



RADIO WORLD

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istockphoto/Milan Ljubisavljevic

For NATE, Safety Always Comes First



Association's Annual Convention Is Set for San Antonio, Feb. 6-9

BY BRETT MOSS

When you're hundreds of feet in the air working on an exposed structure, attached merely by your hands and

SAFETY

perhaps a cloth or metal hanger, there should be only a few things on your mind. The first, one hopes, is safety.

The National Association of Tower Erectors Annual Conference & Exposition serves the tower erection,

service and maintenance industry. For the people who convene in San Antonio Feb. 6-9, safety is supposed to come first. Indeed, at least a third of the education sessions are devoted to tower safety, for managers as well as tower hands.

FLORIDA

In late December, Nick Rouskey, president of Broadcast Services Tower and Antenna, a veteran tower worker, was rendered unconscious while working on a broadcast tower in Florida. According to news accounts, the local fire department was dispatched when Rouskey couldn't be contacted by a coworker at the tower base or by his wife, who was called to the scene by the coworker.

Rouskey apparently had been electrocuted while replacing tower beacon lights. It took local rescue workers five hours to get to him, determine he was

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He Wants NAB to Be a Tech Leader

Kevin Gage's Initiatives Include NAB Lab And A Radio Engineering Committee

WASHINGTON — When the National Association of Broadcasters brought Kevin



NEWS MAKER

Gage aboard in the spring of 2011, it placed him in a high-profile position, a new one at NAB that has direct responsibility to President/CEO Gordon Smith. Gage's selection and the nature of the announcement seemed to send a message that NAB wants new technology to play a key role in how broadcasters reinvent their business models.

Gage has been spending much of his time on television spectrum issues in his first eight months as the executive vice president and chief technology officer, but he's managed to get radio projects rolling as well.

An AM engineering study is underway. NAB has created a radio technology committee and is developing the "NAB Lab," which will include radio as well as television work.

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World Radio History

Copps Opposed Consolidation to the End

Leaving the FCC, He Criticized Proposed Relaxation on Cross-Ownership

BY LESLIE STIMSON

WASHINGTON — As he cast his last major vote at the FCC, Michael Copps opposed portions of media ownership rules as currently proposed.

“No issue before this commission — no issue — rivals in importance the future of our media.”

The FCC has proposed to repeal the radio/television cross-ownership rule; eliminate the blanket ban on newspaper/broadcast cross-ownership, replacing it with a modified version that would allow some cross-ownership in the largest markets; and retain the rest of the media ownership rules, including the local radio ownership limits.

The agency proposed rules that would allow one company to own a newspaper and a television station in the same market in the top 20 TV markets.

The prohibition would preclude TV/



Michael Copps, second from left, was an FCC commissioner for more than 10 years. He is shown with former colleagues Mignon Clyburn, Julius Genachowski and Robert McDowell.

If given final approval by the FCC, there would now be a presumption that in the 20 largest U.S. TV markets, such cross-ownership is in the public interest if a “diversity of information sources” remains and if the television station

media, and our public policy, need to head in a different direction. A media that more effectively nourishes genuine civic dialogue is necessary to successful self-government.”

He continued: “In the 10-plus years

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daily newspaper combinations if the paper is published in the TV’s Designated Market Area; and it also would preclude radio/daily newspaper combinations if the paper is published within the 2.0 mV/m contour (for AM stations) or 1.0 mV/m contour (for FMs). The presumptive waiver would then permit combination of a single radio station and daily newspaper in the top 20 TV markets.

The FCC enacted similar rules in 2007 under Republican Chairman Kevin Martin. A federal appeals court remanded that decision in July 2011 because the agency did not give the public enough time to comment. The agency had allowed for 28 days instead of the usual 90.

Under the new rules proposed by Democratic Chairman Julius Genachowski, the FCC would leave in place key portions of the 2007 rule-making, namely the elimination of the 35-year-old ban on cross-ownership of newspapers and broadcast stations.

involved is not one of the four top stations in the market.

The Newspaper Association of America and NAB support lifting the ban, arguing that the Internet as well as cable and satellite TV channels have made a cross-ownership rule moot.

Copps was senior Democratic member at the commission. He criticized the proposed rules as too close to those put forth by Genachowski’s Republican predecessors, Martin and Michael Powell. Copps, a longtime opponent of media consolidation, said the proposed rules would threaten media diversity and localism.

“In the vast majority of cases, I do not believe that newspaper-broadcast cross-ownership advances the public interest,” he said.

“It means fewer voices in the community, less localism in the industry and steep transactional costs that all too often lead to down-sized or shuttered newsrooms and fired journalists. Our

that I have been at the commission, we have witnessed dramatic media industry consolidation, to say nothing of the extensive concentration that occurred during the preceding 20 years. It is time to put an end to the years of public policy shortfall that have encouraged this trend.”

While the broadband space has grown, there has not been the breadth and depth of online growth to replace what has been lost in “traditional” media, he argued.

“This becomes critically important when you look at the hundreds of millions of dollars that no longer flow into news operations, only a fraction of which has been replaced by Web newsgathering. Simply put, what we currently have is an illusion of plenty. The barriers to self-publish have never been lower, but the majority of eyeballs and clicks are still focused on too few small players.”

Deadlines to file public comments on the proposed media ownership rules were not set as of early January.

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TASCAM

Radio 720 WGN Moves Upstairs

Engineering Staff Plans Relocation Project in Tribune Tower

When I read that WGN Radio will move upstairs to new studios and offices in the Tribune Tower on Michigan Ave. in downtown Chicago, I wanted to know more.

The existing ground-level broadcast facility of "Radio 720 WGN" represents a high-profile presence in one of the nation's biggest markets. Now, parent Tribune Co. has leased 14,000 of its square feet to a restaurant operator.

I reached out to Director of Engineering James Carollo. He told me the company plans to build a state-of-the-art plant for "the next page in WGN's storied history."

PUBLIC FACE

Carollo knows whereof he speaks. He began working for WGN in 1970 at the age of 24 as a board op, remote engineer and maintenance engineer. He has many memories of engineering Bears and Cubs broadcasts and doing other notable remotes. Since being named chief engineer in 1979, he has managed a big station move, installation of five new transmitters and construction of two mobile studios and a satellite uplink.

From 1935-1961, he told me via email, WGN was located in the tower. It then moved to a new standalone AM/TV building on the northwest side of Chicago called Bradley Place, near Wrigley Field, where the TV station remains. (WGN is a station that values its history; check out its site www.wgn-gold.com.)

"Then in 1986, WGN Radio moved back downtown to the Tower. Very little



The station will move offices, news and most technical systems, including this commercial production studio, to the seventh floor of Tribune Tower. A restaurant will occupy the space.



Master Control also will move as part of the project.



Not affected by the move: The WGN Showcase Studio on Michigan Ave., installed in 1986 and renovated in 2000.

FROM THE
EDITOR

Paul McLane



equipment was moved to the current radio location in 1986; almost all of the equipment was purchased new." The project included building a large "WGN Showcase Studio," from which the public on Michigan Ave. can watch and interact with the talent. That studio was rebuilt in 2000.

Now after 25 years, WGN will move its offices, news and technical facilities up to the seventh floor of Tribune Tower, though it will keep the showcase studio on the ground level.

"Since WGN continues to broadcast its 24/7 local talk, news and sports programming while we build a separate new facility, most of the equipment will be new," he continued. "Much of WGN's equipment has been analog and dates back 25 years, so this move gives

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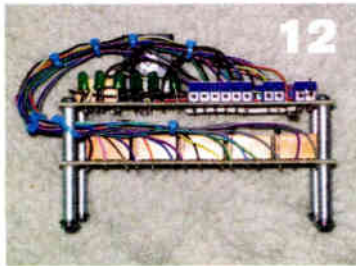
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WGN

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the station the opportunity to upgrade to a fully integrated digital, state-of-the-art broadcast facility.”

While some gear including mics, codecs and automation will move, WGN will install a new digital distribution system.

“In addition to the street-level WGN Showcase Studio, up on the seventh floor the station will have main and alternate air studios, two production rooms, two edit suites, other editing stations and an all-digital news, sports, traffic and agri-business center with 10 separate workstations. The control surfaces will be Wheatstone E6 units in the studios and production rooms and Wheatstone sideboard control surfaces at the news and sports workstations.”

SEAMLESS GOAL

I asked what the biggest challenges in the job will be; Carollo said the primary one is to continue flawless broadcast operations while building new facilities in a transition that is seamless for listeners.

‘This move gives the station the opportunity to upgrade to a fully integrated digital, state-of-the-art broadcast facility.’

“That’s what we did in 1986. While it will be a bit easier with today’s digital technology, the project still requires much planning and coordination. The work will be done by a combination of external contractors and WGN staff. Very few radio stations are staffed to handle a project of this magnitude without outside support, and since WGN is a standalone operation with no sister stations with which to share facilities and staff, our challenges are more unique.”

But, he said, the radio station technical staff “has a significant role in the design and installation of any new facility so that when the project is completed, the station personnel can run it.”

WGN, Carollo wrote, has an “immense locally-created content brand. WGN’s staff is ultimately responsible for operating the station on a daily basis and must have the documentation and deep knowledge to meet that responsibility.”

The station plans to complete the relocation by summer.

NEWS**NEWSROUNDUP**

EAS CAP: The final rules governing the new Emergency Alert System protocol allow for the use of converters but do not add a requirement to transmit alerts initiated by state governors. The FCC laid out its directive regarding the incorporation of Common Alerting Protocol, an XML-based format for EAS messages that allows for multiplatform distribution and updates.

FORD: The carmaker said it was the first to provide access to Clear Channel’s iHeartRadio app using voice control. Access is through its Sync AppLink, which is in 10 car models in the 2012 model year. An NPR app also is among those that Ford drivers will be able to control.

SPOTS: U.S. commercial radio stations had more reason to be grateful to the gecko and his friends in 2011. Insurer Geico ran the most spots of any company over the past year, as counted by data and monitoring firm Media Monitors, which issued its 2011 leader report. Media Monitors counted about 2.23 million

Geico spots. Home Depot again held the second spot at 2.1 million and McDonald’s repeated in third place with 1.3 million.

RADIO-BERRY: Research in Motion said FM radio is part of its BlackBerry Curve 9360 and 9380 smartphones, as part of the BlackBerry 7.1 operating system update. “Listening to the FM radio does not require a data plan or use data services,” it wrote. The announcement was made at the CES convention in January. Look for more CES coverage in an upcoming issue.

SATELLITE: Sirius XM Radio said it ended 2011 with around 21.9 million subscribers. It reported approximately 540,000 net new subscribers in the fourth quarter and approximately 1.7 million paying customers for the full year 2011. The satcaster previously had projected full-year subscriptions would increase to 21.6 million. CEO Mel Karmazin said based on preliminary subscriber data that SiriusXM exceeded its subscriber guidance for the year.

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GAGE*(continued from page 1)*

In a broad sense, he says, his job is to figure out where broadcasting will be technology-wise in the next few years and find ways radio and television stations can use technology advances to bring in new revenue streams.

Last fall, NAB quietly renamed its engineering division from NAB Science and Technology to simply "NAB Technology," reflecting a broadening focus under Gage.

His background is in television and music digital platforms. He helped develop the DVD specification and production facilities at Warner Bros. Studios and helped launch the WB Network. He was head technologist at Warner Music Group, where he oversaw creation of new digital platforms and standards for products that included iTunes.

His résumé also includes a stint as an RIAA board member. He's a Penn State University graduate who has a B.S. in science.

Radio World News Editor/Washington Bureau Chief spoke with Gage about the new NAB Lab and other technology matters including the creation of the radio engineering committee, in which several prominent industry engineers are participating.

RW: Why did NAB create your position?

Gage: Beyond the advocacy that NAB does, there's a leadership role in the technology space that NAB can provide for the whole broadcasting marketplace. To do that, they felt they needed someone from the outside who had real-world digital technology and product development experience.

When they contacted me, they looked at my background and said, "Okay, you've done digital technology infrastructure, you've done business development, product development, strategic development as well as being a CTO."

RW: Have you run into any surprises?

Gage: It wasn't really an overall new experience because I'd been in the industry before, from the Time-Warner days. It's just really re-discovering what the landscape is [now], and what are the drivers of where we need to go in the next five years.



RW: How is NAB's technology department structured? The new name seems more broad.

Gage: It's a little more broad. If you look at the mandate, it's not just broadcasting, it's broadcasting and all that's collateral to broadcasting. As broadcasters, that's where we are today.

It's structured in four units: Victor Tawil from MSTV has a group that



NAB brought in Kevin Gage, left, in the newly created position of executive vice president and chief technology officer. He is shown with Senior Vice President of Technology Victor Tawil and Senior Director of Advanced Engineering David Layer.

reports to him, and he reports to me. [The Association of Maximum Service Television was merged into NAB last June. It had worked with NAB to help shepherd the digital television transition.] Janet Elliott is head of my technology operations, she manages all the non-tech initiatives and events and organization, including our educational outreach that we're going to try to build on.

With that in mind, John Marino is in charge of our technology education; that's the show, the other seminars, taking on the Futures Summit, as well as building new curriculum that we will be announcing shortly for the NAB Show. Finally we have Lynn Claudy, who works really on the standards side, from his background working with the Advanced Television Systems Committee, and he has a couple [of people] under him as well.

RW: What can you say about these new initiatives? Are any radio-oriented?

Gage: Two of them are radio-oriented that we're going to be doing at the show. It's really creating curriculum for managers — not necessarily technologists, but managers — and try to make the language of technology ... what is capable and what are the opportunities out there ... to put it into language for managers: "If I want to go do X in a digital media space, here's what I can do. Here are the success models and this is what I need to do as a station manager or a GM, and

'This is what I need to do to enable my station or stations to do this.'"

We're going to do the same type of curriculum on HD Radio. One of the initiatives that came out of our funding efforts here at NAB was a project that we're working on with Emmis, iBiquity Digital and Intel to create HD Radio-enabled mobile phones. We've partnered with those core companies to basically

RW: The HD Alliance is conducting a survey among members to see where stations are with Artist Experience and what kind of assistance they would need to do it. Is NAB helping?

Gage: This is part of that. When we put out this curriculum, we're actually working with operators. Something that's key for me is I want to be able to really get the input of folks who've rolled up their sleeves, bruised a knuckle, bled a little bit and actually tried to implement something and seen the successes and failures ... and get them to be part of this curriculum, vs. just creating something that wouldn't necessarily have those real-world experiences attached to it.

RW: So one curriculum is on HD Radio. What's the other radio curriculum?

Gage: It's general digital. Neither of them has been announced so I don't want to steal the convention's thunder.

RW: What's the concept behind the new NAB Lab?

Gage: The concept is to really give us an entity that is solely focused on driving the innovation that the [NAB] board was looking for.

In this case it's going to be a support function, but it's going to have a number of different functional units. Part of those functional units will be a showcase; we don't showcase broadcast technology. In my brief time here, on the Hill, it still surprises people that there is innovation going on in the broadcast world. Because unless it's touchy-feely and you have that visceral experience with it, [lawmakers] don't believe it's real.

So the easiest thing to do is to create a showcase that people can come in and see, have events and see what's happening ... because there's nothing like that here in the beltway.

The incubator function is still going to be there. You're right to say the FASTROAD program will be included. ... We will help foster [some] projects but not necessarily work directly with them.

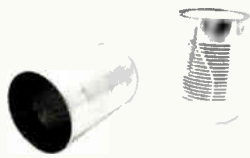
And then there will be a function in which we work directly with projects and partner with other companies and labs across the world on developing new innovation within the broadcasting and the collaterals of broadcasting. Which means there will also be a much more focused outreach on partnering with other companies — associations, companies and foreign organizations — to foster broadcasting of the future.

RW: Where will the lab be?

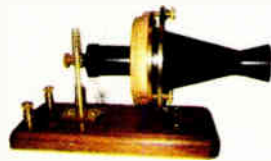
Gage: In the NAB building.

I'm trying to bring my start-up experience with me and saying, "Listen, we've just been given some seed funding." That's the way I want to approach

(continued on page 8)



1664: Just what it looks like. Two tin cups and a string. But it transmitted sound!



1876: Alexander Graham Bell's commercially viable telephone.



1900: Phones become fixtures in more well-to-do and steam-punk homes.



1920: Every home is working toward having a telephone!



1936: The advent of the dial desk phone. No more asking the operator to connect you.



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1983: The mobile phone is a reality. Plots in all TV shows get a boost!



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GAGE

(continued from page 6)

it, though I know it's a little different than that.

We have this seed funding; and now how can we be efficient and effective but also very dynamic in being able to create and produce and test different things in the marketplace? To be able to do that, I'm trying to create a little more of a virtual organization, and bringing in folks that we need as we need them. If we need to staff up over time, we will staff up over time in the areas that we've defined that we need to ... but really take it more from a start-up standpoint: "Here's a lab."

If we need to work with folks who work remotely, they work remotely. They'll have space internally to work on that. We'll have the showcase internally. We'll have a lot of our testing and other types of capabilities will still be in-house. But in this day and age, to get a brick-and-mortar lab is not really the most effective way of driving innovation. It saddles that entity with too many constrictions, as far as I'm concerned.

RW: NAB has testing equipment already?

Gage: We've got plenty of that and we can get more. Remember also we merged with MSTV, and with MSTV we got two excellent engineers [Victor Tawil and Bruce Franca] who've done a ton of testing in the RF space. They're both considered experts and they both came out of the FCC [prior to MSTV].

RW: I'm curious how this effort will compare to NPR Labs.

Gage: We've had a little outreach to the NPR Labs. My understanding of NPR Labs is they're a separate entity. We're part of NAB. My understanding of NPR Labs is they do things internally; and they also do things for fee. That's not our goal.

Our goal here at NAB is to find ways to maximize or increase the overall broadcast market. We're here about developing market vs. trying to develop

individual products although that may come out of it. We're here to tactically look in and say, "Okay, where are the areas that we can focus on innovation. How can we support our membership and the broadcasting community in general and then help expand in the development and innovation of the overall market?"

RW: Is your lab set up?

Gage: It's being set up. We went through the initial approval of this in the October board meeting. It takes some time to go through the budgetary process and get us going.

RW: When will you be ready?

Gage: We're already starting to spin up a little bit. One of your questions was about the AM engineering study. That's one of the first things we're taking on. ... Instead of just going external to do that, we have internal people working on that as well, and setting up the AM engineering study. ... It's a mixture of us, external folks and of our radio broadcasting community coming in and working with us on that.

RW: What can you tell me about that study?

Gage: It's too early to say much, other than I parse the problem as, "Where is radio five to 10 years from now; and what are the platforms that are potentially in place? What can we do with those platforms?"

When I say a platform, it can be cellular, mobile DTV, or TV Channels 5 and 6. There's a number of different ways of looking at what the platform is. So it's something that a business owner can say, "Okay, I want to be *there*, and that's where my radio station will be broadcast to the world."

The second part of that is what can be done with the AM band, because there are physics involved here with AM, on what can and cannot be done. As we know, the ambient noise that's in the marketplace that affects the AM band is increasing and growing. So what can be done to help optimize what we can do with the AM band today?

Our goal is to lay out factually what we have discovered during this study to the board, and at that point in time, I think we will get the next steps of what we need to do.

RW: Are AM stations worried because they're starting to see more portable devices that don't have AM at all?

Gage: I don't think it's just one thing. I think the noise floor is one of the issues. Portability is another issue. The ability to deliver data is another ability.

There's a number of different concerns to say, "How, on the AM band, can we compete with the other modes of distribution?" It's not just one, it's a multitude of those.

RW: Are you surveying members?

Gage: Yes, another one of your questions is about the radio engineering committee. We have a TV engineering committee. They're now called technology, not engineering committees — again, to have a

pate with it.

RW: You seem to be trying to broaden the broadcasters' focus, technology-wise.

Gage: I think it's really ramping it up and it's reflective of where the market's going. What is broadcasting today and where is it going in the future? And where are the technologies that surround broadcasting ... which is anywhere from what you're doing — actually broadcasting — to all your ancillary products that are dealing with broadcasting and tying it all together?

I would say yes, it is a broadening of the technology mandate within the NAB membership.

RW: How does HD Radio fit in with what NAB's doing?

Gage: The key for our broadcasters is the ability to innovate; so we're trying to support innovation across the board. With innovation, some will succeed, some will fail; but at the end of the day

Gage said NAB shortly will announce two initiatives to help radio managers succeed with new technology.

larger mandate vs. just the engineering of radio but with the overall technology that goes behind it.

With the MSTV merger, we brought in a robust and dynamic group of guys that were managing the TV side, but what we didn't have was [the] radio side. I started polling the industry at the board level, and had David Layer [senior director, advanced engineering for NAB] reach out at the engineering level; and we found there was, indeed, a strong interest in creating a technology group around radio. We formed that group.

RW: When was it created?

Gage: This committee was created in November. David Layer manages it. We just announced it internally to our membership. Barry Thomas of Lincoln Financial is going to be the chair and Jeff Littlejohn of Clear Channel Radio is going to be the vice-chair.

RW: Did this replace another committee or is it totally new?

Gage: It's new. Within the technology side we inherited the TV group, we've expanded its charter and we formed the radio counterpart, which is the radio technology group. ... When we formed this group and we reached out to the membership ... some small but [also] a lot of medium markets showed an intense interest in being able to partici-

we're supporting all these types of innovations, and HD Radio is one of those we support because we have broadcasters that support it. We think it's actually an interesting product, but at the end of the day we're all learning daily what it takes to put out that type of a product.

RW: It seems your job is to look ahead, to see how radio can be distributed on more platforms and to think more broadly. Is this what organizations need to be doing to think more broadly about to distribute their product?

Gage: I think that's already happening. You're looking at the innovation that's happening in the marketplace today. It doesn't always get the press necessarily that it should, at least what I see within the beltway. But there's a lot of innovation going on. Our role is to help foster that innovation and potentially find new areas of where innovation can happen and be there at those early stages with both informational and technical support.

RW: It sounds like you're going to make some changes to the Broadcast Engineering Conference at the spring convention.

Gage: We'll make changes in the show. Whether it's in the engineering conference or in the management conference or separate sessions altogether, there will be changes.

NEWSROUNDUP

DATA: Quu Interactive is now an investor in Jump2Go, and has obtained the exclusive license to that company's JumpGate RDS and HD Radio offerings. Quu, launched about four years ago, seeks to make radio an interactive medium. Joe Harb and Lynn Bruder are executives. Jump2Go was founded by Allen Hartle and has been active in RDS and iTunes tagging.

SWANSON: Engineer Stanley Swanson died in Yuma, Ariz., in December, according to the HCJB newsletter. He was 83. According to the account, Swanson worked at Motorola, the Naval Research Lab, Stromberg-Carlson and General Dynamics. Radio work included WCMF(FM) in Rochester, N.Y.; HOXO in Panama; and KVMV(FM) in McAllen, Texas, where he became involved in the growing World Radio Network. Swanson put several WRN stations on the air, including KBNL(FM) in Laredo. Later he worked at KYRM(FM) in Yuma, Ariz.

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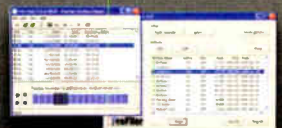
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This Is Not Your Father's Remote Control

A Picture Is Worth a Thousand Readings

BY JAMES WITHERS

Section 73.1400 of the commission's rules is titled "Transmission System Monitoring and Control."

TECHTIPS

Contrary to the rules that existed in ol' Dad's day — anybody remember hourly meter readings? — the requirements now are, if anything, a bit vague. For example, paragraph (a),(4), states that "in the case of remote control ... operation, not every station parameter need be monitored or controlled if the licensee has good reason to believe that its stability is so great that its monitoring and control are unnecessary."

Well, fine. But then again, one man's "good reason" might be another man's (or inspector's) idea of sheer folly.

What, then, to monitor? Transmitter manufacturers have long supplied samples of plate voltage and current, and sometimes, forward power to the remote control interface terminals, but little else. All stations used to employ a remote frequency meter to monitor the carrier frequency; but PLL (phase-locked-loop) and more recently digital clocking (including GPS sync) have rendered that parameter one of the ones that we can all have "good reason" to believe will stay put.

GIMME THE WORKS

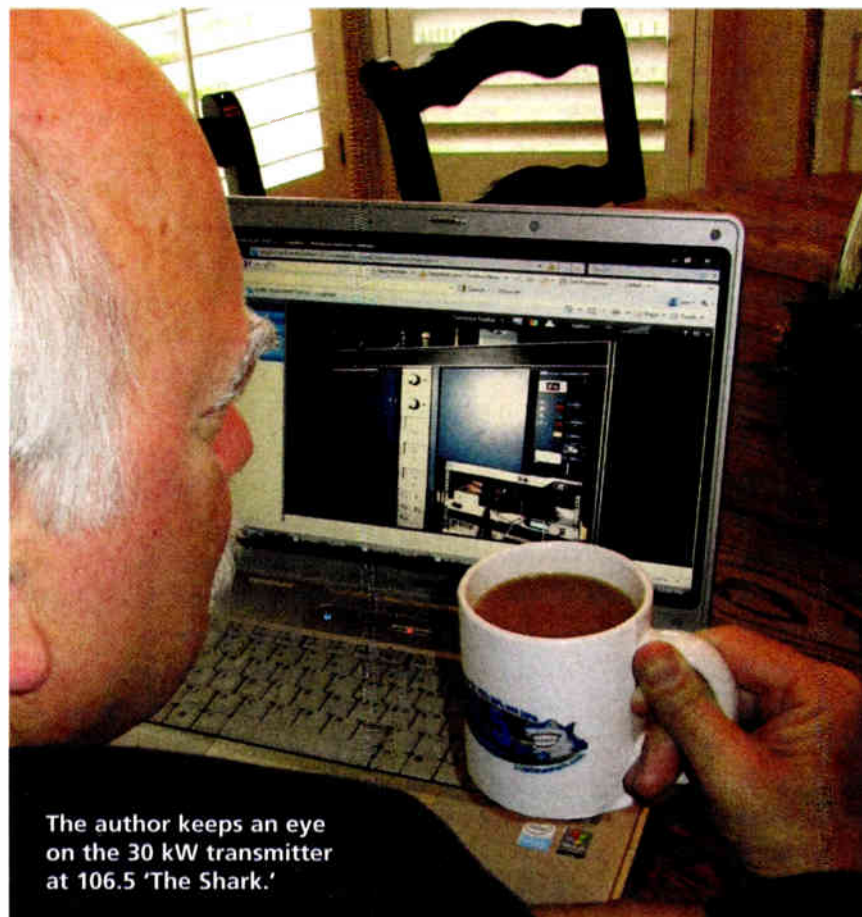
For my part I like to load it up. This is easy to do, thanks to digital control, voice response and the Internet. They have combined to help radio reinvent the transmitter remote control.

Far from the ponderous remotes of old, with stepping relays and analog circuitry, modern remote controls essentially are foolproof. As a bonus, they have followed along with other computers in conforming to Moore's Law. In other words, they are several orders of magnitude more powerful than 30 years ago but cost way less, in inflation-adjusted dollars.

For example, all of the remotes I looked at when building our new FM

have a built-in LAN port, a Web browser and a USB port for direct link to a local computer.

Since our site has a broadband connection, I took an unused laptop and linked it directly to the remote.



The author keeps an eye on the 30 kW transmitter at 106.5 'The Shark.'

Using LogMeIn (there are other versions of this Web-based service), I can access the laptop easily and look at the GUI of the remote control. The software app allows easy access for setting multiple alarm modes on each channel, logging capability and POTS, cell or e-mail alerting modes.

The GUI (Graphical User Interface, for those unschooled in the dark art of IT) displays nifty representations of analog meters, which I prefer to digital readouts. The Web interface also is nice, since it saves me the cost of a landline to the site.

A PICTURE IS WORTH A THOUSAND READINGS

The remote access laptop adds unrelated, but valuable, benefits.

We have loaded Adobe files of the manuals for every piece of equipment at the site on it. No more shelves of dilapidated books with spilled coffee stains on them!

In a fit of techno-overkill I also added a webcam to the computer, one that zooms, pans and tilts. What's the pressure in the transmission line? Well, I'll just log in, zoom the camera in on the nitrogen gauge and check it out as I sit at my kitchen table in my sweats with a cup of coffee (which, as noted above,

are willing to devote to figuring out how to interface it.

What about the basics? Do you really need to pan and zoom like some out-of-work news photographer looking for the next big money shot? Or do you just need to monitor the minimums: plate current, plate voltage, forward power and call it a day.

It turns out that even if you just want plain vanilla, current technology remote controls with autologging add to that experience, too.

WHAT'S TRENDING

Automatic logging allows the alert engineer to see something more important than an instantaneous reading: the trend of things.

I got a lesson in trends 40 years ago when I lived in Las Vegas. I was walking through a casino and saw a guy playing with \$100 chips. He was laying down five "blacks" at a time, \$500 a bet, which was a ton of money at the time.

He had a crowd rooting him on and I commented to the guy next to me that it was unbelievable; the guy had won more than \$3,000 just in the few minutes I had been standing there. The guy I was chatting with looked back at me and said, "Yeah, he's only about \$12,000 down now."

Like the blackjack player, you never want to be on the wrong side of a trend with a transmitter and be caught unaware.

Autologging can check it all: building temp, outside air temp, every important meter reading ... essentially anything you want to take the time to setup. By reviewing that file regularly, you can catch things that might look fine by just taking a snapshot once in a while but might not look so benign once the trend line is considered.

Back in the day, all transmitters were manned whenever they were on the air. This was not only a regulation, but also made sense from an operational standpoint, since transmitters of that time (and the tubes that powered them) had a disturbing tendency to drift around both in terms of frequency and power. Modern transmitters, on the other hand, are incredibly reliable.

Still, even the newest solid-state Cadillac model is made up of thousands of individual parts, each having a defined mean time between failure. And many of those parts can cause the money machine to shut down completely.

Investing in a current technology remote control and taking the time to implement all of its functionality fully is good (not to mention cheap) insurance against an unplanned outage.

Among Jim Withers' many past contributions to Radio World is his Christmas poem "Twas the Night at the Site."

never, ever spills on my tech manuals).

For 20 bucks I bought a motion detector and connected it to a status alarm on the remote. If it triggers, I can log in to the laptop with my smartphone and see what's up. If someone breaks in, I can have the webcam record and upload the whole episode, at least until they grab the laptop (which is more likely to disappear than the 1,500-pound HV supply).

In a bigger sense, it is beneficial to be able to "look" at the overall transmitter.

The solid-state IPAs in my rig have front-panel status lights. So does the remote control itself, along with exciter and several other boxes. No way to tie all of that into a remote control, but with the webcam, monitoring them in real time is simple. Hang some colored nylon strips on the HVAC vent and you can tell when the blower is running, even if the status of the compressor is unknown. The list of parameters capable of being monitored with a new style remote is limited only by the effort you

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usa.studer.ch

STUDER
by HARMAN

Buc Builds a Relay Interface Assembly

Here's a Tip for Controlling an Older Auxiliary Transmitter

Our Radio World colleague Charles S. "Buc" Fitch, P.E., recently completed a relay interface assembly for controlling an older auxiliary transmitter.

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Late-model transmitters have remote control terminals operating on 5, 12 or 24 VDC, perfect for interfacing to an external remote control system. Many older transmitters don't include this feature

and instead use 120 or 240 VAC for their control ladders.

Connecting these terminals directly to a remote control is asking for trouble for several reasons.

First, the current rating used in the transmitter may exceed the rating of the remote control relays. There is also the possibility that you can short the control ladder AC to the remote control, causing serious damage to the remote control, as well as yourself. Finally, good engineering practice frowns on having raw 120 or 240 VAC on terminal strips in the back

of an equipment rack. It's just waiting to "bite" you.

The solution is a relay interface, such as the one Buc has built and seen in Fig. 1. The terminal connections are the correct orientation for attachment to the inside front wall where the control wiring is located.

The top strip of 12 connections are

(in pairs) from left to right for the 120 Volt AC transmitter control ladder. Buc chose relays with contacts rated for this voltage. The contacts handle filament on/off, plate (high voltage) on/off and power raise/lower.

If you set out to build such an interface, add Buc's confidence LEDs for each relay. The green LEDs are located along the lower left of the board. This simplifies troubleshooting between the transmitter and the remote control — no more worrying whether the relay is

(continued on page 14)

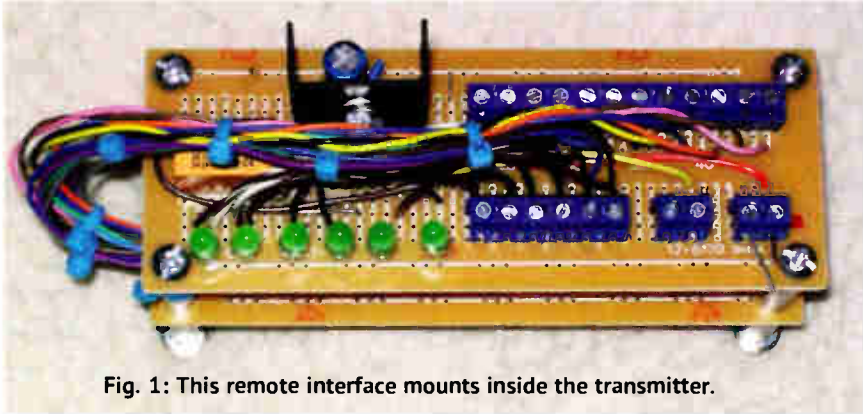


Fig. 1: This remote interface mounts inside the transmitter.

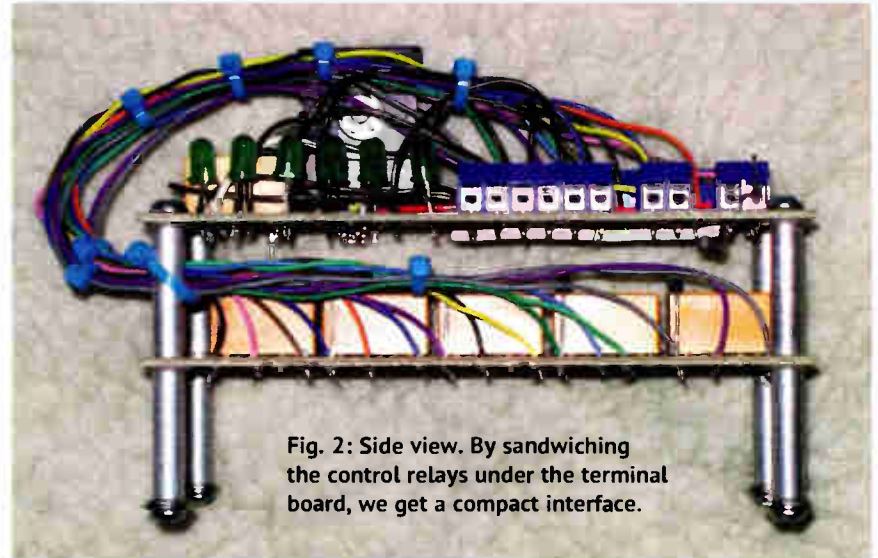


Fig. 2: Side view. By sandwiching the control relays under the terminal board, we get a compact interface.

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SL

LO

ML

MH

HI

SH

Lim Thresh 0.0 dB

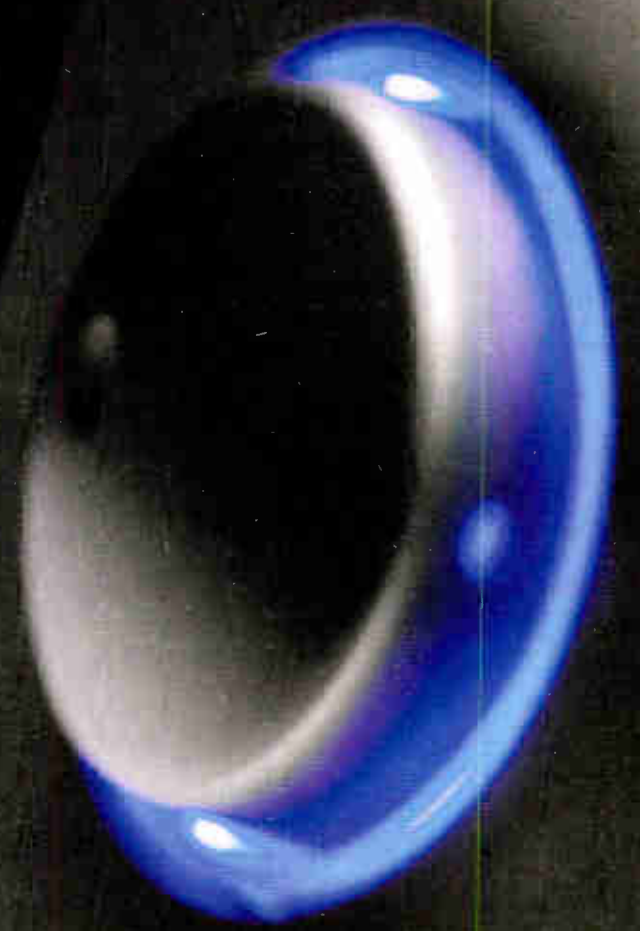
Attack Offset 8.3

Release Offset 5.6

Gate Offset -4.0 dB

SL to LO Sync -12.0 dB

Preset Wizard Basic Advanced



Should I Be Concerned About IPv6?

Take the Path That Provides the Best Experience for Your Content Consumer

BY WAYNE PECENA

In early 2011, the shortage of commonly used IPv4 Internet protocol addresses reached the public media when the Internet Assigned Numbers

SBE NEWS

Authority, the international body that allocates IP address space, depleted its pool of available addresses assigned to the five Regional Internet Registries, or RIRs.

The Asian-Pacific RIR subsequently depleted its pool of available IPv4 address space. In the United States, observers say the American Registry for Internet Numbers (ARIN) may exhaust its available IPv4 address pool as early as January 2013, though more optimistic projections cite 2016.

IPv6 was brought forward in the public eye as the solution for the dwindling availability of Internet address space.

At times, the address space shortage was considered an approaching Internet technology crisis. This may be true in some cases; but to many the "crisis" was nonexistent. In reality, the majority of North American network infrastructures are not ready for a "hot" cut to an IPv6-only mode of operation.



Many organizations have enough public IP address space or have met needs via dynamically assigning address space within their organizations. This resolution creates an attitude that "IPv6 is a possible future issue; however, it is not an issue today." ARIN has IPv4 address space available and allocations are made based upon meeting the allocation and utilization rules of established ARIN policy.

However, this attitude can result in a certain sense of false security. The industry focus centers upon address space within an organization's network; but shouldn't the focus also be directed toward the broadcaster as a content provider and how the broadcaster is viewed by the Internet community?

From an international standpoint, the growth areas in terms of content consumers — "eyeballs and ears" — will be in an IPv6-only environment. This is especially true in the Asia-Pacific area, which is experiencing massive growth in Internet service demand. Growth is occurring in an IPv6-only environment simply due to lack of IPv4 address

resources.

In the United States, because large blocks of IPv4 address space are not available, broadband cable and mobile data networks rapidly are moving to IPv6-only context to accommodate projected growth. ARIN has IPv4 address space to allocate, but not in the large block space desired by these providers. In addition, they are getting a jump on the future by implementing IPv6 now rather than later.

In either case, available IPv4 address space is decreasing as demand for Internet address space increases rapidly.

FRESH PERSPECTIVE

So what about this false sense of security for the broadcaster?

Instead of looking at your network from the inside and focusing solely on adequate IPv4 address space, look at your network from the outside. Who are the "eyeballs and ears" that desire your content? You will find the majority are IPv4-based content consumers; but at the same time, you may find a growing number of IPv6-only content consumers.

Evaluate when IPv6 implementation is needed by determining how the consumer has access to the content. Implement the network infrastructure that allows access in a native IPv6 format for the

IPv6 QUICK FACTS

IPv4 Address Space:
Slightly over 4,000,000 IP Addresses Available

IPv6 Address Space:
340,282,366,920,938,463,374,
607,431,768,211.456 IP addresses
available
(340 undecillion or 3.4×10^{38})

But, IPv6 is more than just larger address space:

- Security (IPsec) incorporated
- Designed with QoS in mind
- Has awareness of mobility
- Restores the end-end Internet communications model

IPv6-only viewer and/or listener.

Technical solutions exist to accommodate the mixed world of IPv6-only consumers and IPv4-only content. Industry solutions include IPv6-IPv4 Network Address Translation (NAT) and, in many practical implementations, double NAT processes occur through solutions such as Carrier-Grade Nat (CGN).

For some types of Internet content, such as basic Web page content, these solutions are viable. However, a major drawback of any solution is the detriment to Quality of Service (QoS) factors that affect real-time media content, such as streaming audio and video content

(continued on page 16)

WORKBENCH

(continued from page 12)

actually pulling in.

Fig. 2 shows a side view. The metal standoffs help with mounting to the transmitter wall.

Buc Fitch can be reached at fitchpe@comcast.net.

One of the best design criteria for broadcast equipment is longevity in the field.

Although developed years ago, the Gentner VRC2000 Remote Control System is still going strong at a lot of stations. Channel parameters are programmed in a volatile memory. The memory is "kept alive" with a coin battery inside the unit.

The pitfall is if the battery fails and you lose AC power to the unit, you must re-enter all the programming functions, which is not a fun project. If you have one of these workhorses handling your remote control functions, read on.

First, if you haven't replaced the battery, it may be dead and you're skating on thin ice. But before you change it, see what Saga's Ira Wilner suggests.

Recently on the PubTech listserv, engineers discussed adding wires to the coin battery contacts and running them outside the unit to an external battery holder. Not a bad idea; it eliminates removing the VRC from the rack, popping the top and changing the battery on a routine basis.

Ira's suggestion is to plug the VRC into a UPS, which makes changing the battery a moot point. However, make sure the internal coin cell battery is fresh before unplugging the VRC. You don't want to lose the programming in the time it takes to move the AC cable to the UPS!

He chose a UPS because of the risk of shorting battery leads while soldering the wires, and subsequent loss of programming.

Certainly, another solution is to piggyback new batteries inside the unit. But be careful. One wrong move and you're faced with a long re-programming task. (This may happen anyway, if you ignore the battery and at some point lose power.)

Reach Ira Wilner at bdcast@vermontel.net. Let me know if you have other equipment with similar issues and how you handled them. Email suggestions and comments to johnpbisset@gmail.com.

Brian Urban, chief operator at the University of Texas at Austin's KUT(FM), weighed in on our earlier discussion of corroded batteries: "I've had much better luck recovering from leaking batteries since I remembered an acid will neutralize a base."

But in the case of seriously corroded terminals, Brian has resorted to 3M Scotch-Brite pads to clean the terminals, after using the vinegar or baking soda. Next time you're at the store, pick up a pack of pads. Be sure



Fig. 3: These work great for removing tarnish on contacts, especially tarnished copper transmission line connections.

you get the ones that are not impregnated with soap!

Reach Brian at burban@kut.org.

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.

Author John Bisset has spent 43 years in the broadcasting industry and is still learning! He is SBE certified and is a past recipient of the SBE's Educator of the Year Award.

There's only one question on this iQ test: Where'd they hide the switch?

You've heard the buzz about IP consoles, and you love all the things they can do. Only one thing held you back: you figured you'd have to call Mr. IP Genius just to plug it in. Then you saw iQ, and everything changed. Axia deep-sixed your switch configuration worries by putting an Ethernet switch right into the console. Mixing engine, power supply, I/O, and a built-for-broadcast switch all in one neat, fan-free rack unit. There's zero switch configuration, zero finger-pointing from tech support, zero "kinda-maybe" compatibility issues. And only Axia does it.

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- » Silky-smooth, side-loading 100mm, conductive-plastic faders feel great.**
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NATE*(continued from page 1)*

dead and retrieve the body. They had no experience in such operations.

It seems obvious, yet has to be said repeatedly that climbing and working on towers entails a number of hazardous possibilities. Taking that into account, NATE convention sessions range from a hands-on NATE-authorized tower climbing training course, to considerations involved with tower rescues and a look at RF-exposure safety factors on towers. Not surprisingly there are several OSHA-oriented sessions as well.

With the Florida tragedy fresh on everyone's mind, Todd Horning, director of training for Safety One International, and Richard Perse, also of Safety One, will host "New Techniques for Performing a Remote Rescue on a Tower." Horning said that they will be demonstrating "revolu-



Todd Horning will co-host a discussion about using automated external defibrillators to perform remote rescues on towers.



Craig Lekutis emphasizes the importance of a pre-bid 'site walk' in safety planning.

job site safety assessment forms."

He is a founding director of NATE and a continuing supporter. "The wireless industry has a number of organizations providing conferences. However, their focus is primarily in areas that will benefit carriers and tower owners. NATE is the only trade group that has the wireless construction indus-

ducted by Safety LMSystems, will take place all day on Feb. 9. It is limited to 50 participants and costs \$145. Its description says: "The training will cover several topics including: regulations and standards, equipment use and inspection and components that make up a fall protection system."

There will also be a 10-hour OSHA-certified training course spread across two days. It has a capacity of 100 and costs \$60. (Some events required advance signup; check the website.)

There are other OSHA-specific courses: "OSHA & Standards Specifications for Training" and "OSHA Mock Inspection," to be conducted by Raul Carrillo, an OSHA safety and health compliance officer.

Tower hands do have other considerations beyond safety. Convention attendees also have sessions such as "Trans-

mission Line and Antenna Testing," "Weatherproofing the Connection," "Helical Foundation Piles and Anchors for Towers" and "Concrete Placement Methods and Repair" for consideration of their time.

Management has its options as well. The tower industry has seen growth as the telecommunications industry expands in directions other than broadcasting while the wind energy industry has stimulated demand for tower construction and maintenance services. Sessions such as "Strategic Business Planning That Works" and "Where Did My Customers Go? Creating Loyal Customer Relationships" hit the standard business angle, while "How

schemes, thus eliminating the potential for performance degradation. A proactive approach also prepares you for the future sooner than later.

Enable your "outward-facing" network services in an IPv4-IPv6 "dual-stack" mode, which allows your content to be delivered in a native format to both IPv4 and IPv6 "eyeballs and ears," and lets you provide the best possible listening or viewing experience for your content consumers.

IPv6 may not be on your technology roadmap today, but as you look to the future, be sure to survey the Internet content consumer world from the proper viewpoint so that your "roadmap" is reflective of the changing technology and consumer. Take the implementation road that provides

**IF YOU GO****What:** NATE 2012**When:** Feb. 6-9**Where:** Marriott Riverwalk and Henry B. Gonzalez Convention Center**How:** www.natehome.com**How Much:** Members \$259, Others \$599 (on-site rate)

The NATE Annual Conference & Exposition serves the tower erection, service and maintenance industry.

tionary rescue techniques using automated external defibrillators to dramatically increase chances of survival at heights in remote work areas."

Safety also starts before anyone gets on a tower or even before a tower is built. Craig Lekutis, president of WirelessEstimator.com, a tower safety, support and engineering website, will head a panel in "Utilizing the Site Walk to Ensure that All Contractors Incorporate Safety Into Their Proposals."

"Our panel discussion will be highlighting the need for contractors to use the pre-bid site walk to ensure that when a crew arrives on site they are already prepared to have the equipment available to perform a safe project since every location will have unique situations that must be addressed."

Lekutis will be joined by Eric Munsell of engineering and consultancy Black & Veatch; David Sams, director of risk management for SBA Communication Corp.; and Scot Sandefur, director of environmental health and safety for American Tower Corp. Lekutis noted another topic for the panel: "Four of the industry's top safety executives will also be discussing the use and abuse of

try's interest at heart, and their ever-increasing membership and attendance at their shows is clearly a result of that dedication."

OSHA

The training course, "NATE Authorized Climber Training Course," con-

IPv6*(continued from page 14)*

provided by the broadcaster or similar audio and/or video content providers.

ENABLING

What is the solution for the broadcaster?

If you are a provider of content to the Internet audience, IPv6-enable your network to the outside world. In practical terms, enable your content servers, Web servers and external email so that your content or service is provided in native form to both IPv6 and IPv4-only consumers.

This approach eliminates the need for any translation or conversion

Do Regulations and Standards Work Together?" is more practice-minded, and "Fiber to the Antenna — Trends and Opportunities for the Tower Owner" is a technology trends session. It has a companion session for tower crews, "Fiber to the Antenna — Installation Best Practices for the Tower Hand."

In addition to the educational sessions there will be a show floor with equipment manufacturers, service providers, tower companies and others exhibiting. The convention hosting the show is on a section of San Antonio's famous River Walk.

the best possible experience for your content consumer. This just might be your competitive advantage.

For more information regarding IPv6 implementation, consider attending the SBE webinar to be offered this spring. It will focus upon implementing IPv6 as suggested. Visit the Education page on sbe.org for more details about the webinar.

Wayne M. Pecena, CPBE, is a member of the SBE Education Committee and a speaker for the SBE on networking technology at Ennes Workshop events and the SBE sponsored webinars. He is director of engineering at Educational Broadcast Services in the Office of Information Technology at Texas A&M University. Email w-pecena@tamu.edu.

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Robert Williams' Odyssey in Cuba

Fifty Years Ago, 'Radio Free Dixie' Targeted Blacks in the South

BY HANS JOHNSON

"The abundance of the USA belongs to the people, all the people, and no one

RADIOHISTORY

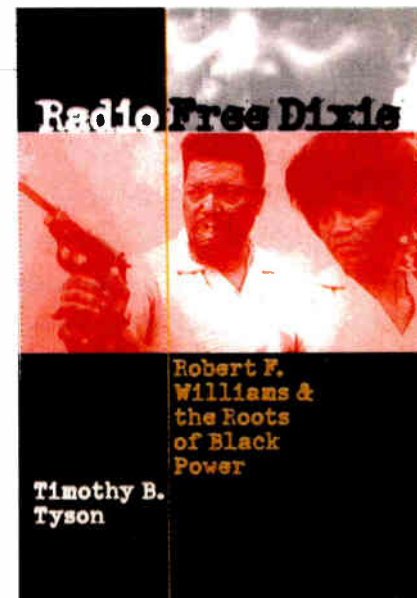
faction has the right to deny the other liberty, justice and the pursuit of happiness," said Robert Williams in 1962.

He was speaking via radio to listeners in the American South, but he was doing so from Cuba.

Williams had served as president of the local NAACP chapter in Monroe, N.C., in the late 1950s. As Timothy Tyson's book "Radio Free Dixie" explains, Williams favored "armed self-reliance," not non-violence.

According to the documentary film

"Negroes With Guns: Rob Williams and Black Power," Williams had not only revitalized the NAACP chapter but also filed for a charter from the National Rifle Association and formed an armed group committed to the protection of Monroe's black population, "to keep the peace and come to the aid of black citizens, whose calls to law enforcement often went unanswered."



Williams was the subject of a 1999 book by Timothy B. Tyson.

He conducted local civil rights campaigns and urged national media to focus on conditions in the South. When a white man was acquitted in an attempted rape of a black woman, he publicly stated that if the Constitution could not be enforced, "it is time that Negroes must defend themselves even if it is necessary to resort to violence ... If it is necessary for us to kill we must be willing to kill." The NAACP suspended him for advocating violence.

During a protest melee, Williams sheltered a white couple from an African-American mob but was then accused of kidnapping them. He fled with his family to Cuba via Canada in 1961, eluding both the KKK and FBI.

Cuba and Williams were not strangers. He had visited Havana the previous year, appearing on television and giving lectures throughout the country. With Williams back in Cuba, Havana's Union Radio announced that he "hoped to reach a great number of Negroes in the south of the United States through the powerful radio station 'Radio Havana Cuba.'"

"Williams was always intent on getting his message out," explains Jon Elliston, author of "Psywar on Cuba."

"Robert Williams Reports" became a regular part of Radio Havana's English program by 1962, but it was heard at first only on shortwave. Williams described what happened next in oral history interviews with Robert Cohen and Thomas Mosby.

Williams wanted to be on AM with his own radio program, but faced opposition from American communists exiled in Cuba as well as elements of the Cuban government. He had listened to Cuba on the AM band when he was living in North Carolina; he knew AM was the way to reach an American audience. At first Cuban authorities tried to direct him to a weak AM station rather than the 50,000 watt one he wanted. Williams insisted and got his station.

He also faced opposition over programming, being urged to do a program for the white working class. He thought



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issues of blacks should be addressed first, and prevailed.

There was a battle over music next. Williams wanted to play the latest jazz. But this was "imperialist music" and he was urged to play Cuban opera instead. He explained that no one would listen to his words if they were accompanied by unpopular music.

The opposition in the Cuban government delayed three months; it apparently took the intervention of Fidel Castro to get Williams on AM with his desired programming.

Williams called his program "Radio Free Dixie" and invited people to tune in every Friday night from 11 p.m. to midnight Eastern on 690 kHz for "jazz, Afro-American folklore, news, interviews and commentary" from "the free voice of the South." CMBC transmitted with 50,000 watts from Havana. Some American newspapers issued Williams' press release announcing the program.

RADIO PROPAGANDA

Radio Free Dixie became part of the ongoing radio war between the United States and Cuba.

The U.S. Foreign Broadcast Information Service described Williams' program as "radio propaganda." Other exiles and Cubans broadcast on "The Friendly Voice of Cuba" in English. Others directed shows in Spanish targeting Peru, Guatemala and the Dominican Republic, programs that the FBIS described as encouraging "subversion of the incumbent governments."

The United States ran a CIA front station called Radio Americas (originally Radio Swan), transmitted on AM and shortwave and directed towards Cuba. Other front groups purchased time on American AM and shortwave stations.

Cuban radio was not Williams' only radio outlet. WBAI(FM) in New York City aired an interview with him in May 1962. The program prompted at least one listener to write Attorney General Robert Kennedy to do something about racial injustice in the United States. Williams supplied programs that aired on WBAI as well as sister Pacifica stations in California. Williams republished the radio commentaries in his newsletter "The Crusader," distributed in the United States via Canada.

Radio Free Dixie eventually expanded to three times a week, with additional broadcasts at midnight on Sundays and Tuesdays. "We know that he was reaching a large part of the South," Elliston says.

RETURN HOME

The New York Times wrote that Radio Free Dixie's tone was growing "increasingly violent" by 1964, described by Dixie as the "year of revolution." One program that year described various means of sabotage.

"I believe that self-defense will bring Americans to their senses. But if it doesn't, then they don't deserve to exist and they will be destroyed," Williams told the National Guardian newspaper that year.

But Radio Free Dixie lost the fight two years later. In Williams' view, American communists and their Cuban government supporters failed to support his cause. Dixie was preempted a few times; Williams then received complaints from listeners that they could no longer hear him. The Cuban authorities claimed that there were technical difficulties with 690 and they could only

operate it at 1,000 watts.

Williams wanted out. He told the Cubans that he wished to help the North Vietnamese improve their propaganda directed to American troops fighting in the Vietnam War. That got him out of Havana, but Williams went to China instead of North Vietnam. Williams saw that China was in the midst of the upheaval of the Cultural Revolution and decided not make a radio program there.



He returned to the United States in 1970. According to the documentary film "Negroes With Guns," Williams later advised the State Department on

normalizing relations with China, and took a position as a research associate at the Institute for Chinese Studies at University of Michigan.

North Carolina dropped the kidnapping charge in 1976. Williams died in 1996 and was buried in Monroe.

For more on this topic including audio of music and speeches, see www.pbs.org/independentlens, key phrase Radio Free Dixie.


Hans Johnson is a freelance writer living in Southwest Florida. He has been writing about broadcasting for almost 20 years and founded Cumbre DX in 1994.


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World Radio History

FM Exciter Modifications and Repairs

An Exciter May Be a Bit Complex, But Don't Shy From Working on It

BY MARK PERSONS

If you think about it, an FM exciter is a transmitter. All it needs is a power amplifier to get RF to a desired level. That makes the exciter a vital link in

TECHTIPS

the broadcast chain. An exciter is a bit complex in how an RF carrier is created and how audio impressed on it, but it's not rocket science.

I see exciters in the shop that suffer various ills, almost all of them taking a station off the air. Here's a grab bag

I also like to add a screwdriver-adjustable composite input level control on the rear so modulation can be adjusted easily.

The Harris THE-1 FM exciter has an output RF amplifier that can fail. Repairing it could be an expensive job, because the original manufacturer of the RF transistors is out of business. There appears to be no substitute for them. Harris has just a few complete working amplifier modules on hand at \$2,128 each. Ouch! The exciter isn't worth that when operational. I was faced with this dilemma recently and discovered an answer. It is the FM70

is pretty standard especially for tube transmitters.

Speaking of tubes, any solid-state exciter that feeds the tube input stage on

a transmitter needs to be protected by a shorted quarter-wave stub. An arc-over in that tube could put 1,000 volts on the output transistor of an exciter, causing an immediate failure. Continental Electronics has recommended these devices highly for years.

You can build one by shorting a
(continued on page 24)



A Harris MX-15 exciter is shown on the testing bench.

of mods and repairs that may help you in future.

One of the modifications I like to make to exciters is to add a power control on the front panel. I've had enough of poking a jeweler's screwdriver through a hole in the top of an exciter to make an adjustment. Many transmitter tune-ups involve tweaking exciter power to get things just right. A control with a knob makes that job so much easier.

pallet amplifier for about \$150 from Broadcast Concepts in Miami (www.broadcastconcepts.com).

By cutting away part of the existing amplifier circuit card carefully and bolting this replacement amplifier in place, I was able to revive two THE-1 exciters. Wiring has to be reworked too. The existing RF output low-pass filter was probably responsible for the transistor failure in the first place. With an exciter terminated into a dummy load, a return loss measurement at the input to the filter showed about 8 dB, when it should have been at least 20 dB. Retuning the filter was the fix.

In the end, the exciter did not put out its rated 55 watts but topped out at 30 to 40 watts depending on which end of the FM band it was on. There wasn't enough gain in the design to get full power. Most stations don't need that kind of power anyway. Ten watts



Power control knob as added to MX-15 exciter



Original PA module in THE-1 exciter

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Telos-Systems.com/ProStream/

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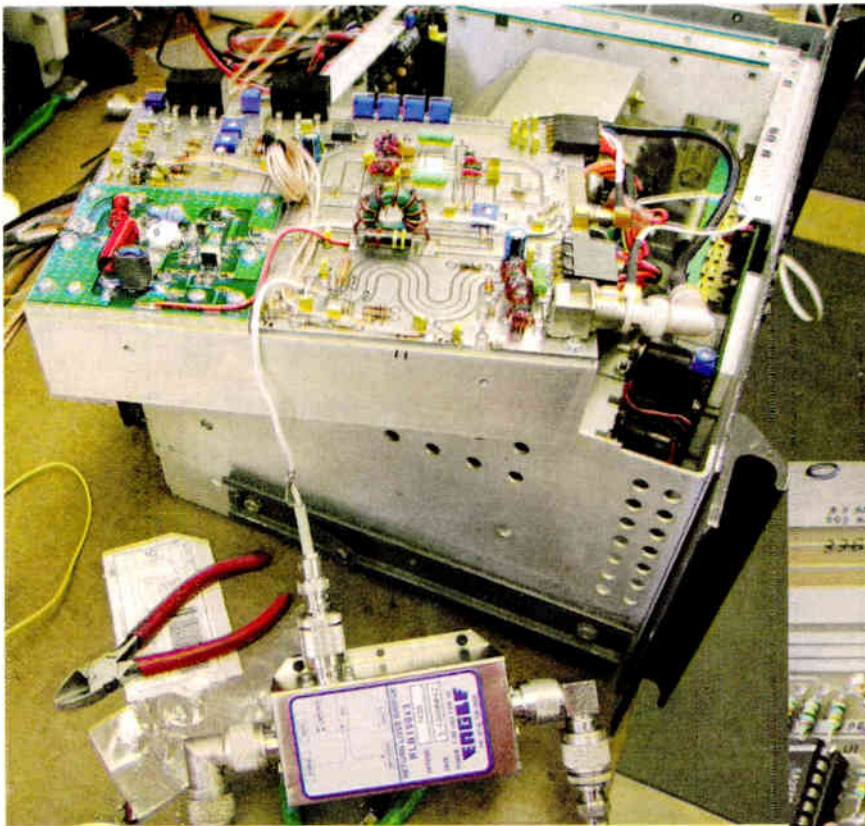
And that audio packs the clean, clear competition-crushing punch Omnia is famous for. Each stream is sweetened with its own adjustable wide-band AGC with three-band compressor/limiter, EQ and low-pass filter, and precision look-ahead final limiter. The result: clean, clear streams with more presence and character than you ever thought possible.

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OmniaAudio.com/AXE/

World Radio History

FEATURES



Revised THE-1 module being tested with return loss bridge

EXCITER

(continued from page 22)

piece of coaxial cable at one-quarter wavelength from a “T” adapter on the output of the exciter or input to the transmitter. The difficult part is getting the length right so the exciter sees no VSWR when the stub is in the circuit. I do that in the shop by using a spectrum analyzer with tracking generator and a return loss bridge. It’s amazing how the right test equipment makes almost any job easy.

Many exciters are kept in standby status so they can be put on any frequency at a moment’s notice to substitute for a failed exciter. Almost every exciter that comes into the shop here

gets a new set of DIP switches for frequency selection. That means putting switches in place of wire jumpers or replacing existing switches, which may fail after 20 years of service.

In the case of a Harris MS-15 or MX-15, I cut a rectangular hole in the AFC module cover so the switch positions can be changed easily without taking the cover off. Caution: Anyone setting up an exciter with switches needs to put it into a dummy load and frequency counter on a sample port before attempting to put it in service. There is always a chance that the switches may be set incorrectly and the exciter is playing merrily on the wrong frequency. I’ve

seen that before, and the transmitter doesn’t tune with beans.

Many exciters show up in the shop here with the complaint that the station is being heard on three or more spots on the FM dial. Management likes the idea, the FCC doesn’t.

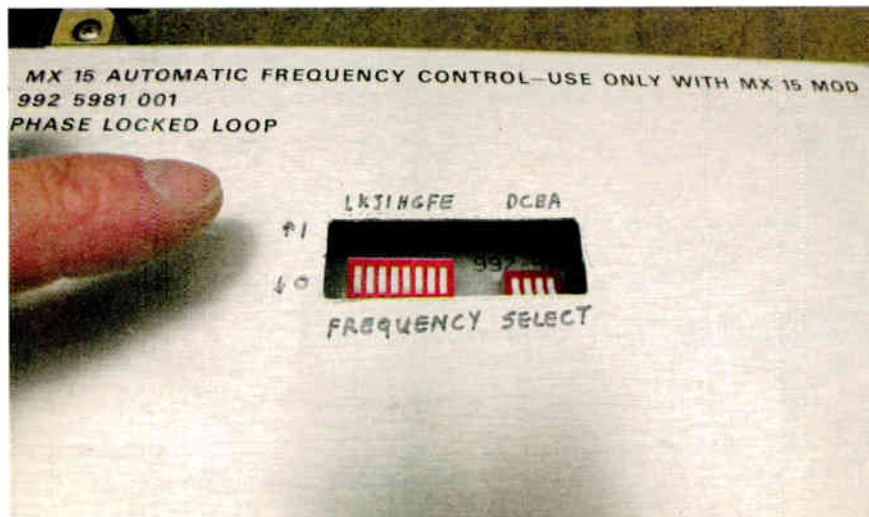
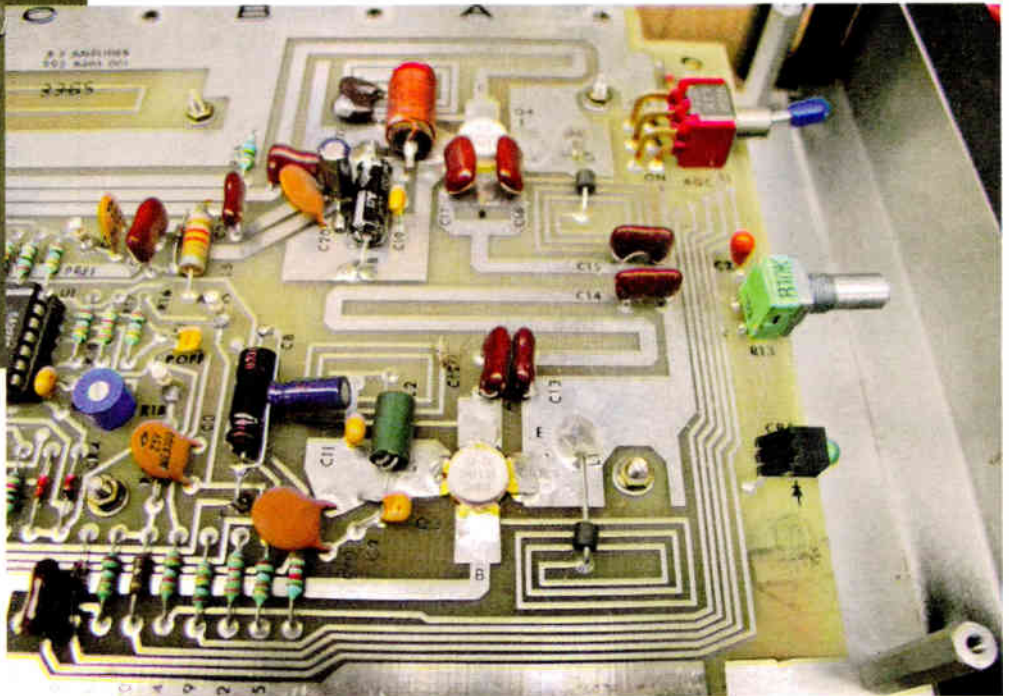
The problem usually is a dried-out electrolytic bypass capacitor or two in the RF power amplifier stage of the exciter although I have seen it happen in the modulated oscillator section and power supply. Basically any oscillation,

typically in the 100 kHz to 1.5 MHz range, will modulate the exciter’s signal to appear above and below the assigned frequency by that amount. Keeping the spectrum clean is an ongoing job for broadcast engineers.

Find more Tech Tips under the News & Technology tab at radioworld.com.

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

MX-15 PA module with replacement capacitors, below



DIP switches accessed through new hole in cover

What Is Radio All About?

Explaining radio in terms of Hertzian waves may be a simple matter of physics, but explaining the medium in terms of its cultural, economic and societal impact is a bit more difficult.

Ward Weis is looking for help in exploring the answers to that question as part of a planned sound sculpture being designed for Wild Radio Day, March 3, in Brussels.

Wild Radio Day is a project of the Wild Radio Lab, a creative group within the Flemish national public-service broadcaster, VRT.

Weis plans to collect “a lot of spoken quotes by people out in the (great) world of radio” and to embed them behind QR matrix barcodes.

In the installation, visitors will hear a composition of radio noises from an array of speakers and they can walk through the space using their smartphones to scan the QR codes to play back the answers to the question “What is radio all about?”

Weis is seeking audio contributions for the project. Interested people can record in their native language their name and a reply to the question “What is radio all about?” and then send the audio file to send@wiralab.com. More details are available at www.wiralab.com.



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World Radio History

Smartphones, Mics and Small Recorders

Wherein the Warrior Upgrades One Tool And Finds Solutions to Other Problems

BY PAUL KAMINSKI

The smartphone has found a place in my arsenal of radio news tools.

I navigate and communicate with my Sprint EVO Shift. And from time to

RADIO ROAD WARRIOR

Columns are archived at radioworld.com

time I need to transmit and record audio for two-ways, interviews or full-blown live spots.

The choke point for audio for any cell-phone (smartphone or not) is the headset jack. Improving the audio into the phone with the connection of an external microphone and headphones can work wonders. That works even better with smartphone applications that in effect turn the smartphone into an audio codec.

The iPhone is the most popular smartphone platform. Codec maker Tieline has leveraged that with hardware and software that allows radio reporters and producers to transmit, record, edit and transmit audio. The hardware is the Mic Adapter, which connects to the iPhone's connector port. This device lets a user connect a microphone with an XLR input, a stereo line input, headphones

and a USB cord for charging the iPhone. The Mic Adapter has an onboard AAA battery slot, which powers the unit and extends the charge on the iPhone battery. Those capabilities impressed the Radio World "Cool Stuff" judges enough to be a 2011 award winner.

SIMPLIFICATION

I chatted with Fox News Radio's Eben Brown at Homestead Miami

Speedway while covering the NASCAR Sprint Cup finale and asked him about his use of smartphones. Brown told me about a free app called the Hokusai Audio Editor that allows him to break out



actualities and play them more efficiently when he uses the iPhone to feed reports back to the studio.

The day is already here when report-



The Radio Road Warrior uses the Access Reporter Codec for Android.

The Warrior's kV Connection configuration for using a dynamic mic with his Sprint EVO smartphone.

ers like Brown basically can take an iPhone to a news situation and feed studio-quality narration and actualities with no other devices, as he did when covering the NASCAR Sprint Cup Finale at Homestead. That development helps news departments with severely limited budgets. With the growing penetration of smartphones in general use, to add and upgrade software at the reporter level makes more operational and fiscal sense than it would to invest in hardware at that level with severe budget constraints.

On my visit to the Comrex booth at the NAB Show last spring, I discussed the audio chokepoint problem with Comrex's Chris Crump, who showed me his Sprint EVO running the Access Reporter Codec for Android software (the app I run on my EVO Shift) and an adapter from kV Connection/Sixn Technologies (www.kvconnection.com).

The kV Connection adapter allows the user to plug a standard dynamic mic into an XLR connector that is connected in parallel with a 3.5 mm TRS female jack for the corresponding 3.5 mm male connection, whether a patch cord or headphones. Those input and output connections are connected into a 3.5 mm four-pole jack that connects into the headphone/microphone 3.5 mm jack of the smartphone, thus bypassing the onboard microphone and speaker.

(continued on page 28)

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World Radio History

WARRIOR*(continued from page 26)*

I know that sounds complicated but when you see it in action you'll understand. This configuration allows for a professional microphone input and a way to monitor with earbuds.

KV Connection makes all sorts of adapters for BlackBerrys, Androids, iPhones and other devices. These let users interface a microphone and earbud headset or line-level inputs and outputs to the smartphone.



Audio-Technica's BP4001 and BP4002 interview microphones

Because of the different wiring conventions, some of the devices may not work at first so kvconnection.com customer service may have to walk you through those issues.

I have a kVconnection connector that works in the field with my Sprint EVO Shift. The connector fits easily in my fanny pack, and I use it with a set of earbud headphones, and my short-barreled Shure SM63 dynamic mic. Interfacing with my studio Peavey PV8 mixer proved to be a challenge. The PV8 has two aux send channels (pre-fader/monitor and post-fader/effects). I've set up the post-fader/effects channel as the mix-minus send for the codec interface. I can send a mic level signal to the phone through a 40 dB XLR pad, the return from the phone goes to the input that is the minus in the mix-minus feed. In a future column, I'll let you know how I solve this challenge so you can help others solve similar issues.

MORE NEWS BAUBLES

Another Comrex goodie that caught my attention in the past year was the Access 2USB, a field IP codec. The unit adds two USB ports and support for some 4G wireless data modems to the hardware, and AAC codec algorithms to the Comrex BRIC transmission algorithm.

Also new, Audio-Technica has been showing off a pair of extended-length dynamic field interview microphones, the cardioid BP4001 and omnidirectional BP4002. The extended length might prove useful in a scrum where the extra length can mean the distance between on-mic and off-mic audio. I've got them and



The Tascam DR-05 Handheld Digital Recorder

will tell you more about how they work in the field later on.

Another item I shopped for recently was an audio recorder that would record mono WAV audio, fit easily in either my road kit or fanny pack and cost less than \$100. One of Tascam's latest, the DR-05 SD card recorder, records audio in WAV and MP3 formats in mono and stereo and has a street price of \$99.

Let's consider the possibilities with such a unit. For \$300, an operation could buy three recorders that can record professional-quality audio easily. So not only can a newsperson record the audio necessary for news reports, an enterprising local salesperson or two can record customer audio on location for commercials. With studio-quality recording capability in the palm of a hand, studios need not be tied up for simple interviews. The unit could pay for itself.

I and the editors want to make sure these columns are helpful, and that the information in these columns opens your eyes to possible, practical and cost-effective ways to make life easier for field reporters and their engineers. The hope is that those improvements I write about and research will result in better news programs for your listeners, advertisers and other stakeholders in

that process. Don't hesitate to email me or the editors with those suggestions for future columns along with your comments and questions.

Paul Kaminski is the news director for the Motor Sports Radio Network, a contributor for CBS News, Radio, and since 1997, a Radio World contributor. His e-mail address is motorsportsradio@msrpk.com. Follow him on Twitter at MSRnet.

MARKETPLACE

IP CODEC: ATC Labs offers a new IP software codec for field use. ALCO Professional works with Internet connections and aims at optimizing 2G/3G

wireless links. It operates as an SIP client using an ATC Labs SIP server. Bitrate selection provides 32/64/128 kbps performance including high-fidelity stereo.

ALCO uses its own low-delay audio coding and processing algorithms for sound fidelity, clarity and robustness, according to the company. Standard codecs such as G.711 are supported. A chat channel allows for text messaging to field users while connected. It has a mixing function for conference calls with multiple users in the

field. Bitrate selection can be configured independently for each user and the return channel. ALCO Professional is used with Windows PCs, netbooks and tablets. An Android version is planned. A free one-week trial is available. Starting price is \$579 for a pair of one base and one field license.

Info: www.atc-labs.com

TAKE A TABLET: For the neophyte sound engineer on the go, Harman's Soundcraft operation has made its handy guide "The Soundcraft Guide to Mixing" available for the iPad. The contents focus on the concepts, basics, functions and set-up of live



sound/PA system. Besides text, the app has numerous instructional videos. Harman Mixing Group Marketing Director Keith Watson stated that the content has evolved from an original booklet into versions as a web page, as a downloadable PDF, on

DVD and online video formats. Price: \$2.99. A free teaser version is available with a full chapter and excerpts from other chapters.

Buy: itunes.apple.com

CLIMATE VALUE: Climate Guard LT is an environmental monitoring system from Burk Systems; it's a value-oriented version of the company's Climate Guard.

LT can handle up to 32 sensors, half the number of its sibling. Climate Guard LT is designed as a server room environmental monitor to detect temperatures, some security and other room conditions. The company's Jonathan Burk said the prod-



uct "facilitates cost saving and green IT initiatives by closely monitoring server room conditions and alerting IT staff to developing problems." A Web interface allows for remote operation via computer, smartphone or tablet. It can issue alerts via email, SMS and SNMP. Price: \$495.

Info: www.burk.com

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RadioFlag Marries Radio, Social Media

'A Social Network for a New Generation of Listeners'

BY JAMES CARELESS

RadioFlag is a marketing concept that combines traditional radio broadcasting with the customization of social

NEW MEDIA

media. The service does this by allowing member to "flag" (select via instant messaging) the kinds of music, news topics and lifestyle choices to which they are listening.

RadioFlag's "live radio content search engine" uses these flags to create lists of suggested stations for these and other listeners, which can be accessed via RadioFlag's website.

Says Tony Roman, founder and CEO: "On RadioFlag you can search live content; connect with DJs, talk hosts and other listeners in real time; and listen from anywhere from the company's website or mobile apps if you have a smartphone. These flags are searchable

by other users, which enables them to find the radio content they most want to hear, and also link up with like-minded listeners."

Roman is an entrepreneur whose background includes a tech startup backed by Silicon Valley venture capital.

"I launched RadioFlag simply because I love radio and could no longer stand to see it be ignored by social media markets, considering it is the original electronic form of social media," he said. "I guess you would consider me an expert professional radio listener."

RE-ENERGIZING RADIO

Unlike Pandora and other customizable online music services, RadioFlag is focused on *live* content



Roman plans a branding campaign, which he calls 'a rallying call to action for our industry with all that has happened to it.'

from both broadcast and Internet-only radio stations.

In particular, the site gives prominence to "free-form format" (college, local, indie and community) stations, "where some of the most unique and original on-air talent and content can be heard," Roman says.

To underline this point, RadioFlag recently took part in College Radio Day, the October event that brought U.S., Canadian and Jamaican college/school stations together into an ad hoc network. RadioFlag was selected by College Radio Day as its official listening social app.

"No other format is better positioned to re-energize this medium like college radio, by remaining uncompromised and leveraging today's new social channels," says Roman. At the same time, "Being able to choose which radio coverage to tune into based on the flags you read, then communicating with other listeners who hear what you're hearing, makes it a very interactive experience."

RadioFlag also has joined with several student stations to create the College Radio Advisory Board.

"Together we will work towards better planning, organization and promotion of college radio," Roman says. "These stations, with the influence of their young listening audience, will also help us better develop the products DJs and listeners want for a better broadcasting and listening experience."

Facebook, Twitter and other social media are central to RadioFlag's goal of treating radio as a two-way medium. Roman hopes that listeners will establish their own online communities based on shared tastes, be they musical, political or whatever brings people together. These communities will tie into their favorite stations via RadioFlag and the Web, thus bringing young listeners to radio.

VIABLE?

A big question is money. Can RadioFlag find a way to pay for itself as it fosters the concept?

Currently this website is free to users (both listeners and radio stations), with no income to speak of.



Sofia Panuelos

KUCI(FM) at the University California, Irvine, participated in RadioFlag launch day in 2011. Broadcaster Rich Marotta, far right, and RadioFlag's Ravind Kumar are shown interviewing a student athlete. Tony Roman is standing.

"We are not yet generating revenue, as our primary focus is to promote traditional radio by growing our user base," Roman said. "When we do monetize RadioFlag through advertising as one revenue-generating stream, it will be non-invasive and laser-targeted so our users only received offers for products and services they would welcome."

Fred Jacobs is president of Jacobs Media, a radio consultancy and provider of radio-oriented apps. He looked over RadioFlag for Radio World to offer a third-party perspective.

"Conceptually, it is fascinating; combining a search element to find

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the kind of content a consumer desires, while marrying a social piece so they can connect with like-minded consumers," he said.

"The reality is that there are problems with the service as it's being rolled out. The site and sign-up process are confusing; there appears to be few users; and even bands you'd think would show up well, like an Arcade Fire, really don't."

However, this is not Jacobs' largest concern about RadioFlag.

"The biggest issue is that the system isn't automated — it's not parsing metadata or other encoded info in streams — so it's up to *someone* at the station to tag and flag their content," he continued. "I can tell you that most stations don't have the personnel bandwidth to be able to do this."

These problems notwithstanding, Fred Jacobs likes the thinking behind



this service.

"RadioFlag's trending of individual users/contributors is cool, along with trending interest," he said. "The concept is very interesting, combining community building and content referral in one. It needs to be simplified, and the participation from the radio station staff piece is a puzzler."

Roman meanwhile has big plans to boost the RadioFlag brand. This includes creating an Internet radio network for the American Basketball Association and possibly partnering with indie record labels. As well, "We have recently filed to trademark 'Save the Radio Star,'" says Roman. The phrase plays off the iconic song title "Video Killed the Radio Star."

"We have many plans in which to use this new extended RadioFlag brand in our attempt to further promote traditional radio."

PEOPLENEWS

Cumulus Media Networks named **Jerry King** director of operations for Dallas. He will oversee the network's



Jerry King

Dallas operations as well as the program directors and satellite-delivered radio programming in 14 formats originating in Dallas. He was with programming consultancy firm McVay

Media, where he was vice president of operations and programming.

The Telos Alliance promoted **Kirk Hamack** to vice president of Telos Products, a newly created position. His title had been executive director of worldwide sales. COO Marty Sacks wrote in a letter to customers. "He's been a station engineer, has operated a contract engineering firm, has owned



Kirk Hamack

radio stations and has told the story of Telos, Omnia and Axia on every continent." Also, **Christina Carroll** becomes senior vice president of global sales. "Christina's sales leadership has seen our Linear Acoustic



Christina Carroll

division grow exponentially," Sacks wrote. She will oversee the sales organization of all four of the company's brands: Telos, Omnia, Axia and Linear Acoustic.

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Fulfill the Listener's Expectations

Tips to Get the Most Out of Your Email, SMS and Social Database

Roughly a year ago I penned an article about e-letters. I related a story about a station sending out a coupon offer instead of the usual content-based piece. The station received 20,000 "unsubscribe" requests.

One of my readers recently questioned me regarding coupon offers sent out so successfully by Groupon, Living Social, Amazon and others. The reader wanted to know why these companies aren't receiving massive unsubscribes.

It's simple: Their subscribers are receiving exactly what they want. When someone opts in to get coupons, that what's you send them. If they register to get an informative or entertaining email piece, you'd better deliver.

It's about fulfilling the expectation.

The first quarter is a wonderful time to build or review your database collection, retention and sales plan for 2012.

Your plan should be expanded to cover email, SMS and social.

CONTENT REIGNS

Building and retaining a substantial email list becomes more difficult every year.

The first quarter is a wonderful time to build or review your database collection, retention and sales plan for 2012.

A decade ago, listeners did not need much encouragement to join radio station email lists. Now it's vital that you prime the pump with regular and prefer-

ably large incentives, and then retain users by sending them excellent content.

You must also let your listeners know that as members of your club, they'll receive information *first* regarding items of significant importance to their personal lives. Offering several types of e-letter sign-ups can be quite useful.

For example, some people may want to receive weekly entertainment news; others might want rush hour traffic

alerts; another crowd may want breaking sports headlines. It is possible for you to automate some of this information by utilizing templates that pull in RSS feeds from your website.

KICK-BACK

In contrast to gathering names for email lists, building SMS text (mobile) database lists has gotten a bit easier.

Texting has become a lifestyle choice for many people. You should be offering SMS on-air interaction and alerts. The on-air interaction comes in the form of opinions on topics, or by voting in polls.

One of the keys to successful SMS use is that the kick-back message is tailored to achieve the tactical desired result.

For example, you could be doing a poll about the best new song of the week, and everyone who votes gets a message encouraging them to go to your website to watch new live versions of all three songs, or to tune in to the station to hear the winning song in 15 minutes. Or the kick-back message might invite them to join your texting club and by doing so are entered into a drawing for free lunch for their entire office.

Although you are not building a database in the traditional sense when you utilize social media platforms like Facebook and Twitter, you are gathering followers who have certain expectations of your brand. Too often, Facebook and Twitter interaction is handled directly by talent, with little guidance as to frequency or content. It is essential that your personalities be involved, but they require supervision and mentoring,

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Mark Lapidus



just like they do for their on-air performance.

Facebook and Twitter are excellent platforms for driving user visits to your website. When you link to the right content, you'll see the clicks come your way.

WHERE'S THE MONEY?

Even if your lists are small, it may be possible to get one sponsor involved across email, SMS and social.

By building a package with banner ads, text kickbacks and social integration, one advertiser can have impact. These advertising messages must be short, so make certain they are understood and actionable.

Finally, remember that the point of building databases is to encourage loyalty, tune-in and generation of incremental revenue. It's a rare station that hits all three at once, but in this case, two out of three truly ain't bad.

Have suggestions of your own to help other stations get the most out of these tools? Drop me an email.

The author is president of Lapidus Media. Email him at marklapidus@verizon.net.

RADIOWORLD

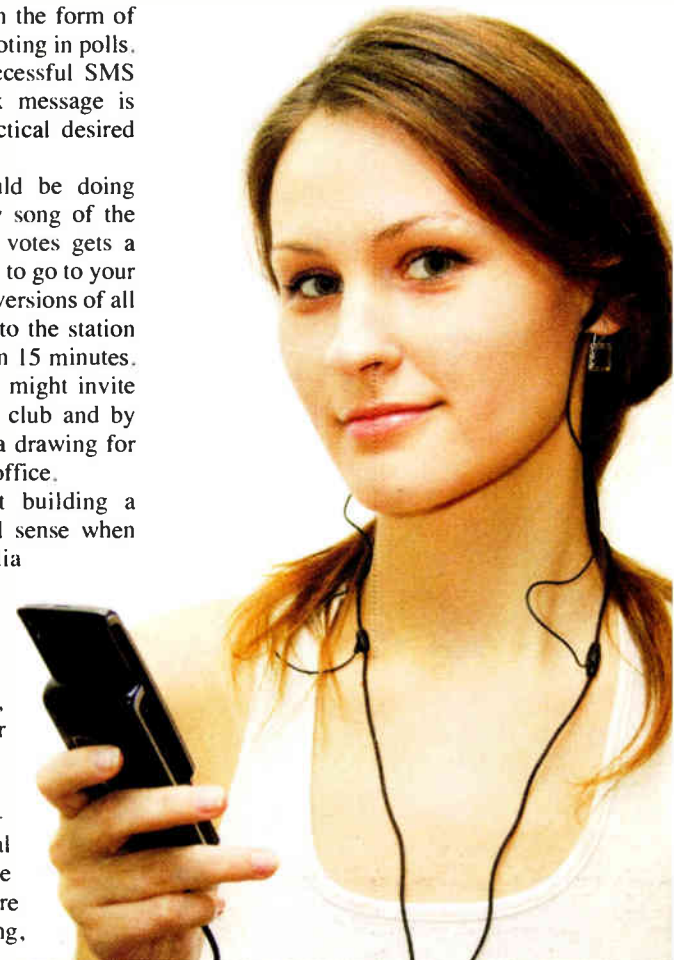
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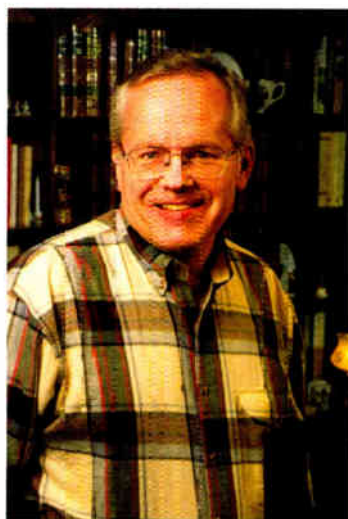
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PHOENIX: Phoenix Media Group, through its Phoenix Associates, offers specialty consulting services to broadcast media and related businesses, primarily radio. It formed in 1990 when broadcaster Steve Moravec and financial officer David Bjork, CPA, professionally reunited. The principals have experience in owning, managing and consulting stations, networks and related concerns; they have conducted due diligence studies of numerous properties in all market categories. Services include entry/expansion, working with companies in evaluating and structuring acquisitions, start-ups and upgrades; strategic reviews; restructuring/divestiture advice; and joint services such as marketing, social media and underwriting. Clients have included investors, owners and financial institutions. It also offers specialized brokerage consultancy including translator acquisition, divestiture and upgrades.

Info: steve.moravec@juno.com or call (651) 699-1776.



Steve Moravec

HAPPY 25: The Minority Media and Telecommunications Council recently celebrated its 25th anniversary. The group was founded in 1986 in response to the FCC suspension of two of three minority broadcast ownership encouragement policies. Founding members included eight media and telecom activists, scholars and entrepreneurs. According to the MMTC, its media brokerage work in Washington has been responsible for approximately one-third of broadcast station purchases since 1997 and has trained 52 fellows to practice telecom law before the FCC. The group also runs the broadbandandsocialjustice.org blog and sponsors two annual telecom policy conferences. Long-time Chair Henry Rivera recently became chair emeritus; he'll continue to serve on the board and the executive committee. Former chair of the Florida Public Service Commission Julia Johnson is MMTC's new chair, and former FCC Commissioner Deborah Taylor Tate becomes vice chair. David Honig remains board president and CEO.

Info: <http://mmtconline.org/>



Julia Johnson

THEY ♥ RADIO: Clear Channel introduced an application programming interface (API) and affiliate program for iHeartRadio, its digital radio service. The developer program will enable third parties and developers to integrate iHeartRadio's content and services into their products, web pages and applications.

Separately, Clear Channel recently announced several agreements with broadcast content providers to appear on iHeartRadio. Greater Media will offer its 22 stations come April. Earlier, CC announced an agreement with Cumulus to include its 570 stations. Spanish-content provider Univision Radio made a commitment in September, and Christian broadcaster Educational Media Foundation came on board with its K-Love and Air1 networks the following month. New York public station WNYC also is in the fold.

Clear Channel calls iHeartRadio "the number one free broadcast radio app on the iPhone and Android," saying in January that there had been 47 million downloads of iHeartRadio mobile apps.

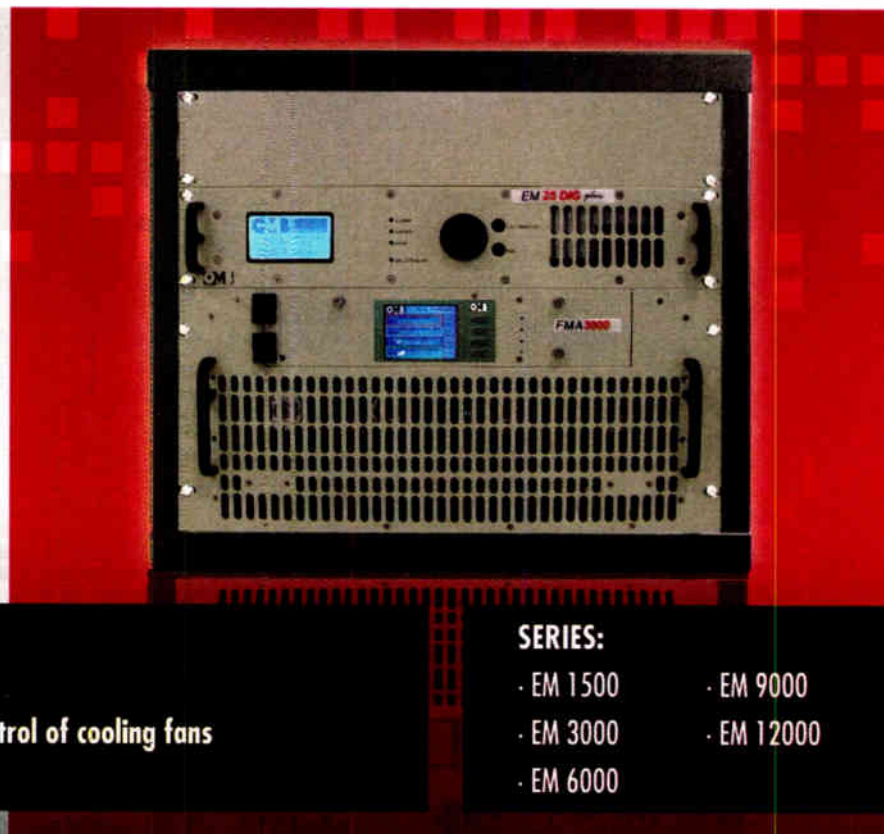
Info: <http://developer.iheart.com>. Stations interested in participating in the iHeartRadio platform should email Larry Linietsky at LarryLinietsky@clearchannel.com.



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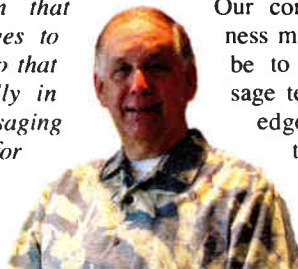
Put Your Faith in 'Field Messages'

Rick Dorey Says the Industry Needs Alternatives to Broadcast Advertising

COMMENTARY

BY RICK DOREY

The author is the owner of Quickshow, a system that takes audio and images to create Shockwave video that is placed automatically in personalized field messaging pages and reformatted for multiple message formats. Here he explains the philosophy behind the concept.



The traditional radio industry is in trouble. Dozens of new advertising products are grabbing customers' marketing dollars. Radio's broadcast listeners have many news and music choices. Radio's customer and client base is moving on to newer, faster, more targeted media.

It's not all radio's fault. We continue to provide distinctive broadcast entertainment and advertising messages. But with so many advertising, Internet music, satellite and direct stream sources, plus peer-to-peer social networks, it's tough keeping (much less expanding) our entertainment and advertising market share.

Rowdy competitors have grown up around us. Our core broadcast business value has been diminished by loud and

disruptive services. To overcome this distraction we must find new business applications.

SIMPLE MESSAGES

Our core talent is audio messages. Our core strength is the local business marketplace. Our strategy should be to use our script writing, message telling and local market knowledge to create business value that is not compared against our competitors' strengths.

Recognizing the pace of today's business, radio's new messaging product must be simple and fun to use. It must have a fast implementation, measured in hours from idea to implementation. It must solve important business needs. And it must bring in repeat business opportunities.

This could be a great business solution. But what is it, where is it? How can it be used by every local radio station to expand and compete against rowdy competitors?

Let's examine a customer's sales department: Every business uses field sales messages. They probably don't need more broadcast advertising. They do need sales process messages consisting of thank you, followup, specific product benefit stories, bridging conversations between meetings, etc.

What about a customer's operations or service department? Not a promising

advertising opportunity. Most operations departments have special message needs: product training, feature orientation, procedures, etc. They have lots of information and data. They need to make this information relevant. Operations manager will list out what they want.

With each new application discovery, this "new media" radio messaging

field sales messages. They introduce the station's advertising story, explain unique benefits, set up business questions that can be answered during an appointment. Their most used tool is phone calls and text email.

With "new media," each message becomes a personal message. Every team member has access to the best stories to open doors, get appointments and have their message shared inside a client's organization.

After your customer sees and hears your "new media" radio advertising message, traditional sales techniques

Radio's core talent is audio messages. Our core strength is the local business marketplace.

opportunity becomes bigger. It's local. It's high-margin. And it's under-served.

Each radio station can create its own "new media" signature style. It starts with your radio wheelhouse skills: script writing and on-air personality based audio messages. Then add images and text, with a personal message twist. The twist is that each is presented in a unique environment, with the sender's personal image, logo, contact information and individual show play tracking. The style is the show color and, of course, the audio message.

Can a radio sales executive use this "new media" to place more radio advertising packages? Yes. Every radio sales executive already creates his or her own

become more effective. If they have not seen the show, restart the contact process. After seeing the show, your customer will be pre-qualified for a traditional radio sales meeting.

After your personalized "new media" message, the next step is for them to describe their sales and operations problems. You should take notes.

Question: Should you offer a new product? After all, a field message is different. It's not classic broadcast radio.

Here's the answer: If you don't want to provide unique, high-value business message solutions, in non-radio format, someone else will. Then, what will you do?

Reach the author at rick.dorey@quickshow.com.

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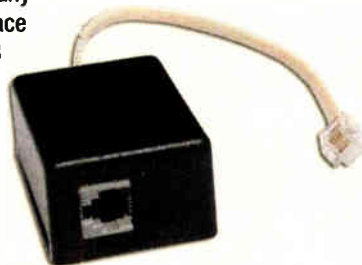
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Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running

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time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

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

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READER'S FORUM

PATENT SYSTEM IS A MESS

Your coverage of the Mission Abstract Data lawsuit, in which that company seeks licensing fees for long-established automation technology, is extremely important. I strongly recommend that everyone in broadcasting watch this very carefully.

Maybe it will serve as a wakeup call. Our industry needs to improve its woefully inadequate and inaccurate coverage of the current patent mess in this country. Patents originally were established as a way for new and novel ideas to be protected for a limited time so that the developer could recover his/her costs. The idea was intended to spur innovation and development.

In recent years, the U.S. patent system has become so broken that it's often a case of "whoever makes it to the patent office first" with something so obvious that it should never have been granted a patent in the first place. The fact that many (if not most) of these silly patents are eventually declared invalid doesn't help those who spend thousands (or even mil-

Automation Battle May Not Be Over Quite Yet

Examiner Overturned Key Claims, But Appeal Process Can Be Lengthy

BY RANDY J. STINE

A U.S. Patent and Trademark patent examiner has rejected many of the key claims made by Mission Abstract Data that lie at the heart of the patent dispute involving hard-disk automation systems.

Many observers figured the October move would bolster the defense of the broadcasters named in an associated federal lawsuit.

In an "office action" — a letter from a trademark examining attorney setting forth the legal status of a trademark application — PTO Examiner Jason Proctor overturned 15 of the 29 challenged claims in the first patent and five of the 10 claims in the second.

Overall, broadcast industry sources reacted positively to the new developments. However at least one patent attorney believes the patent reexamination and litigation will continue.

Bill Ragland, a patent attorney with Womble Carlyle Sandridge & Rice, said Mission Abstract Data has several appeals remaining and that they could

(continued on page 3)

lions) defending themselves against lawsuits.

So-called software "patents," in particular, should be eliminated. The United States is one of the few nations to even recognize them. Many Americans are unaware of this. The European Union, just to name one, still refuses to recognize software patents, even after many years of vigorous lobbying by Microsoft and other large software vendors.

That patents are now granted so freely has given rise to businesses that produce no real product or service. They simply own a portfolio of these useless patents with which they then try to browbeat and extort fees from those who might have been using that technology for many, many years in perfectly good faith. Sadly, many will pay these fees just to avoid the cost of a court fight.

Stephen Poole
Market Chief Engineer
Crawford Broadcasting
Homewood, Ala.

The author also is a contributor to Radio World. He writes above as an individual.

KEEPING THE OL' GIRL HAPPY

I thoroughly enjoyed Mark Persons' article "Rebuild That Relic of an AM Transmitter" in the Oct. 19 issue. It brought back memories.

During the 1970s I lived and worked in El Paso, Texas. One of

the local AM daytimers had an RCA BTA-1M as its main (and only) transmitter. Other than its MV rectifiers, the old rig used only two tube types: 833s for the finals and modulators, and 807s for everything else. It even used 807s for the input audio stage.

The transmitter was sited directly across from one of the El Paso Water Authority pumping stations, and every time the pumps shut down, the rectifiers were prone to arc back, tripping the main breakers and taking the transmitter off the air until someone could drive from the other side of town and reset things. (The transmitter was not built for remote control and had been sort-of modified to permit unattended operation).

The transmitter also had suffered some sort of short in the control ladder that had done quite a bit of damage, although not enough to take it completely out of service.

Anyway, the station owner wanted all of this fixed, and I took the job on. Over a period of several weeks, I completely rewired the control harness, one conductor at a time. I also modified the power supply, replacing the 8008 HV rectifiers and the 866 LV rectifiers with solid-state equivalents (not overlooking the mandatory snubber networks). I also improved the RC system.

All in all, it was a fun project, made all the more challenging because the transmitter had to work every night when I knocked off. I'd usually start a half-hour or so after sunset and quit shortly after midnight. I'd fire up the transmitter to make sure everything came on OK and then shut back down and lock up.

I must have done a good job. That old girl stayed in regular service well into the 1990s and was then sold across the border into Mexico, where it's probably still going strong.

Again, thanks for a most interesting article.

W. Louis Brown, P.E., CPBE
Director, Visual Integration Services
Innovative Technologies Inc.
Chantilly, Va.

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Our readers have something to say

"I've been enjoying the articles in your publication so much this past year that I've stopped passing the magazine on to other guys in the shop so that I can hang on to them."

Jan Lipski
Broadcast Consultant
Lampson, Calif.

READER'S FORUM**WWJ ON 920**

The photo of the outside of the 1938 remote broadcast van on page 14 of the Dec. 1 issue of Radio World clearly shows 820 kc, not 960 as noted in the text, as the operating frequency for the WWJ AM station.

Bob Meister, WA1MIK
Hamden, Conn.

Author John Schneider replies:

Actually, the van signs read 920 kc. The way their 9 was drawn looks like an 8 from a distance.



WWJ was on 920 in 1938 and moved to 950 under the NARBA frequency reallocation of 1941. It remains on that frequency today. It was never on 960, so our text was incorrect.

PART 15 AM 'LOOPHOLE' EXPLORED

Comments by Bill DeFelice in the Dec. 14 *Reader's Forum* present his belief that the "ground lead" of an unlicensed system compliant with FCC Part 15.219(b) consists only of the lead itself, and not any conducting object or structure to which it connects.

This is an important issue, because 15.219(b) limits the length of the antenna system of an unlicensed AM station to 3 meters total, including the ground lead.

Any definition of the term "ground lead" requires that at least one end of that lead must connect to ground. An electrical ground will not radiate RF energy, but physics shows that any conductor along which RF current flows *does* radiate, when that conductor is above the surface of the earth.

Attaching a short lead from an elevated Part 15 AM transmitter to a longer conductor such as a grounded metal

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tower, flagpole, a wire needed as a "lightning ground," a water tower or the steel frame of a building or billboard simply adds length to the ground lead — all of which length radiates. So the ground lead functionally becomes the total length of the conducting path from the transmitter RF ground terminal to the point where that path enters the earth.

The FCC has issued citations to some unlicensed AM system operators using such long, radiating "ground" conductors.

Richard Fry, CPBE
Quincy, Ill.

WHY NOT PUT DRM TO USE?

I received my first copy of Radio World and discovered I have a reason to communicate with you already.

On page 4 you featured the thoughts of Mr. Ben Downs regarding the need for a significant change in the delivery system of AM broadcasting ("Downs Advocates for AM Solutions," Nov. 16). Mr. Downs can be of good cheer since there is a proven alternative to amplitude modulation. This system is called Digital Radio Mondiale, or DRM (see www.drm.org).

I am sure Radio World staff is fully aware of DRM, although it is mentioned nowhere in Downs' interview. For completeness I remind you of the following qualifications of DRM as the replacement of amplitude modulation:

- DRM delivers FM broadcast-quality audio. It is in use today by major European broadcasters (BBC, Radio Netherlands, Radio France International, Voice of Russia) as an alternative to amplitude modulation for long-wave, medium-wave and shortwave broadcasts. Experimental testing has been conducted successfully at VHF frequencies (in the last 18 months in Germany, Sri Lanka, India, U.K., Italy and Brazil) as an alternative to the 200 kHz conventional FM signal.

- The DRM signal is 10 kHz in width, the same bandwidth of a double-sideband AM signal. No significant change is needed to the broadcast radio laws for its adoption since bandwidth and channel allocations go unchanged.

- DRM is an open-source digital system, no secret codes and incremental costs for upgrades. Intellectual properties have to be paid in the normal way, once by manufacturers but no cost is incumbent on listeners or broadcasters.

- U.S. company Continental Electronics has already developed and is fielding DRM transmitters in other countries. Mr. Downs should drive over to Dallas and see what is going on in his "backyard."

- Asian and European countries are ready to adopt DRM to replace their AM broadcast system. Most likely India and Russia will adopt DRM and begin to manufacture receivers for DRM reception and decoding of signals for their civilian markets.

DRM does not need new allocated frequencies or greater radio bandwidth for its adoption. It can in almost every case simply be tuned and connected to the existing station antenna on its existing frequency.

DRM is indeed a very merry message for the problems facing Mr. Downs and all AM stations.

James V. Heck
McAllen, Texas

The writer is retired director of engineering of Radio HCJB-Quito, Ecuador, and World Radio Network

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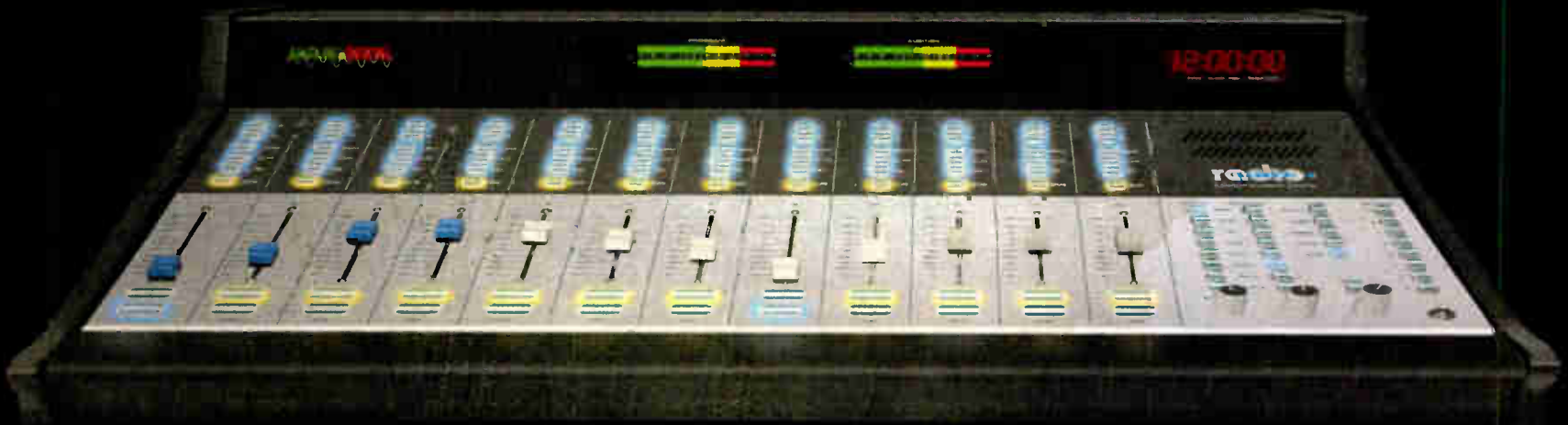
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