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LPFMs Look Ahead to 2015

Advocates are keeping track of new strategies, peer support groups

BY RANDY J. STINE

Low-power FM faithful expect 2015 to be the year of major station build-outs — a flurry of facility launches as community broadcasters stake claim to more space on the FM band.

At the same time, advocates are watching how these new broadcasters raise money for equipment, adapt to new management strategies and create peer support groups.

Close to 2,000 new LPFMs could be on air within 18 months as result of the application filing window in 2013, LPFM advocates estimate. About 150 of those are now on the air.

Observers said the FCC was quick to assess and process LPFM applications during the past year. The commission in early 2014 began issuing construction permits where there was only one clear, qualified applicant. In fact, CP grants for LPFMs were seemingly “fast-tracked” in 2014, according to several observers.

The commission is expected to finish sorting through the mutually exclusive, or MX, applications from that filing window in the first half of 2015, according to observers. MX applications are

cases where entities are vying for the same frequency. Conflicts among MX applications can be resolved by technical amendments eliminating mutual exclusivity, by settlement or by timeshare agreement. The MX period thus brings a lot of negotiation, coordination and amendment filing among hopeful low-power broadcasters.

Two regional MX settlement windows have closed, according to the FCC. Observers believe the agency will open a final MX settlement window, covering mostly southern states, by early 2015. This will include several large MX groupings in desirable areas like Houston, Dallas/Fort Worth and Orlando, observers said.

LONG-AWAITED WINDOW

Space on the FM dial remains a sought-after commodity, and some settlements of MX applications could take years to work out. If voluntary timeshare agreements can't be reached among the mutually exclusive applicants, a commission point system point system is used to determine the grantee. The system is a set of criteria used to score applications and break ties (see sidebar on page 6).

Low-power FM stations, which broadcast at a maximum of 100 watts and typically reach seven to 10 miles from the antenna, must be licensed to non-profit entities. These proliferating new micro FM stations promise to air programming that ranges from art and culture to education and hobbies with a hyper-local focus. Churches, civic groups and foreign-language stations make up a large number of the CPs.

For instance, the Center for Hmong Arts and Talent in St. Paul, Minn., aims to nurture, explore and illuminate the Hmong American experience through artistic expression, according to its website. The Flint Odyssey House in Flint, Mich., is concerned about addiction services and drug education; the Women's Civic Improvement Club of Sacramento, Inc., in Sacramento, Calif., will air programming related to the group's work in the community, according to the website Radio Survivor.

In the first LPFM window 15 years ago, 3,258 applications were filed; from

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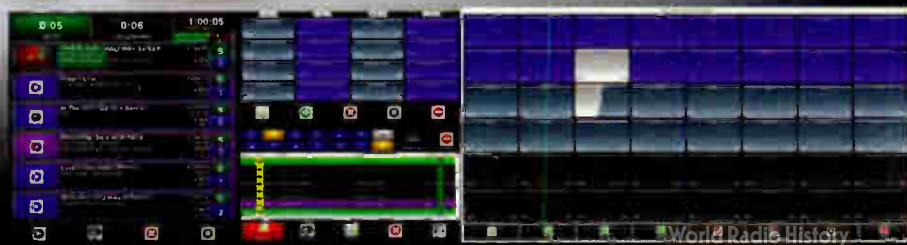


From left: Brian Wilson, Greg Monti and Bob Mack

Photo by Scott Fyfe

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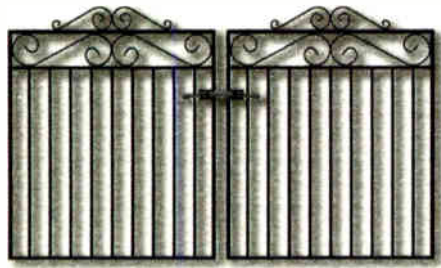
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Shopping for a Car With HD Radio

Engineer compares his experience with a similar venture in 2010

FIRSTPERSON

BY TOM RAY

The author is president, Tom Ray Broadcast Consulting, New Windsor, N.Y.

Roughly four and a half years ago, I wrote an article in the pages of Radio World about my search for a new car with HD Radio as an integral part of the package. I settled on a 2010 Ford Escape.

My experience then of trying to find a vehicle factory-equipped with an HD Radio receiver, or of buying one as an option, was not good ("HD Radio Shouldn't Be This Hard," RW Aug. 11, 2010). A memo on the Ford website had stated that HD Radio would be an option, but this was in error and there was no factory radio available for that vehicle. And equipping it with an after-market solution was an exercise in frustration. Dealer staff did not even know what HD Radio was.

That was then. While I am not in the market for a new car yet (my Escape runs well, thank you), Radio World asked me to



The author is shown in a 2015 Cadillac CTS.

It is still a frustrating experience to shop for HD Radio in vehicles, though it's much better than it was in 2010.

don my Joe Consumer hat and go shopping again for a new car with a factory HD Radio receiver and to see whether dealer employees had a better grasp of the HD Radio concept.

What I found in my mid-November search was still discouraging overall, though with some qualifications.

PLANNING

To start, I did some research. According to the website goodcarbadcar.com, the top five auto brands in the U.S., based on projected number of vehicles sold in 2014, are General Motors, Ford, Chrysler Group, Toyota and Honda.

Well, lucky me. Not far from home on Route 17K in Newburgh, N.Y., about 50 miles north of New York City, there are numerous car dealerships. I stopped at four (skipping Honda because a truck full of new vehicles arrived when I was there, and I decided they didn't need my

nonsense at that time).

I also visited hdradio.com and took a look at the brands iBiquity Digital Corp. says have HD Radio. Here I encountered my first problem. In the majority of cases, HD Radio is available mostly in the top-tier vehicles of manufacturers. Bluntly, I feel that if HD Radio is to succeed, Joe Consumer needs to be able to find it in the mainstream vehicles he drives.

(HD Radio also comes in Bentleys. I know one person who owns a Bentley; I can assure you he does not live anywhere near my neighborhood and most likely is not a listener to any station I have been associated with.)

I have some other statistics to reveal soon.

FORD

I considered just starting to shop, but I had two concerns.

First, I did not want to lead a sales guy on, only to have the conversation turn into an HD Radio education session with no chance of a sale. Second, the people at the Ford dealership know me, so it was only fair to identify myself and what I was up to at other dealerships.

I walked into Ford and, after their shuddering stopped, I was teamed with two salespeople who knew what HD Radio was. While chatting, it became

apparent that they were not familiar with HD multicast channels, so I took the opportunity to educate them.

HD Radio at Ford is standard in high-end vehicles and available as an option in all other vehicles — except the lower-priced Fiesta. To add it as an option, you need the MyFord Touch package, which is in the neighborhood of an additional \$4,000. HD Radio comes with MyFord Touch; it's incorporated into the GPS-equipped radio system.

As an example, a base-priced Ford Focus is \$16,810. To get the MyFord Touch package, you need to upgrade to the Titanium option, making the car \$23,900 list, with a street price of around \$21,650. That's not too bad; and you get the cool in-dash GPS unit, which most likely is the selling point, though one needs to ask whether an extra \$5,000 is worth the cost if you already have a nice GPS and just want HD Radio without other bells and whistles like Bluetooth connectivity for audio and USB ports for audio devices. (This list reminds us too that along with HD Radio comes more competition.)

Note that Ford announced in December it intends to replace MyFord Touch with a new infotainment system based on its Sync AppLink. Called Sync3, the system will start appearing in model year 2015 Fords and Lincolns.

CHRYSLER

Over at the Chrysler dealer, I encountered a sales person who was new on the job. At first, he corrected me by saying, "Oh, you mean SiriusXM Satellite Radio." Um, no, I mean HD Radio — over-the-air digital. He had to look it up, but quickly told me that it was available as an option in the Chrysler 200. He

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A Chat With an HD Radio Skeptic

Mark Ramsey urges broadcasters to consider how to solve listeners' problems

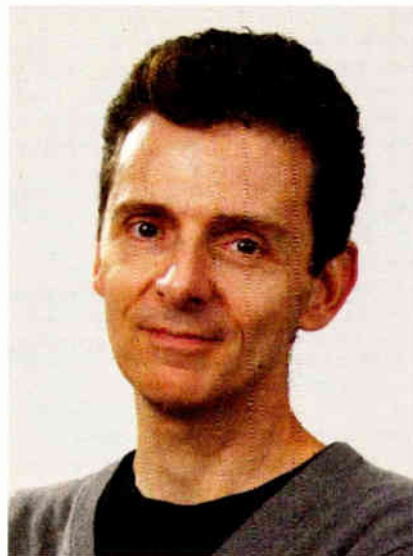
BY TOM VERNON

Media strategist Mark Ramsey has made a name for himself by looking at media, radio in particular, from the consumer's perspective. He has long been a critic of HD Radio, headlining a recent blog post with a photo of a tombstone engraved with the name of the technology.

HD Radio has been the standard for U.S. digital broadcasts since 2002 and has drawn its share of adversaries. Its advocates continue to promote it to car manufacturers, the public and radio stations.

The recent news that General Motors would not be including HD Radio in some models next year raised the question of whether the format may be losing momentum. GM and iBiquity have described the move as temporary, as RW's Leslie Stimson has reported. But Ramsey says the best thing that consumers and broadcasters alike can do with HD Radio is to forget about it.

RW spoke with the media analyst



Mark Ramsey

to find out why he has been a vocal skeptic.

IN THE DASH

Interest in car infotainment systems has exploded in recent years. A post

in 2014 from Bob Struble, president and CEO of HD Radio supplier iBiquity Digital, notes that five years ago, no car makers exhibited at CES; by last January, nine of the top 11 automakers had booths. The enhanced display screens in new cars, according to Struble, are being promoted as prime visual real estate that needs to be filled. Analog radio presents a blank screen, deemed by some to be no longer competitive.

Some car manufacturers argue that HD Radio is the answer to radio's dashboard challenge. Ramsey disagrees.

"It's not the consumers who are telling Ford, 'We want HD Radio.' That clarion call is coming from somewhere else — probably from a company which stands to gain lots if HD becomes an industry standard and has everything to lose if it doesn't."

A 2014 open letter from Ford's Jim Buczowski argues that radio's audience in the connected car will jump ship for the alternatives if it doesn't embrace the key technological features of HD Radio, namely digital sound quality, the added display of track and artist names, iTunes song tagging, the potential for album art or other graphics, plus the promise of creating additional channels.

FROM THE EDITOR



Radio World publishes opinions pro and con from all sides about important technology trends; few topics bring us more reader commentary than HD Radio. Here, longtime contributor Tom Vernon speaks with Mark Ramsey to find out why the media strategist and blogger writes harshly about the technology.

— Paul McLane

Ramsey differs: "First point, the audience is going to slip away to those alternatives no matter what. Of course, some of those digital alternatives can and will be your own. What is iHeartradio after all, but one big digital alternative, powered by radio? Ditto for TuneIn. And yes, your own station's app is in there too."

As to the value of matching the most important competitor features, Ramsey asks: "Does anyone out there really believe that 'digital sound quality' is what makes listeners tune in to Sirius XM? Or that song tagging is what appeals about Pandora? Or that album art is why Spotify would be a go-to"

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choice? Or that the consumer is lacking 'additional channels' when you add in the infinite number of channels online radio already provides? Come on now."

He feels that HD Radio doesn't improve features that already draw people to the medium. "HD Radio doesn't make radio more timely or more helpful in an emergency or funnier in the morning or more a companion during the day. It doesn't make the songs better or the commercial breaks shorter. It doesn't reflect your life or your community. It doesn't make you laugh or cry. It doesn't tell you the best route to work or what to wear in the morning. It doesn't nourish your spirit or salvage your nest-egg.

"HD Radio doesn't do any of these things because these things are about what we create with radio, not just about the technology which surrounds it."

Regarding the connected car, he said control of the entire dashboard itself is up for grabs. "There is an effort to standardize the interface between different types of cars in order to end a lot of the confusion. But there is another camp, led by Android and [Apple], who want to control the digital dash from mobile devices. If they win out, the issue of the car as a separate environment will simply go away."

SOLVE PROBLEMS

Does all of this mean that Ramsey is a content guy who dismisses technology? Not at all.

"We can absolutely make radio better with technology. Ultimately, technology and content will merge into one value continuum. But sacrificing the latter to favor the former will make radio weaker, not stronger. Technology needs to be something that solves a consumer problem."

For example, Ramsey cites Uber, the app-based transportation network and taxi company that enables users to get a ride quickly in major cities worldwide. "This service is unbelievable, and very quickly solves the problem of getting a cab in a city you're unfamiliar with.

"All advertising is directed to solve a consumer need or problem. But if I don't have a radio problem, then I don't need a radio solution."

He assailed the selling points he's heard: "'HD is digital.' That does not solve a problem for consumers. 'The audio is better.' Same deal. 'HD provides more choices.' So do Spotify, Pandora, Slacker and a host of others, and with 21st century technology. In short, HD Radio is a '90s solution to a 21st century problem. It does a lot of the same things as the alternatives, it just doesn't do them any better."

Ramsey said broadcasters seem to be willing to spend money on radio but often for the wrong reasons or on the wrong things. "They would rather spend \$100,000 on the technology to

NEWS

upgrade a signal, than spend that money on getting the best talent in town. That's a shame, because no one listens to the radio for technology, they listen for the personalities, because the songs are freely available everywhere now."

He cited a recent survey. "Listeners were asked to name a radio DJ or host. The youngest named was Ryan Seacrest, at age 40. Most of the rest, such as Dick Clark or Wolfman Jack, are all dead."

And finally, to broadcasters feeling the pressure from an increasing number of media alternatives, Ramsey suggests they step back and think about what business they are really in.

"The opportunities are not in expanding the number of channels you have. Instead, you've got to put yourself in the shoes of your listeners, and ask yourself what you can do to solve their problems.

How can you add value to their day, and make their lives better? And then you've got to take all of this and leverage these relationships with the audience, and leverage relationships with the advertisers. Then you can connect the two more efficiently across any number of platforms, not just radio."

Ramsey concludes with one question for management: "What business are you in? Broadcasters are in the connection business. They're in the content business, and the people business. They are not in the radio business, much less the HD Radio business."

Comment on this or any article. Write to radioworld@nbmedia.com.

For more views and news about HD Radio, read the free eBook "What's Next for HD Radio 2015" at radioworld.com/ebooks.

PUT SOME HISTORY ON YOUR WALL

BY PAUL MCLANE

John Schneider calls himself The Radio Historian; Radio World readers have enjoyed his series of recurring photo-based articles.

Now he's out with a calendar that broadcast technology geeks will love, featuring wonderful pix of historic radio broadcast transmitters and people who worked around them.



Interestingly, he chose to colorize these photos, all of which originally were black and white. That sounds at first like a bad idea — I'm normally for historical veracity when publishing historical material — yet the colorization process works here, allowing us to engage more with the people and equipment shown. This makes it possible for us to feel like we're standing with Walter F. Myers at WJJD in Chicago as he takes meter readings from his new RCA BTA-50F transmitter in 1947, or sitting with engineer Edwin Boyes at the control desk of WWJ(AM/FM) in 1963 in front of the big Western Electric and RCA transmitters.

As a bonus, the last page of the calendar provides background about the stations shown, which include legendary names like KIRO, WEA, KSFO and WJZ. For each month, Schneider provides not only a historical thumbnail about the station, but a separate short history of the transmitter, which RW tech readers will particularly appreciate.

Find it for \$21.95 on eBay by searching "radio broadcasting history calendar," or email Schneider at jschneid93@gmail.com.

LPFM

(continued from page 1)

that pool, the number of LPFMs on the air in the United States, according to FCC data, stood at about 800 just prior to the more recent window.

The second window produced 2,826 LPFM applications. Of those, 628 were dismissed because of errors and omissions, leaving 2,198 to be considered; out of those, approximately 150 new stations are now on the air, and an additional 1,196 hold CPs, according to consultancy Christian Community Broadcasters.

Thus the total number of LPFMs now on the air stood at about 950 as of December 2014, and it will grow quickly. The entities holding CPs have 18 months to get their stations on the air, according to the commission. That can be extended to 36 months upon showing "good cause."

PROLIFERATION

LPFM hopefuls had waited an extended period between the filing windows due to a backlog of applications from a 2003 FM translator filing window, LPFM advocates said; that backlog is mostly cleared.

The second window generated strong interest from non-profit organizations including schools, churches, public safety agencies and other eligible groups, they said.

The window "allowed for more LPFM services to proliferate, especially in smaller markets and rural areas where many open channels were," said Todd Urick, program director for Common Frequency, an LPFM and college radio advocate and consultant. "My big disappointment is that many first-time applicants had engineering errors within their applications."

According to REC Networks, another community radio advocate, 202 of the dismissals were for technical reasons.

Urick cited several examples of groups who saw their applications dismissed due to minor engineering errors, including a food bank and low-income family non-profit in Redding, Calif., called People for Progress.

The year 2015 will be a big build-out year, according to Urick. "However, I think there will be some organizations in over their heads as to their preparedness



Ribbon-cutting for KUBU(LP), "The Voice of Sacramento Radio," in November 2014.

in licensing these facilities. They'll need to fundraise at least \$5,000 to scrape together the minimal equipment needed to get one on the air. That might be a hurdle for small organizations," Urick said.

URBAN GROWTH

The number of CPs being granted in urban areas surprised some LPFM analysts. They noted that the commission is allowing use of second-adjacent channel waivers in hope of establishing additional LPFMs in large markets.

The Local Community Radio Act, signed by President Obama after its passage by Congress in late 2010, authorized the commission to eliminate third-adjacent channel LPFM spacing requirements and allowed the agency to create standards for waiving second-adjacent channel protection requirements.

The FCC has granted hundreds of second-adjacent channel spacing requirement waivers. One source with knowledge of the commission said some full-power FMs are challenging those requests.

"We have seen substantial LPFM growth in urban areas such as Denver, Seattle and Portland. Even New York City is getting a two-way voluntary share station," said Michi Bradley, founder of community radio advocate REC Networks. In New York, the Roman Catholic Diocese of Brooklyn and the Global Service Center for Quitting the Chinese Communist Party will share 105.5 MHz. "I do feel that there has been a proportionate distribution of CPs in urban and rural areas," she said. However, large MX groups in Los Angeles, San Francisco and Portland could take months, if not years, to resolve, she said.

Bradley, who worked with a variety

FCC LPFM POINT SYSTEM

The commission uses a point system to award LPFM CP grants in cases of mutually exclusive applications where competing groups cannot resolve. According to Tracy Rosenberg, executive director of Media Alliance, points are awarded for:

- 1) An established presence in the community as a 501c3 organization for at least two years;
- 2) A pledge to air at least 8 hours a day of locally originated programming;
- 3) A pledge to maintain a local main studio that is inside the signal area, publicly accessible and able to generate locally originated programming from that site;
- 4) Qualifying under points 2 and 3 in the same application, which earns an extra point;
- 5) Having no interest in any other broadcast outlet;
- 6) Being a tribal applicant that plans to broadcast on tribal lands.

Rosenberg said many LPFM applicants in the recent window worked hard to make sure they could maximize their number of points in the 4-to-5 range to be competitive for a license.

"Sometimes two applicants will join together and merge their applications in order to combine the points in both original applications and thus achieve a higher total number," she said. "The final FCC decision is awarded on the basis of which application has the highest number of points."

If there is a tie and no voluntary sharing agreement, Rosenberg said, the commission will determine a sharing agreement.

"Most people agree that voluntary sharing agreements are more likely to work out well than involuntary ones. In most cases, an objection or petition to deny will be filed on the basis that competing applicants have been awarded points they don't deserve," Rosenberg said.

— Randy J. Stine

of community groups seeking LPFM licenses such as ARTxFM in Louisville, Ky., doesn't think the 2013 window will yield more than 2,000 CPs and potential LPFM stations.

"Considering that in the third MX window we have several large MX groups, I would expect to see a lot of dismissals from non-tentative selectees. Based on this, breaking 2,000 grants is not likely."

Prometheus Radio Project, an LPFM advocate and consultant, completed its first station build of a low-power FM that applied in the 2013 application window in October 2014. Prometheus helped coordinate construction of KMRD(LP) in Madrid, N.M., including the installation of transmission equipment, a mast and antenna.

Madrid Community Radio will be a

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World Radio History

LPFM

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“grassroots effort contributing to democratizing Santa Fe County,” according to the Prometheus website. A blacksmith fabricated a steel cage, hinging base and a 26-foot steel mast to support KMRD’s Norwalk Electronics Dominator NWE-34 antenna. A volunteer electrician and solar expert built a solar system to power the transmission equipment at the transmitter site.

An electronics expert is building a broadcast console from a kit obtained from Kaatskit and organizers hoped to have the station on the air by the end of 2014, according to Prometheus.

Sanjay Jolly, Prometheus Radio Project’s policy director, said demand for LPFM by community organizations remains strong.

“They see LPFM as an important platform for local, diverse voices that are otherwise ignored,” Jolly said.

Prometheus believes that by the end of 2015 the total number of LPFM CPs issued from the 2013 window could hover around 2,000; this would bring the LPFM service to almost 3,000 licenses nationally.

BUSINESS MODELS

Jolly, who characterized the FCC’s pace of qualifying applicants as “exceeding expectations,” said one trend of note is timeshare agreements, in which separate stations share time on the same channel.

“These tend to be clustered around the country’s biggest cities. Several timeshare proposals in Los Angeles have six or seven applicants all sharing one channel,” Jolly said of an MX grouping at 101.5 MHz.

Electronic processing of LPFM applications has allowed the commission to grant more CPs in less

SOME BIG-MARKET LPFM WINNERS

Here is a small sampling of construction permit recipients in urban areas, courtesy of REC Networks (recnet.com). Timesharing arrangements represent one way the FCC is fitting more LPFMs into desirable populous areas.

New York — Roman Catholic Diocese of Brooklyn and The Global Center for Quitting the Chinese Communist Party are sharing 105.5 MHz

Chicago — Chicago Independent Radio Project has a CP at 107.1 MHz

San Francisco — Alameda Community Radio, Poor Magazine and Alameda School District are sharing 96.1 MHz

Boston — Lasell College, City of Boston and Global Ministries will share 102.9 MHz

Seattle — Sand Point Arts and Cultural Exchange and KMIH.ORG Radio Booster Club will share 101.1 MHz

Philadelphia — Greater Philadelphia Asian Cultural Center and Uptown Entertainment and Development sharing 98.5 MHz

Los Angeles — 17 applicants in three timeshare groups are currently battling for 101.5 MHz



Volunteers raise mast and antenna for KMRD(LP) on the crest of a hill above Madrid, N.M., in October 2014.

time than before, according to Christian Community Broadcasters’ co-founder John Broomall. By contrast, paper applications were still accepted in 2000.

“Some mistakes have happened, but there is an appeal process,” Broomall said.

Broomall said 2015 is all about getting as many LPFMs on the air as possible and determining how timeshare agreements will work out.

“It’ll be interesting to see what happens if complaints are filed related to localism, in particular with three-way timeshare agreements. Some applicants believe that if a 24/7 station would only need to devote one-third of their time to local programming, surely the timeshare applicants should not have to devote 100 percent of their time to local programming when they

NEWSROUNDUP

APPYOURCAR: A company based in Munich, Germany, has created AppYourCar, a system designed to use smartphone apps in the car without relying on a big-screen infotainment system. To start, a wireless Bluetooth remote control is attached to the steering wheel. That’s combined with a smartphone mount that sits on the dash and charges the phone wirelessly. With the controller, the user navigates through the apps without touching the smartphone. The company has a working prototype and is crowdfunding to raise enough money to get the devices manufactured. The package lists for \$179 and shipping is slated for May.

PUBLIC FILES: Radio may soon be required to provide online access to public files. The FCC has voted to open a Notice of Proposed Rulemaking to expand online public file obligations to broadcast radio, satellite radio, satellite TV and cable operators to improve public access. TV stations have been required to upload documents to an FCC-hosted website since 2012. The commission proposes to make stations in Nielsen radio markets 1–50 that have five or more full-time employees comply first. Other stations would have two more years to comply. Comments to MB Docket 14-127 are due 30 days after Federal Register publication.



KUBU(LP) PD Shane Carpenter in the studio

are not responsible for the entire broadcast day.”

The majority of Christian Community Broadcasters’ clients are churches and ministries, according to Broomall, and the majority of those are ethnic or minority organizations.

Tracy Rosenberg, executive director of Media Alliance, a non-profit that advocates for democratic communications, is watching closely to see how business models adopted by some of the new LPFMs work out.

“I think everyone is curious how well crowd-funding will work in this sector, whether membership models will meet with success and how the participatory co-op style works. Some different models are beginning to emerge,” Rosenberg said.

The San Francisco-based Media Alliance, which worked with clients to find available channels, supports the concept of creating regional peer support groups for LPFM.

“We are beginning to take notice of more local meetings and conferences for LPFM. One that I attended recently was the Cascade Media Convergence in the Pacific Northwest,” Rosenberg said.

Moving beyond 2015, at least on LPFM advocate continues to call for higher power, perhaps 250 watts, for rural LPFMs.

“I am hoping that in 2015 we can get the gears turning on working towards a 250-watt LPFM service. REC is currently evaluating the applicants who have been granted and those who will likely be granted in the future to quantify a proposal to move LP-250 forward,” said Bradley of REC Networks.



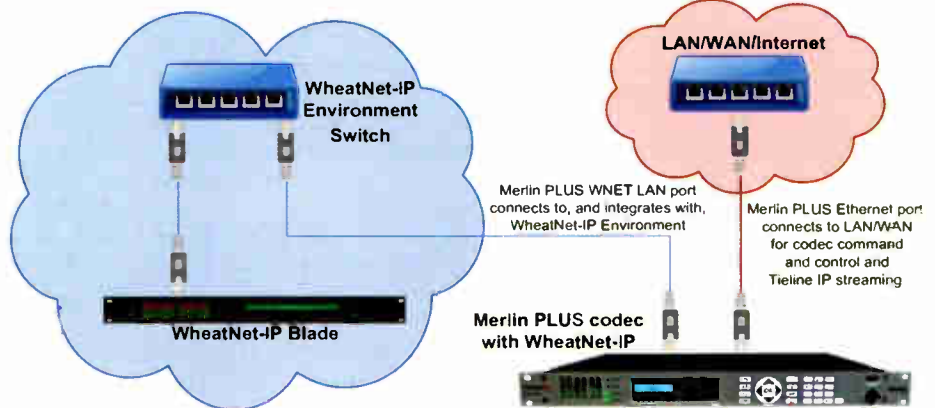
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HD CAR SHOPPING

(continued from page 3)

told me that satellite radio was available in all Chrysler vehicles, but HD Radio was only available in the 200 if the car is equipped with a Uconnect system. HD Radio then is either an upgrade or comes standard, depending on which version of Uconnect is available for the individual trim model.

The base price on a Chrysler 200 is \$21,700. The Uconnect, which includes GPS navigation and of course SiriusXM, adds roughly another \$1,495, which I thought was a fair price for what you get. Again, he was new, and was not aware of HD Radio or HD multicast channels — so we had a good discussion.

Chrysler has since announced that its 2015 model 300, equipped with the Uconnect system, offers HD Radio, too. Some trim levels of the 300 include the premium Uconnect 8.4AN, which includes HD Radio; other trim levels offer the Uconnect 8.4AN as an upgrade option.

GM

I had better luck at the GM dealership, which offered Cadillac and Chevrolet vehicles. The sales person was knowledgeable and adept with the HD system, and knew about multicast channels.

He told me that all 2015 Cadillac models offer HD Radio as an option except for the Escalade, in which HD Radio is standard.

In the Chevy line, the 2014 Traverse, Silverado and Impala have HD Radio available optionally. The vehicle must include the MyLink package, which incorporates HD Radio. However, Chevrolet has stated that HD Radio will not be an option in these three models starting with the 2015 model year, as Radio World has reported. These vehicles have been on the lots since mid-2014. In my mind, this is a tremendous loss, as the Impala is a common vehicle on the road.

The GM salesperson had some interesting things to add. His commute is about an hour. He told me he does not listen to over-the-air radio because “it’s the same stuff over and over,” and he has to change stations constantly as he goes out of range. He said he will listen to Pandora about once per week. But he’s tech savvy and understands that, on an hour-long commute, he could blow quickly through his data allotment on his cellular contract.

Still, he can listen to Pandora through the Bluetooth connection on his phone or through the onboard OnStar system data package in his car. He also stated that he has not looked at his iPod in roughly 3 years — because it is in the center console of the car tethered to the audio system through a USB con-



The HD1, HD2 and HD3 channels of WJGK(FM), Newburgh, N.Y., are displayed on the tuner in a Cadillac CTS.

nection. He listens to either his iPod or Pandora simply for the variety offered.

He also said I was the only person who had ever asked about HD Radio. Ever.

TOYOTA

Finally, I stopped at the Toyota dealer. Toyota gets it. They have four radio models. The base one does not have HD; the other three do and have varying degrees of amenities. The only Toyota model that does not have an option for HD Radio is the Yaris, their lower-priced model.

He stated that Toyota is trying to simplify consumers' lives and, in the next model year — 2016 — the automaker will only have one model of radio for the vehicles; it will include HD Radio, so the technology will be standard in all Toyota vehicles.

The unfortunate part of Toyota's pricing is that they do not break out the radio cost on their window stickers. And when you upgrade to a higher radio for the vehicle, there are other options included, so it is difficult to assess the cost of the upgraded radio.

HD ROLLOUT

Here are interesting statistics from *motorintelligence.com*: As of Dec. 2, there were 3.02 million mid-size vehicles sold in the U.S. in calendar year 2014, as well as 2.66 million small vehicles, 965,000 luxury vehicles and 7.07 million light-duty trucks (which includes minivans, SUVs and crossover vehicles).

It's nice that HD Radio is available in the luxury vehicles; but luxury vehicles make up 7 percent of the motoring public. You need HD Radio available, reasonably priced, in the other 12.7 million vehicles sold to make the medium viable.

Don't forget, you have Pandora, other Internet services, iPods, flash drives and many other forms of entertainment for the driving public to avail themselves of.

Yes, iBiquity Digital has told me numerous times that there are “politics” involved in getting the technology into

analog radios factory installed.

While HD Radio is available as an option in numerous vehicles, if the public does not know what it is or why they would need it, why would they spend the money to have one put in the car? Fourteen years in, I feel that this is inadequate, especially compared to the rates of adoption of other media delivery platforms.

And yes, let's go down this road: We, the broadcasters, need first to offer content that will keep the listeners from seeking the alternatives on a regular basis. You don't get the same 300-song playlist constantly with your iPod, and you don't get the drivel that is the

Stations need to do a better job of talking about HD Radio technology and its advantages other than mentioning it only in the top-of-the-hour station ID.

cars. That's nice. Then how about fighting for our place in the dashboard and get us into the mainstream vehicles? That is what we, the broadcasters, need after we put large amounts of money into taking our stations HD.

iBiquity projected recently that its HD Radio technology would be in some 43 percent of cars sold in the U.S. in 2014 and believes that figure will rise to about 50 percent in 2015.

Looking at the iBiquity website list of models that support HD Radio, as of mid-November, the technology was still only available for the most part in luxury vehicles. The company's penetration projections do not make sense to me, seeing as Chevy has dropped HD Radio in the three models mentioned for the 2015 model year. Walking around car lots, I did not see one vehicle equipped with an HD Radio receiver where the technology was an option. They all had

vast wasteland of talk radio these days. Content is king.

Then stations need to do a better job of talking about HD Radio technology and its advantages other than mentioning it only in the top-of-the-hour station ID.

It is still a frustrating experience to shop for HD Radio in vehicles, though it's much better than it was in 2010. FM stereo took 20 years to become mainstream. I took WOR Radio in New York City HD in 2002, 14 years ago, and there hasn't been much progress with the public yet. We still have a long way to go.

Tom Ray is former corporate director of engineering of Buckley Radio and WOR Radio in New York. He has experience with AM and FM HD Radio; in 2002 WOR became the first full-time high-power AM HD Radio station. He operates Tom Ray Broadcast Consulting in New Windsor, N.Y. Reach him at tomray@tomrayconsulting.com

NEWSROUNDUP

REDSKINS: The FCC said the name of Washington's NFL team does not violate broadcast indecency rules; it approved a license renewal for WWXX(FM), Buckland, Va., which is owned by Daniel Snyder, the owner of the team. The agency rejected a petition by George Washington law professor John Banzhaf III and others who likened the team name to hate speech. The commission said in order to protect broadcasters' free speech rights, the agency doesn't deny license renewal based on whether listeners object to programming. Snyder has rejected calls to change the team's name and said the challenge was without merit.

NEXTRADIO: NextRadio and iBiquity Digital plan to demo an automotive solution combining the broadcast enhancements of HD Radio and TagStation. The demo takes place in Booth 8232 in the Central Hall during the Consumer Electronics Show Jan. 6-9 in Las Vegas. Look for an FM chip promotional campaign to get underway in the first quarter.

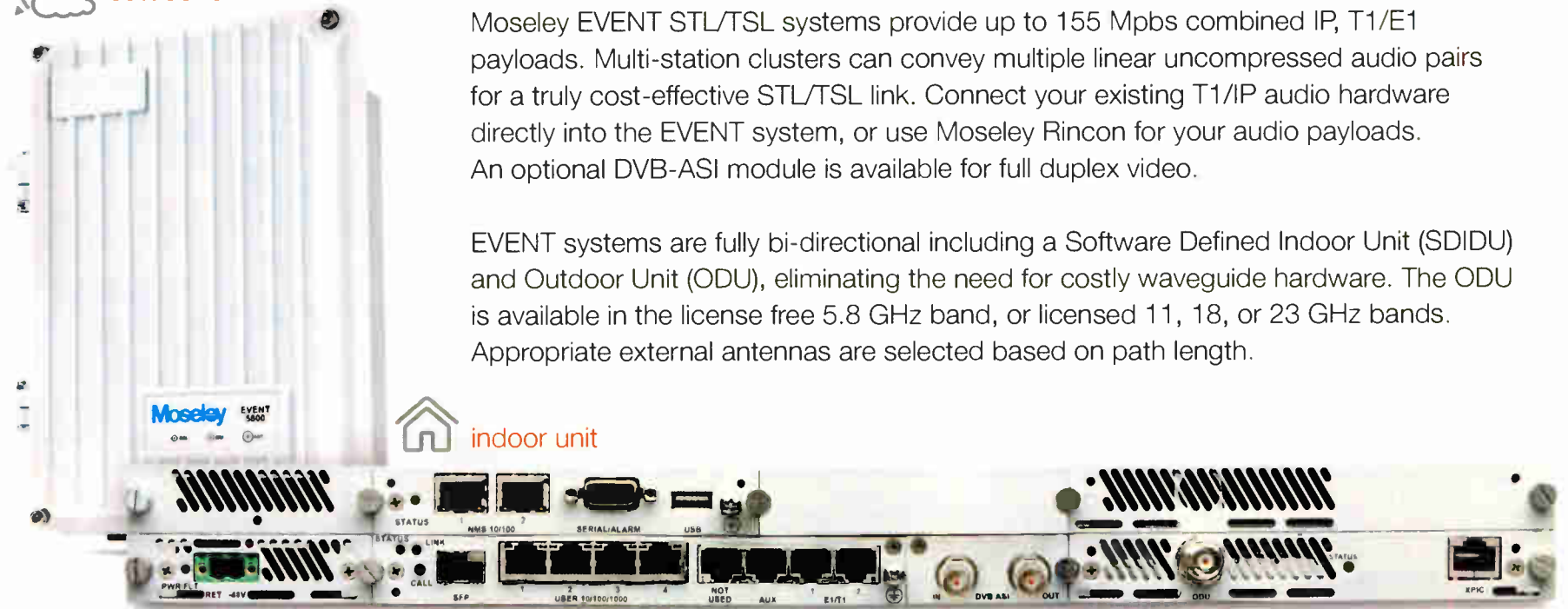
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EVENT systems are fully bi-directional including a Software Defined Indoor Unit (SDIDU) and Outdoor Unit (ODU), eliminating the need for costly waveguide hardware. The ODU is available in the license free 5.8 GHz band, or licensed 11, 18, or 23 GHz bands. Appropriate external antennas are selected based on path length.



INTELLIGENT SYSTEM DESIGN



Spectrum-scalable digital radios with user-selectable data rates enable broadcasters to have greater flexibility in STL planning and future growth. The integrated T1/E1 and Ethernet interfaces allow for a combination of T1/E1 and IP packet data.

IP APPLIANCES AND APPLICATIONS

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Let's Have a Cabinet Meeting

Kitchen-type shelving offers several advantages in radio facilities

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Mark Voris is engineering manager for Spirit Catholic Radio's KVSS(FM) Omaha/Lincoln, Neb. He got tired of crawling around on the floor underneath consoles, dealing with studio punch blocks; so when he wired his main control room, Mark relocated the blocks to eye level and enclosed them in a cabinet.

As you can see in Fig. 1, the wiring is hidden until access is needed.

Although limiting access is not a concern at Spirit Catholic Radio, Mark notes that if you have curious staffers or junior engineers who can't leave things alone, you can drill kitchen-type cabinets for door locks, to keep curious eyes (and hands) out.

The cabinet can also serve as a bulletin board.

Mark also sent in a shot of his remote "go" bags, seen in Fig. 2. These zippered canvas bags hold all the gear needed for a remote. Find them at big-box hardware stores. Toolmaker Stanley makes the version Mark uses. The zippered bags are trademarked as FatMax. Great ideas, Mark!

Reach Mark Voris at mark@kvss.com.

Engineer Jim Heim enjoyed our discussion of transmitter venting. He recalled being dispatched to an FM station in Oregon. It was using a 20 kW grounded-grid transmitter, which was going through finals at a rapid rate.

The first thing Jim noticed was difficulty in opening the transmitter room door. The second was that the system had an exhaust vent but no companion intake vent. Instead, there was an in-wall air conditioner. The air in the room seemed thin, but cool.

Jim never did convince the owner

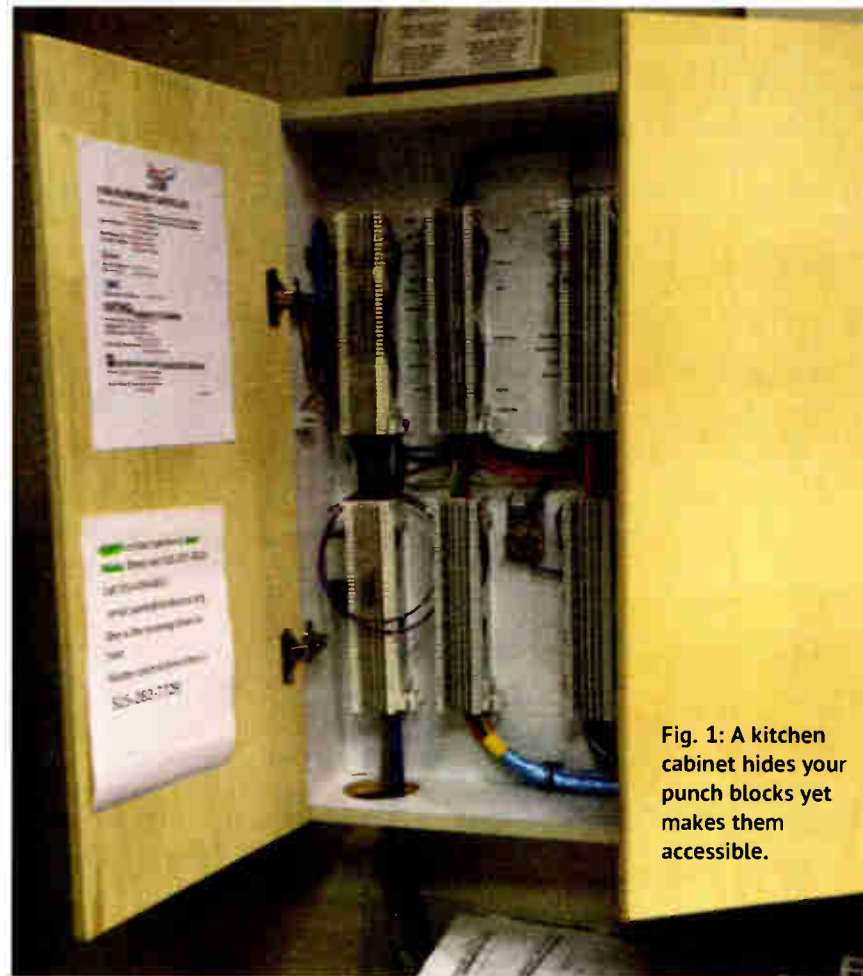


Fig. 1: A kitchen cabinet hides your punch blocks yet makes them accessible.

that airflow was way more important than cool room air.

One winter at Jim's home base station in Portland, he got the bright idea of using waste heat from a Collins FM transmitter (a pair of duplexed 10 kW PA amps) by disconnecting the vent on one of the amplifiers which went up to a roof vent, and letting the warm air blow into the control room. The top of the vent was curved so that nothing could blow in ... he thought.

During a snowstorm, Jim got a call that the transmitter was down to quar-

ter-power. When he entered the mountaintop transmitter building, Jim saw a big pile of snow on top of the PA amp. A strong east wind can blow snow pretty much anywhere it wants!

Jim Heim now makes his home in Southern Pines, N.C., and can be reached at jim@heim.us.

Fig. 3: Fader8 is a compact cleaning kit.

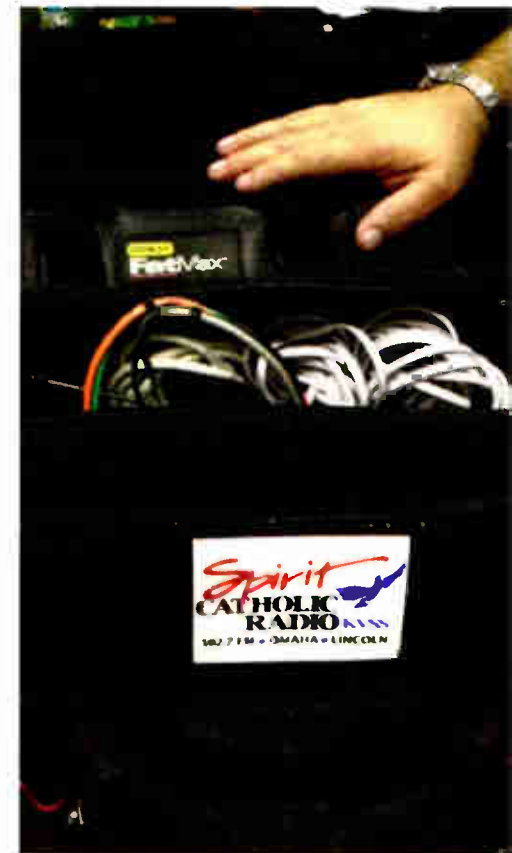
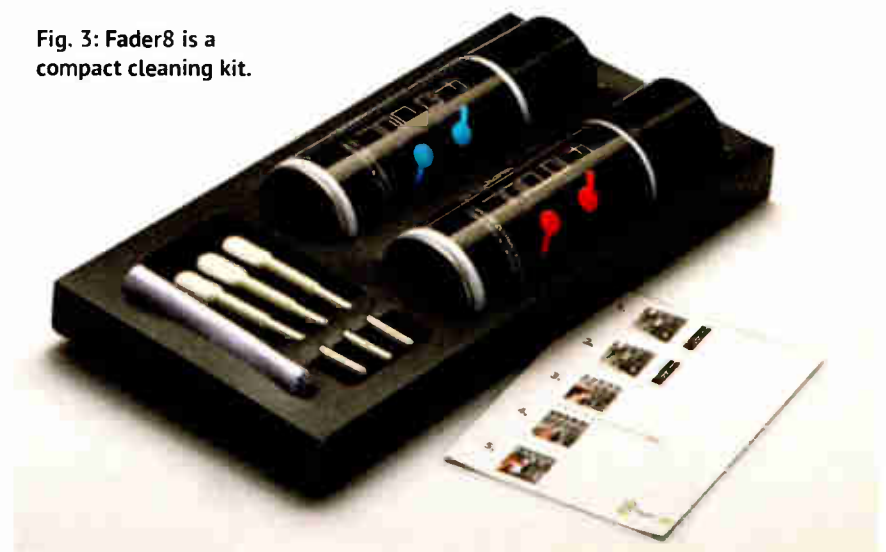


Fig. 2: Mark's "go bag" holds all the equipment for remote broadcasts.

Icon Digital USA offers a compact and portable "first aid cleaning kit" for faders, pots and switches. The kits provide 200 ml of a higher-quality cleaner/lubricant, cleaning swabs and a case. The long-lasting formula does not require recleaning of gear.

Order the \$69 kit from www.icondigitalusa.com/fader8.

The popular Workbench column is built around your ideas. Help fellow engineers — and qualify for SBE recertification credit while you're at it. Send tips to johnpbisset@gmail.com. Fax to (603) 472-4944.



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Radio Engineering APptitude

Smartphones aren't just fun and games

APPS

BY TODD DIXON

Nearly six-and-a-half years ago, when Apple released the first iPhone, I don't think many of us would have believed that the first tool we would grab for our job was a smartphone.

Even when Google presented its first attempt nearly a year later, the thought of having 1.5 million apps available to smartphone users — on the two major platforms alone — was inconceivable for most people.

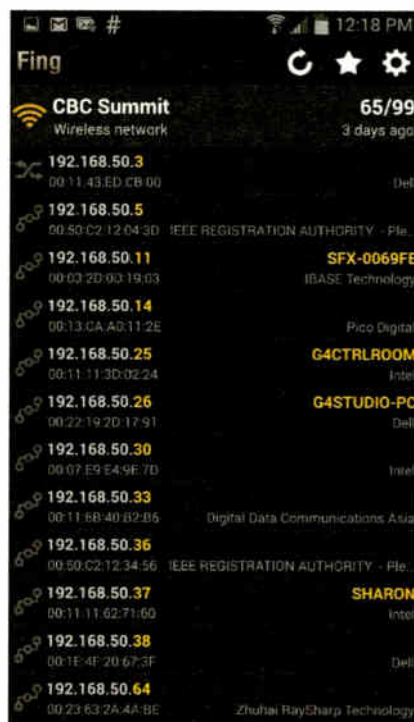
Radio World has written before about a number of useful apps; see www.radioworld.com/apps. I'd like to share some that I have found to be useful in my day-to-day work, beyond the two clearly most basic — camera and flashlight apps!

FING

Fing is my favorite must-have app. In a wireless network environment, Fing will touch every network device and provide a host of great information to you. Once it has done its scan, you can click on individual computers it found and run network scans to determine what network services are running on the machine.

Fing not only does this for LAN networks, but it can give valuable bits about IP addresses in the WAN space as well.

If you administer more than one wire-



Fing finds all of the network connected devices on a LAN.



Fing can determine which Web services are available at a specific IP address.

less network, you might be interested in an extension of Fing called Fingbox. This allows you to do remote scans of your networks, check on your TCP services and get alerts about changes in your networks. By placing the Fing software on a piece of hardware in each network (a Fing Sentinel), you can get detailed information about all of your sites from anywhere you have data cell service.

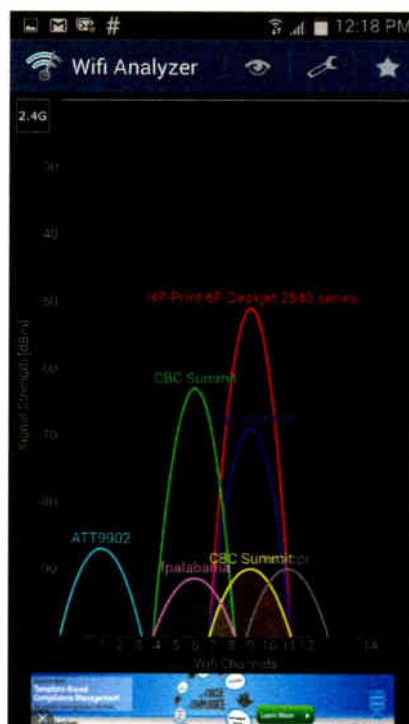
The Fing app is free and is avail-

able in both iOS and Android flavors. Fingbox is a pay-per-month (or year) service and has varying levels of features and pricing.

WIFI ANALYZER (NETWORK MULTIMETER)

Wifi Analyzer is another app that you should place on your phone immediately. Wifi Analyzer can help you determine the best place to put your Wi-Fi access point.

Once you place your access point, open up Wifi Analyzer and walk the office. It gives immediate graphical feedback, and you'll know exactly



Wifi Analyzer gives quick measurement of all wireless signals in the area.

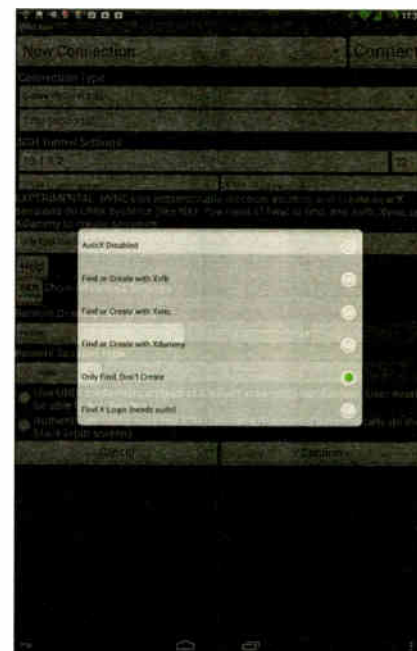
The app is pretty well laid out. Swiping to the left or right will switch to different graphical formats that break down your Wi-Fi environment, including access to a time-sequence graph that allows you to see all of the Wi-Fi signal interactions over time.

Wifi Analyzer is free and Network Multimeter is \$0.99.

BVNC FREE (REMOTERVNC)

When I use bVNC Free, I fancy myself as a drone pilot and try to remember that I can do a lot of damage from 3,000 miles away!

The ability to get into your systems remotely is empowering, especially via your phone. BVNC allows access over basic vnc, vnc over ssh, ultravnc, and several other encrypted secure VNC protocols.



Access your systems remotely by phone with bVNC.

I'd like to share some apps that I have found to be useful in my day-to-day work, beyond the two clearly most basic — camera and flashlight apps!

where your Wi-Fi signal strength and weakness will be.

In the 2.4 GHz spectrum, there are only 11 channels and they overlap each other. What if a neighboring business or tenant has Wi-Fi? Wifi Analyzer will help you cut down on interference you might receive from those other Wi-Fi networks. Each signal that is detected is denoted and labeled in a different color for a quick accounting of your Wi-Fi spectrum. The app monitors the 5.8 GHz spectrum, as well with the same set of tools at your disposal.

On a 4- to 5-inch screen, you might imagine it difficult to navigate screens. Pinch-to-zoom helps alleviate that and gets you where you need to be on the remote screen.

The direction arrows, CTRL, ALT, TAB and ESC keys are available from a shaded area in the bottom middle of the screen. The keyboard is brought up by tapping the shaded area on the right middle of the screen. The app also allows for a "view only" mode.

The app has saved me several trips to the studio and is clearly worth the

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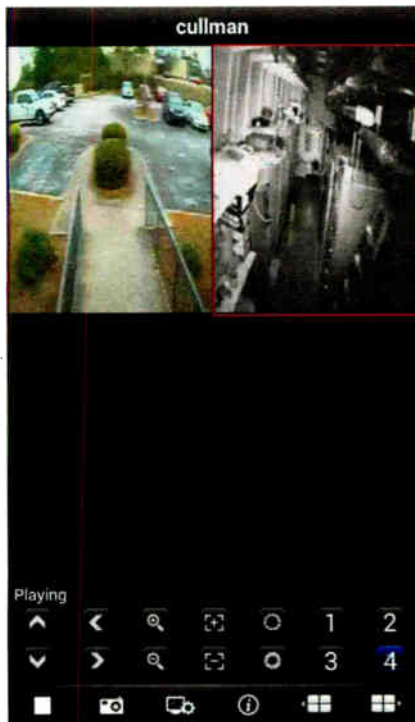
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price (free). Remoter VNC is available for iOS with nearly the same feature set.

OVR CAMERA ACCESS

Speaking of remote access, it is worth noting that a number of surveillance camera DVR combinations have apps that allow for remote access. If you have network access to your sites from the studio, it is a fairly straightforward procedure to make your DVR available for remote viewing of the cameras at the tower site.



DVRs with mobile apps can help you check up on activity at the studio or transmitter sites.



Lessons in Electric Circuits is divided into both primer and reference for any radio engineer.

The DVR surveillance cameras at three of our sites are made by Lorex. It offers the apps for free to customers so that after only a few minutes of setup, you can see what is going on at your remote tower sites. They are available for both iOS and Android.

ELECTRODROID

When I saw everything that the ElectroDroid Pro version had over the free version, I suffered through not having a Coke and a bag of chips for the afternoon and bought the app from the play store right then (\$2.79).

The fact is that a list of everything it calculates, has pinouts for and the resources alone is exhausting — and makes it unique and worth every penny. It also has plugin availability for an electronic parts seeker, Atmicro and PICmicro databases.

I should mention that most apps “do” something. This app is simply an industrial electronics teacher’s collected notes and ideas after finding complete frustration in the textbooks he was given to teach.

What it “does” is teach. I fall into the category of a radio engineer who came

in through the computer door, not the RF or circuitry doors. You may have similar engineers that you are mentoring. The app is broken down into DC, AC, semi-conductors, digital, reference and experiments. It is available for free in the play store and for \$6.99 in the iTunes store.

This list is certainly not exhaustive, but maybe you have a killer app that you use on a regular basis. Share it with me via email at tdixon@crawfordbroadcasting.com.

Todd Dixon is an assistant engineer at Crawford Broadcasting’s Birmingham facility and a regular RW contributor.



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LPFM and the Audio Arts

You know that good feeling you get when your significant other surprises you with tickets to a game or gets your Starbucks order right?

Well, here it is, in the form of a note from new LPFMer ARTxFM posted on our Facebook page:

"We just LOVE our Audioarts AIR-1 - perfect starter board for our new LPFM, WXOX 97.1 FM Louisville!!!"



Congratulations to Sharon Scott, Sean Selby, Tim Barnes and all the others at ARTxFM, on their new non-profit LPFM after three years of hard work and involvement in the Louisville, Kentucky music community. We love your experimental music format, your shows, and the fact that you're out there in the community covering the music scene. We're listening.

Learn more about how Audioarts and Wheatstone can help make your LPFM the best it can be.

Go to: INN18.wheatstone.com



Hand it Over, Internet

With satellite delivery no longer widely available, broadcasters are turning to Tieline's Genie with WheatNet-IP inside for distributing programming over the public Internet.

If you're thinking about handing over program distribution to the public Internet, Brian Kerkan of Crawford Broadcasting in Detroit has some advice for you.

Brian suggests oversubscribing on bandwidth, using SNMP to get in front of any packet problems you might have, and to use a good codec. Oh, and to grow a backbone - you're going to need it.

"Was a I nervous about using the Internet? Oh, yes," relates Brian, who is the engineer for Crawford's WMUZ-FM, WEXL-AM and WRDT-AM in Detroit where the Bob Dutko show is syndicated. But, he adds, the internet has become so much more reliable in recent years.

His group was able to successfully switch over to Internet program distribution for its Bob Dutko nationally syndicated show using the Tieline Genie, now available with WheatNet-IP inside. Crawford Broadcasting's Detroit location is a Wheatstone facility.

Here's some more advice for anyone wanting to do the same:

Go to: INN18.wheatstone.com



Oh, The Voices - Part II Adjusting for Taste

by Steve Dove, Minister of Algorithms

Here's what else you need to know about getting the most out of talent voice, starting with what frequencies to tweak.

The most basic, and arguably the most powerful, tool for getting vocals to sound good is equalization.

A low-frequency shelving equalization section can do a good job of correcting for proximity effect. A wrong-headed approach is to try to use the high-pass filter to do this - generally they are too steep (too rapid a rolloff) to be a good match for the more gentle tilting response. A shelving section is far more suited.

A high-frequency shelving section is excellent for establishing an overall tonal balance for the presenter/microphone combination, particularly once any sibilance issues have been dealt with by the de-esser, and proximity effect is dialed out with LF shelving. Particularly bright microphones (budget condensers in particular named and shamed) can benefit mightily from de-brightening with this section!

A parametric, or sweepable bell-shaped equalization section, can be of use in minimizing unfortunate characteristics of the microphone. (Or indeed of the presenter...) In particular, some dynamics and certainly some lower end condensers have a high-mid boosting peak, in the name of "articulation" but which in today's better and more controlled air-cha environment can just plain sound harsh. Dialed in to, say, between 2kHz and 5kHz with a fairly low Q (broad bandwidth) and just a touch of cut can make a world of difference.

More tips from Steve for adjusting the voice can be found here:

Go to: INN18.wheatstone.com



College Station Heads Overseas for Remote

KFJC(FM) broadcasts from Liverpool International Festival of Psychedelia

COLLEGERADIO

BY JENNIFER WAITS

I've been a volunteer and DJ at Foothill College radio station KFJC(FM) in Los Altos Hills, Calif., since 1998, and during that time I've been impressed by the technical and engineering expertise of the station's volunteer staff.

Every year KFJC seems to take on more ambitious projects, masterminding international live remote music broadcasts from England in 1996, New Zealand in 2000 and Tokyo in 2008, for which KFJC added live streaming video.

This September, a handful of KFJC volunteers traveled to England to oversee a live remote from the Liverpool International Festival of Psychedelia.

Using a mix of equipment owned by KFJC and borrowed or rented in the U.K., the station was able to broadcast from multiple stages at the two-day festival. Listeners around the world could listen and watch live video streaming (in HD) on KFJC.org and San Francisco Bay-area residents could tune in to listen over 89.7 MHz.

Across the pond, my KFJC colleagues were working around the clock to ensure that the broadcast went smoothly.

It was a bit of a nail-biter on the first day of the festival. Back in the U.S., I didn't know the details, except hearing that it was "Internet problems." When I first saw images from Liverpool appear on KFJC's livestream page, I was elated and imagined the crew was breathing a collective sigh of relief.

KFJC Promotions Director Liz Clark told me that she first learned about the festival when the 2013 lineup caught her eye.

After some discussions during KFJC management meetings, there was general interest in broadcasting the 2014 event. Things really came together after KFJC volunteer and remote broadcast engineer Brian Potter enlisted his U.K.-based nephew to help make a connection with the festival organizer. According to Potter, his nephew explained enough

about KFJC to "pique his interest." Potter then phoned him, telling him, "we've been doing stuff like this for years," and the possibility of the live remote became more likely.

GRAPPLING WITH THE INTERNET

Potter is himself from the U.K. and serendipitously was heading over for a short trip. This gave him the chance to meet with the festival organizer and see the venue (an old industrial space called Camp and Furnace) in preparation for the remote.

After testing the Internet connection,

Potter said that he realized they had a problem.

"The venue DSL was in the region of 500Kbps upload, nowhere near enough for reliable audio and HD video. Elevator Studios had 1Gbps ... The wireless link was a pair of Ubiquity Nanobeam devices."

Undeterred, he took pictures and notes and brought home plenty of information and diagrams. He's a veteran of KFJC live remotes; Potter went to KFJC's first out-of-state live remote during the South by Southwest Festival in Austin, Texas, in 1994 and also traveled to

remotes in London, Tokyo, Milwaukee and Providence. So he was prepared to tackle the Internet challenges.

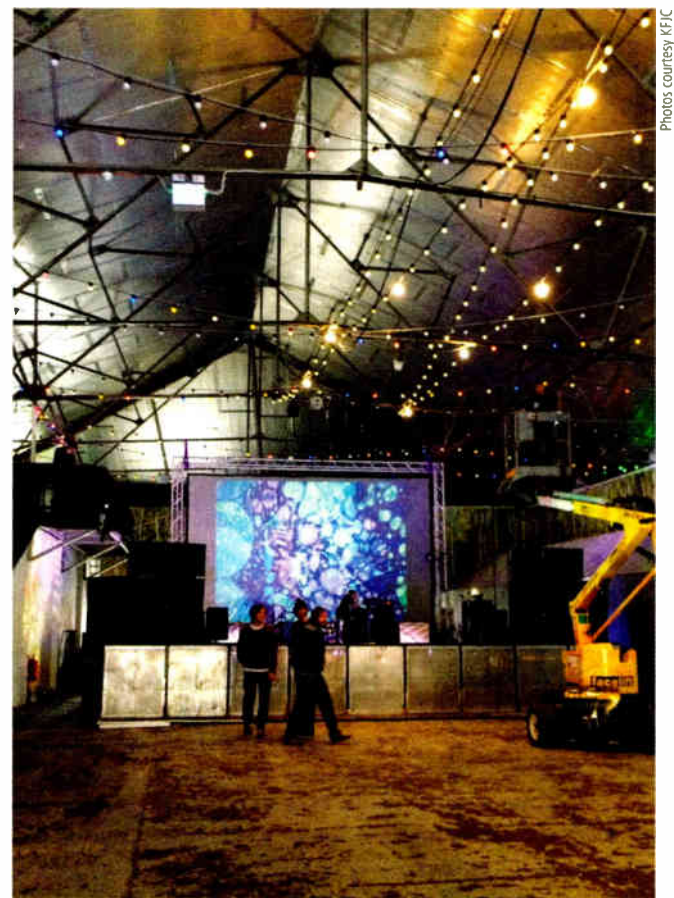
Volunteer and student Jacob Choplin explained, "The upload speeds were far from what was required for our broadcast." The KFJC team arranged for the venue to install a new Internet connection. Choplin said that when they found out that it hadn't been installed two weeks before the festival, they "started working on a backup plan."

Luckily, there was a really fast connection across the street from the venue at the Elevator Studios complex. So, KFJC purchased a wireless bridge setup, in case the backup Internet was needed.

When the crew arrived in Liverpool for the festival, the venue's satellite Internet connection still hadn't been set



Jacob Choplin is back at the station in California after the festival, showing off part of the wireless network bridge that saved the day.



Last-minute prep before the festival.



KFJC gear, shown inside the venue before it was set up.

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up. Desperate, they tried to align the satellite dish themselves, but couldn't get it to work. As sound check began, it became clear that Plan B would need to be enacted.

Potter and Chopin then set up a wireless link dish in each building and scrambled to find a way to access the connection at Elevator Studios. After searching throughout the building, they finally found a router, got permission to use it, connected a cable to it, and were astonished by the speeds. Although this was great news, they still had to get the Internet from the dish (which was 20 feet above the audience at the venue) to the KFJC broadcast booth.

After securing a long Ethernet cable and tying "a special knot," Choplin tossed the cable over a brick wall and over the crowd in order to make a connection to the booth and start the live streaming (several hours later than planned). Things went smoothly after that, with the connection in place for the remainder of the festival without a dropout.

Although the live broadcast was delayed, audio engineers from KFJC recorded performances throughout the day and broadcast them later.

While the Internet problems were being sorted out, the rest of the KFJC crew was busy not only recording live bands, but also conducting interviews with the artists.

INTERVIEWING ON THE FLY

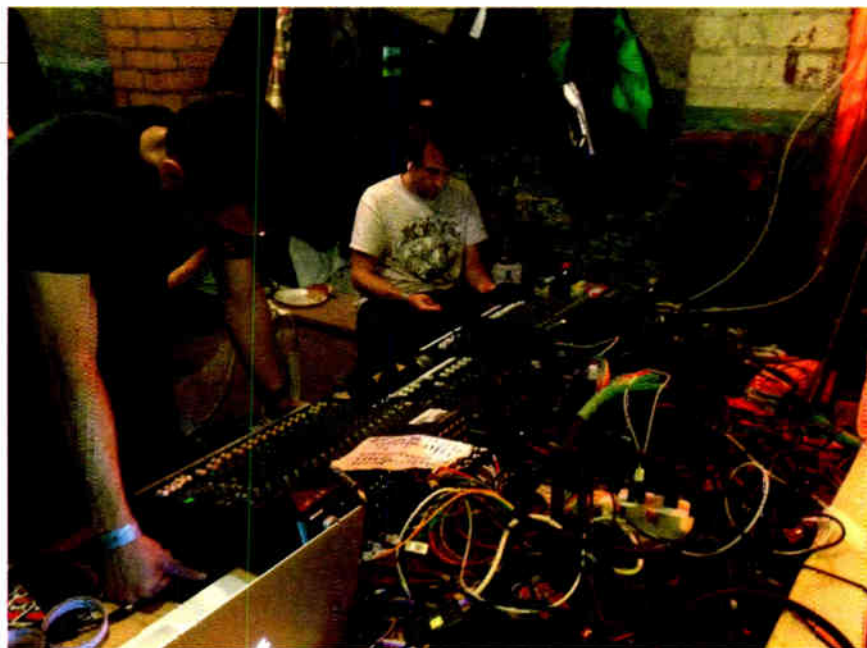
Clark told me about her evolving role during the festival.

"I went over there thinking that I would see a lot of bands and perhaps interview a few, but it turned out quite differently," said Clark. "Fortunately for KFJC, the Liverpoolians provided us with a great 'artist liaison' who was able to corral most of the bands for interviews ... Because everyone was so busy trying to get the broadcast going, I ended up coordinating all the interviews and conducting most of them on Friday. Saturday... I still coordinated the interviews, but others had a bit more time to talk to the bands."

KFJC volunteer and student Zer Barokas talked to some bands (using a Zoom recorder) and did all of the audio editing for the interviews. Throughout the festival, artist interviews were played between acts. Additionally, KFJC brought along a microphone so that the volunteers on the scene could announce the bands and introduce recorded segments or music (which they brought on an iPod).

MULTIPLE CAMERAS ON MULTIPLE STAGES

In addition to the audio work, KFJC installed eight HD cameras to film the performances. For the video setup, they mounted two pan-tilt-zoom cameras



Ryan Peterson and Eric Johnson worked out of the makeshift KFJC headquarters.

high above each stage and positioned two wide-angle cameras on each stage. They rented fiber optic cable in order to cut down on the amount of cable required. KFJC brought its own cameras from California and borrowed four others from station volunteers.

Over the course of the festival, KFJC filmed from three stages, so at one point the video setup on one of the stages was moved to the third stage.

"We built camera stands for the GoPros out of mic stands so we could move them easily," said KFJC volunteer David Reid. "Moving those around while the bands were on stage was pretty cool."

After the cameras were positioned, the filming was controlled by KFJC volunteers, who could move and switch between cameras remotely.

LIVE MIXING

KFJC audio engineers worked off of Mackie boards in order to do live mixes of the performances. KFJC rented three boards in the U.K., including a 1402 to use for master control and two 1604s to use for the live mixes from two stages.

KFJC volunteer audio engineer Ryan Peterson and KFJC's General Manager Eric Johnson did the audio mixing in Liverpool.

Peterson said that they were in a pretty visible location, but far from the noisy bar. He explained that since they weren't hidden away, their presence "generated some interesting questions and interactions with audience members." He told me that, "more than one person [mistook] us for a giant cell phone charging station."

At the end of the festival, KFJC recorded two bands at once, White Hills and Goat, on separate stages. Peterson said that Johnson "was mixing White Hills, which went out live while I mixed Goat, which we replayed afterwards." He added that this, "rather interestingly resulted in us doing two separate audio

mixes and two separate video mixes at the same time, with only one video computer and some cable swapping."

In contrasting the Liverpool live broadcast setup with the last KFJC international live remote from Japan in 2008, Potter explained how things have changed in seven years.

"In Tokyo, we used our old remote gear: the audio feed was sent using a Telos AudioActive box in conjunction with a Linux laptop; video used standard-definition cameras in conjunc-

tion with a Windows laptop," said Potter. "We used the club's DSL line to send it all back to the station across the Internet."

"In Liverpool, we used a nice new Telos ProStream for audio, no extra computer needed, and video used high-definition cameras in conjunction with our Livestream HD500 video switcher. We used an adjacent building's gigabit fiber Internet connection."

Potter explained that everyone worked well together, with people pitching in to help with a variety of tasks. The team at the festival was also supportive. Barokas remarked that "the local sound guys who were working on Psych Fest were ... just incredibly patient and helpful."

Clark also mentioned that it was great to get "turned on to some fantastic bands" like Lay Llamas, While Hills, Zombie Zombie and Goat.

KFJC undertakes these live remotes to expose listeners to music that they might not hear otherwise; Liverpool International Festival of Psychedelia certainly fit the bill.

Jennifer Waits is a writer, college radio DJ and independent radio scholar. She contributes to the blogs SpinningIndie and Radio Survivor.

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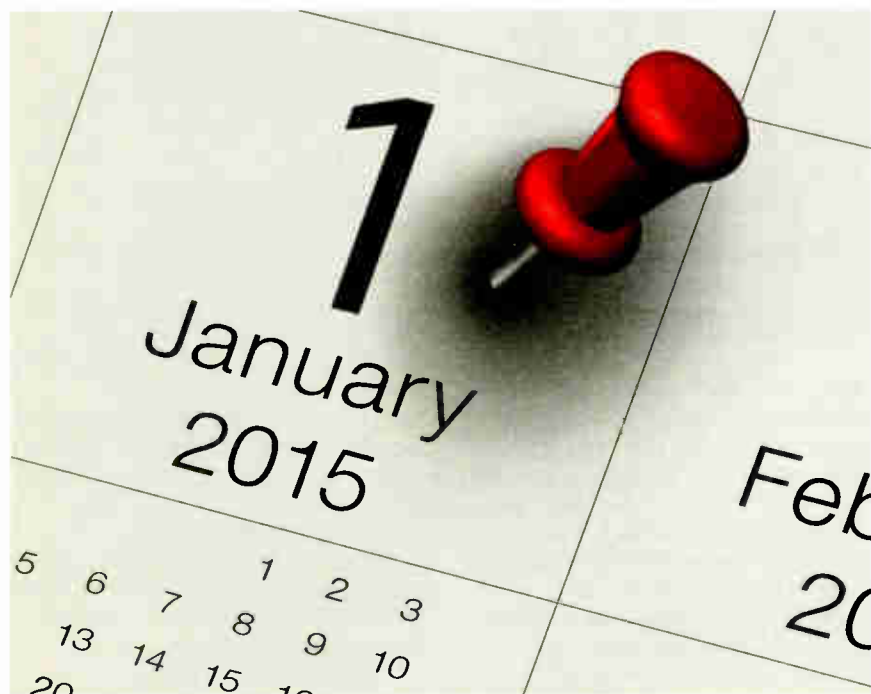


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January Sets the Tone for Your Team

Managers, this is the time to plan for a successful year



“As January goes, so goes the rest of the year!”

This adage, long used by those who play the stock market, applies equally to our industry.

A well-thought-out plan, realistic projections and positive internal communication set you up for a successful first quarter, which makes the rest of the year so much more profitable and fun.

Don't freak out if you're not ready. We'll keep that little secret to ourselves as long as you can quickly dedicate one full day to fast planning.

How to start? Every great plan begins with two things: lists and calendars.

The mission at hand is tactical. Due to the budgeting cycle, you no doubt already have ratings and revenue projections. Rather than guessing how you're going to cross the finish line each quarter, the list we're about to make will provide the necessary achievement structure.

RATINGS

Are your established characters (talent, hosts, DJs) ready to deliver an ongoing, easy-to-follow plot that revolves around relatable local events, issues and holidays?

List the events, activities and potential stunts that have a chance to spark emotional connections for each of them. Talk over the list with talent and then put them on the calendar. Sure, the dates and activities will change, but having placeholders helps push action.

Even talk, news and information sta-

tions — which rely on ever-changing topical subjects — benefit from a predictable framework as a foundation for being a reliable friend to listeners.

Can you come up with one event/activity/promotion that your entire staff can get behind once per quarter? If you devise these now, your sales department will actually have enough advance warning to solicit sponsorship dollars effectively.

MARKETING

Shrinking marketing budgets, or no budget at all, makes planning all the more important.

How will you get the word out? Partnerships with local websites, content integration in social media and trade with television stations should all be considered and scheduled piece by

PROMO POWER



Mark Lapidus

weekly goals for reps. We live in a brutally accountable time for revenue, and the streets are littered with ex-radio salespeople who could not meet the numbers.

More than ever, our sales achievers require positive reinforcement, which includes one-on-one time with mentor-

When you ask for and then listen to feedback, the benefit comes in improving plans, plus you get buy-in and acknowledgement that you have team goals.

piece now. It takes time to develop the relationships and plans for an annual marketing plan, so the sooner you can get to this, the better.

By the way, I hardly ever see radio stations being promoted in local pre-roll prior to watching online video and often wonder why more aren't experimenting in this high-growth media opportunity.

REVENUE

Out of necessity, local sales managers are excelling in creating individual

ing managers who go on calls. They also need more education and regularly scheduled motivational sessions.

This is where the planning comes into play.

Schedule time each month with every sales rep to go on calls. Then, three or four times a year at the least, make sure every sales person attends a motivational session with a sales cheerleader who can show them the path to success and happiness. Reinforcement coming from recognized motivational speakers has lasting impact.

What else can you do in January to set the right tone? Over-communicate plans with staff members.

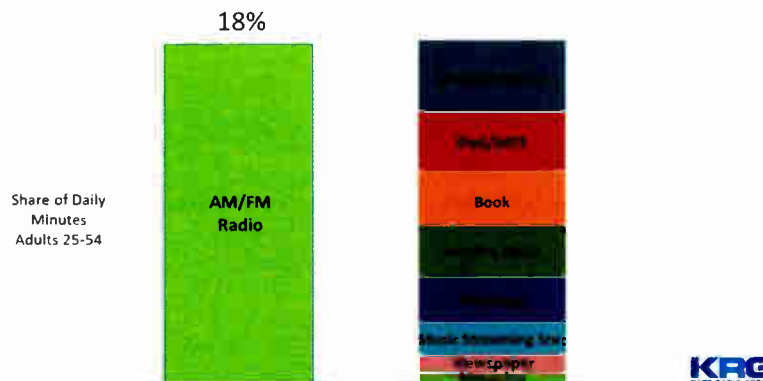
Ask staffers for opinions about plans and alter course when suggestions warrant. When you ask for and then listen to feedback, the benefit comes in improving plans, plus you get buy-in and acknowledgement that you have team goals.

DON'T FORGET TO CELEBRATE

January is also a great time to throw a smaller staff party. Assuming you had a huge December staff get-together, go for an intimate setting so people can actually interact with co-workers more easily. Instead of doing this by department, shake it up by having a mix at each location. Keep the party informal and push just one theme: It's January and we've got an amazing year of possibilities ahead.

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

MORE TIME SPENT THAN EIGHT OTHER AVAILABLE MEDIA



Note: AM/FM Radio includes HD and radio station streaming. Mobile Internet excludes email, but includes Internet usage via mobile, tablet, and eReader. Newspaper, Magazine and Book include digital readership via print, PC, mobile, tablet, and eReader. Music Streaming Service (e.g. iHeartRadio, Pandora, Spotify, etc.) includes via PC, mobile phone, tablet and eReader.

Your sales achievers require positive reinforcement. They will also benefit from professional resources like those provided by the Radio Advertising Bureau ("Why Radio?") to help them make their pitch. The above slide is a sample; find more at www.rab.com/whyradio/deck.cfm.

Job Hunting and Employee Hiring

An employer offers his tips from both sides of the fence

EMPLOYMENT

BY DAN SLENTZ

As someone who has applied for jobs and employs up to 50 employees, I wanted to share thoughts on job hunting.

If you are in the world of broadcast, from engineering to on-air, there are plenty of places to look for work. Monster and Career Builder are a start. For engineering, the SBE.org website is one of the best. There are classified ads in Radio World. If you know of specific employers for which you want to work, keep your eyes on their websites. Many companies have excellent job listing sections, whereas educational websites can get bogged down by other types of jobs.

Know and understand with whom you are applying. Have some idea of who is running the show and the financial status of the company. If the company is publicly held, research its stock because your livelihood rests on the strength of the leadership. Follow the trends of the businesses and take note of how frequently jobs appear to open up (or not open up); that can be a good indicator of employee satisfaction.

Know the cost of living and other data about where you might be going. I like Sperling's cost-of-living calculator online (bestplaces.net/cost-of-living). Another excellent resource for understanding where you might be going is city-data.com.

REFERENCES AND RÉSUMÉS

Your references are one of your most valuable assets on your résumé. References are professionals willing to say that you know your stuff. When I hear from numerous candidates and a few provide references while one doesn't, guess who is last to be "asked for references," assuming the others were solid enough on the phone interview?

As a matter of format, use no more than one font. Make the layout "formal" and consistent.

Don't get cutesy. We're going for professionalism, so leave the colorful printing and goofy fonts off your resume.

Be sure to spell check, and spell check again — then have someone else check the spelling and grammar. Don't look as if you're sloppy or don't care or you're probably not going to get a call.

Submitting a résumé is work, or it should be. Each should be tailored to the job for which you're applying. Again, apply for jobs with employers with which you really do want to work.

As someone who has been on both sides of that fence, it's hard to not to question why someone spent only a year at their last job. Be prepared to give a reasonable and honest answer if you've made a few "jumps."

INTERVIEWING

Hiring managers: Remember that you were in the candidates' seat at one time.

I treat every person who submits a résumé as I'd like to be treated. I give a generic response telling someone that I appreciate their time in applying and if it appears their qualification meet our needs, I will be back in touch. I also try to include a timeframe on filling the job.

I usually communicate via email initially and expect these people who've applied to respond within 24 hours. I see this as an example of their enthusiasm and true interest in the job I've posted.

It's my opinion that the rudest thing a prospective employer can do is to conduct a phone interview and then not respond at all or followup in any way. You've just taken the person's time and left them hanging without so much as a followup email to say that you didn't feel "the qualifications met our current needs" (a reasonable explanation).

If you meet with a candidate face-to-face and decide not to hire them, I would suggest that you owe that interviewee a phone call or email to thank them for their time and let them know that you've "decided



to go a different route." Don't keep them "on the hook" for days.

DOING A LITTLE MORE

There's one other thing I've done when hiring new employees (who are relocating) that I find almost shocking that others don't do: Welcome them!

You've just spent a lot of time reading many résumés, interviewing numerous people, then finally negotiating and committing to one person. You're just going to let them fend for themselves?

As a former member of the U.S. Air Force, I experienced the welcome package, designed to help service members and families understand and familiarize themselves with the area's culture and the new base (location).

I've taken this as a great example of a way to make new employees feel welcome at my stations and make sure they had an easy transition to this new area.

That little gesture creates a great first impression with your new employee and helps them to feel invested and confident in the life change.

Share your own ideas about job hiring and job seeking. Write to radioworld@nbmedia.com.

Dan Slentz has just accepted a position with a family group of stations in Fort Myers, Fla.. He will now serve as the director of engineering for WINK, which includes two TV stations, five FM stations and four AM stations.

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Focal Press Updates “Keith’s Radio Station”

Classic textbook’s ninth edition carries on a rich tradition

EDUCATION

BY DICK TAYLOR

Thirty years ago, Michael C. Keith entered a small New England college to start a new career. Keith had spent the past 10 years as a professional broadcaster and was now transitioning into the world of teaching.

The first thing that he would learn was that the textbooks available on the subject at that time were woefully out of date. Radio was now format-driven and there were no textbooks available in 1986 teaching the kind of radio Keith had just left.

So he decided to write his own. He called it simply “The Radio Station” and he pitched his manuscript to Focal Press.

Focal Press immediately embraced Keith’s work and rushed the manuscript into print. “The Radio Station” became the most widely adopted textbook on the subject in its first year. Keith would go on to author seven more editions over three decades, keeping the material fresh and relevant — covering radio’s programming, management, sales and engineering.

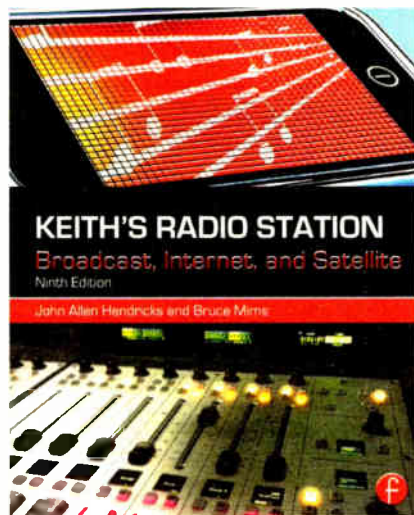
In that time, Keith would interview hundreds of radio professionals, from the all-night disk jockey in western Nebraska to the president of ABC Radio, integrating their knowledge and experience into a how-to book about the radio industry. The book has been translated into multiple languages and is used around the world.

THE NEXT CHAPTER

Three years ago, Focal Press realized that the textbook again needed updating, given the many changes that had occurred in the radio industry, including the advent of streaming, websites and the Internet.

When the company contacted Michael Keith to author a ninth edition, he felt he was no longer up to speed on the digital influences that had dramatically transformed the medium of radio. With his blessing, Focal Press advertised in the world of academy for new blood to author the next edition. It also decided to rename the ninth edition “Keith’s Radio Station” to keep Keith’s name and legacy part of the next installment of the textbook. It was published in June.

Of the many educators who threw their hat into the ring to be part of authoring the ninth edition, the publisher selected Dr. John Allen Hendricks, professor at Stephen F. Austin University, and



Dr. Bruce Mims, professor at Southeast Missouri State University. Hendricks has authored and/or edited eight books. Mims has published in multiple academic and profession publications. Both have worked in public and commercial radio.

However, maybe their most important qualification was their use of Keith’s “The Radio Station” in their classes. Mims has been using “The Radio Station” in his classes for over 25 years. Hendricks said he was 16 when he was exposed to Michael C. Keith’s “The Radio Station” and subsequently adopted the textbook in his radio classes when he became a college professor.

Before entering the world of collegiate education four years ago, I was a professional radio broadcaster for over 40 years. I started as a DJ on weekends and worked my way up to the general manager’s office.

The Telcom Act of 1996 would see dramatic change to the radio ownership landscape as the ownership caps were lifted and a single company could own hundreds of radio stations; Clear Channel would amass more than 1,200 at its largest. Radio clusters would be formed and general managers turned into market managers. I was one of those market managers for Clear Channel (now iHeartMedia), the largest radio company in the United States. I tell you this because the radio people you’ll meet in “Keith’s Radio Station” are ones I know personally; each are the best in their area of expertise.

HIGH STANDARDS

Life is full of irony.

One story Michael Keith shared with me was about Lynn Christian, former Century Broadcasting president, senior vice president at both the National Association of Broadcasters and Radio Advertising Bureau, who

once employed Keith many years ago in Miami and fired him.

Twenty years later, Keith received a phone call from Christian. He said he wanted Keith to know that he insists that every single person in his organization reads “The Radio Station” when they are hired. Christian said that after 45 years in radio, it was the first time he’d ever seen a book that really embraced what radio is all about.

“There’s never been a college textbook before that truly prepared students to become professional radio broadcasters,” Keith reported that Christian told him. Keith said for him that was “frosting on the cake” — to have created a book as meaningful for the industry as it was for college students studying it.

Over the years, people like top 40 innovator Rick Sklar and AOR/satellite radio pioneer Lee Abrams have written forwards for the “The Radio Station.” Jay Williams Jr. and Ed Shane also made huge contributions to the ninth edition, the authors acknowledged.

Hendricks and Mims maintained the

high standard that Michael Keith set by including biographical information on the radio professionals who contributed important sections covered by the textbook.

Focal Press has created a companion website in addition to the textbook. The historical data that used to be included in the previous editions of the textbook has been migrated over to the website so that it can be kept fresh and up to date. Additional professionals have been asked to contribute material for the website; I am one of those professionals sharing my experience in the area of radio sales.

“Keith’s Radio Station” maintains the rich tradition of being a book that both college students as well as radio professionals will keep within close reach as a handy reference.

The ninth edition is 536 pages and retails for \$59.95.

Dick Taylor is a Certified Radio & Digital Marketing Consultant and assistant professor of broadcasting at Western Kentucky University in Bowling Green, Ky. He joined the faculty of its School of Journalism and Broadcasting after a 42-year career in radio. He is director of the KBA WKU Radio Talent Institute and remains on the board of the New Jersey Broadcasters Association.

INSIDE “KEITH’S RADIO STATION”

Topics listed after each chapter are a sampling of the contents, not a complete list.

Chapter 1: State of the Fifth Estate — includes the HD Radio Revolution, Satellite Radio, Internet Radio and Online Music Services, etc.

Chapter 2: Station Management — includes Managing the Cluster, Manager and the Profit Motive

Chapter 3: Programming — includes Programming a Cluster Operation, Station Websites, Podcasts and Blogs

Chapter 4: Sales — includes Selling With and Without Numbers, Website, HD Radio, New Media Selling

Chapter 5: News — includes The Electronic Newsroom, News Ethics

Chapter 6: Research — includes Qualitative and Quantitative Data, From Paper to Electronic Measurement: The Portable People Meter, the Future of Radio Research

Chapter 7: Promotion — includes Promotions in a Digital Era, Budgeting Promotions, Promotions and the FCC

Chapter 8: Traffic and Billing — includes Traffic in Clusters, the FCC and Traffic

Chapter 9: Production — includes Digital Editing, Voice-Tracking, Computers and Software

Chapter 10: Engineering — includes Satellite and Internet Radio, Digital Audio Broadcasting (HD Radio Technology), The Emergency Alert System, Automation

Chapter 11: Consultants and Syndicators — includes Consultant Services, Consultants Pros and Cons, Program Suppliers, Syndicator Services, Hardware Requirements and Quality

The list of contributors and those quoted in the book includes Mike Dougherty, Gary Berkowitz, Paul McLane, Wayne Pecena, Larry Keene, Dave Scott, Ed Shane, Glenn Halbrooks, Lori Lewis, Warren Kurtzman, Ted Bolton, Ed Cohen, Tim Scheld, Jeff Magram, Andy Ludlum, Holland Cooke, Weezie Kramer, Jason Insalaco, Wolf Korgyn, David Gleason, Rick Ducey, Frank Bell, Peter Stewart, Lorna Ozmon, Mike Janssen, Erica Farber, Paul Fiddick, Dick Oppenheimer, Norman Feuer, Eric Rhoads, Dr. Rob Quicke, Paul Goldstein, Glenda Shrader and Valerie Geller.



Greg Monti and Bob Mack look at the codecs that deliver programming from outside producers to the Purchase network technical operations center.

Cumulus Media Settles In at New NTOC

Company focuses the design of its new 10,000-square-foot facility entirely on the needs of distribution

FACILITY PROFILE

BY SCOTT FYBUSH

PURCHASE, N.Y. — You can't see it amidst the neat wiring and gleaming surfaces of Cumulus Media Networks/Westwood One's new network technical operations center north of New York City, but there is plenty of history underlying the facility that's celebrating its first anniversary.

When Cumulus moved to its new home in an office park in Purchase, Westchester County, it closed out almost 30 years of network operations in ABC's historic facility at 125 West End Avenue on Manhattan's Upper West Side. By 2011, a series of ownership changes — first Citadel's purchase of ABC Radio from Disney and then Cumulus' acquisition of Citadel — had turned the former ABC Radio technical operations center into the New York hub for Cumulus. The aging plant and Cumulus' status as a tenant in a Disney/ABC-owned building made relocation a priority.

"It was fairly obvious we needed a new plant that switched audio over IP," says Bob Mack, vice president of engineering. "What did take a lot of time was figuring out where to build it."

You want to find the promised land, you follow the fiber.

— Bob Mack

Even in a city with as much commercial real estate as New York, Mack says it was surprisingly challenging to find space that met all of Cumulus' specialized needs: access to multiple fiber providers, southern sightlines for satellite reception and 24/7 cooling and power supply. To meet union requirements, the new master control had to be within a 25-mile radius of the old West

End Avenue plant.

"A lot of places met most of those objectives, but not all of them," said Mack, recalling what turned out to be several months of visits to more than 40 buildings scattered through all five boroughs of New York City, northern New Jersey, Long Island and Westchester County. Among their stops, the quest took the team out to the Lodi, N.J., transmitter site of WABC(AM), where Cumulus inherited space that had been used to store and maintain ABC Sports remote trucks — and where field-strength meters showed several volts' worth of RF field strength from the nearby 50 kW transmitter.

Gary Kline, Cumulus' vice president of engineering and information technology, sent Mack and Greg Monti, senior VP of operations and engineering, out to examine data centers in hopes of finding the right combination of fiber, cooling and power. That ended up leading to undesirable rent structures — "data centers charge by the watt, not by the square foot," Monti notes — but it did get the Cumulus team on the right path to the site they needed.

"You want to find the promised land, you follow the fiber," Mack says. That thread of glass led up to the I-287 corridor across Westchester County, 20 miles north of the city, where multiple fiber providers all converge to link New England to New York City and points beyond.

"We have better connectivity here than we had at West End Avenue," Monti says of the Purchase location, which is served by six fiber providers.

MOVING ON

Unlike the old ABC space, which put the network master control at the center of a floor filled with studios and the ABC Radio newsroom, Cumulus was able to focus the design of its new 10,000-square-foot facility entirely on distribution. Visitors enter into a hallway alongside a wall of windows looking into the rack room that makes up the heart of the facility. In Manhattan, master control operators worked right in the rack room, scurrying back and forth among the racks to check on incoming feeds, dial up ISDN connections and move patches around in bays. But times have changed: Now that codecs and satellite receivers can all be controlled remotely by IP and patch bays are a thing of the past, Cumulus Corporate Engineer Michael Gay was able to separate the control room from the rack room. Operators in Purchase enjoy outside light from a wall of windows behind them; in front of the Omnirax furniture that fills the control room, another wall of windows looks across a hallway into the rack room.

When it came time to decide how to fill the rack room, one decision was easy: Mack and Monti say there was no question the new facility would continue to use the Harris (now Imagine Communications) automation that had been at the heart of the old Manhattan plant, where it was originally installed

(continued on page 24)

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(continued from page 23)

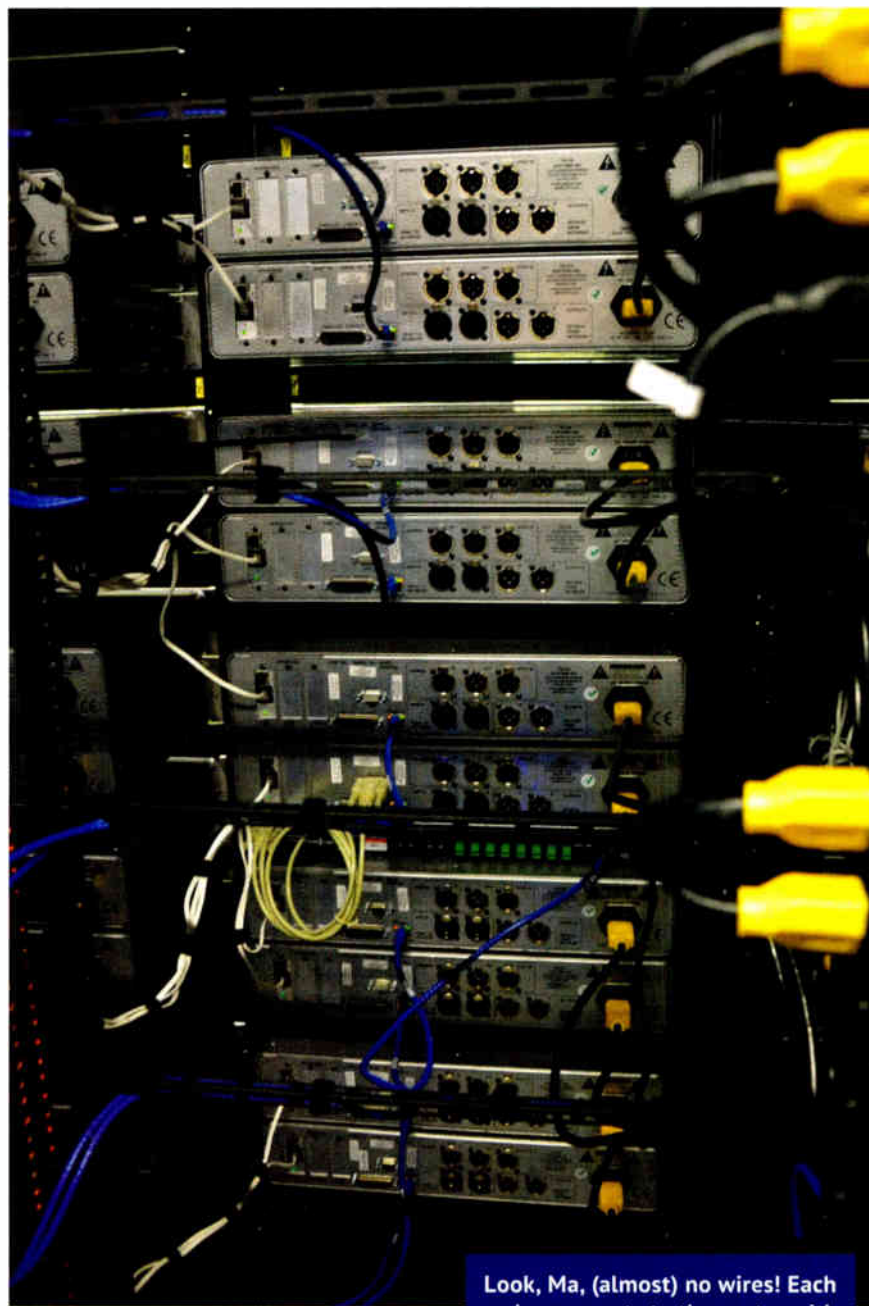
under the McCurdy brand name in the 1980s. In Westchester, the Harris Series D automation serves as the ringmaster to control systems that may be more familiar to a typical radio station: Axia's Livewire audio over IP system transports audio around the plant through a Cisco 4510 router. Netia automation stores and plays out audio, and Telos, Comrex and Harris Intraplex IP and ISDN codecs bring in live audio from the dozens of providers who distribute their programming through this facility. (Instead of trying to get new telco-based ISDN service, which is becoming more challenging, the plant uses T1s through Adtran modules to generate its own ISDN service.)

Behind the racks, Radio Systems' StudioHub connections tie everything together through 48-jack panels of Cat-6 connections back to the router. "You never have to pull a wire," Mack boasts of a plant designed so that analog audio never travels more than seven feet before hitting a digital node. Axia's iPorts extend connectivity to locations

INSIDE THE OPERATION

Courtesy of Bob Mack, here are the "main equipment pillars" for the Purchase network technical operations center:

- Process and control automation: Imagine Communications (Harris) D-Series automation
- Audio and GPIO switching: Axia Audio
- Audio content management and storage: Netia
- ASI transport: Evertz
- Satellite Distribution: XDS
- Servers: Dell
- Switches: Cisco
- Backhaul equipment, importing audio and control from other locations: Axia iPort, Telos xStream and Z/IP, Comrex Access, APT Oslo WorldNet IP, Harris IP100, Harris Intraplex, CCS Suprima



Look, Ma, (almost) no wires! Each codec connects to the router with a single Cat-6 cable. This is a far cry from the nest of wiring found in the previous NTOC.

outside the building, including Cumulus Media Networks' production center in Dallas, which can also serve as a backup network TOC in an emergency. Dallas is one of two uplink points; it and the main uplink in nearby Stamford, Conn., are both fed directly by fiber from Purchase. There's a 750 kVA generator serving the building, and more than six hours of UPS capacity before the generator even needs to kick in.

Brian Wilson, senior director of technical operations, highlighted the capabilities of the AoIP system. For instance, with the ability to switch 200 audio buses, "we need silence sensing," Wilson says. "You've got one guy in master control, and we need to be able to pinpoint where there's a problem." In Manhattan, that meant a forest of hardware-based silence sensors all wired back to warning lights in master control. In Purchase, it's done virtually through Axia, which creates its own software-based silence sensors.

Wilson and the Cumulus team studied the workflow at West End Avenue to determine how to lay out the new master control in Purchase, with an eye toward providing as much control as possible to operators without ever having to leave their desk.

TOP CREW

It's an experience Wilson and his management colleagues got to take on firsthand as construction was underway. After the site search wrapped up in the summer of 2012, a year passed while the space was readied for occupancy and equipment was purchased. Cumulus went on a crash course in the summer of 2013 to build out its new plant, bringing in six to eight engineers at a time from local Cumulus stations as far away as Dallas, Houston and Reno to work in

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Photos by Scott Fybus



Master Control Operator Angel Bourdon is in the new Purchase network technical operations center.

shifts alongside vendors and a systems integrator to get everything in place and wired up.

“We had a whole crew of the best and brightest chief engineers Cumulus had to offer,” Mack says. “Everyone was given a plan and told, ‘Do it,’ and that’s when the cardboard started to fly.”

By September of 2013, the first services were beginning to originate from

Purchase, but Cumulus needed to continue to staff the Manhattan master control as well. So while the regular master control staff did their jobs in New York, it was up to Mack, Monti and Wilson to keep up a 24/7 rotation among themselves to oversee the new facility in Purchase.

Wilson says it was a valuable experience to be back in the operator’s chair

where he’d spent his first 15 years with ABC. “As systems change, there’s nothing like sitting in the seat, answering the phones, to evaluate the workflow.”

Wilson, Monti and Mack spent more than two months on full-time master control duty at Purchase, all while working to move more services

from Manhattan to Westchester. By December 2013, the last of Cumulus’ clients had been relocated, the West End Avenue facility was closed down and the master control operators were settling into their new home in Purchase — just in time for another big change.

We had a whole crew of the best and brightest chief engineers Cumulus had to offer.

— Bob Mack

Its merger with Westwood One means more than just a new sign on the door outside the Purchase NTOC. Inside, the services Westwood One had been offering on its IDC satellite system, including CBS Radio News, were transitioned to the Cumulus XDS system, though the existing Westwood/CBS TOC also remained in place in the CBS Broadcast Center in Manhattan. But, it should be noted, that at the start of 2015, Westwood One will begin distributing Westwood One News, a customized news service powered by CNN, cutting the last of its ties with the ABC network that was once the cornerstone of the operation.

Scott Fybus is a long-time contributor to Radio World.

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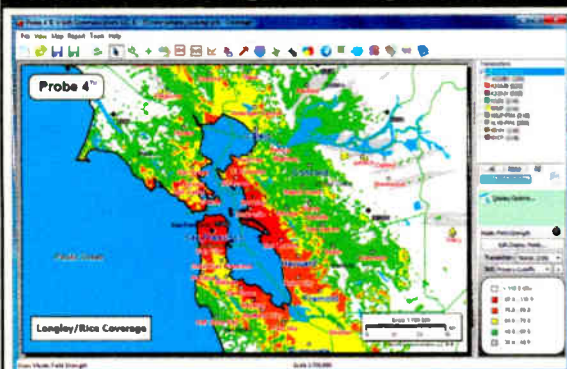
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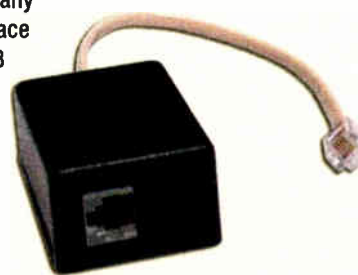
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Alerting: Act on the Lessons Learned

BWWG's analysis of EAS issues and what to do to improve it

COMMENTARY

BY RICHARD RUDMAN

The author is a core member of the Broadcast Warning Working Group.

The Oct. 24 bogus Emergency Alert System Emergency Action Notice is only one of a number of issues that have confronted EAS stakeholders since we began our enhanced public warning journey in 1997.

Exactly how this bogus alert happened is still being investigated, but what occurred is only one symptom of many remaining structural and operational emergency public warning problems in the EAS, and in the entire range of what we refer to as Emergency Public Information.

We must squarely address all these problems before we can have a truly secure, effective and reliable EPI structure that includes the EAS. We should also stop to recognize the amazing contributions of EAS subject experts, vendors, other stakeholders and employees of our federal partners who still believe that the time and effort to improve EPI is worth it.



Richard Rudman

do to improve the EAS. The BWWG encourages all EAS stakeholders to agree or disagree with us via Radio World or at eas.radiolists.net.

OUR MISSION

Conflicting interpretations of what Part 11 requires contributes to the harm done to the overall EAS mission, effort and reputation.

We must also reinvigorate the EAS mission in the hearts and minds of all stakeholders who have public warning responsibilities. This most certainly includes those of us who take on the thankless volunteer effort of setting up and main-

and if the FCC makes changes to how EAS works. At this time, no one can say for sure how this will affect overall warning propagation, or how we can migrate legacy warning systems to be fully compatible with enhanced capabilities made possible by the Common Alerting Protocol. Obstacles like this may well stand in the way of many EAS improvements.

The FCC will likely issue revised rules for EAS authentication and secu-

EAT and NPT message created only by the Presidential Entry Point system and authorized test encoders, recipient equipment would compare the validation code of the enhanced message header to the prior downloaded and locally stored code. A code match would compel the recipient equipment to automatically and immediately proceed to forward the entire enhanced EAS message in accordance with Part 11 requirements. A non-match would trigger an alarm requiring manual review of the message for verification of origination.

To maintain complete conformance with the SAME coding standard, the validation field would be appended at the end of the EAS message header. The single location code EAN, EAT and NPT message types would trigger the recipient

The Virtual Red Envelope concept is an automated message validation that gets its name from the Cold War-era EBS red envelope that contained codes to validate national activations. This system was never used.

The Virtual Red Envelope system would use the IPAWS servers to distribute a short validation code as part of the Required Weekly Test.

The Broadcast Warning Working Group is only one stakeholder within the community of EAS subject experts and others who have been working with the FCC, FEMA and the National Weather Service on EAS improvements.

Several of our BWWG core members participated in the FCC's fourth Communications Security, Reliability and Interoperability Council. The FCC tasked CSRIC IV with looking at Big Picture issues having to do with state EAS Plans, EAS authentication and security and other aspects to assure that Presidential EAN work correctly. The FCC, unfortunately, did not task CSRIC IV to report on and offer suggestions on all the issues we are about to discuss.

Here is the BWWG analysis of what many of the issues are and what we must

taining EAS monitoring assignments, the volunteer members of local and state EAS Committees know as the State Emergency Communications Committees, or SECC and the Local Emergency Committees.

We are very much concerned that there are no provisions yet for total FCC Part 11 conformance testing for devices installed by EAS Participants, something that the BWWG and others have brought to the attention of the FCC in formal comments.

Making the interoperability issue worse is an unknown number of downstream warning systems and equipment designed using 1990s or earlier legacy Emergency Broadcasting System and EAS attributes. Those embedded attributes may render them useless when

rity issues based on the CISRIC IV report on this issue and public Comments. Other changes may come about on who and how EAS is regulated. It is still too early to tell what will happen. Recent discussions on The EAS Forum have centered on a different type of authentication procedure than has been suggested heretofore.

THE VRE SYSTEM

The Virtual Red Envelope concept is an automated message validation that gets its name from the Cold War-era EBS red envelope that contained codes to validate national activations. This system was never used.

The proposed VRE system would use the IPAWS servers to distribute a short validation code as part of the Required Weekly Test. Upon receipt of an enhanced single location EAN,

equipment to accept the added field for decoding and validation.

To minimize erroneous mis-matches, missed code circulations and the staggered weekly test schedule based on time zones, the system would include the three most recent weeks' validation codes. The EAS message's enhanced header would include all three weeks' codes in the field. If any one of the three codes match, validation would occur. Additionally, recipient equipment that determines that validation codes have lapsed could poll IPAWS for that week's validation code.

While changes and clarifications to Part 11 can fix some EAS deficiencies, the current open FCC Proposed

Rulemaking does not deal with the different ways that EAS devices interpret the current rules. The FCC has never required an overall Part 11 conformance testing procedure.

Our goal now must be to work with all EAS stakeholders to fulfill the promise of enhanced public warnings to help save more lives and property.

IPAWS: A WONDERFUL NAME

The Partnership for Public Warning Inc. was formed as a nonprofit public-private partnership corporation after Sept. 11, 2001 because the United States lacked an overall public warning policy and a means to implement it.

Through a series of reports, the PPW outlined what had to be done.

The Common Alerting Protocol now in use was a work product of the PPW that wrote several seminal emergency public warning reports during its short life.

PPW reports and other actions brought CAP into existence as an open source international non-proprietary standard to issue public warnings over any CAP-compliant warning system, not just radio, television and cable systems.

A few years ago FEMA came up with a great name for what CAP is supposed to do: Integrated Public Alert and Warning System. It did so based on PPW reports.

Still missing as of late 2014 is the overall United States Warning strategy and rules in place to make sure the interoperability features of CAP are truly interoperable. IPAWS is a wonderful name for something that so far does not exist.

Realizing the true potential and public benefits of IPAWS includes but should not be limited to the following:

- Renew and increase cooperation between the primary federal public warning partners, the FCC, FEMA, the National Weather Service and the Department of Justice (AMBER EAS) for all public warning systems — not just EAS.
- Bind state and local EAS committees to state and local emergency management agencies so public warnings can become a truly effective component of emergency response.
- Make sure that EAS participant management is fully engaged. EAS must involve more than the engineering community.
- Take action to rectify how different EAS equipment interprets FCC EAS Rules by making Part 11 requirements uniform and crystal-clear.
- Set a date certain for discontinuing use of legacy EAS equipment as well as EAS equipment that is outmoded and no longer supported by the manufacturer.
- Consider what is being called virtual red envelope authentication for the EAS
- Reconstitute the PPW
- Implement bipartisan Congressional oversight to make sure when IPAWS starts to do what its name promises, it will continue to do so.
- Dollars! We will know that various levels of government take their moral and legal duty to warn seriously if they support the effort with serious funding. Getting warnings to a public at risk should no longer be an unfunded mandate.

We might all start by agreeing to a common goal statement that summarizes what was the driving force to form the PPW: Emergency public warnings must get verified, action-oriented information to the maximum possible number of people at risk so they can take timely protective actions to preserve their lives and property.

EVOLUTION OF EPI

This step will bring into being a class of devices we call warning appliances (#warningappliances) that can get information-rich CAP-based messages to the public without interrupting any on-air program stream unless truly necessary.

Such devices will poll CAP servers as well as legacy EAS sources and display as much or as little information on displays ranging from tiny LCD screens, scrolling video messages on to devices that can work with home video and audio entertainment systems.

This is not a new idea. It was proposed years ago as a natural evolutionary product of CAP. In our opinion, the consumer electronics industry has to step up and create reliable, attractive and easy-to-use consumer warning appliances. The FCC, FEMA, NWS and the U.S. Department of Justice (AMBER) have to all get behind this and push — *hard!*

Congress can help by finally coming up with that unified National warning strategy should incorporate requirements for “warning appliance” features in broadcast and other program stream devices, and stand-alone products.

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

Richard Rudman was one of 17 founding trustees of the Partnership for Public Warning; he contributed to PPW reports about public warnings and the EAS and to developments that led to the Common Alerting Protocol. He is a past national president of the Society of Broadcast Engineers; he is an SBE Fellow and a recipient of its lifetime achievement award. He is vice chair of the California EAS State Emergency Communications Committee.

READER'S FORUM

BBG AND SHORTWAVE

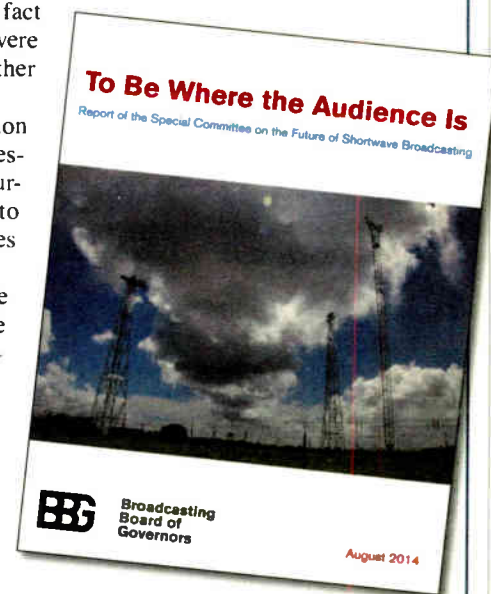
I found it interesting that while the BBG committee eagerly condemned the high cost of shortwave (“Shortwave Audience Still Dropping in Most Markets,” Aug. 4, 2014), they made no comparisons of the cost of switching to other mediums or the availability of necessary infrastructure in the target areas.

Also no mention was made of the fact that, often, shortwave broadcasts were recorded and then distributed in other mediums (i.e. MP3, CD and others).

And finally there is the consideration of the fact that in countries with repressive regimes, the population being surveyed would be afraid to admit to possession or usage of banned devices such as shortwave receivers.

I find that these issues negate the accuracy of the report and indicate that it was prepared to cause inaccurate conclusions deliberately.

*Ken Porter
Porter Services
Marshfield, Mo.*



TELETYPE MEMORIES

I read with interest and not a little nostalgia the 2011 essay by Charles “Buc” Fitch about teletype/teleprinters (“Clack-Clack-Clack-Clack-Clack,” *radioworld.com*, keyword clack). I was an announcer, news reader, classical music host and engineer at a tiny AM/FM radio station during the years of my undergraduate studies in western Pennsylvania.

Buc made mention of KYW’s ubiquitous “clack-clack-clack” as a background to the newsreaders. When my family and I moved from North Jersey to South Jersey (about 10 miles from Philadelphia) a few years ago, I was surprised to hear the sound of that old-fashioned machine. You may be interested to know that even now, in the waning days of 2014, it is *still* used.

*Daniel J. Weitner
Sewell, N.J.*

Photo courtesy John Schneider



San Francisco NBC announcer Bud Heyde checks a row of teletypes in 1954.

READER'S FORUM

WALK DOWN MEMORY LANE

I read with many fond recollections the walk down memory lane as penned by Bill Betlej in the Aug. 1 issue, titled "Work for the Glow."

I lost count years ago of all the trips to the studios and/or transmitter's in the four decades I took care of the technical facilities for radio stations in markets from Brownwood, Texas, to L.A. A few times I've tried to remember the call letters of all those stations as well as their dial positions and transmitter types but without much luck since time has erased so many of them, but what I do recall with vivid memories is exactly what Bill wrote in regards to the "warmth" from the glow of those big glass bottles humming away with the station's programming.

I think this is what got me interested in being a chief engineer. I used to listen to the big top-40 AM in my hometown and the first time I actually got to see the main rig, a Collins 21E 5kw "monster," it was the blue glow from the rectifiers that kept me mesmerized. A few years later, I had my "head in the oven" as it were, changing out a tube socket for one of those bottles when lightning took its toll.

It wasn't all peaches and cream, as many readers can attest. There was that time when the electrician and I were in the elevator at the top of a 1,500-foot tower in Dallas trying to repair a j-box for the antenna heaters that had been hit by lightning and when finished we started the long trip back down only to have the elevator stall some 1,300 feet off the ground. I still believe I could see southern Oklahoma from there.

I consider myself very lucky to have worked in the industry when the kind of memories the article brought back were pre-Internet and pre-computer and radio was fun!

*Steve Keating
President/Chief Engineer
Mission Electronics Corp.
Las Vegas*

AM REVITALIZATION

Here are my suggestions about the AM band to add to Tom King's, with which I agree 100 percent ("King Lays Out 'Critical Steps,'" Sept. 24, 2014).

It is important to the U.S. to improve the quality of the band. My wife and I own WMRO(AM), Gallatin, Tenn., a Class D daytimer at 1,000 watts daytime, 3 watts at night. We are 730 miles from the Class A station we have to protect at night, 1560 WQEW in New York. WMRO should have at least 100 watts at night for ballgames, local nighttime church services, etc., bad weather and community functions that are at night. Class A protection should be lowered from 750 miles to 500 miles from their tower sites so Class D stations can compete, and serve their communities.

FM translators are not the answer to AM's problems. Since the FCC allowed AMs to use translators I know of several AMs abusing the privilege. They turn off the AM and just broadcast on their FM translator. I made comments about this to the FCC; nothing has been done about the problem. To me this is not fair to AM stations that lack translators. Moving AMs to the overcrowded FM band is a huge mistake, and AMs now are trying to compete with new LPFMs as well.

We need to fix the problems on AM, as King is suggesting. Translators are not the answer. I was under the impression that this whole ordeal of revitalization was to focus on AM only!

The FCC and Congress need to work with automobile manufacturers, make them keep AM in the dashboard of automobiles. Improve the quality of the AM signal and bring back AM stereo.

I support digital AM as well; it can be done and be made mandatory. A fellow broadcaster in my area, Bud Walters, made me aware of this a few years ago. I knew there had to be an answer to keep AM in the dashboard of the new automobiles, rolling off the assembly line and to the dealerships. I praise Mr. Walters, owner of the Cromwell Group, for his advice, concerns and playing fair by the rules.

When the FCC extended the band to 1710 kHz, one



or two channels between 1610 and 1700 should have been assigned as Class C (old Class IV) channels. There is a Class C channel to which my station can move, but I can't get anybody to agree with me except my consultant engineers Jim Turvaville and Gary Brown. AM stations should be allowed to change frequency as a minor change of facility, instead of the AM station being stuck on a channel that is far past any good for them. We should be allowed to change frequencies and not have to wait for a "Major Change of Facilities Window," which has only come up one time since 1996 that I am aware of.

Also, AMs should be allowed to use shorter ground radials and towers. In communities all over the U.S., property is scarce, with higher prices and land insufficient to build or move an AM. Zoning laws and home subdivision board members protest tall towers. I have preached to the engineering community for 10 years that something must be done about this problem, and especially for Class D AM stations. This is why some in the past five years have gone off the air. The 282 mV/m required field efficiency should be lowered to a 241 mV/m, same as the Class C stations. Using the Kintronic folded unipole is excellent to meet 241 mV/m field efficiency with shorter ground radials and no high angle radiation at night. This would help AMs tremendously.

*Scott Bailey
Owner/General Manager
WMRO(AM)
Gallatin, Tenn.*

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