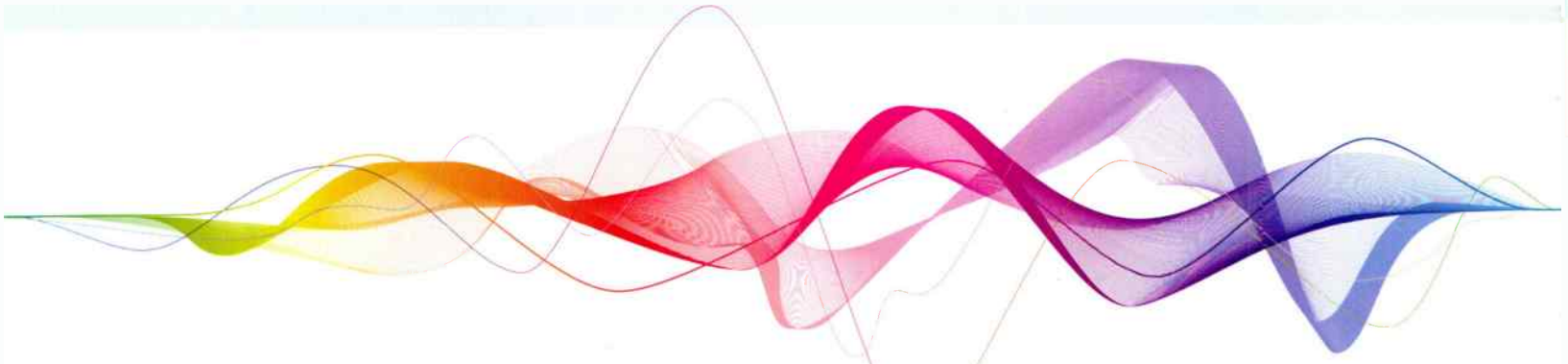
Gary Keener
San Antonio, Texas

"Detours out here mean a two-hour drive around, and sometimes it's better for drivers to just hang tight."

Think creatively to protect your service

In considering whether AM radio can continue to exist, its need for land is among the complex issues. But sometimes solutions present themselves. Here's one that seems to be working out.

Recently a roofing and construction company had to sell its property for a new highway interchange. They needed to find new land where they could store their equipment and



surplus inventory; they wanted a good-sized plot that could be secured with fences and cameras to prevent theft.

Nearby, a site with two towers was available, home to an AM and an FM station.

The roofing company was not interested in broadcasting; nor was the broadcaster interested in owning the land anymore. But it wanted to keep a local radio service on the air.

Getting these two parties together seems to have yielded great results. The roofing company bought the land and used its heavy equipment to clear 20+ years of overgrown weeds and trees. The broadcaster negotiated a reasonable monthly rental agreement.

The 70-year-old station building is being converted into a three-bedroom apartment for roofing employee housing. A small area with separate door contains the transmitters and related equipment. The station building is close to a busy highway; maybe it would make a good storefront or small business office.

Could this be a solution in other small markets? All it took was a little brainstorming and a couple of phone calls to ask a few questions.

"What if" thinking can be interesting and rewarding. Small-market radio is about the synergy between local advertisers and local advertising; this just goes one step further.

Michael Baldauf
Rye, Colo.

How to submit

Radio World welcomes comment on all relevant topics. Email *radioworld@futurenet.com* with "Letter to the Editor" in the subject field.

A vote for better AM radios

I really liked Don Elliot's commentary "Who Benefits by Removing AM From Cars?" *(radioworld.com, keyword Elliot)*. But our problems extend beyond just interference, which he points out has largely been solved.

We have lousy-sounding radios to deal with as well. How is it that a car sound system that has booming, full-fidelity audio in every other mode sounds like a 1960s pocket transistor radio with a 2-1/2-inch speaker? If radios actually sounded decent on AM, not just when decoding HD, there might be more listeners.

I haven't done an extensive test with the radios in my vehicles, but most sound like they roll off around 4.5 kHz and have little to no low end on them either, possibly 150 Hz at best.

If that isn't fixed, AM will truly be just an emergency broadcast service, if it survives being reduced to that.

Scott Todd

He seconds that emotion

I am a bit chagrined that AM has been declared dead and no one has even tried to optimize the listener experience!

The receivers are dreadful, wasted design effort. The new DSP chip receivers waste the computing power by modeling a diode detector with NO enhancements of the basic technology. Autocorrelation of the two sidebands, impulse noise blanking and variable bandwidth are easily accomplished in the programming of the DSP, and after the initial programming effort they cost NOTHING to incorporate into the final product.

Yet no one seems to care that they could have a clearly superior receiver to market for a token expense!

I can optimize the heck out of the bandwidth, the distortion and the group delay in addition to linearizing the transmitter system to sound transparent, yet with only crappy receiver designs to choose from, my efforts have only limited results.

Timothy Cutforth
Director of Engineering
Broadcast Engineering Consultants LLC
Denver

"I am a bit chagrined that AM has been declared dead and no one has even tried to optimize the listener experience!"

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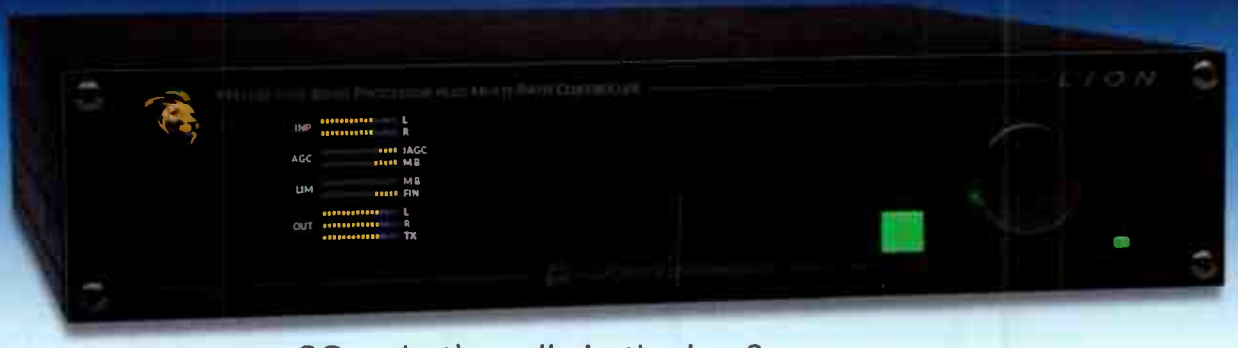
Well...not really. Our LiON has the latest Wheatstone DSP algorithms; it is *not* a 90's era processor by any means. The AUDIOARTS LiON Five-Band Processor/Multipath Controller has WheatNet-IP, so it can be networked. It has analog and AES3 so it can stand alone. It has Wheatstone SystemLink™ built in, to send full 24-bit linear audio directly to your transmitter over reliable high-speed links — Baseband 192 MPX with FM+HD timing locked (no codec to degrade audio quality). And it comes with 50 presets so you can plug and play.

Let your signal ROAR on a kitten budget!



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- ITU-BS.1770 loudness metering and controller

AUDIOARTS ENGINEERING

Wheatstone

Manufactured in North Carolina USA