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RADIO WORLD

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Audi Drives Infotainment Upgrade

Anupam "Pom" Malhotra discusses the automaker and dashboard connectivity

NEWSMAKER

This is part of a series to help radio managers understand how automakers are grappling with issues surrounding the "connected car." For more, see radioworld.com/dashboard.

Audi recently upgraded its infotainment platform to include more Internet radio options as well as other changes.

Development of a vehicle platform takes longer than typical lifecycles of consumer electronics, so Audi has handled this by consolidating certain functions into a small circuit board called the multimedia extension module. The board can be upgraded model year by model year.

Last year Audi introduced it in the U.S. in the A3 sedan; this year, Audi is introducing the modular architecture on its MIB-2 platform, which has higher graphics capability.

Anupam "Pom" Malhotra spoke with Radio World News Editor/Washington Bureau Chief Leslie Stimson about this and other topics. An engineer and native of New Delhi, India, he is senior manager of connected vehicles for Audi of America, responsible for Audi connected car businesses in the U.S., as well as infotainment and electronics product management.

Malhotra joined Audi in 2010; he had been head of enterprise quality for

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Consumers can access various types of radio on the driver's display on the Audi Q7.

Fostex: The Digital Side of an Old Friend

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FCC Closures? Who You Gonna Call?

A former district director decries the field office closure proposal

COMMENTARY

BY WALTER GERNON, WITH REBECCA WILLMAN GERNON

The author is a former FCC district director for the states of Louisiana, Mississippi and Arkansas.

The Federal Communications Commission has proposed to reduce the number of its field offices from 24 to eight, and the field staff from 63 to 33, to better deploy its assets and save

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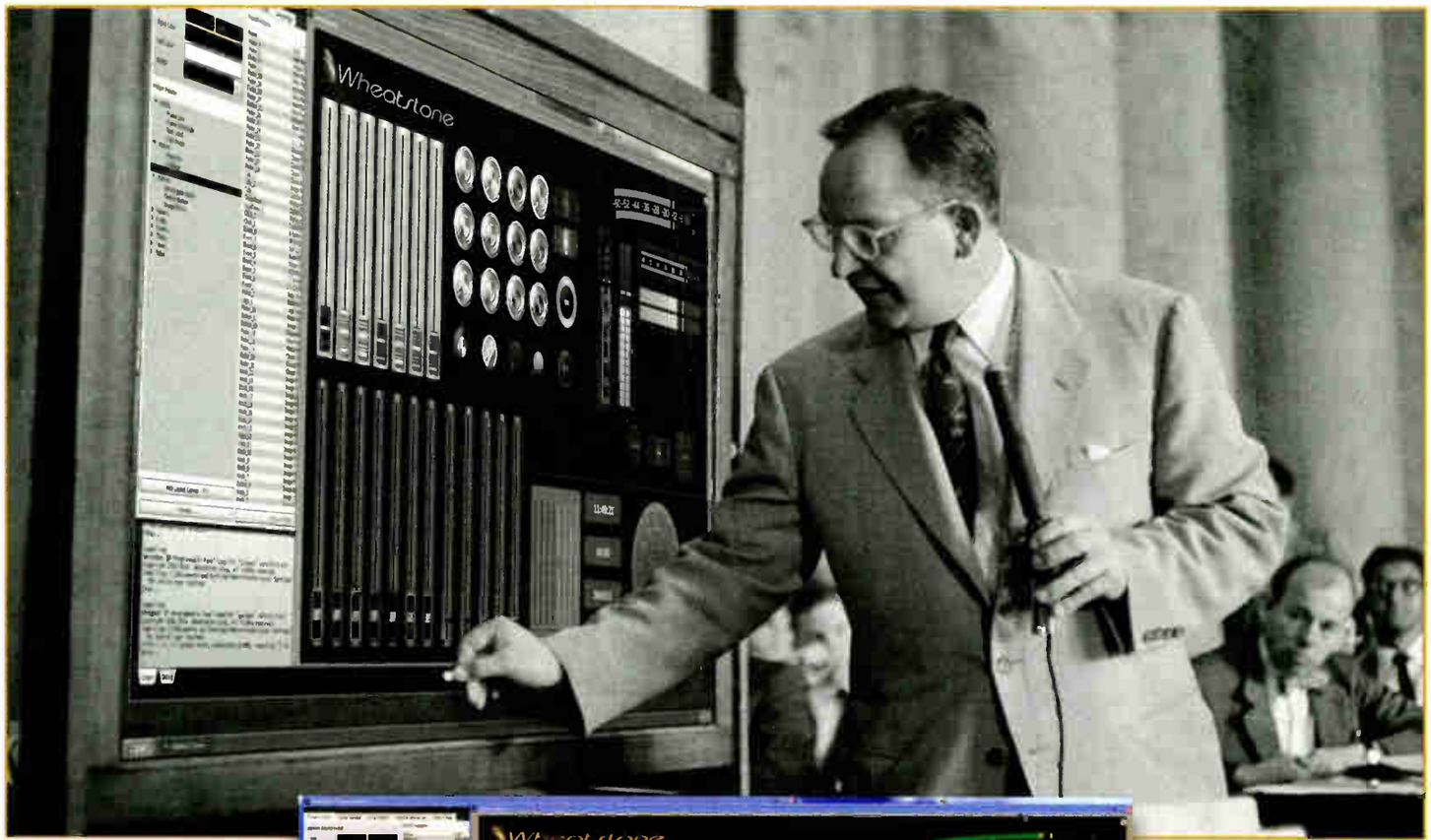

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FCC FIELD OFFICES

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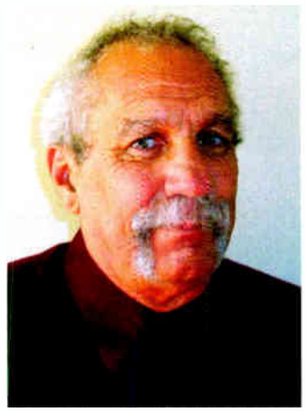
money. If this proposal is implemented, the long-term result will be degraded communications for licensees and the general public.

The planned Tiger Team, composed of agents dispatched from a distant location, in most cases, will be unfamiliar with the unique geographic features and RF intangibles of the area of interference and will not be able to resolve interference in a timely manner. Unresolved interference to safety of life communications, i.e., marine, aviation and public safety communications, could result in disastrous events not only for licensees but also the general population.



Walter Gernon

An FCC agent is the only entity that has the authority to enforce compliance and require operators to cease harmful transmissions. Under this proposed staffing, disruptions in cellular service, use of jamming devices, pirate radio transmissions, transmitter malfunctions and cable leakage may continue for days.

A top priority for the commission has always been interference-free safety of life communications. Vessel Traffic Service offices and similar entities, which direct traffic on our waterways, depend on interference-free communications. Marine communications in lakes, rivers and coastal waters by the U.S. Coast Guard, Navy, commercial operators and the boating public are currently served by 16 FCC Field Offices: Chicago, Detroit, Buffalo, N.Y., Boston, New York, Philadelphia, Norfolk, Va., Miami, Tampa, Fla., New Orleans, Houston, San Diego, Los Angeles, San Francisco, Portland, Ore., and Seattle.

MARINE, AVIATION USERS

Under the proposed plan, Chicago, New York, Miami, Los Angeles and San Francisco will serve the needs of all marine radio users.

Commercial shipping on the Mississippi River, the port of New Orleans (busiest in the U.S.), the Gulf Coast, the Houston Ship Channel, intercoastal waterways and large naval installations such as the one in Norfolk, Va., will all be vastly underserved.

Aviation radios, both land-based and those in aircraft, can and do receive interference from a variety of sources, including cable leakage, wireless devices, electrical systems, malfunctioning radios, Emergency Locator Transmitters and intentional jammers. FCC field agents have a working relationship with area Federal Aviation Administration personnel that enables them to recognize, locate and resolve interference issues promptly.

A proactive function of FCC field agents is to drive cable television systems with vehicles equipped to detect signal leakage. Cable companies are required to check their system continually for leaks, because some CATV frequencies are shared with the aviation service.

The random inspection of CATV systems by FCC field agents for leaks is an important oversight function that cannot be ignored. When interference to aviation frequencies occurs, commission field agents have the equipment, expertise, knowledge of CATV personnel and equipment to locate the leaks, and more importantly the authority to require CATV systems to fix the leaks.

Cell phone service is ubiquitous. The public expects perfect reception. During the past few years, cheaply-made, easily-obtainable cell phone jamming devices have become common.

These devices produce a broadband signal rendering cellular phones, public safety radios and GPS devices and other wireless devices useless in a given area. Without real-time interference resolution, employers, criminals, terrorists or pranksters could use jamming devices to profoundly affect all types of wireless communications.

EAS, HAMS, PIRATES

The Emergency Alert System tone, that noisy buzz we hear weekly on all broadcast stations, is effective because FCC field agents actively assisted in the implementation phase, and ensure continued compliance by routine inspections. Advocates for the proposed reduction of commission agents will argue that the Alternative Broadcast Inspection Program will ensure that EAS continues to function; but less than half of the broadcasters participate in ABIP, a voluntary, private program that charges broadcast stations for an inspection.

Most broadcasters are responsible and comply with EAS requirements, but if several neglect their duties, the entire system is put at risk and the public will not receive weather information and disaster alerts from city, state and national officials. In addition to ensuring compliance to EAS, commission field agents ensure stations comply with the parameters of their license and assist broadcasters by locating interference to a station's STLs, RPUs and wireless microphones.

Pirate broadcasting is a growing problem for licensed broadcasters as well as the general public. Unlicensed transmitters are easy to obtain and often drift off frequency or produce spurious emissions in the aviation band, which could have a disastrous result.

Amateur radio, in addition to being a hobby for many, plays an important

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An FCC field office investigated this pirate radio station in an abandoned building in Lake Charles, La., about seven years ago.

Let's Take It Back to the Dealer

For radio to flourish in the modern dash, remember where the rubber hits the road

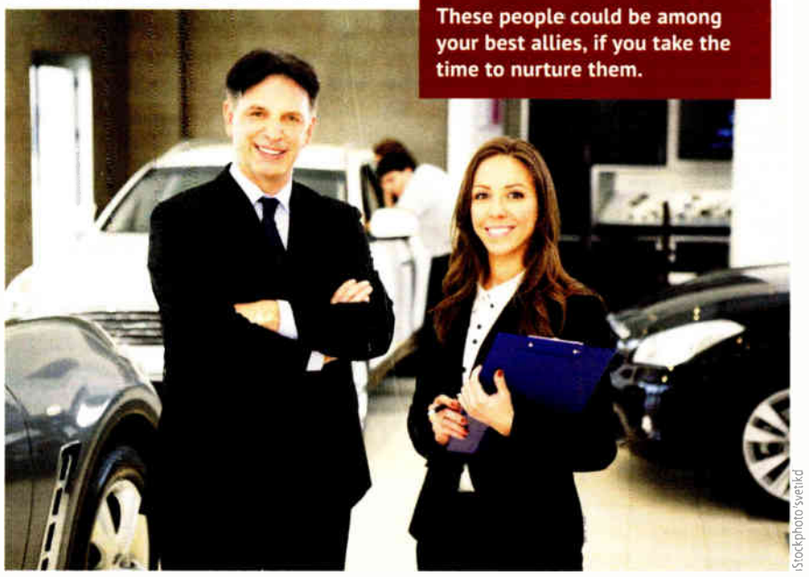
In preparing for a journalists' panel at this month's NAB Show, I was chatting with Fred Jacobs, president of Jacobs Media, an industry thought-leader active in new digital media, apps and so forth.

He lamented that even today — with so many consumers driving around with powerful, multimedia infotainment systems in their cars — only a fraction of radio station executives and managers have driven such a car, much less own one.

It was my impression that most radio people were *well* aware of the near-revolution in how people listen to content in the car, where radio had reigned. Perhaps not; or perhaps too many of us are just looking the other way. Fred's anecdote makes me want to know whether *you* have a car with an infotainment system or "connected dashboard," and what your experience with it is. Write to me at *radioworld@nbmedia.com*.

But it seems certain to me that traditional radio will continue to face more and more competitors within the crucial automotive listening environment. Fred continued our conversation by saying that for radio to flourish in the car, our industry needs to go beyond high-level, broad conversations with carmakers by the heads of the NAB or RAB. That conversation needs to happen locally, on the street, with a partner that radio stations know well: the local car dealership.

The person selling today's cars enjoys a crucial role in forming consumer impressions about radio and new media options. From both a revenue standpoint and an educational standpoint, Fred told me, these car salespeople can effect change. That salesperson's head may be full of the sexy benefits of satellite radio or Pandora or navigation tools, but he or she probably hasn't been visited this quarter by a Pandora representative. The car salesperson also knows your radio station's strong local brand; he or she needs to hear about the powerful positives that *local* radio stations bring to drivers, too.



These people could be among your best allies, if you take the time to nurture them.

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Fred Jacobs thinks it's time for radio people to get back to their local dealers with the specific goal of enhancing radio's standing there; educating dealer staffs about what radio does well; and creating partnerships that take advantage of radio's existing, and very powerful, local standing.

FROM THE EDITOR

Paul McLane

Wheels of bureaucracy turn slowly; but at the behest of two engineering groups, the FCC is moving to modernize rules governing remote pickup systems as used by radio and TV stations, broadcast and cable networks.

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FCC FIELD OFFICES

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role in disaster communications. FCC agents assist in resolving interference to ham radios from sources as diverse as broadband over power lines to remote-controlled devices. If a ham operator causes interference to neighboring home electronic devices, commission agents mitigate the dispute and ensure compliance with FCC rules.

Agency personnel in the FCC field offices also have a working relationship with electrical utility companies. They assist these companies by pinpointing electrical interference to consumer products.

FCC Field Offices had a drastic reduction in force in 1996. In the ensuing years, they were left to twist in the wind under a policy of benign neglect. This occurred during a time of unprecedented growth in wireless communications. FCC staff should have been maintained or increased to keep pace with this growth, but field engineering staff dwindled. Their important oversight, compliance, interference resolution and expertise to police, fire and other public safety agencies were curtailed.

The interference resolution expertise of commission field agents is unique, unmatched in the industry. Whoever is responsible for this proposal has no concept of the difficulty of direction-finding in a marine environment with metal wharves and numerous vessels; or in mountainous regions with canyon walls reflecting the signal; or among skyscrapers on busy streets.

In addition, interference is often sporadic, caused by an unstable transmitter. This type of signal is difficult for experienced agents to locate. By taking FCC field agents out of this equation and sending Tiger Teams to resolve interference is applying a one-size fits all mentality.

Depending on a Tiger Team to assemble, deploy and mitigate an interference problem within a reasonable amount of time is delusional and unreasonable. Pirate radio stations are often sporadic in nature, operating only a few hours a day or a week. Locating these transmitters, a routine Field Office function, would pose a logistics nightmare for a Tiger Team. What priority would be given to the myriad consumer interference issues that are dealt with on a daily basis by FCC field offices? With less technical staff in the future located throughout the county, problems will be ignored with the hope that they will go away; a major disservice to the general public.

The plan fails to mention that most district directors actively work cases and perform the duties of field agents because of a lack of staff. In the last 20 years, more attorneys than technical staff have been hired by the FCC's Enforcement Bureau. This is not an efficient use of resources in regard to interference resolution, on-site investigations, consumer education and compliance with the Communications Act.

Proponents of this proposal argue the FCC field staff doesn't need to perform these functions. But commission management should not ignore the fact that the field staff historically has performed these duties, and with the proliferation of radio devices, the field staff is more important than ever.

The FCC has a fiduciary responsibility to the American public to ensure that the best communications infrastructure in the world remains just that: the best. Katrina, 9/11 and other disasters taught us that interference-free, reliable communications are critical. Anyone who flies in an aircraft, uses a marine radio, talks on a cellular phone, depends on the EAS system, listens to radio, watches TV or runs a business with a stake in uninterrupted, reliable communications must question how this proposal will serve their needs.

Walter D. Gernon began his 30-year career with the commission as a license examiner in the New Orleans Field Office and was the district director for Louisiana, Mississippi and Arkansas for the last four years of his FCC career. His wife Rebecca Willman Gernon was a field agent for 15 years.

EFFECTS OF FCC DOWNSIZING

Walter Gernon lists the following as reasons not to close field offices and reduce the number of field agents:

- Loss of FCC presence nationwide
- Only three offices west of the Mississippi
- Slow response to all radio interference
- No local direction finding experts
- Reduced enforcement compliance with FCC rules
- Increase in pirate radio transmissions
- Interruption of radio communications by jammers in all services
- No oversight of cable leaks that can disrupt aviation communications
- Marine communications lost due to interference from faulty transmitters
- No other entity equipped, skilled or authorized to resolve wireline and wireless communication problems

MALHOTRA

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location-based services for the General Motors connectivity brand OnStar. He was named to his current position in 2012.

RW: Overall, how does Audi view radio in the dash? Broadcast radio, Internet radio, satellite radio. Where do you see its place?

Malhotra: I think that radio is fundamental to the entertainment options that customers expect to see in a vehicle. There's certainly been a true evolution of radio over the years. And we've kept up with every trend that's come up. From AM to FM to HD Radio to Sirius satellite radio and then, now, of course Internet radio. And within that Internet radio moniker there's actually several flavors. We introduced Web radio in the A3, which is broadcast Internet radio stations, and we have a refresh with the new RS7. This comes with our MIB-2 infotainment platform, which is an upgrade from the A3 infotainment, and this now will allow Internet radio as well.

We have three different flavors of Internet radio providers that we will be coming in with, one being a subscription service, one a service that allows you to basically select from a list of several million songs and play whatever's out there. And then another one that actually streams the music to you and allows you to send your preferences — either you like it or you don't like it — and then based on that [it] adapts the stream to your individual tastes.

RW: Are people connecting using a cable or are they expecting a wireless connection now?

Malhotra: I think they're expecting it to be as easy as possible. The ideal way to do it is to have it be no different than radio that comes right in the head unit, so I can select from whichever band I want to go into. We're very close to that implementation now. We have Internet radio that comes in through the smartphone.

And we have an Audi Connect app that sits on your smartphone. We have other applications that work with that app. Your Internet radio app would be accessed by the Audi Connect app.

But the nice thing about it, and the reason we've done it this way, is the Audi Connect app itself does not have to be handled by the smartphone. You can handle it from the vehicle's controls.

Anupam "Pom" Malhotra is senior manager of connected vehicles for Audi of America.

RW: From the steering wheel ...

Malhotra: Yes, the steering wheel, the same interface that you use in the car to select different options. Say when we go to a media area, within media you have sources ... where today you can select from CD, DVD, the jukebox, the hard drive in the car, that is, the SD cards. We also have within there an option for your phone, for Bluetooth.

We also have, since we launched Audi Connect, the option to include your phone through Wi-Fi, and we're expanding that, offering to include not just Web radio, but also the Internet radio providers as well. That list of options will grow.

What's even more interesting is we're bringing in Apple CarPlay and Google Android Auto integration. That really makes this interesting because now I don't have to guess which provider you [the consumer] like to listen to in the car. The providers of these apps will adapt their apps to work with Apple CarPlay and Android Auto, and we're giving the access in the vehicle ... it's been designed and streamlined ...

The smartphone integration can be controlled directly from the interfaces in the car. So you don't have to go out and touch the screen like you have to do on your phone. You can use the same controls in the vehicle — that you're used to using — that are important from a driver distraction standpoint, in order to control these apps.

RW: When will your implementation of the Apple CarPlay and Android Auto be available?

Malhotra: The next-generation Q7 is the vehicle that will first get that, and then every vehicle after that gets it, so that's about a year away, in the U.S.

RW: Will drivers be able to see the word "radio" or an icon on the first screen?

Malhotra: No, what will happen is, when you go to the main menu, you have a string of different options like media, navigation, telephone. Within that ring of options — we added Audi Connect at one point — where you could go to the online services function.

Now we've also added a smartphone interface, and if you have an Android phone plugged into the USB in your vehicle it will show Android Auto. If you have an iOS phone plugged in, it shows Apple CarPlay. When you select that option ... what you see on the screen is actually being projected from your phone. So your phone screen is blank and sitting in your console somewhere.

RW: You're not tempted to look at it ...

Malhotra: You're not going to be able to touch it, and the controls are there with the Apple configuration. ... You see the icons that you're familiar with seeing on an iPhone ... the music icons, your iTunes library's available, you have the navigation icon, telephone icon, the messaging icon. And if you have Android Auto, you also have a similar set of icons, except they're laid out in Android format.

So you'll have access to the Google Play store directly through a tablet that we are bringing into the car for rear seat entertainment. This is a tablet that Audi has developed. ... It still is a touchscreen as well. But the big thing is, in addition to working over Wi-Fi in the car, it can also directly access Audi Connect in the vehicle. So you can plan a destination in the back, send it to the front, and the driver can accept it.

RW: So the driver doesn't have to do all the thinking...

Malhotra: If you're on a vacation and you have kids in the backseat, it gives them something to do. ... It will also let you stream the DVD you have in the vehicle directly to the backseat. Today, our DVD players only allow the stream to be visible when the car's stationary. As soon as the car starts moving, the DVD blanks out, so its usefulness is a little bit limited as a result of that. Now, as a rear-seat entertainment system, we can use that front DVD, instead of putting a separate DVD player in the back, the front DVD can stream directly over Wi-Fi to the tablet ... We think entertainment in general can be in the car is evolving in many different ways.

RW: And to be clear, you're including AM, FM analog, HD Radio, Internet

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RPU

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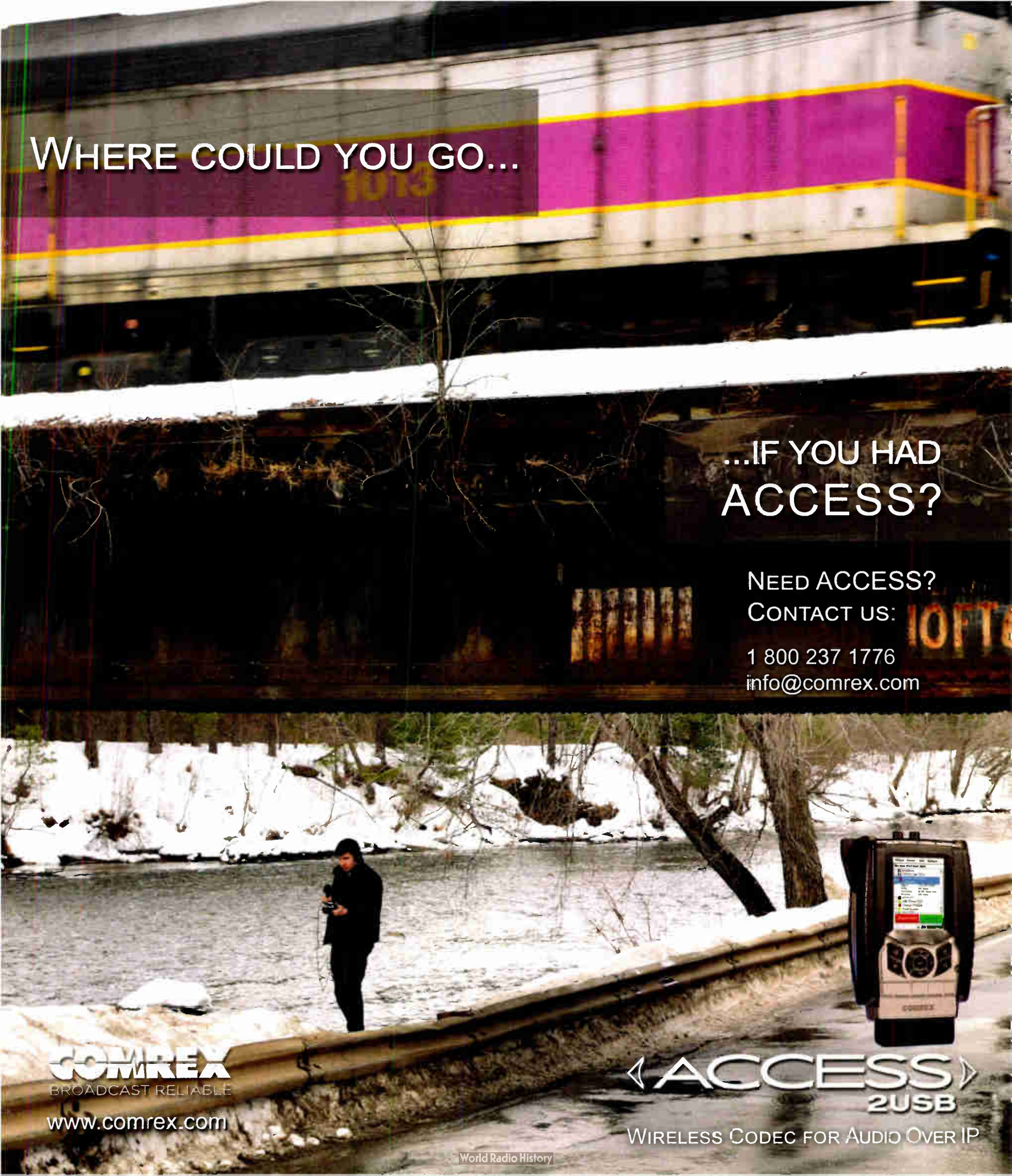
The commission has begun a rulemaking to update Part 74 rules concerning broadcast auxiliary stations, including RPUs. The goal is to eliminate "outdated barriers" and to allow stations to use frequencies and digital transmission technologies more efficiently. It says these changes would give RPU licensees flexibility to choose from a variety of digital commercial "off-the-shelf" equipment (what federal government types call COTS, because government has an acronym for everything). This in turn would encourage licensees to convert to digital systems "and increase spectrum efficiency."

Public comments were due this month, with replies due around the time you are reading this (to WT Docket 15-36).

The current rules date to 2002; over several years, the Society of Broadcast Engineers and, separately, the group Engineers for the Integrity of Broadcast Auxiliary Services Spectrum have pushed for such changes. Thus prompted, the commission proposed to allow broadcasters to use any type of digital equipment. However, the commission decided that no rule change is needed to provide channel applicants more flexibility in interpreting center frequency assignments. And for now, at least, it declined to allow Part 74 licensees to use digital emissions in the VHF and UHF bands while the rulemaking is pending, as the SBE had hoped it would.

If all this affects you, you can read the full NPRM to see the exact frequencies and technical engineering data involved; I've posted it at *http://tinyurl.com/RWRPU*. And law firm Fletcher, Heald & Hildreth has a good summary concerning the complex engineering issues, at *http://tinyurl.com/RWRPU2*.



MALHOTRA

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radio stations and satellite radio in that entertainment system…
Malhotra: Yes.

RW: *Do you see AM and FM analog always being in the dash? I'm asking because broadcasters see all the choices in the dash and some of them are worried about that.*
Malhotra: I think there will be a time where you have to start looking and saying, is it time to maybe de-select a particular option? But we haven't quite gotten to that point yet. We continually have evaluations — a lot of discussion about AM radio — about does it make sense. But if you look at the U.S., you still have a lot of national parks that [operate] an AM station for information; a lot of sports channels that broadcast on AM stations, a lot of listeners for that; so we have made the decision that we will continue to keep AM as part of our suite. I know that there are some efforts underway, by even the government, to encourage AM operators to upgrade to FM.

RW: *Yes, on FM translators.*
Malhotra: Because that certainly gives a higher fidelity of sound. We will continue to monitor those developments. At some point, I think, the radio industry's situation on AM radio will probably drive what we do. … But yes, it's one of those things where we just have not seen the need to discontinue a particular option.

FM certainly has a huge following. HD Radio in certain markets improves the quality of what you hear from FM. They continue to evolve their offerings as well. SiriusXM satellite radio — that has gone from people questioning why people would pay for radio to now, sometimes you *miss* the BBC or Bloomberg in the car and the kids want the Disney channel. … So it's one of those things where I think they've made their place in the sand.

For us, it always becomes a question about do we limit the choice of our customer because of some reason. And that's a dangerous place to go. So we tread carefully there. Audi's more about letting the choice be there, and if a particular set of customer *only* uses satellite radio, that's their choice. And another customer, in the same family perhaps, may like to listen to FM radio.

Internet radio, I think, is an interesting development because now, the industry itself has an avenue of delivering content in a new way. And Internet radio is riding along the wave of connectivity in cars. So as connectivity in cars goes up — we're at about 60 to 70 percent install rates on connectivity in our vehicles, so about 70 percent of our cars are connected today.

RW: *Connected meaning with a tether or wirelessly?*
Malhotra: No, all embedded connectivity — built-in connectivity over a cellular connection, with 4G LTE connection. It's a very high-speed connection and therefore, very high-quality streaming. That gives us the ability to bring Internet radio in a very realistic way, and meaningful way. We're still exploring the space to see how the space grows. But clearly we've got platforms being developed, both on smartphones and within the head unit that will take advantage of all these developments.

At some point, I think, the radio industry's situation on AM radio will probably drive what we do.

RW: *Some in the radio industry were shocked when BMW chose to drop AM from the electric i3 and i8.At the time, they said that the motor caused interference to AM reception. And broadcast engineers are asking why they can't solve it.*
Malhotra: It is a problem. We have experienced the same types of development issues, interference issues, especially in electric vehicles. They tend to be more susceptible to that kind of interference, because it's an analog signal. …

It can be solved. It costs money to solve it. Audi has taken the position that we want to solve that challenge. And so we are not letting go of AM, at this point at least. But we are closely monitoring how the industry develops. I do think that, at some point, just like [the] analog cellular industry transitioned out, because you can use the airwaves for much more efficient, much higher-quality transmissions, that at some point, it may actually make sense for even the government to come in and say "It's time." We'll be monitoring that to see how that goes, but again, we're not about pushing that to happen, necessarily.

RW: *Is it an antenna issue? Because the antenna's embedded in the glass or the bumper…*
Malhotra: It's about how the antenna's shielded and the interferences that happen with the battery in the vehicle. Because … you have a lot of electromagnetic waves in the vehicle *because* it's an electric vehicle, the potential for interference increases. Especially with an analog signal, because an analog signal is not defined to a particular spectrum; it's very wide and it tends to be very inefficient in terms of it bleeds a lot.

Even though you might be targeting a particular frequency, you'll have signals that are in other frequencies around that band as well. And that tends to cause interference issues. So you have to do a little bit more work to protect and shield, which adds cost. It adds development time; it adds cost to the vehicle.

From a customer standpoint, we think at this point, those costs are likely to be manageable. At some point, I think you know, when the industry does evolve into a standard that doesn't *have* to necessarily rely on AM, or if the amount of following that's out there for AM goes down, I think that will change.

But I think it has to be driven more by the government than the industry. If national parks continue to use only AM channels for their broadcasts, then I don't think we're ever going to be able to get away from that, right? When are they going to [migrate] to FM? And that could drive the rest of the industry.

Comment on this or any story to radioworld@nbmedia.com.

NEWSROUNDUP

PANDORA: Pandora will be on the Apple Watch, which was expected to ship to customers in late April. The Internet audio service was on the iPhone when it launched in 2007, according to Pandora CTO Chris Martin. He said one benefit of the watch is that users will be able to access music modifications or control the volume without pulling out their phone.

PIRATES: Pirate radio broadcasters are illegal; they're not filling a niche nor acting as a training test bed for legal broadcasters, according to FCC Commissioner Michael O'Rielly. He wrote in a blog post that pirate radio "causes unacceptable economic harm to legitimate and licensed American broadcasters by stealing listeners." The Republican commissioner acknowledges that the agency's enforcement resources are stretched and suggests broadcasters be allowed to use a legal approach that's been used to combat email spam. That law essentially authorizes Internet service providers to seek out the bad actors for illegal activity and recoup their losses. The framework serves as a model to provide more options, outside of the FCC process, for deterring and eliminating pirate radio, according to the commissioner.

NAB: In response to a Radio World query about O'Rielly's anti-pirate proposal, NAB EVP Communications Dennis Wharton said, "NAB appreciates the fact that FCC Commissioner O'Rielly is putting a spotlight on the serious interference and public safety issues related to an unchecked increase in pirate radio stations. As Commissioner O'Rielly notes, pirate radio is illegal, and should not be tolerated. NAB will work with the commission to encourage creative new approaches to beefed-up enforcement and better policing of the radio airwaves."

PROGRAMMATIC: National ad agencies and their clients like buying their ads programmatically on digital platforms, and they've been pushing radio to develop such a system. IHeartMedia launched a programmatic and automated ad buying platform for its 850+ broadcast stations. At the same time, national sales rep firm Katz Media Group, owned by iHeartMedia, will introduce a programmatic buying ad exchange for the industry called Expressway from Katz. Cloud-based technology company Jelli is providing the underlying technology for ad exchanges. Proponents of programmatic ad buying say it's faster and allows more targeting than traditional media buys.

NAB HQ: The headquarters of the National Association of Broadcasters is in a fashionable Washington neighborhood but not as close to Capitol Hill or the FCC as its leadership would like for the convenience of its lobbyists and of lawmakers. NAB now has agreed to acquire a location near the riverfront in an economically revitalized section of the city that is closer to the Hill and the commission's current location. It entered into an agreement with Monument Realty to purchase upon completion a new building with a scheduled move-in by fall of 2018. NAB anticipates proceeds from the sale of its current building will help finance the new headquarters; and it expects to break ground on the new structure at South Capitol and M Streets SE next spring. Built in 1969, NAB's current headquarters houses some 150 employees.

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Remember the Vanguard?

Krazy Glue once helped this transmitter live up to its name

ROOTS OF RADIO

BY ED MONTGOMERY

The 1960s started the age of solid-state development. Groundwork for transistors and diodes had been laid with new applications being developed almost daily. Integrated circuits evolved into opamps; then early microprocessors were being developed. Most early solid-state circuits were low voltage and low current, relying on vacuum tubes for major amplification to drive speakers, or send signals to an antenna.

At one point, RCA developed a vacuum tube that had all of the identification characteristics of a transistor. They called it the Nuvistor, capable of operating in the VHF and UHF band where junction transistors did not perform well.

This was the hybrid era of electronics. Broadcast transmitters relied almost totally on vacuum tubes for final amplification. The tubes were rugged and had a long life when maintained properly. Solid-state started to creep in with the use of diodes rather than mercury vapor tube rectifiers.

Field-effect transistors entered the commercial market. The FET could operate in the VHF and UHF bands without the appearance of being a short circuit. FETs could be used in radio frequency applications. However, the workhorse for amplification was still the vacuum tube — in AM, quite a few tubes were needed to handle high-level modulation and the final amplifier.

VANGUARD

Times were changing and through its Gates transmitter line, Harris took a bold step in marketing an all transistor plus one-tube 1 kW AM transmitter.

It used low-level modulation, an unusual method for that era. They named it "Vanguard." A low-power "exciter," an unusual term back then for an AM transmitter, employed "diode modulation" to feed a 4CX3000A ceramic tetrode vacuum tube operating as a class-B linear radio frequency final amplifier.

If the antenna system was in good condition, permitting the Vanguard to be matched properly, it ran without problems delivering excellent frequency response. The efficiency of the final amplifier was low, only about 35 to 40 percent but compared to vacuum tube transmitters requiring class AB modulators, final amplifiers and other vacuum tubes, the operating cost of running the Vanguard was reasonable. However, the cost of electricity was low, and there were legions of broadcast engineers who were leery about the life span of transistors in an environment where reliability was paramount.

In addition, the Vanguard was more expensive than the traditional tube transmitters.

It was not a leader in sales for Harris.

FUTURISTIC DESIGN

The first Vanguard was produced in 1966 and had a space age look. If the Jetsons had owned a radio station, they would have had a Vanguard transmitter.

Many thought it looked like something Gates designed with help from Maytag or KitchenAid. Some DJs actually probably believed that. The original design was only about chest high, and staff would use the exhaust chimney from the vacuum tube to reheat pizza, sandwiches or anything else, creating quite a mess for engineers to clean up. I always thought that Harris/Gates teamed with Seeburg Jukebox when designing the Vanguard.

Mike Monnier, W8BAC.com

Top: The Vanguard

Left: The Seeburg Jukebox, which the author speculates may have inspired the transmitter's design.

As with all things, the Vanguard was revised and improved and redesigned to fit in one of the BC series transmitter cabinets. No more using it for a hotplate.

My experience with the transmitter came in the mid-'70s. I was hired at WOHO in Toledo to take care of the directional antenna. That position expanded into all areas of station maintenance but most of my responsibility was checking the operating log, taking monitor point measurements and calculating antenna ratios to make sure the station was in compliance with its license for its day and night patterns.

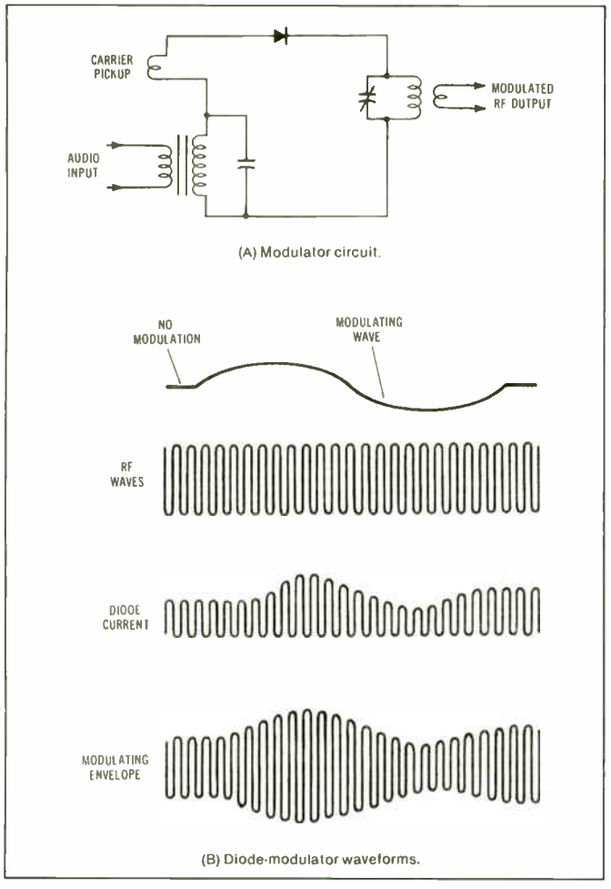
I would also check WXEZ(FM) on a weekly basis. WOHO had a Vanguard II.

For quite some time, I didn't pay any attention to the Vanguard transmitter. It ran flawlessly almost all the time I was there. Then in the summer of 1977 just before I would leave Ohio and move to Virginia, a problem arose. The transmitter started losing output power and the raise/low power adjustment didn't correct anything. I checked the transmitter manual and found an issue with the power output adjustment coil in the exciter.

This coil was frequency sensitive, chosen by Harris/Gates for the transmitter carrier frequency. Vibrations in the transmitter loosened a screw adjustment, and it could not be locked in place. It was night, and I made a quick fix, gluing the set screw in place with a drop of Krazy Glue. I then called Harris.

By the mid-'70s, there were not many people in Bloomington who knew anything about Vanguards.

(continued on page 12)



"Diode Modulation" is a simple means of creating an AM signal. The exciter creates the carrier. Audio is combined to create amplitude and sidebands and then sent to a half-wave rectifier. This signal is then injected into the grid of the tetrode final amplifier where the modulation envelope is created at full power.

HIGH CAPACITY
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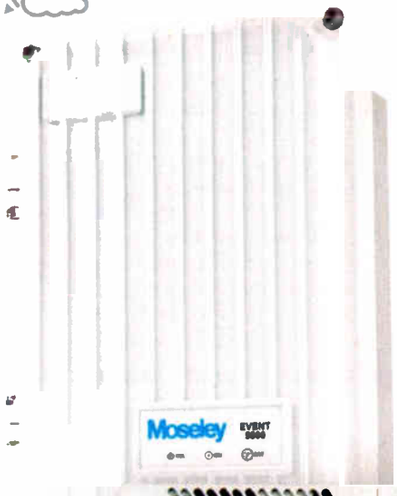
outdoor unit



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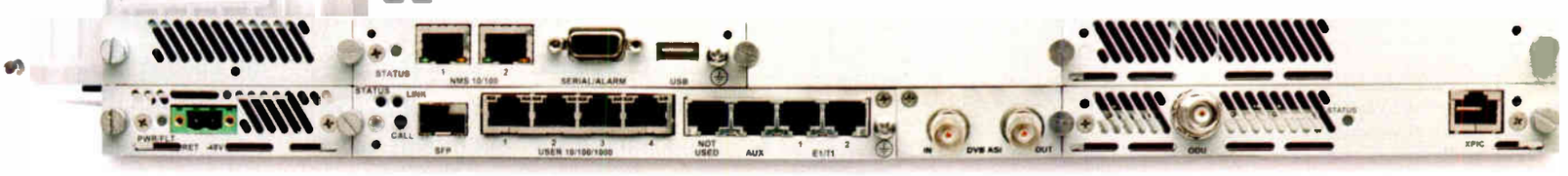
indoor unit



INTELLIGENT SYSTEM DESIGN

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Here's an Alternative Satellite Test Fixture

And keep that drink *away* from the console!

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

Ira Wilner is chief engineer of the Monadnock Radio Group in New Hampshire. He liked the tip we shared in the March 1 issue about using cable ties to keep temporary seating organized.

Although we showed plastic tie-wraps holding chairs together, he noted that Velcro-brand strips, as seen in Fig. 1, might handle more easily, and they can be reused.

Fig. 1: Seven-inch Velcro-brand straps are a reusable alternative to tie-wraps.

Ira, however, was not enamored of our LNB test port idea from the same issue. Adding yet another pair of connections to an outdoor inter-facility link cable creates more opportunities for failures over time, he says; and you still have to futz with removing weatherproof overwraps to get to the port to use it. And of course, the process exposes the system to possible short circuit damage, if the receiver(s) remains powered up with LNB bias on the line.

Since most LNBs provide beefy RF power outputs, the IFL can tolerate the use of an L-band two-way splitter at the dish, along with diode steering or an optional DC block placed on the test port. While a weatherproof splitter would be best, one could mount it all in a small waterproof plastic box at the back of the LNB. Ira says a food storage container with holes drilled in it to pass through the coax or to mount compression style waterproof feed through boots would work.

Then you could permanently connect a piece of coax, long enough to reach your test equipment, coil it up and place the free end, with a small termination resistor in a sturdy plastic bag. This would afford you the option of periodic testing on the dish side of the IFL cable without disrupting the signal or endangering the LNB bias power source. Ira concludes that he doesn't bother with more IFL plumbing than necessary, relying on the KISS system (Keep It Simple, Stupid) to reduce failure points.

All good points, Ira. I should clarify that Mark Voris' dish is in a very arid part of the country, not subject to rain, ice and snow, which could contaminate the "test" connection. However, it is important to consider Ira's point about inadvertently shorting out the bias supply when conducting your test.

Fig. 2: A cup holder keeps liquids away from the console, preventing expensive accidents in the studio.

WBAL Radio Chief Engineer Kerry Plackmeyer found and mounted the cup holder seen in Fig. 2. He mounted it *away* from his audio console, giving his air staff a place to store drinks with enough distance from any electronics.

The cup holder is a nice compromise between no drinking in the studio and taking a chance that a sugary drink will find its way into the board.

Both RV and Boating Supply Stores have a variety of cup holders. You can also Google "gripmate drink holder" for some ideas.

Bob Henry is a contract engineer in Albuquerque who has enjoyed our ongoing discussions about the mystery studio photo.

After searching through old Radio Shack catalogs online, he determined that the headphones in the picture are the Radio Shack Realistic Nova 10 stereo headphones. Bob had a pair like that in 1972. The Nova 10 headphones were not introduced until 1970. In the picture, the Nova 10 headphone label was larger, compared to the label on the earlier version label, which was smaller. This would narrow this picture down to somewhere around 1972.

Regarding small local radio stations, it was not uncommon to see radio stations like this one, even well into the next decade. Bob had worked for such a station in the mid-1980s. It had very old equipment that worked quite well. Many of today's radio stations tend to go through a complete equipment replacement every 10 years or sooner. This simply was not the case with early radio stations, as it was not cost-effective or practical; even though the equipment was old, it still worked.

Many of today's radio stations tend to go through a complete equipment replacement every 10 years or sooner. This simply was not the case with early radio stations, as it was not cost-effective or practical; even though the equipment was old, it still worked.

Bob loves these types of investigative endeavors; judging from all the comments, many Workbench readers agree.

Bob Langstaff is general manager of WAMV(AM) in Amherst, Va. I'm always glad to see managers among the list of Workbench readers.

Bob did a little sleuthing of his own, since his favorite tape recorder was the Ampex 600 series, which is pictured in the photo, to the right of the console. Bob confirmed his suspicions via *www.museumofmagneticsoundrecording.org*, an online site for recording history.

Contribute to Workbench. You'll help your fellow engineers, and qualify for SBE recertification credit. Send Workbench tips to johnpbisset@gmail.com. *Fax to (603) 472-4944.*

VANGUARD

(continued from page 10)

The transmitter had been out of production for seven years. The person I spoke to knew little about the problem. He mentioned that they had an exciter that was still on the shelf that he could sell the station. I declined the offer for such a purchase for a transmitter of that age.

I notified the management of the problem and prepared to move. By this time transmitter design had advanced to more efficient Pulse-Width Modulation systems and ultimately FET all-transistor transmitters.

The Vanguard, as its name suggests, was in the forefront of solid-state transmitter design. By 1969 the Vanguard was no longer offered in the Gates/Harris catalog. The Vanguard occupies a small space in broadcast history, but it was an innovation that advanced solid-state transmitter design spurred by the development of the family of Field-Effect Transmitters.

I returned to Toledo a year later and visited WOHO to find the Vanguard II still performing as the main transmitter. The Krazy Glue was still probably holding the coil in place.

The author is a longtime technology communications educator and Radio World contributor.

What piece of equipment do you recall with fondness or dread? Why? Email radioworld@nbmedia.com *with Letter to the Editor in the subject line.*

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Translator Q&A: Let's Get Specific

The author responds to questions raised by our series on FM translators

TRANSLATORS

BY JOHN GARZIGLIA

Several weeks ago, Radio World carried a four-part series on FM translators, looking at the basic FCC regulatory aspects of FM translator stations, the perspective of an FM translator licensee carrying an AM station or an HD sub-channel, the challenges an AM station licensee faces in acquiring an FM translator and the issues full-service stations may have with possible FM translator interference. The series is available at *www.radioworld.com/translators*.

The series provoked questions and comments from Radio World readers. In this wrapup, let's take a look at several aspects of FM translators in more detail.

Chalkboard by iStockphoto/NorthernStock; Towers by iStockphoto/Robin Olimb

FEEDING THE TRANSLATOR

The first in the series included a photo of an FM translator with no AM or FM receiver visible in the rack. A reader asked what was feeding the translator, apparently assuming that FM translators must be fed with over-the-air signals.

With an in-contour fill-in FM translator carrying either an FM, FM HD sub-channel or AM station, there is no FCC requirement that the FM translator be fed by an off-the-air signal. Rather, the broadcast programming of the primary station can be fed to the FM translator by whatever means is the most efficient, including the use of an STL, a hard wire or the Internet.

Conversely, if the FM translator is a commercial out-of-contour non-fill-in translator, it may only be fed by an off-the-air signal of the FM primary station. Out-of-contour AM carriage is not allowed by the FCC's rules. Therefore, even though not stated in the photo's caption, the photo must have shown an in-contour fill-in translator being fed by a means other than an over-the-air signal.

COMMERCIAL VS. NONCOMMERCIAL

Another reader asked if there is a limitation on ownership, specifically whether a commercial broadcaster could own a noncom FM translator.

This is where the FCC's transmitter rules depart from those for full-service AM and FM stations. Unlike full-service FM stations in which a noncommercial station must be owned by a noncommercial entity, the commercial or noncommercial status of an FM translator is entirely dependent upon the primary station carried.

If an FM translator is carrying a noncommercial educational station, the FM translator is regarded as noncommercial but there is no restriction upon who may own the FM translator. The noncommercial translator may be owned by an individual, a commercial entity or a noncommercial entity.

Equally important, the restrictions on receipt of compensation for out-of-contour non-fill-in carriage do not apply to noncommercial FM translators. Therefore, it is legal for an individual or an entity — even though he, she or it may have broadcast station interests — to own an out-of-contour non-fill-in FM translator that carries an NCE station as its primary station.

Conversely, an individual or entity that has attributable interests in any commercial FM broadcast station cannot own or have any relationship whatsoever with an out-of-contour non-fill-in commercial FM translator. This difference in the FCC's rules does not alter the requirement that only noncommercial FM translators operate in the 88–92 MHz reserved portion of the FM band.

HD SUB-CHANNEL CARRIAGE

We also heard a question about re-broadcasting HD sub-channels (an HD2 or HD3 channel) on an out-of-contour non-fill-in basis. The reader asked about leasing an HD sub-channel on a full-power station and running it on his out-of-contour translator. Would FCC's rules permit it?

The re-broadcasting of HD sub-channels is not addressed specifically in the FCC's rules. The presumption is that the same rules that apply to primary station carriage of the main analog FM channel apply to the carriage of an HD sub-channel.

Therefore, while broadcasting an HD-sub-channel on a non-fill-in basis would appear to be acceptable, the same rules limiting compensation and relationships for the carriage of out-of-contour commercial stations would apply. If there is any financial or other relationship whatsoever between an out-of-contour non-fill-in FM translator and the HD sub-channel, it would not be allowed if a commercial HD sub-channel is being carried as the primary station.

With the reader's situation in which an out-of-contour HD sub-channel is leased, unless it is the HD sub-channel of an NCE station, the prohibition on relationships between FM translators and out-of-contour commercial primary stations would ban the HD sub-channel carriage on the FM translator.

SEQUENTIAL MOVES

The subject of sequential translator moves came up, with the question of whether FCC decisions limiting FM translator moves are made at the Audio Division staff level or by the full commission. Readers also asked what is the maximum number of transmitter site hops that will be allowed for an FM translator, and what rule the FCC uses as its basis for authority to restrict moves of FM translators.

Awhile back, the Audio Division routinely granted 15 or more sequential moves. Today, operators consider it lucky if it grants more than two.

Sequential transmitter site moves of FM translators is a legal and procedural area fraught with uncertainty. The FCC appears to recognize that it has scant authority to limit the number of FM translator moves. The legal precedent for translator move limitations was largely manufactured by the Audio Division and then repeated by the commission by pronouncing as a matter of policy that, although sequential moves may not be contrary to its rules, the rules were not intended to allow for sequential moves.

The specifics of how many, if any, sequential moves the FCC will allow an FM translator is unclear. Awhile back, the Audio Division routinely was granting 15 or more sequential moves. Today, FM translator operators consider it lucky if the Audio Division grants in excess of two.

As a practical matter, I believe there is little public interest reason for the FCC to bar sequential or significant moves

of FM translators. FM translators are not based upon Section 307(b) to serve specific communities but rather exist for the FCC-rule-stated purpose of "retransmitting the signals of an AM or FM broadcast station ... in order to provide broadcast service to the general public."

The public interest is well-served when FM translator stations provide service from the primary station to the public where it is most needed. Yet, in recent years, the FCC has imposed artificial non-rule based restraints upon moves of FM translators, which ultimately harm the public's satisfactory reception of radio broadcasting signals.

AM CARRIAGE ON FM TRANSLATORS

Alluding to the subject of AM revitalization and FM translators, a reader commented that he personally felt that AM stations should not be granted FM translators at all, observing that to do so is "essentially giving up on AM."

In a 2012 Radio World article that I co-wrote with the Cromwell Group's Bud Walters (see *(www.radioworld.com/wtcj)*, we observed that "[t]here are two ways to look at AM revitalization. One way is to think about just the AM technical facility and what can be done to make that facility sound better, be better received and be more listenable. The other way to look at AM revitalization is to think about what can be done to enhance the service to the community now provided by AM stations."

The commenter, who is against AM stations being carried on FM translators, evidently falls into the former camp of believing that the public interest is best served by saving the AM technical facility. With the exception of FM translators, however, there are few immediately implementable AM revitalization technical solutions that will provide widespread benefit. FM translators re-broadcasting AM stations have dramatically enhanced both the service and future prospects of many AM stations. No other AM revitalization proposal carries with it the significant degree of benefit provided by an FM translator.

Another reader laments that he fails to "share the optimism for [FCC AM revitalization] action soon on translators." Indeed, AM broadcasters were encouraged in 2013 by statements from Audio Division officials that an AM-only window for FM translator applications would be opened by the "end of the year." Such an AM translator window was thought by the FCC's Audio Division to negate the need for more dramatic AM relief such as the now-denied Tell City Waiver. The waiver was a proposed marketplace solution that would have allowed AM broadcasters to acquire and significantly move FM translators.

But we are now well into 2015 without any indication that such a filing window will open soon. So in response to the commenter, yes, a degree of AM revitalization pessimism may be in order.

ARE MHZ STILL PERTINENT?

Finally, a reader in Atlanta wonders "why these MHz are still pertinent," as he listens to his favorite radio show via Internet streaming.

There is no question but that new radio programming transmission capabilities are available to the public. More will be available in the future with LTE broadcast and ATSC 3.0 audio being two huge potential radio disrupters. But radio has survived TV, CB, cassettes and satellite radio, and today continues to survive in our IP-centric world.

Leaps in technology impact both radio transmission methods as well as the creation of programming. Having the entirety of a radio station's programming on a hard drive the size of a deck of cards was unthinkable several decades ago. As long as AM and FM radio receivers are ubiquitous, radio broadcasting will survive. FM translators fulfill the important role of enhancing radio reception service to the listening public and are therefore very much part of radio's future.

John F. Garziglia is a veteran radio and television attorney offering assistance in all areas of Federal Communications Commission law in the Washington, D.C., offices of Womble Carlyle. For other publications, see listings at www.linkedin.com/in/johngarziglia.

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

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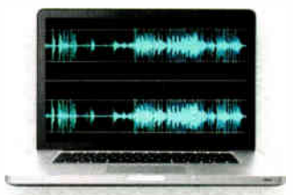

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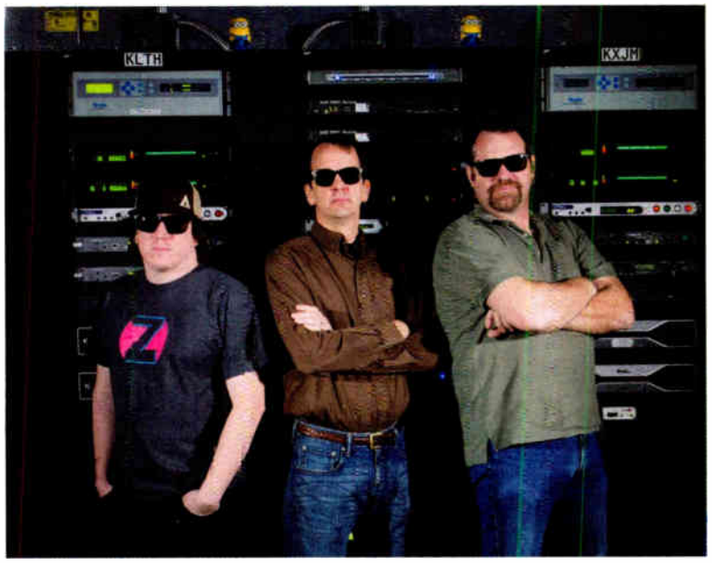


Checking in with iHeartMedia Portland

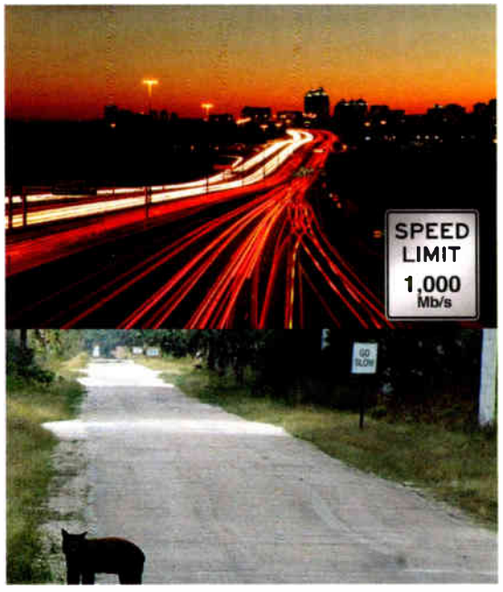
Numbers don't lie. That's what your friendly police officer will tell you when he clocks you going 70 in a 35 mph zone. But, this isn't entirely true when it comes to the speed of Gigabit Ethernet networks.

We dropped in on iHeartMedia in Portland recently to revisit a WheatNet-IP audio network that has been in operation since the seven-station cluster moved to Tigard, Oregon, in September 2012. Director of Engineering Chris Weiss showed us around the 17-studio, 25,000-square-foot facility and talked about life with audio over IP.

For the entire story. .

Go to: INN21.wheatstone.com

Gigabit Ethernet. Just the Facts.



Numbers don't lie. That's what your friendly police officer will tell you when he clocks you going 70 in a 35 mph zone. But, this isn't entirely true when it comes to the speed of Gigabit Ethernet networks.

Most of us assume that Gigabit Ethernet links transfer data at one gigabit/second, or 10 times faster than 100Mbps Fast Ethemet.

But, in fact, a Gigabit Ethernet cable contains four twisted pairs of wires that are each clocked at 125 Mbps. What the "Gigabit" actually means is that a gigabit of information (data payload plus overhead) can travel across the cable in one second. Because of the efficiency of the modulation scheme and the use of all four pairs in both directions, instead of a pair each way as is the case for Fast Ethernet, Gigabit Ethernet is effectively 10 times faster than 100BaseT (Fast Ethernet).

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The Curious Behavior of Radios

Louder is better! Crank it up! Well, not so fast...

Ever wonder what your listeners' FM radios sound like when your station is knee deep in the loudness race and the modulation monitor is always pegged? Our audio processing development guru, Jeff Keith, wondered about that too. So, during one quiet week at the Wheat processing lab, he decided to find out. Here are his surprising findings.

For the entire story...

Go to: INN21.wheatstone.com

This Boycott Changed American Music

Radio's 1941 ASCAP boycott had long-lasting effects on the industry

PROGRAMMING

BY JOHN SCHNEIDER

One of the strangest episodes in American radio took place in 1941, when the major players of the radio industry joined together and boycotted all music licensed by the American Society of Composers, Authors and Publishers.

In the process, the move changed the face of American popular music.

ASCAP was created in 1914 by songwriters led by Victor Herbert. It took on the task of enforcing the 1897 copyright law, which required that anyone performing music for profit must have the consent of the copyright owners. This was relatively easy in the days when all music performance took place in theaters and other public venues; ASCAP simply collected royalties from theater owners based on a percentage of their box office sales. But the new radio industry created a problem for them — there was no way to know the number of listeners.

This spawned two decades of haggling. Early broadcasters, led by Zenith president and pioneer Chicago broadcaster Eugene F. MacDonald, formed the National Association of Broadcasters in 1925 specifically to deal with the music licensing problem. In 1932, ASCAP set a blanket annual fee of 5 percent of a station's advertising revenue. While burdensome on the radio industry, which continually fought for better terms, this became the recognized formula throughout the 1930s.

Everything fell apart in 1940, when ASCAP announced it would triple its music fees for radio. Broadcasters vehemently opposed this, arguing that the exposure the music industry received via the radio helped popularize new music and boosted sales, but ASCAP refused to back down. An impasse had been reached, and drastic action was needed.

In September of that year, industry leaders met at the NAB convention in San Francisco and decided on a drastic move to demonstrate the influence of radio on popular music — beginning Jan. 1, 1941, most radio stations and all the networks would boycott ASCAP music. That meant that, virtually overnight, more than 1 million ASCAP tunes disappeared from America's airwaves.

The increase in popularity of Western bands in the 1940s can, in part, be credited to the 1941 boycott. This WCMB photo is from the collection of John Schneider.

In 1939, broadcasters and the NAB had established Broadcast Music Inc. as the radio industry's own music-licensing agency, and $1.5 million had been set aside to create new music compositions for broadcasting. BMI actively sought out new composers who weren't already contracted to ASCAP and released their music to stations at a much more favorable rate. These were mostly third-rate tunes penned by unknown composers. When the boycott happened, there wasn't enough BMI music to meet the need.

To fill their airwaves, broadcasters turned to other sources of music. They played songs from the public domain, such as familiar melodies derived from classical works, and old American standards like "I Dream of Jeanne with the Light Brown Hair." (Time Magazine said that song was played so much that Jeanne's hair turned grey.) And they performed foreign music that wasn't licensed by ASCAP, especially Latin American standards like "Perfidia" and "The Breeze and I." Still another source of new music were the "hillbilly" and "race" tunes that ASCAP considered beneath its dignity to license.

AFTERSHOCKS

Radio's ASCAP boycott had far-reaching implications. Most radio programs in the 1940s had opening theme songs, and many of these were controlled by ASCAP. This meant that Jack Benny couldn't play "Love in Bloom" on his violin, and George Burns and Gracie Allen couldn't use their theme "Love Nest," which had been written by ASCAP co-founder George M. Cohan.

Instead, substitute theme songs were found, and some astute program producers had avoided the problem completely by choosing public domain theme songs, such as the Lone Ranger's "William Tell Overture" and the Green Hornet's "Flight of the Bumblebee."

The boycott also affected the record industry, because recording artists knew their releases of ASCAP tunes couldn't be heard on the radio. Some popular bandleaders responded by recording swing versions of public domain songs, such as Glenn Miller's "American Patrol" and "Song of the Volga Boatmen."

Coinciding with the start of the radio boycott, the Department of Justice began investigating all the parties — ASCAP, BMI and the broadcast networks — for criminal monopolistic practices. This was resolved in February when ASCAP voluntarily signed a consent decree, agreeing to offer broadcasters both blanket and per-piece licenses.

However, several more months of negotiations went by before all parties could agree on the rates to be charged. By the end of summer, ASCAP had signed an agreement with NBC for 2.75 percent of net time sales on network broadcasts and 2.25 percent for local station programs — less than half of what it had been getting before 1940.

NEW EXPOSURE

The boycott officially ended in October 1941, and America's popular music returned to the airwaves.

But something had changed in those 10 months — American listeners had been exposed to new music genres, and they liked what they heard.

"Hillbillly" music quickly morphed into the more refined "western" genre, which became immensely popular on radio throughout the forties, eventually leading to today's country music. "Race" music became rhythm and blues, which then merged with jazz to become rock and roll. Latin rhythms and dances like the rumba and the mambo became national sensations.

In short, radio had demonstrated its tremendous ability to shape popular music tastes.

Unfortunately, with time, broadcasters lost control of their own creation, BMI, and it has become a functional clone of ASCAP. Once again, the radio industry is battling with the music industry — this time over performance royalties.

In radio's golden era, most broadcast music was performed live, and so the artists were paid for each performance. In fact, the American Federation of Musicians exercised its own substantial power to keep most recorded music off the airwaves. Of course, today almost no live music is heard on the air. And so the debate rages as to whether radio should pay performance royalties, and the radio industry still argues that its influence over popular music creates a symbiotic relationship.

With today's greater diversity of music delivery methods, some people wonder if a radio music boycott could ever have the same impact today as it did in 1941.

John Schneider is a lifelong radio history researcher and a longtime Radio World contributor. Write the author at jschneid93@gmail.com.

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PROMO POWER

Mark Lapidus

The big tease is on. One day it's 70 degrees. The next it's 36. After a record breaking 110.6 inches of snow, the people of Boston are united in their desire to bathe in the sun. In most of the USA, gray is finally turning green and renewal is in the air.

So how much of this joy is reflected on *your* air? Smart stations will do exactly what their listeners are doing — get outside — and will begin to provide the local soundtracks for spring and summer.

REMOTES

Live broadcasts from large outdoor gatherings are an inexpensive, high-impact way of connecting locally.

Even if your station is close to fully automated and has only one live, local person daily, look at the glass half-full. You've got at least one personality to feature in-the-flesh, and if you direct this person well, rewarding him or her with fair compensation for the extra hours and effort, a little can go a long way.

An additional strategy is to figure out how to bring the voice-tracking talent to town on a regular basis for spring and summer remotes and appearances.

Nearly all program directors have a litany of complaints about remote broadcasts. The laundry list includes many valid concerns such as increased length of chatter, using the radio station as a public address for the crowd in attendance, too many sponsor plugs, poor or inconsistent audio quality, distracted talent missing cues for breaks and sounding unprofessional, too many resources required to pull off the remote, making the station sound different.

'Talkin' Muskegon'

By Bill Iddings | The Muskegon Chronicle
Follow on Twitter
on April 06, 2009 at 10:26 AM, updated October 01, 2009 at 4:18 PM

Print
Email

Courtesy photo

John VanWyck and Brian Wierschem doing a remote radio broadcast of the 2008 Stan Tyler Golf Classic at Muskegon Country Club

John VanWyck has been the constant.

Even before the "Talkin' Muskegon" radio show on WKBZ (1090 AM) was the "Talkin' Muskegon" radio show on WKBZ, VanWyck held forth on another Muskegon station.

"Talk 'n' Tunes" was a Saturday morning staple on station WEPG (97.5 FM).

This news blog highlights the visibility that an outdoor remote can offer, featuring WKBZ(AM).

I hope you'll agree that there isn't one item on this list that can't be addressed. In fact, I'll go so far as to say that most of these concerns turn into issues because PDs do not engage talent sufficiently to prepare them for the challenges of broadcasting in front of a live audience. All it takes is a few air check sessions with your talent reviewing a recorded remote to head off these issues in advance.

Now if full-blown hosted remotes are a nonstarter for your management, at least consider short, structured on-air breaks that paint the picture of what's going on at a major local event like a concert, sports activity, county fair, wine/beer festival, marathon or foot race — any place where thousands are gathered together outside.

While we don't have the space to go over smaller remote broadcasts for commercial purposes, such as car dealerships, furniture stores and the like, I am also in favor of this angle. One caveat: These sales remotes require precise parameters — for example, the necessity of using commercial unit breaks to sell the venue.

With promotional budgets slashed, you'll be relieved to know that outside signage costs for banners have actually come down in recent years and renting or buying public address systems is more competitive than ever in terms of price and availability. Making noise and having visibility are important, but if that's not in the cards for your station, I still wouldn't let it stop you from being part of the outdoor parade of life. Most people you touch will be on-air listeners anyway.

So why is getting sound on the air from local outside activities so important? It's the human connection!

Being a music jukebox or a news/talk machine is formal, sanitized, and expected. It's like turning on a light bulb. Flip the switch, the light burns bright, and the user doesn't think about it again until it's time to turn it off. But when we tell a story about an event that people care about and are connected to, we have a shot at letting listeners know that we are real, local people who care about our communities.

No doubt, remote live broadcasts can be unpredictable or messy and sometimes even fail. The upside is on-air fun and good cheer — something local radio stations sorely need to produce.

Take the risk, head outside and really embrace it by being prepared for rain!

The author is president of Lapidus Media and a longtime contributor. Find more of his Promo Power column at radioworld.com/promopower.

WHO'S BUYING WHAT

Emmis Communications and **Saga Communications** have both renewed and expanded their contracts with media industry business software provider **Marketron**. In addition to traditional traffic and revenue management service, both companies have added new offerings, including Marketron's Expanded Disaster Recovery Service, Efficio CRM Integration, Proof of Performance and Marketron's reporting and management tools, Mediascape Insight and Accounts. Saga Communications has also expanded its use of Marketron Digital's mobile solution for all 23 of its markets.

GatesAir has delivered a high-power Flexiva 80 kW transmitter system to Brazilian broadcaster **Nova FM** for coverage across Rio de Janeiro and Sao Paulo, including coastal and inland areas. **Foccus Digital**, a systems integration firm based in Sao Paulo, designed and integrated the complete RF system. The firm points out that the system's modular design simplified the relocation of Nova FM's RF facility from ground level to the 20th floor of its building. The complete RF system, as designed, integrated and commissioned by Foccus Digital, also includes a new ERI antenna system custom-built for the high-power Flexiva.

Nova FM Director of Technology Teodoro Fonseca in front of the Flexiva 80 kW transmitter during the testing phase at GatesAir's manufacturing center.

Satellite services contractor Ka You Systems has installed a satellite uplink and downlink system for sports talk **KLAA(AM)**, Anaheim, Calif. The station felt that its T1 STL line wasn't fully reliable, so it decided to go with a DVB satellite link to its remote transmitter site. Ka You had to make modifications to compensate for high-wind activity; the dish is rated for 125 mph winds. According to the company, inside rackmounted equipment included: QBIT P561 digital audio encoder, Comtech EFData DMD20 LBST satellite modem with automatic uplink power control and an IDC Star 1 DVB digital audio decoder. Outside equipment included: 2.4 m Ku Band TX/RX antenna and a Comtech EFData 10 watt LPOD-R block upconverter.

Love Don't Change a Thing

Unfortunately, passion for the radio biz isn't enough to make it big

FIRSTPERSON

BY BRIAN FOSTER

I have always loved radio. At five or six years old, I put together a makeshift radio studio in my bedroom and I practiced, practiced, practiced!

In the mid-1980s, I noticed that a nearby community college ran an ad in the weekend section of the newspaper, offering a degree program in radio and television broadcasting. From then on, there was no doubt.

I had no clue how frustrating my chosen career would be. Of course, I brought the frustration on all by myself.

iStockphoto/carlosgastilla

SIGNS, SIGNS, EVERYWHERE A SIGN

The first sign of trouble was when others at the college station started landing paying jobs without finishing their degrees. Two of these guys had only been there for five or six months, whereas I'd been diligently working away for more than a year.

So I started making demo tapes, too, and I mailed them out to every station in town. Did anyone ever call? Nope. Did I call them? Absolutely. And I was told, "Send us another one when you're out of school" or "Format sounds good" — but no comment on the voice.

When it was time for an internship, lo and behold, there was Ryan Seacrest, who was only 16, but on the air already and not an intern. This should have immediately sent me looking for another program of study/field of endeavor, but it did not. Here I am more than a year into my degree and I'm interning under a 16-year-old? Once my internship ended, the PD was canned, and I was *persona non grata*.

You'd think that maybe I'd start smelling a rat by now, but instead I went full time at the store, funneling my paycheck into tapes and postage for my demos. I also kept rolling at the college station to keep my demos current, although I was no longer a student. I started paying particular attention to the Help Wanted ads in Radio World. If they had an ad, then they got a tape and résumé.

After another couple of months, I got a call from one of the local big-boy stations. In the conversation, I made the mistake of asking how much the gig paid. And the guy laughed and said, "It doesn't pay anything. It's an internship."

I came unglued! I yelled, "*My days of working for free are over!*" and hung up on him.

TAKE THIS JOB AND SHOVE IT

I ended the radio show and severed all ties with the station. I really meant it this time. I was done.

Two years passed and then I visited a school of broadcasting whose name you would recognize. This is where I had The Epiphany.

I had brought a tape, but they insisted on recording me on the spot. I nailed the copy on the first take, and then there was a lot of commotion. "You must attend our next course!" "Excellent!" "The best I've heard in a long time!" "You should be doing radio news!" "Where have you been?"

I thought, "Um, I've been in college and then trying to get a job, but I can't even so much as get a crumb ..."

And then a big red light went off in my head. I realized that all of their praise was just a big load of crap to get me to sign up for a $7,000 course — when I already had a college degree in the same field!

I went home and stewed. I realized: If I have a degree and have had numerous opportunities to catch on somewhere and haven't, then ... I must suck!

I wrestled with this new perspective for a while because I had identified myself as an up-and-coming radioman for so long. But I was getting a little old to be chasing a career.

AGAINST THE WIND

The college had taken thousands of dollars, and in exchange, they blew smoke up my butt to keep me writing those checks. I could have earned a more suitable degree, or bought a car ... or some beer. Point being, spending that money on anything else would have been a better option.

If I were any good, my degree from a legitimate university, combined with real entry-level work experience, should have put me on the path for a successful career. I had all of the other requirements, so it must be the talent factor that prevented my employment.

Once I accepted this to be true, I could also accept that the college probably knew I'd quit if they'd been honest with me. The same applies to the broadcasting school; they told me I was awesome because they wanted my money.

Remember: If you pay someone enough, they'll tell you anything you want to hear.

Comment on this or any story; email radioworld@nbmedia.com.

Find New Ways to Do Old Things

KGAF's mantra applies to lots of small-market stations

SMALL-MARKET RADIO

BY STEVE EBERHART

When I turned 16, I got a Third Class FCC license and presented myself at KGAF(AM), the local station in my hometown, Gainesville, Texas. My timing was perfect because they needed a weekender. In those days, they were live/local in all shifts, and being a licensed warm body was about all it took to land a gig.

The station was your typical small market-station at the time. Country format, local spots, remotes, sports and news were king. At one time, I had a two-way radio in my car (long before cell phones) and helped out covering car wrecks while out cruising at night with my high school buddies. I would go on the air live from my bright red 1966 Chevy Impala, thinking it was pretty cool stuff.

In high school, I worked at KGAF from 4 p.m. until signoff at midnight, and when I graduated, I went to work in nearby Sherman, Texas, at KIKM(AM), a full-fledged top 40 station. After a couple of years I landed at the famed KVIL(FM) in Dallas and worked there for many years, absorbing everything I could learn from the staff headed by Ron Chapman. In the ensuing years, I did afternoons at KLUV(FM), mornings at KDMX(FM) and even a stint doing TV helicopter traffic reporting at Fox 4 TV in Dallas. Later, I spent 20 years at ABC Radio Networks/Citadel/Cumulus Media, working part time while being a Mr. Mom.

In 2008, I made a deal to buy into the company that owns my old hometown station. I have exclusive rights of management in operating KGAF.

Everything had come full circle. I was now running the station where I started.

I had big plans, but the first order of business was revamping the entire station. It was still located in the same 1947 building, which was in disrepair; the equipment was much the same as I operated in high school while working there and had to be replaced. We found old logs in boxes with my signature on them from the 1970s! The city sent out a large industrial dumpster, and we filled it four times.

We installed new computers, microphones and audio processing. It still looked funky, but it began to sound great.

Our first night on the air, we looked around and realized we hadn't had lunch or dinner so we ordered a pizza. When the delivery guy showed up, he said, "I didn't know there was a radio station here." We had our work cut out for us.

It took months and months of work to just get the station cleaned up. The station had billing, but the entire business, programming and engineering departments were in a severe state of neglect. Within about six months we had doubled billing, but it was also costing a lot more to operate.

When a snake slithered through the studio, I decided enough was enough. The building was shot, and any self-respecting broadcaster couldn't continue in this dump. I contemplated moving the office and studios downtown, but eventually ownership decided to build a new building on the same sight just east of town on "Radio Hill."

It was a bittersweet moment. I'd started in radio in that building; Elvis had been interviewed there in the mid-'50s; it was a cool retro-radio studio with large studio windows, floor wiring troughs, soundproof walls and such. For its time, it was well designed and constructed. But it was also too big. At one time, both an AM and FM was housed in the building. The FM had moved to Dallas decades before. The large performance studio had been converted to office space years before.

I designed an efficient, much smaller facility. At slightly over 900 square feet, we created a building with a control room big enough to accommodate guests, a production room, storage room and one private office (mine) along with an entry area/lobby/front office. I also installed all new studio equipment.

Unfortunately, the move coincided with one of the worst turns in the economy in decades. The years 2009 and 2010 were brutal financially. I had to reduce staff and asked those remaining, myself included, to do more for less. "New ways to do old things" became my mantra, and we still strive for that.

Computer automation and technology has made our jobs so much easier and enabled small broadcasters to accomplish so much more with so much less. We got rid of all the expensive and hard-to-lug remote equipment and began using iPhones and Skype for all out of studio broadcasting. We also set up every computer on *logmein.com* so we can access all computers remotely because I am in and out of our station computers multiple times a day and night making adjustments or double-checking on things.

The Pacific Recorders BMXIII console, 11 Software Jockey Pro automation on the computer screen, three Shure SM 5-B microphones, Gentner TS-612 broadcast phone system and Fostex powered monitors. Eberhart also notes that this picture shows the "only real relic from the original 1947 building, the "ON AIR" light, which we restored and works!"

STAFF

Our morning show is live and local with my longtime friend Dee Blanton, who also started his career at KGAF and

This shows the current KGAF building, which was constructed in 2009, replacing the original 1947 building. It shows the two towers, 200 ft. tall, each located on the same property. The station is 250 watts non-directional daytime; 250 watts directional two-tower array at night.

has lived in Gainesville forever. He is the local radio star and also does local news and hosts our popular call-in swap show, in addition to being our play-by-play caller for live high school sports. Blanton also is our operations manager, handling much of the traffic and production work, in addition to a few sales accounts.

We have a full-time sales person, John Hambrecht. His main job is hitting the streets, but he is also a former TV sports anchor and helps on-the-air when needed.

I've always felt that the ideal employee in any small market is an "all around guy" — someone who may have a specialty but could do any job at the station in a pinch.

We also have a former radio guy who is in public relations at the local community college. He covers sports and records from home in Adobe Audition and emails his stories, whereupon it is inserted into the automation.

I'm on the air every day DJing the midday shift. I actually live in Dallas, but people in Gainesville would never know it. I voicetrack from my home studio and do a daily shift "handoff" live via Skype just before taking over for the midday shift.

Nowadays, I do 99 percent of the engineering. I have educated myself, and when I bring in someone else to do something, I am right there learning.

Our afternoons are handled by another long-time friend of mine, Janice Williams, who lives in Austin. Again, you'd never know it.

We've stumbled a few times, but have found a combination that seems to be working.

We use Texas State Network news at the top of the hour and ABC headlines at the bottom. Following each is automated local weather provided by Dave Scott's Unattended Weather. It pings the National Weather Service every few seconds for the very latest, and it is an invaluable tool for us located right in the middle of "Tornado Alley."

Our morning show is almost entirely news and information with only an occasional tune, usually specific or relatable to something going on that particular day. We program a live local community service report each morning at 7:45. The mayor and other civic spokespersons join Dee each morning to discuss local happenings, news and/or events. It is a great outreach and has a big local following and listener appreciation.

Our swap show also airs mornings, 8:30 to 9:30. It's a bit corny but is the most popular program we air. We give listeners the opportunity to call in, but in between, our host has carte blanche to talk about anything topical, local or otherwise.

We also do a noon news and information hour with local news, weather, sports and more, and another version airs each afternoon at 5 p.m.

Our music format is what I'd call gold-based AC. We play a little of the old, a little of the new and a whole lot of in between. It is very pop flavored, right down the middle with few extremes. It's very subjective, but I do not feel obligated to play any song no matter what its chart position might be.

Our station imaging voice is the best in the business, another longtime friend, Charlie Van Dyke. We use an extensive collection of custom jingles and keep the format and station very tight.

IMPROVEMENTS

One of the first lessons I learned was to find out what you are good at and find a way to do it. I like being on the radio, programming radio — and I like engineering, to a point. I have always enjoyed tinkering with

(continued on page 24)

PEOPLE NEWS

Fred Baumgartner
Nautel
will fill the newly-created position of TV product manager.

Gary Luhrman
Inovonics Broadcast
will serve as sales and marketing manager.

Chris Ackerman
Coleman Insights
has retired as vice president.

the Big D
iHeartMedia
will serve as assistant PD and new morning show personality for KPLV(FM) in Las Vegas.

Corey Calhon
iHeartMedia
will host the afternoon drive on WAMZ(FM), Louisville, Ky.

Bill Cross
FCC Wireless Telecommunications Bureau
has retired after 38 years.

Larry Blumhagen
CBS Radio
has been named vice president/director of sales for CBS Radio's six stations in Los Angeles.

Shannon Kelley
Beasley Broadcast Group Inc.
was promoted to corporate director of digital content.

Bill Coleman, owner, Team Radio Marketing Group, Ponca City, Okla.; **Bruce Goldsen,** president/general manager, Jackson Radio Works, Jackson, Mich.; **Randy Gravley,** president and CEO, Tri-State Communications Inc., Jasper, Ga.; **Bill Hendrich,** vice president/market manager, Cox Media Group Jacksonville, Jacksonville, Fla.; **Ed Henson,** president, Henson Media Inc., Louisville, Ky.; **Beth Neuhoff,** president/CEO, Neuhoff Communications, Springfield, Ill.; **Bob Proffitt,** president and CEO, Alpha Media LLC, Portland, Ore.

National Association of Broadcasters
have been named to the Radio Board.

KGAF

(continued from page 23)

electronics and upon ownership, it became apparent that it would be necessary for me to really learn radio engineering or pay through the nose for someone else to do it. I've done a little of both.

Nowadays, I do 99 percent of the engineering. I have educated myself, and when I bring in someone else to do something, I am right there learning so I can do it the next time. There are only a few things that scare me from the engineering standpoint, but I am ready to admit when I am over my head. That is very important, as I have learned, because not knowing and messing something up worse is incredibly humiliating … and usually *very* costly. Small-market radio often operates on a very thin margin of profit, and I've found it is necessary to double estimates for repairs.

REMODEL

In only five short years, we had too much stuff in too little space. I spent three days at the station, almost entirely by myself ripping the studio apart and rewiring. The new design is ergonomic, efficient and allows for maintenance and repairs to be more easily accomplished. I acquired a used Pacific Recorders BMXIII console to replace our BMXII.

After a couple of weeks, I also decided to take on our production room. It was a smaller project, accomplished in one day. Again, I ripped out everything and started over. We put our BMXII console in the production room and have transformed it into both a production studio and backup on-air studio.

Looking at our studios, you'd likely not imagine this is for a 250-watt small-market radio station. On the air, KGAF sounds like a major-market station. But we program "for here, from here." We've found a formula that works, and it really is simple: Local, local, local.

1580 KGAF
HOMETOWN RADIO

I think the reason it works is simple, too. No one else is doing it. We are in an area with more than 50 signals on either the AM or FM band, not to mention satellite and or online streaming stations from other markets. We are the only place to get local news, weather, sports and information.

One of my other many philosophies is to "be our own best advertiser." We promote everything. If we expect others to pay to promote themselves, why shouldn't *we* use our own air to do the same thing? We have 10 to 20 promos on the air at any given time, two per hour, 24/7.

Revenues in our first year were barely covering expenses. I did not take a salary that entire year despite working harder than I ever had in my life. The second year, the economy tanked and in what I thought would be a profitable year, I again did not take a salary. In the third year, we began to figure out ways to cut back but maintain our objectives, and a small profit finally resulted. In the fourth year I actually was able to pay myself.

Revenue is 30 percent greater today than our first year. Each year I have been able to realize a greater profit with a keen eye to the bottom line. The temptation to spend money when you have it is one of the greatest challenges we face.

LOCAL ENGAGEMENT

Community involvement isn't just a catch phrase. Aside from the community service report each morning with a civic leader, we cover local sporting events, but we are *huge* to community events. Events like the Medal of Honor Parade, Depot Days, Germanfest, Summer Sounds Concerts, local picnics and festivals are our mainstay. We broadcast live at each and bring our station van for exposure.

Over the holidays, I personally decorated and drove our station van in a couple of local Christmas parades. What a treat to see 10,000 people line downtown Gainesville and cheer and yell out our names as we pass by. You can't buy that kind of exposure.

We are bringing *real* radio to *real* people and making a difference. It is enormously satisfying knowing that real radio still works. It's much like the radio we all remember, but we are topical, not just old school.

There are a lot of small-town things we have to do, but my dictate is that we will not do something that makes us really sound bad; we will not put poor quality on the air. If effort is the only difference between a poor idea and a professional sound, we must make the effort to rechannel.

I operate the station with a bottom floor philosophy. That is, the bottom floor is the least acceptable anything that goes on the air. Our mission is to continually raise the floor.

Wanna hear how we sound? Tune in online at *www.1580kgaf.com*.

Do you have a station whose story you'd like to tell in Radio World? Write to our Emily Reigart at ereigart@nbmedia.com.

The original and the new Fostex kid on the block sit side by side.

Fostex 6301N Gets More Than a Facelift

SHORT TAKE

BY CURT YENGST

In 1982, Fostex introduced the 6301B Personal Monitor, a compact and sturdy powered loudspeaker. It has served the radio and television industries well as a control room monitor, in addition to the live sound world and even ham radio. Now, Fostex brings us the redesigned 6301N series. How does the redesign compare to the original and to other speakers in its class?

I was interested in taking a look at the upgraded design because I've had an original 6301B sitting on my workbench for years. I've used it primarily as a piece of test gear for checking audio outputs, or for any other situations where confidence monitoring was needed. It has taken quite a beating in its time yet still performs admirably, owing to its cast aluminum case and metal grille, design features retained in the 6301N.

Not much larger than a box of Pop-Tarts, the 6301N is small enough to fit just about anywhere audio monitoring is needed. The optional EB-6301 U-bracket provides additional installation options. The 6301NX and 6301NE monitor accepts both balanced XLR and 1/4-inch unbalanced connections. The 6301ND version accepts AES/EBU digital signals and the 6301NB accepts 1/4-inch unbalanced connections. The controls are simple: an on/off button and a volume pot. One improvement is that both controls are recessed, preventing them from being bumped, or even sheared off, from rough handling or other accidental impacts. Another improvement is the inclusion of a standard IEC power inlet on the back. The original had a permanently attached two-prong power cord.

The redesigned 4-inch driver is fed by a 20 W Class D amplifier, which gives it ample power for most applications. As with the original, this monitor provides plenty of volume for its size, but the 6301N sounded clearer on the sources I ran through it. Granted, a single 4-inch driver is not going to give you "studio" quality, but the 6301N will give you a good idea of how audio will translate to less ideal playback conditions. It will definitely fit the bill in an edit suite, voice over booth, or even in a noisy server/transmitter room. Even though the spec sheet says it bottoms out at 70 Hz, it does a decent job of reproducing bass in music mixes. Highs were no sweat, with the response topping out at 15 kHz. Since analog FM radio doesn't reproduce anything above 15 kHz, I don't think this will be a problem.

The $250 street price for one monitor may seem steep, given its size and output; but considering its sturdy construction and durability, it will be a long time before you replace it. Sure, you can buy larger, better-sounding studio monitors in this price range; but how many of them will survive an errant screwdriver or a dive off the top of an equipment rack? If I could suggest one additional feature (when they redesign it again 30 years from now!), it would be to add a mic stand mount, as a speaker like this would make a good miniature stage monitor.

For information, contact Fostex at info@americanmusicandsound.com *or visit* www.fostexinternational.com.

Curt Yengst, CSRE, is a frequent contributor to Radio World.

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I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBY, KCBS, KQW, KRE, KTIM, KYA, etc, I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

Looking for a broadcast excerpt of a SanFrancisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

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North Texas Radio Group, we have for sale the following transmitters recently removed from service, all units come complete, with instruction manuals and schematics, you may purchase them on their current freq's or we can have them fully tested and tuned at our lab to the freq. and preset output power required with full test data sheets, Nautel Amphet 50 kw solidstate 780 kc; Nautel N.D. 25 kw solidstate 1290 kc; Nautel N.D.2.5 kw solidstate 670 kc (less than 900 hours); Continental 816R-5 35 kw with 802 exciter; Continental 816R-4 30 kw with 802 exciter; Continental 816R-3 27.5 kw with 802 exciter; Continental 816R-2 25 kw with 802 exciter; Continental 816R-2A 21.5 kw with 802 exciter; (3) Continental 816R-2 20 kw, with 802 exciters; Collins 831 G2 25 kw with 802 exciter; Collins 831 G 20 kw with 802 exciter; Collins 831 G 10 kw with 802 exciter; CCA 25 kw solid-state exciter; CCA 20 kw solid-state exciter (single phase); BE FM 35 kw with FX 50 exciter; BE FM 20 kw with FX 50 exciter; Harris 20 K with MX-15 exciter; Harris 10 K with MX-15 exciter; Harris 10 H-3 with MX-15 exciter; Harris 5 K with MX-15 exciter; Harris 2.5 K with MX15 exciter; Collins 831D 2.5 kw with solidstate-exciter; CCA 2500 E with solis-state exciter; Altronics 6612 air cooled dummy load(low hours); New Blanc Royal 200 foot self supporting super tower, for full information and price quotes with freight via AIR Ride Van (prepaid) Direct Line 972-931-6055 or WITKEAUX@yahoo.com.

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The FM Chip Enables Access

Facts and fallacies radio managers should know

COMMENTARY

BY PETER SHOEBRIDGE

The author is the chief technology officer at Clip Interactive.

In February, the National Association of Broadcasters and the Radio Advertising Bureau teamed up to lobby the FCC to encourage cell phone manufacturers and mobile service providers to activate the FM chip in all smartphones, allowing the broadcast radio signal to be transmitted directly through the mobile device.

With much of the industry supporting this initiative and mass advertising being utilized to inform the public, there are still misconceptions about what the FM chip is, what it is not and how it can be accessed.

Peter Shoebridge

FACTS

The FM chip is a piece of hardware installed in most smartphones manufactured in the last five years. The vast majority of devices do not have the chip connected in such a way for it to be functional (or easily made functional). However, a small number of device manufacturers, such as Samsung, HTC and LG, have enabled the FM chip so that it is accessible.

With the chip accessible in a small number of phones, some carriers like Sprint and AT&T have included the software layers that allow developers to access and activate the chip. Any app developer can access the FM chip to add the feature to a mobile app.

Listening through the FM chip is like having a small FM radio in your phone — it tunes local broadcast radio stations without having to use data. Conserving data has become an incentive for users to listen through the FM chip. However, this is becoming less of a concern, with unlimited data plans like those offered by Sprint. Currently, the FM chip is only available on about 35 Android devices, but the industry is working with more manufactures and providers to get the FM chip activated on all smartphones.

To access the FM chip in a smartphone, users only need a mobile app that acts like a radio tuner. Similar to physical radios, the FM chip in the smartphone can only access local radio stations within range. Also like a traditional radio, the FM chip in the smartphone needs an antenna to tune into the local broadcasts. Therefore, users must either plug in headphones or an auxiliary cord to act as the antenna.

Because the FM chip does not require Wi-Fi or data to listen to the broadcast, it can also be a source of information for the public in emergency situations including weather alerts, amber alerts or announcements of other major catastrophes.

FALLACIES

Many radio managers think that the FM chip is something that the carriers activate or even an app that listeners can download. In fact, the app is simply the tuner that accesses FM transmission from the chip. No one app or one radio company owns the FM chip technology.

Certain companies have been seeking the support of broadcasters to facilitate the distribution of their app; however they are only one of many companies that can access the FM chip. The radio industry should evaluate all FM chip-supported offerings and decide for themselves which is their best option.

Mobile broadcast listening through the FM chip cannot access out-of-market stations. Many radio station apps offer the ability to stream station feeds from all across the country, but the FM chip is limited to stations that are within the broadcast range. Listening is also restricted with the FM chip when users are in remote areas.

Last, broadcast listening on mobile devices through the FM chip is not yet widely adopted. To this day, only a very small percentage of radio's total listening audience utilizes mobile broadcast listening. With other options for listening, including mobile and online streaming, the majority of radio listeners (97 percent) still choose the traditional broadcast through a physical radio either at home, at work or in the car.

SIGNIFICANCE

FM chip activation is important for a few key reasons:

- *Emergency Situations:* FM chip-enabled smartphones can play an important role during emergencies when other communication networks get overwhelmed or fail.
- *Data Usage Concerns:* As discussed, FM chip listening does not consume any of a user's data. In recent years, more people have become concerned with data usage on their phone and additional charges as a result of overages. However, as data becomes more affordable, this is becoming less of a concern (e.g., Sprint and T-Mobile's unlimited bandwidth for data).
- *Reaching Radio's Total Listening Audience:* FM chip-enabled apps offer listeners another way to tune into and interact with their favorite radio station. However, in this digital advertising age perhaps more important than tuning is interacting with radio's content. In the past few years, radio has seen a decline in advertising as a result of new digital advertising options cutting into its revenue. Because of this increasingly competitive landscape, it is more important than ever to offer radio listening and interaction to consumers in the way that they most prefer.

FM chip integration is one more step in offering users more ways to listen to and interact with the great content that is being provided by radio stations. In fact, Clip Interactive acknowledges this as a trend and recently added FM chip listening to all of our radio station apps, which gives listeners the option of listening to the broadcast through either the stream or the FM chip. We look forward to seeing how many people utilize this new way of listening to local stations.

Peter Shoebridge has 30 years in software development and has been involved with Internet technologies since 1996. He was CEO/co-founder of Blue Yonder Gaming Corp., a casino gaming systems and gaming company, which was acquired in 2012; he was vice president of engineering at Sona Mobile Inc. and led the team that built the first wireless gaming system to receive regulatory approval, as well as the team that built the server-based Sona Gaming System.

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

READER'SFORUM

ANTENNAS IN TREES

In regard to Dan Slentz's article "Can I Put My Antenna in a Tree?" (Feb 1, 2015), he needs to understand that a tree grows from the top, not the bottom. That is, if an antenna is mounted at 50 feet in an 80-foot tree, the antenna will *always* remain at 50 feet.

As the tree grows, the trunk gets larger and may eventually "swallow up" the mounts, but the elevation of the antenna and the length of coax needed will remain the same.

I agree that a tree mount is not the best choice, but not for the reason he states.

I very much enjoy your publication and read it cover to cover as soon as it arrives.

Jim Schultz
Owner
Schultz Communications
Warren, Conn.

iStockphoto/zsooofija

READER'S FORUM

LPFM CONCERNS

Thank you very much for nice story about my book ("Radio Reading for Your Winter Blues," Jan. 14 issue). It's been 15 years out of the business for me, and I do miss it.

Regarding LPFM comments: It appears LPFMs and translators are going on unabated at the FCC, but not where I anticipated them to be. My LPFM concerns 15 years ago related to small markets, where a 25- to 100-watt LPFM transmitter literally covered the market as well as any commercial station. My observation now is that not many LPFMs have been placed in small markets, most in metro areas doing niche ethnic programming. Satellite and Internet radio have become the biggest competition in small markets and they can't sell local advertisers.

But it's a fast-changing world.

Paul C. Hedberg
Naples, Fla.

PROGRAMMATIC

Thank you, Radio World, for the Leslie Stimson interview with Mike Dougherty ("Jelli: Programmatic Is Radio's Future," Jan. 14) about the absolute importance for the radio industry to greatly — and quickly — incorporate electronic spot, digital and mobile platform buying in its business model.

These programmatic buy/sell services also provide real-time accountability and proof of performance to advertisers, something that TV has been doing far more effectively than radio for a long time now — at radio's expense, literally.

And, with the ability of "programmatic" technology to drill down more deeply into what an individual radio station may offer in terms of desired demographics, market rank and so on, I think there's actually a better chance that the station would receive *more* advertising, on one or more of its ad platforms, if it participated in the technology.

Everything, seemingly, is going digital these days, and for good reason. The radio industry, I'm sorry to admit, has lagged way behind other advertising media in this regard. In a different aspect of the industry, we can't even get our act together and reach a final consensus on which digital signal transmission standard to adopt. HD Radio has not been readily and universally accepted on FM, especially in small and medium markets, and the AM band is in even worse shape in terms of digital-signal technology adoption. But, this is, perhaps, a different topic for a different discussion.

I think time is running out for radio, if the industry doesn't get its act together, and soon, in figuring out and establishing an effective presence in the digital-content world. The digital-delivery and operations competition that radio faces is getting more intense, not less. Programmatic technology, I believe, is a critical component of the service that radio needs to provide to potential and current advertisers if it is going to survive, and for years to come.

Innovate, radio, or we are gone.

Robert E. Lee
Lee MediaWorks LLC
Austin, Texas

PROLIFERATING PIRATES

On the closure of FCC field offices and the proliferation of pirates and jammers:

The Federal Communications Commission is considering a monumental change that will jeopardize its ability to control interference for the private sector. According to Radio World (*http://tinyurl.com/RadioWorld-FCCEBDownsizing*), the plan under consideration "would reduce the number of field agents from 63 to 33 and reduce the number of director positions from 21 to five and the number of field offices would shrink from 24 to eight."


Robert Gonsett

Here in southern California, for example, the San Diego field office would close and the Los Angeles office would carry significant new responsibilities by watching over perhaps six or seven states, including Hawaii, while at the same time operating with a skeletal crew. So drastic are the anticipated cuts that the staff would only have time to handle public safety interference cases and little else. This is going to create a lawless environment where pirates and jammers will flourish.

Case in point: Many months ago, four FM pirates (illegal broadcast stations) popped up all at once at scattered locations in the San Fernando Valley. The FCC knocked them all down. In the past few months, two of those pirates returned to the air, and one of those appears to be running increased power. The reason that the pirates have returned may be a little-known brand-new FCC policy: Hands-off pirates unless they are causing direct interference to an authorized broadcast station, and the FCC isn't busy with higher priority cases, like public safety interference. But the FCC is always busy with public safety cases. So, by largely dismantling pirate enforcement, the seeds to create a lawless environment have already been planted. (We have become aware of this hidden hands-off policy by talking with different individuals and FCC agents across the country and connecting the dots. It wasn't hard to do.)

The fact is that our local FCC offices have traditionally struggled to find time to deal with pirates with so many higher priority cases pending — but they have, in fact, found the necessary time and have given us clean airwaves here in southern California. Now with the hands-off policy in place, pirates are guaranteed to proliferate. Even the most egregious high-powered pirates will go unscathed if FCC field staff is cut in half because public safety interference cases will occupy the FCC's every waking moment. Unscrupulous people will ask, "Why bother to file for a low-power FM permit when we can just start broadcasting instead, and why limit ourselves to low power?"

Let's turn to the TV arena. Just over a year ago, the FAA accused a southern California UHF-TV station of causing interference to a high altitude en-route VHF channel (133.2 MHz) used by aircraft. So serious was the reported problem that the TV station voluntarily left the air while private sector engineers worked overtime to assess the situation. The important point is that the FCC was ready to dispatch its own engineers at a moment's notice if need be (we made telephone contact with the San Diego FCC field office to make sure of this).

Now imagine the situation with greatly reduced FCC staffing: There is no public safety issue because the TV station left the air and that action seemed to resolve the intermittent interference problem. Too bad if the station couldn't return to the air quickly — that would be viewed as a problem for the private sector to address. (As it turned out, there was never conclusive evidence that the broadcast station was at fault; the FAA located a stuck microphone problem at its control center, the TV transmitter tested "clean" and the station successfully returned to the air without making any adjustments whatsoever.)

If FCC Enforcement Bureau staff and field office reductions go into place as now proposed, the broadcast community won't be able to count on FCC field offices for any type of assistance. RPU jamming? Too bad. Two-way radio interference? A pity. A competitor doing something illegal? Forget it. Some other government agency using questionable engineering practices and accusing you of causing interference? Good luck. You can bet that a new generation of jammers and pirates will crop up knowing full well that the FCC's field offices have been emasculated and will do nothing.

Fast action is needed (a) to reverse the FCC's "hands-off pirates policy" and (b) to keep the commission from making drastic cuts to the number of field offices and the number of field agents. This is a one/two punch we don't need. With interference and communications complexity increasing, we need more field engineers and more FCC field capability, not less.

Please forward this editorial to your director of engineering and general manager along with a request that an urgent appeal be made to Congress in Washington. Appeals must be made *now* to the U.S. Senate and the House of Representatives by as many stations as possible. Unless the FCC's "hands-off" policy toward pirates is reversed, and its drastic downsizing of field offices and field personnel is voted down, we are on the road to anarchy.

Robert F. Gonsett
President
Communications General Corp.
Fallbrook, Calif.

To read a related commentary, see page 1.

READER'SFORUM

SKOTDAL'S TAKE ON AM

KKRO licensee Andrew Skotdal's comments, about the migration of AM to digital operation in the abandoned VHF channels, are all too obvious.

It never ceases to amaze me how everyone from the engineering head of CBS Radio to an FCC commissioner keeps trying to sell this idea that AM can be saved!

As a former major-market and medium-market AM licensee, I agree with Mr. Skotdal's assertions that the train has left the station; and I am pretty sure that happened around 3 p.m. on Sept. 25, 1999. (Joke.)

We're all going nowhere until the commission faces the fact that digital radio on VHF is here. The governing body that regulates radio has to come to grips that regardless of the protestations the big operators and others, we must make this change like now, today and quit fooling around!

Lloyd Bankson Roach
Meetinghouse Media Inc.
West Chester, Pa.

The commentary "AMs Should Focus on VHF Migration" by Andrew Skotdal offers suggestions that all AM broadcasters should pursue regardless of their market size or financial position with their facilities.

Engineers that I know and respect having been talking about this at least for the last decade, aware of the quality problems facing AM radio signals and interference.

Broadcasters are always hoping for some miracle or some FCC action that will change the downward spiral of AM radio. It will only happen if some sound engineering concept is employed as a fast, easy and not expensive burden on operators and listeners.

The FCC needs to be on board into taking action now and not waste time or money investing in HD Radio. If HD Radio was so successful, why do the operators need to have a translator working with their HD channels for people to hear the content on HD? Simple. No real display of HD receivers in cars or home.

If you can't hear it, you got nothing.

Let's get moving in the AM-VHF migration movement now. There will be room for every AM broadcaster to move too and get rid of those towers, sell the land and recoup some of the losses over the years incurred by the downfall of AM radio advertising, which cannot be sustained very much longer.

The content for the most part is available on AM, but the quality and delivery system is no longer in tune with the times and the digital world

Carl Como Tutera
President
Star Over Orlando
Licensee of WRSO(AM)
Orlando, Fla.

I read, with great interest, Andrew Skotdal's commentary on the state of AM radio stations. Andrew is correct that many AM licensees can't afford the S-L-O-W migration path HD Radio provides for a lot of reasons, with the lack of financial resources being the primary one.

It's beyond time for NAB to secure a new home for AM radio station licensees from the FCC. AM can't possibly hope to garner the entire Channels 1-6 spectrum. Let's see; AM stations have 10 kHz bandwidth. Channel 6, everyone's logical choice, since it is adjacent to the current FM band, would enable full migration, if 10 kHz bandwidth is implemented. Want 200 kHz? Buy an existing FM station!

Requiring manufacturers to make radios that will enable listeners to be able to receive whatever migration path is used is not the American way. I was on the other side of this in the early days of my career. I saw opportunity in FM radio when, frankly, you could buy a station for peanuts. The downside? Very few people, especially cars, had FM radios. We all know how that eventually worked out. This time is different. The increase in the noise floor in the standard broadcast band over the years has been simply horrific. All those FCC-mandated stickers on just about everything about "this device must not cause interference" are worthless verbiage.

The answer? Packing the FM band with ever more translators is, in my honest opinion, not a viable answer. Migrating the AM band to a new home, the 6 MHz spectrum of Channel 6 being the coveted spectrum, is vital. The sooner this begins the sooner listeners will again have viable programming choices.

Bill Wertz
Wertz Media
Friday Harbor, Wash.

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NEWS

AMs Should Focus on VHF Migration

Skotdal thinks conversion costs and lack of incentives doom all-digital on AM

COMMENTARY

BY ANDREW SKOTDAL

The author is licensee of 50 kW AM stations KKRO and KKXA in the Seattle market, chair of the Washington State Association of Broadcasters and a former NAB board member. He participated in the recent NAB Labs driving tests of all-digital on the AM band.

In a Dec. 3 commentary, he wrote about the benefits of moving occupants of the band to unburdened VHF spectrum, the current Channels 1-6, rather than pursuing all-digital operation on the existing band. Radio World received so much reaction that we asked Skotdal to expand on his thoughts about the implications.

The benefits of all-digital modulation on the AM band are real, and we'll hear more about them in April. But none of the discussions has explored how occupants of the band convert to digital

Andrew Skotdal

want FM frequencies and have pushed the FCC to open spectrum and change existing rules.

discounts from list can be achieved. Regardless, the numbers will be significant.

Given a choice between a digital FM upgrade and upgrading an AM, an owner with both types of frequencies will choose to upgrade the FM first because it is easier to upgrade, often costs less and affords additional channels if desired. AM digital conversion is hampered as a result.

And cost becomes a factor for other reasons.

In markets of fewer than 100,000 people, the digital conversion expense likely greater than the value of an AM license. Even in larger markets, it may represent the entire net revenue for group of stations for a year.

The odds of station owners laying out $50,000 to $100,000 for one radio station in markets where they have fewer than 250,000 for even 500,000 people are even lower when the technology is useful only to consumers who Radio technology. In a rural market, receiver penetration with that technology is likely less than 5 percent, which is the situation here in Seattle.

How many markets and stations in these markets would unless forced to do so — and forced to do so, they might go

Every time I'm in a car on I pass an AM radio transmitter

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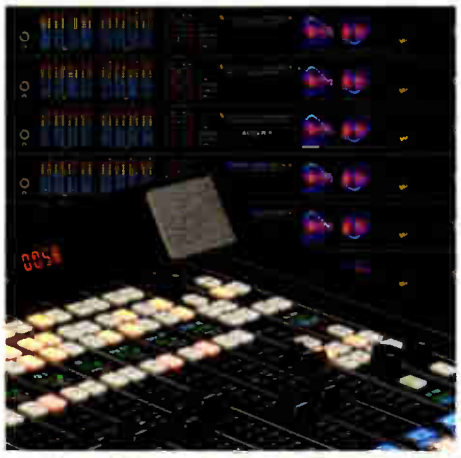

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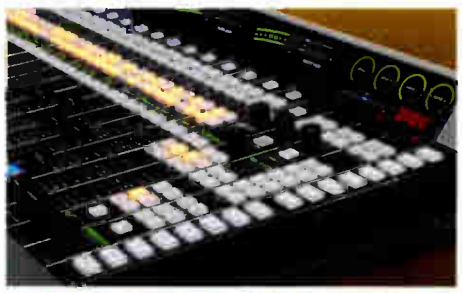

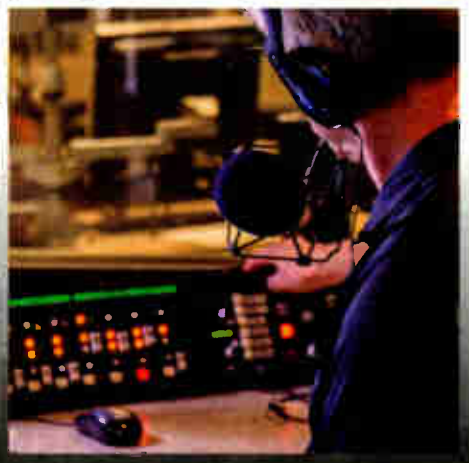

BE YOUR BEST

CONTROL SURFACES/CONSOLES: LX-24 · L-12 · L-8 · E SERIES · IP-12/16 · TALENT STATIONS
BLADE-3 NETWORK MODULES: I/O · MIX ENGINES · PROCESSING · LOGIC · MADI
ON-AIR AUDIO PROCESSORS: AIRAURA · FM-531HD · FM-55 · FM-25 · AM-55 · VP8 IP · AURA-8IP · SG-192
VOICE/MICROPHONE PROCESSORS: M-1 · M-2 · M4-IP

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