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AM Advocates Watch and Worry

Revitalization effort has been deemed spotty while all-digital interest is unclear

BY RANDY J. STINE

This fall marks the seventh anniversary of a Federal Communication Commission Notice of Proposed Rulemaking intended to take a fresh look at the elder broadcast service in the United States and to try to shore its licensees up.

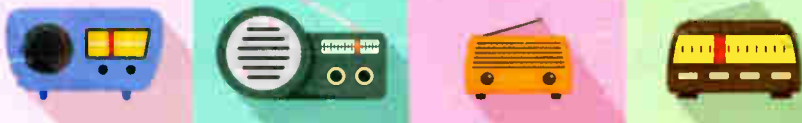
The ongoing effort to "revitalize" the AM band has created opportunities for licensees to use FM translators, modified some coverage standards for daytimers, and introduced some commonsense technical rule revisions including elimination of the "ratchet rule" and the introduction of moment method proof-of-performance.

Al Shuldiner, chief of the FCC's Audio Division, said the commission views AM revitalization "as a big success story" (see sidebar, page 10).

Several observers told Radio World that these moves have provided AM broadcasters some relief but that the economic model for AM licensees, still challenged, has been clouded further by the COVID-19 pandemic.

By far the biggest impact has been the introduction of cross-band FM translators for AM license holders. Now those licensees can serve communities 24/7, reach more listeners and have more of a presence at night.

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Radio Broadcasting Becomes a Reality

Here's how KDKA became the medium's standard-bearer 100 years ago

BY JAMES E. O'NEAL

By the end of the 20th century's second decade, three key elements were in place to fuel radio broadcasting: resonant circuitry, a practical means for generating a carrier wave, and methodology for impressing speech and music on that carrier.

These waited only for someone to combine them in an effective way.

A number of individuals — most notably Reginald Fessenden, Lee de Forest and Charles Herrold — had made varying attempts at broadcasting, but regular entertainment and news broadcasts had not yet emerged.

There was little effort to stimulate interest among the public. Early transmissions of speech and music were directed to radio amateurs. There also

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KDKA takes to the air on the evening of Nov. 2, 1920 with a program of election return reporting interspersed with recorded music. Announcer Leo Rosenberg is second from right in this Westinghouse publicity photo of the broadcast. R. S. McClelland on stool served as a "standby." Also shown are William Thomas, the licensed transmitter operator, and John Frazier, the telephone line "operator."

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Taking the Fear Out of Hybrid Radio

Radio Show session in October aims to help U.S. broadcasters get going with hybrid



BY JAMES CARELESS

A technical session in the upcoming virtual Radio Show will focus on a topic of growing importance to U.S. broadcasters: hybrid radio.

As Radio World readers know, the term refers to in-car radio radios that can receive analog AM/FM or HD Radio over the air but also connect to the wireless internet to download station graphics, song information and station identifications.

Hybrid radios also support interactivity between the listener and the station. And they can switch seamlessly from a station's broadcast signal to its audio stream whenever the vehicle drives out of the station's broadcast coverage area.

For radio broadcasters concerned about losing in-car listeners to non-radio streaming services, advocates say hybrid radio is a timely solution that marries broadcast radio's strengths — free service, localism and wide coverage — with the power of streaming audio including global reach, rich multimedia content and interactivity.

The technology has been talked about at spring and fall broadcast conventions for years but is taking on more urgency as hybrid radio-equipped vehicles start appearing in the United States, and as AM and FM broadcasters watch SiriusXM roll out its own enhanced 360L platform, which includes personalization and on-demand features.

Just this month, Audi of America announced it is collaborating with iHeartRadio to bring the capability to drivers in North America. iHeart is rolling out hybrid radio compatibility via more than 600 stations.

BENEFITS

The session "How Radio Broadcasters Can Support RadioDNS" will be presented on Monday Oct. 5 by Nick Piggott, project director of RadioDNS. It's a not-for-profit membership organization that is promoting the adoption and deployment of hybrid radio globally using open standards.

David Layer, NAB's vice president of advanced engi-

neering, will moderate.

On one level, the presentation will bring session participants up to speed on hybrid radio's progress.

"We'll be talking about hybrid radio's capabilities and what it can do for radio stations as we're starting to see more hybrid radio-capable devices proliferate, particularly in cars," said Skip Pizzi, NAB's vice president of technology education and outreach.

Piggott also will explain how radio managers can move into this medium through their own efforts or by hiring a third-party contractor.

"We'll provide a simple step-by-step guide under the



How a hybrid radio display looks in an Audi vehicle. A small box at right indicates whether the active station source is "FM" or "Web."

headline. "So you've decided you'd like to do hybrid radio," said Piggott.

"It will be reasonably but not impenetrably technical, so that somebody who has a basic understanding of technology within their radio station or radio group can walk away thinking, 'I know how we're going to do hybrid radio. I can see how we're going to do this.'"

The session will include a discussion of the issue of restricting in-car streaming within a station's main coverage area, so that broadcasters do not find themselves paying higher streaming music royalties for content that can be heard easily over the air. This is a software-configurable restriction based on constantly comparing the vehicle's GPS location to the station's core coverage area.

TOOLS FOR BROADCASTERS

As an open-standards advocacy group, RadioDNS exists to help stations understand and implement hybrid

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Radio broadcasters need to get registered with RadioDNS so that their stations can take advantage of the additional station-data presentation and streaming-audio capabilities that hybrid radio receivers provide.

— Session description on the Radio Show website

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What's on the Horizon for Radio?

The fall Radio Show will explore that question over five days of online sessions

BY JAMES CARELESS

COVID-19 notwithstanding, the show must go on — the 2020 Radio Show, to be precise. In a nod to pandemic realities, this year's lineup of sessions will be presented over five days online at www.radioshowweb.com starting Oct. 5.

The show is produced by the National Association of Broadcasters and the Radio Advertising Bureau. There will be two online "channels," with Channel B devoted to technical topics, presented from 3:30 to 4 p.m. ET each day.

Tech topics to be covered include hybrid radio, all-digital transmission on the AM band, the connected car, and the evolution of broadcasting technology and workflows.

These sessions are programmed by Skip Pizzi, NAB's vice president of technology education and outreach, and David Layer, NAB's VP of advanced engineering.

For Pizzi, the challenge of programming online content is compounded by the fact that everyone has been doing it the past several months.

"I think of it this way: When you're the first one in the neighborhood to have a talking dog, everybody thinks

it's amazing that it talks at all," Pizzi told Radio World. "But once everybody else's dog starts talking, people start complaining about funny accents and bad grammar."

What follows is a thematic summary of five Radio Show sessions focused on technology and engineering.

HYBRID RADIO (MONDAY)

The first technical session will focus on hybrid radio, a technology that allows a web-connected receiver to enhance broadcast audio with web-delivered graphics or to automatically switch between broadcast and streamed radio feeds as required so listeners never lose the station they're tuned to.

See related story, page 3.

ALL-DIGITAL AM RADIO (TUESDAY)

Advocates of all-digital transmission on the AM band in the United States believe that the FCC should allow such operation, at broadcasters' discretion, so AM stations could improve their station sound and take full advantage of the growing number of HD Radio receivers. To date, only two U.S. AM stations have made the leap, which requires temporary experimental authorization from the FCC.

"This session will be a progress/update report on all-digital AM radio, which the Radio Show has been covering for a while," said Pizzi. "We'll hear

With so much going into the cloud and the virtual world, the day may soon come when most of radio's technical investment is spent on op-ex rather than cap-ex, and these sessions will discuss that transition.

— Skip Pizzi, NAB

HONORS FOR PERRY

Russell M. Perry will receive the NAB National Radio Award on Monday Oct. 5.

He is described by the National Association of Broadcasters as "a trailblazing media entrepreneur, a champion of journalism and a celebrated humanitarian in his community."

The association noted that Perry began his radio career in 1993 with the founding of Perry Publishing & Broadcasting Co. and the purchase of an AM station in Oklahoma City, Okla.

"Since then, he has grown the company into the largest independently owned African-American broadcasting company in the nation, with 11 radio stations across the southeast United States."

Earlier he was co-publisher of The Black Dispatch, and in 1979, became the owner and publisher of The Black Chronicle, a paid weekly newspaper serving Oklahoma.

Perry has also held high posts in Oklahoma state government as the secretary of commerce and secretary of economic development and special affairs. He's active in efforts to promote and restore African-American-owned commerce in Oklahoma City.

Past honors include induction into the Oklahoma Association of Broadcasters Hall of Fame, the Oklahoma Journalism Hall of Fame and American Urban Radio Network Broadcasters Hall of Fame.



from WWFD's Chief Engineer Dave Kolesar [of Hubbard Radio], who's been a real champion for this technology using Xperi's HD Radio MA3 broadcast mode, as well as Brian Walsh from WIOE in Ft. Wayne, Ind., which ran all-digital for several months and recently turned it off."

"The solutions this merger is poised to bring to broadcasters, automakers and their consumers, take radio and the digital dashboard to a completely new level of discovery and engagement,

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RADIO AND THE CONNECTED CAR (WEDNESDAY)

Xperi SVP Broadcast Joe D'Angelo is expected to discuss the recent Xperi/TiVo merger and the role radio can play in the web-connected car of today and tomorrow.

Xperi is familiar to Radio World readers as the parent of HD Radio and of the hybrid radio platform DTS Connected Radio. Its brands also include DTS, IMAX Enhanced, Invensas and Perceive.

"In a time when consumers want personalized and seamless access to entertainment anywhere, anytime and on any device, the combined company will offer consumers a digital entertainment platform featuring an end-to-end entertainment experience, from choice to consumption," the company has said of the merger.

In a June email, an Xperi representative wrote that the merger brings TiVo's metadata platform to Xperi's hybrid radio platform.

HYBRID

(continued from page 3)

radio solutions.

The Technical Section of its website (<https://radiodns.org/technical/>) offers a range of downloadable "How To" documents detailing each stage of implementing RadioDNS hybrid radio, from creating station logos and other metadata to station registration, implementing high-definition visuals and setting program listening restrictions by time of day or to a specific program.

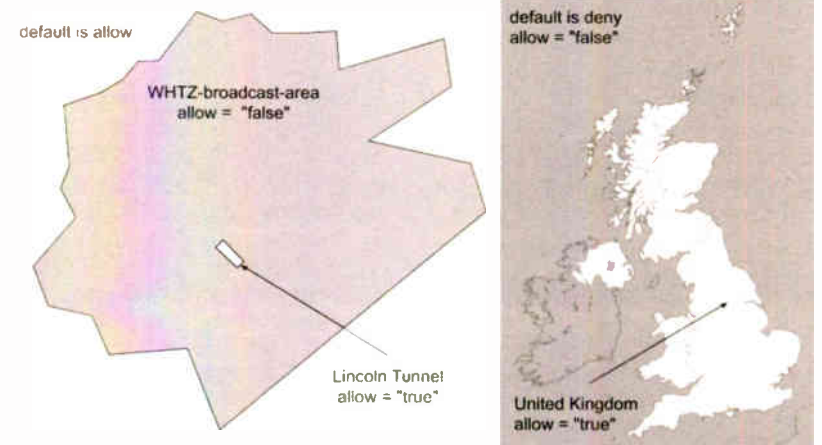
The website's technical section includes a number of presentations on managing RadioDNS hybrid radio applications and support for stations

doing this on their own.

By digging into the nuts-and-bolts of hybrid radio in a plainspoken manner, Piggott hopes to make the concept accessible to radio engineers and non-engineers alike. This is why he, NAB and RAB are putting this discussion forward.

"My goal is to demystify the technology and encourage broadcasters not to be apprehensive about trying it," Piggott said. "That's the headline: Taking the Fear Out of Hybrid Radio Through RadioDNS, So That Broadcasters Can Do It Themselves."

For a deeper discussion, see the recent *Radio World* story "Hybrid Radio Picks Up Momentum" at <https://tinyurl.com/rw-hybrid-2>.



RadioDNS has updated its standard to add geo-fencing to prevent access to specific platforms based on physical location. Among other benefits, this would allow a station to define its FM coverage area and "deny" access to streaming within that area in favor of the OTA signal.



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HORIZON

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offering drivers a safe, efficient, more personalized way to discover radio content, all presented with the text/image richness they demand in a digital platform," she wrote.

"Radio broadcasters retain control of content, with increased engagement and analytical insights, and automakers have access to a turnkey global solution that is secure and will be supported around the world."

Separately, research suggests that finding a place in web-connected vehicles matters more than ever. According to the Spring 2020 Smart Audio Report from Edison Research and NPR, 36% of U.S. adult smart speaker owners have been listening to more music/entertainment content on their streaming devices since the outbreak, with 52% of 18- to 34-year-olds saying the same thing.

When more people resume driving to work, many may continue listening to streaming in their cars rather than returning to broadcast radio.

THE EVOLUTION OF RADIO BROADCASTING TECHNOLOGIES (THURSDAY AND FRIDAY)

The final two technical sessions will consider the evolution of radio broadcasting technologies.

Thursday's will examine radio's transition from a traditional hardware-based infrastructure to IP technology, software-based production/payout and working in the cloud. On Friday, the focus will be on next-generation HD Radio technology.

At press time, speakers were being finalized; Pizzi expected that the rosters would include manufacturers and broadcasters.

"The very nature of radio broadcasting is changing," he said. "With so much going into the cloud and the virtual world, the day may soon come when most of radio's technical investment is spent on op-ex [operating expenses on services] rather than cap-ex [capital expenses on hardware and equipment], and these sessions will discuss that transition."

Radio Show organizers also have announced that their 2021 fall conference will not be held as planned in New Orleans but instead at the rescheduled 2021 NAB Show, which has been pushed back from April to October 2021 in Las Vegas. The fall Radio Show in 2022 is scheduled for Nashville.



SHOW SAMPLER

Here's a sampler of other sessions during the online Radio Show; see the full agenda at <https://radioshow-web.com/>

CEO Townhall — Bob Pittman of iHeartMedia, Mary Berner of Cumulus Media and David Field of Entercom Communications talk business in a Monday panel moderated by Stephanie Ruhle of NBC and MSNBC.

Coffee With Consultants — Each day there's a 15-minute block of time set aside for "fast-paced, short-form presentations" from radio consultants on a number of topics.

Podcasting 2020: From Potential to Profits — A Monday session helps you take original podcast productions "from a pastime to primetime."



Mary Berner

Re-inventing Leadership with Heart and Soul — Author and futurist Rishad Tobaccowala delivers a Tuesday keynote "on the importance of addressing fragility, restoring resiliency and resurrecting businesses in 2020 and beyond."

What Business are You in Now? — Good question! A Tuesday session offers "four stories of how broadcasters and outside industry have

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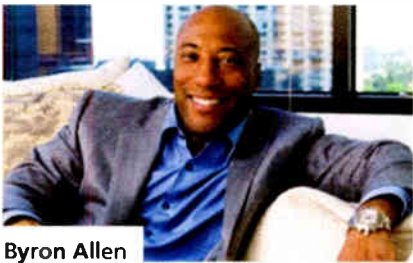
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rethought, revamped and retooled what they do to meet the challenges of 2020.”

Radio Mercury Awards — Held Tuesday evening. The awards, produced by the RAB, were established in 1992 to encourage and reward development of effective and creative radio commercials. Entries come from ad agencies, production houses, radio stations and educational institutions.

Rethinking the Customer Experience — A Wednesday session helps you connect with consumers and enhance the customer experience.



Byron Allen

One-on-One with Byron Allen — Learn from a media mogul. Allen Media Group owns 16 network affiliate TV stations and eight 24-hour HD television networks/streaming services with about 180 million subscribers. Entertainment Studios is also one of the largest independent producers/distributors of first-run syndicated television programming for broadcast TV stations.

Don't Leave Money Behind. Are You Counting All Your Listeners? — This Thursday session asks: “As listeners tap into radio’s content across all platforms, what are all those ears really worth? Monetizing the value of your radio station’s listeners to advertisers is crucial to increasing revenue. In this session, you’ll learn how an accumulated audience is bigger and better than traditional ratings.”

Sales Exchange II: Driving Digital — How can local stations host virtual events to replace lost revenue from their lives ones? Especially now that everyone is doing virtual events? A Thursday session.

Leadership 2021: Inspiring and Building Successful Teams — Financial expert and radio host Dave Ramsey offers a Friday keynote with a roadmap for radio broadcasters in this changing economic environment.

Building and Leading an Inclusive Culture — This Friday session is about creating a “permanent culture of belonging” while working mostly in a virtual world.



Robin Fitzgerald of BBDO Atlanta, chief judge of the Radio Mercury Awards.

Clients for Life — A Friday session argues that stations can’t maintain competitive advantage solely on product and price. A local client will talk about their special relationship with a media rep and what others can learn from it.

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AM

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But critics say the band remains severely challenged and that doling out more FM signals isn't doing anything to help the actual AM band.

"IT'S IN THE OVEN"

According to the FCC's latest tally there are 4,570 AM stations licensed in the United States. Approximately 2,800 of them rebroadcast on one or more FM translators.

The number of AMs on the air with hybrid digital HD Radio is unclear; over the years about 250 told the FCC that they were using the format, but many turned it off later, and the commission doesn't track who remains on the air with it.

Commission Chairman Ajit Pai has advocated for AM broadcasters for years. However the commission has yet to take action on additional proposals such as allowing all-digital AM or reducing nighttime signal protection for 50 kW Class A AM stations. There is no open comment period at present.

Ben Downs, vice president and general manager of Bryan Broadcasting, is an active interested observer. He says AM revitalization hasn't exactly stalled but that the industry is waiting for the next puzzle piece to fall into place. "Just like the Domino's pizza tracker, I'd say it's in the oven," he said.

Bryan Broadcasting petitioned the FCC in 2019 to authorize the MA3 all-digital mode of HD Radio for any AM station that chooses to do so. Advocates such as the National Association of Broadcasters support this idea.

"We have an FCC that is willing to look at the problems AM stations face and work with them to come up with solutions," said Downs.

"There was an NPRM released by the commission Thanksgiving last year that proposes a digital next step, so we are waiting on the FCC and their digital rulemaking. Given that most of the country has been on pause for the past few months, any impatience isn't really warranted. But the passage of time and changing audience expectations aren't AM radio's friend."

Technical questions raised by the FCC in its NPRM about all-digital are complex, Downs said.

"There were issues of calculating operating power in digital versus analog, coverage area, measuring modulation, emission masks, efficiency and impact on adjacent channels. One of all-digital's benefits is that it occupies much less bandwidth than the current hybrid mode; thus less sideband hash," Downs said.

Shuldiner at the FCC noted the "strong industry support" for voluntary all-digital on AM and said he hopes "to move for-



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I firmly believe AM needs go digital and say goodbye to the skywave. Having stations that are unlistenable when the sun goes down makes no sense.

— Joel Oxley, Hubbard Radio

ward in that proceeding by the end of the year."

But the level of radio owner interest in actually switching off analog signals remains uncertain. Existing analog radios would not be able to pick up these new transmissions; and some observers also doubt that major groups would be eager to convert assets to all-digital in the middle of a pandemic.

GOODBYE TO SKYWAVE

Much has been written in Radio World and elsewhere about the experimental effort of WWFD(AM), licensed to Frederick, Md., and owned by Hubbard Radio, which operates in all-digital mode under special temporary authority.

Joel Oxley, senior VP/GM for Hubbard's Washington, D.C., cluster, said the band cannot survive in its current form.

"I firmly believe AM needs go digital and say goodbye to the skywave. Having stations that are unlistenable when the sun goes down makes no sense. The extra coverage for just a few stations is not justified in this day and age," Oxley said. "If

changes aren't made quickly to improve distribution there will be no viable business plans for most AMs."

However, he said, the commission will only support all-digital if the radio industry expresses support for it.

Another station received experimental authority to test all-digital. WIOE in Fort Wayne, Ind., broadcast in MA3 for a few days in the spring but it received listener complaints, after which it ran in all-digital mostly at night. It concluded the digital experiment in September; owner Brian Walsh indicated his listeners weren't ready for all-digital AM.

MULTICAST PLAY

John Garziglia, communications law attorney for Womble Bond Dickinson, wonders whether receiver manufacturers will make radios capable of carrying multicast signals for digital AM stations.

"Receiver manufacturers have not shown an inclination to make such receivers available, absent the FCC taking a proactive stance," he said.

"The question is whether receiver manufacturers have to manufacture such

receivers first for the FCC to move its regulatory roadblock to the carriage of multiple AM sub-channels on FM translators, like is now allowed for FM HD and FM translators — or more to the point, if the FCC does not encourage AM all-digital with multiplex sub-channels and carriage on FM translators."

As we've reported, Garziglia's client Urban One received permission to operate WYLC(AM) in Indianapolis experimentally with all-digital, but the company's leader told Radio World the test might not happen because the FCC refused Urban One's request to rebroadcast digital multicasts of the AM test station over two analog FM translators.

"AM radio is at best beyond challenged, and at worst headed towards extinction," Alfred C. Liggins III said. "Any digital applications that improve coverage and the ability to deliver multiple streams of content are critical to AM's survival."

As of mid-September those were the only three stations that had received STAs. So at this writing WWFD remains the only all-digital AM on the air.

TAIL WAGS DOG

One veteran engineering professional told Radio World he sees "no major U.S. radio companies showing any interest in investing in AM all-digital; and that for many owners, keeping their AM stations on the air now is pretty much just about retaining their FM translator footprint rather than keeping the AM on the air on its own merits."

As noted earlier, well over half of the AM stations in the country have associated FM translators.

The FCC says it has no plans at present for additional windows for FM translator applications exclusively for AM licensees.

Another expert envisions a day when AM broadcasters are able to geo-locate several FM translators around its service area to offer hyper-localized content — "with the FM translators carrying discrete local programming elements and the AM station carrying programming elements that cover the entire area," this observer said.

(Such ideas for translators have been in the news recently because technology company GeoBroadcast Solutions wants the FCC to allow FM stations to air unique content on synchronized FM boosters, to create very localized "geo-targeting" ability. A group of two dozen owners then told the FCC that if it were to allow that, it should also allow translators to originate content, potentially a much bigger change in the FM landscape. It's under such a scenario that an AM station could create the geo-targeted cluster described above.)

The unnamed expert, however, added, "There is also a chance the secondary status of cross-band translators could result in an AM station losing its paired FM

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AM

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translator service someday.”

AWAITING TRUE REFORM

Ben Dawson, consulting engineer at Hatfield & Dawson, doesn't believe AM revitalization really ever started.

“The real meat of the AM revitalization NPRM was to finally make realistic changes in the basic allocation rules to reflect modern noise and propagation conditions, which are significantly different than those of the 1930s, which the present rules are based upon,” he said.

“And that simply hasn't happened. When we've talked with FCC staff about it, the impression we've gotten is that the upper echelons of the commission just don't think it has much importance.”

Dawson believes the cross-service FM translators allocated to AM licensees have cluttered the FM band. “Translators and low-power FM stations are just being sandwiched in.”

Digital AM in the United States faces an uphill battle, Dawson said, in part because many owners and large groups object to paying licensing fees. (While Xperi has offered AM stations a license for all-digital HD Radio technology in perpetuity without fees, that offer is seen as a kickstarter rather than a long-term policy.)

“The adoption of FM, NTSC, FM stereo, digital TV; none of those had licensing fees,” Dawson continued. “And neither should digital AM. And of course, DRM [Digital Radio Mondiale] doesn't and is already being employed in some countries.

“But we need to develop the allocation rules for all digital and movement toward that has been very slow.”

Dawson added, “The commission did change the antenna efficiency rules, which was a help, but the proposed changes in daytime groundwave overlap and returning to using only co-channel stations in skywave RSS calculations and going back to 50% rather than 25% exclusion can be considered separately from the Class A station imbroglio.”

The latter refers to contentious proposals to change the Class A “clear channel” rules, an idea that has not advanced.

On that point, veteran attorney David Oxenford of Wilkinson Barker Knauer

AM REVITALIZATION: “A BIG SUCCESS STORY”

Radio World talked with Al Shuldiner, chief of the FCC's Audio Division

Radio World: Is AM revitalization still a focus?

Al Shuldiner: We remain focused on helping AM broadcasters to serve the public and to address the technical constraints of the AM band. We view the AM revitalization proceeding as a big success story. Through that proceeding, the commission was able to eliminate unnecessary technical constraints on AM stations, allow the relocation of FM translator stations and authorize a large number of new cross-service FM translators. We believe these efforts have helped a significant number of AM stations improve service and remain viable.

RW: How about AM digital and the potential of multicasting? What's next?

Shuldiner: The commission has an open rulemaking on all-digital AM service. Commenters in that proceeding expressed strong industry support for the commission's proposals to allow AM stations to convert to all-digital operation and we hope to move forward in that proceeding by the end of the year.

At the same time, the Media Bureau has continued its support for the industry's interest in all-digital operation through the grant of experimental authorizations. Broadcasters have begun discussing AM multicasting, but the commission has not seen any detailed information on that topic.

Multicasting for AM stations could allow AM broadcasters to introduce a range of new programming for the public. It will be interesting to see if the industry develops technical reports on AM multicasting for broadcasters and the FCC to consider.

RW: Is reducing nighttime signal protection for the 50 kW Class A AM stations going to happen?

Shuldiner: Almost two years ago, the commission sought

LLP sees a possible rift among large and small radio broadcasters.

“The issue seems to be a battle between local stations that want more local service full-time at the expense of the clear-channel stations whose signals would receive interference if that local service is granted, and potentially sacrificing some of the service from what are among the few still successful AM stations in major markets,” Oxenford said.

But at the commission, Al Shuldiner cited concerns from the Federal Emergency Management Agency about the impact of changing Class A protections on presidential alerting. “We remain open to working with the industry to find a path forward on these proposals but do not have any immediate plans to change those protection levels.”

STRICTLY VOLUNTARY

On one thing, broadcasters have been clear: They oppose any kind of *mandate* to go all-digital — for reasons of cost, digital receiver availability and opposi-



Al Shuldiner

comment on proposals to modify the interference protection criteria for Class A AM stations. Our goal was to maintain important protections for these vital stations but, at the same time, to increase the opportunity for other classes of AM stations to improve local service.

FEMA expressed concern about the impact of our proposal on Class A stations and their ability to deliver a presidential message during a national emergency. We have not identified a viable way to advance our proposal while addressing FEMA's concerns. We remain

open to working with the industry to find a path forward on these proposals but do not have any immediate plans to change those protection levels.

RW: And will the impact of COVID-19 and the current economic climate influence the FCC's view of AM revitalization?

Shuldiner: Unfortunately, the COVID-19 pandemic and economic downturn associated with the pandemic have been particularly challenging for AM broadcasters. Since March, we have been in close contact with many broadcasters to find ways to provide temporary regulatory relief to address issues related to the pandemic.

We also have heard from numerous AM broadcasters concerning unbuilt cross-service translator stations from Auctions 99 and 100. Those construction permits will begin to expire in January 2021. Based on the pandemic's impact on capital budgets for AM stations and the constraints the pandemic has imposed on station construction, equipment availability and travel, we recently announced a program to allow permittees of those translator stations with permits expiring during the first six months of 2021 to apply for a waiver of the construction deadline.

We hope that providing an additional six months to construction these important translator stations will help ensure that AM broadcasters have access to these critical cross-service facilities.

tary for each individual AM station, as each licensee can best determine the value to its listeners of such an all-digital transition based on the degree of digital-receiver penetration in that AM station's demographic and market, as well as the economic costs of such a conversion.”

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



NEWSWATCH

A sampling of recent news from the Radio World NewsBytes e-newsletter. **Houses of worship** should not look to the FCC to ease restrictions on uncensored radio signals. Chairman Ajit Pai replied to a request from a congressman who sought pandemic waivers for churches to transmit FM signals beyond what is allowed under Part 15 ... **Audi of America** is collaborating with **iHeart-Radio** to bring hybrid capability to drivers in the United States. iHeart is rolling out hybrid radio compatibility on some 600 stations. ... President Trump said he'd nominate NTIA Senior Advisor **Nathan Simington** to fill the seat held by Michael O'Rielly ... The NAB rescheduled the **2021 NAB Show** to October of next year. The dates are Oct. 9 to 13, 2021, in Las Vegas. The 2021 fall Radio Show will be held concurrently, also in Vegas.

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Time to Prepare for Ice and Snow

The mind boggles at the uses for a product invented by the Rocket Chemical Company

WORKBENCH

by John Bisset

Email Workbench tips to johnbisset@gmail.com

BY JOHN BISSET

It's WD-40 time again!

For readers in the Northern Hemisphere, colder weather is coming. Before that ice and snow arrive, it's time to eliminate "cold" failures around your site. Go grab your can of WD-40 and let's get to work.

Before we start, do you know the story behind this ubiquitous product?

WD-40 is the registered trademark for a multi-use product made by WD-40 Company. From the company's history page:

In 1953, in a small lab in San Diego, California, the fledgling Rocket Chemical Company and its staff of three set out to create a line of rust-prevention solvents and degreasers for use in the aerospace industry.

It took them 40 attempts to get their water displacing formula to work, but on the 40th attempt, they got it right in a big way. WD-40 Multi Use Product was born. WD-40 stands for Water Displacement, 40th formula. That's the name straight out of the lab book used by the chemist who developed the product.

The first company to use WD-40 Multi-Use Product commercially was Convair, an aerospace contractor, to protect the outer skin of the Atlas

Missile from rust and corrosion. The product worked so well that several employees snuck cans of WD-40 Multi-Use Product out of the plant in their lunchboxes to use at home.

A little closer to home, this spray compound works wonders on internal lock mechanisms. Spray some in the keyhole and work the locking mechanism. For combination locks, spray a little into the open hasp and rotate the combination dial. Fighting frozen locks in the middle of winter is no fun, so enjoy a nice fall day and apply some now on all your locks: fences, access panels, doors and gates.

WD-40 can also be used to lubricate door hinges and latches. Wipe the rubber gasket of a garage door to keep it from freezing; spray the compound on the garage door rollers and tracks makes for smooth operation. Spray the door panel hinges (Figs. 2 and 3).

WD-40 also removes gummy labels, bumper stickers and decals without damaging the vehicle finish. It's also good for removing pine tar or other road debris.

The spray can also help lubricate cables being pulled through a conduit.

In the past we've described how you can seal the ends of conduit or other exterior wall holes using stainless steel or copper wool in combination with expandable foam sealant. Well, if you spray WD-40 on your hands before working with that sticky foam adhesive, the cleanup will be a snap.



Fig. 1: WD-40 Multi-Use Product is available in various packages and applicator formats. The company also makes specialty versions for purposes like heavy-duty degreasing; removing rust by soaking; lubricating bike chains; and dry-lubing table saws and drills.

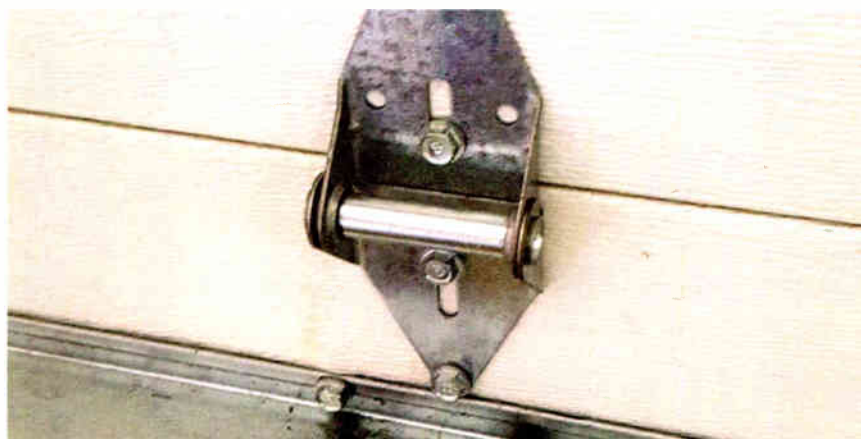


Fig. 2: Hinges like this one on a garage door can wear quickly if not treated with WD-40 or other industrial lubricant. Note the metal filings, which look like dirt, and the smudge mark beneath the hinge.

On remote vehicles, WD-40 will remove scuff marks, road tar and dried insects while protecting metal and chrome parts from corrosion and rust. It works wonders in removing residue from Gaffers or Duct tape.

At home, a spritz of WD-40 will loosen a stuck zipper on a winter jacket,

and keep it zipping smoothly all winter long. (Get this: It also can be used to remove chewing gum or glue from your child's hair!)

As engineers, we're constantly getting our hands dirty. WD-40 is an excellent degreaser, especially if you've been working on a greasy generator engine. Keep a roll of paper towels and a canister of WD-40 at each transmitter site.

When the snow falls, a liberal coating on snow shovels and down the throat of snow blowers will keep the snow flowing and prevent clogs. It also works well on a satellite dish; if you spray the dish ahead of time, snow slides off.

There are thousands of uses including removal of grease and dirt from metal tools. You may have your own favorite; send it to me at johnbisset@gmail.com.

To see new products the company offers, head to www.wd40.com.

Bob Calder's career goes back 40 years to the early days of 45s and cart machines. Over the past couple of decades, he has worked as an inde-

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Fig. 3: Even dual hinges at the door edge wear if not lubricated properly.



Fig. 4: No, your eyes aren't playing tricks. When you build the Buc Fitch project that we told you about last month, the box should have male and female XLRs. (The box on the right is a balanced-to-unbalanced converter.)

pendent project engineer for multiple FM antenna sites and broadcast studios in western Canada. His home is in Victoria, British Columbia.

Today Bob does small projects and keeps in touch with developments in broadcasting through trade journals like Radio World.

Bob sent in a suggestion regarding our XLR tester, developed by Buc Fitch and described in our Workbench column in the Aug. 19 issue.

If the three pushbuttons were replaced with a three-position rotary switch, both of your hands would be free to check for troublesome intermittent connections by flexing and wiggling the cable.

Bob adds that if the rotary switch has a couple more positions, the tester becomes even more valuable.

A fourth position could be labeled "off" and a fifth could diode isolate all three lights so they are all "on" at the same time. This allows you to check more quickly for cable intermittents as the cable is flexed. Bob acknowledges that the risk in adding this "quick" test feature somewhat defeats the main purpose of the device, which is the all-important polarity test.

And speaking of that cable tester, thanks to Radio World friend Jerry Arnold and all you other eagle-eyed readers for gracefully pointing out that the picture I included with the schematic for that project showed a box with two male XLR connectors! See Fig. 4. Kind of hard to test a typical mic cable that way.

Neither your author nor Buc are losing our minds; the photo was for another tester that Buc had proposed, and I simply mixed up the photos. (Too bad it wasn't an April 1 column!)

John Bisset has spent over 50 years in the broadcasting industry and is still trying to learn XLRs. He handles western U.S. radio sales for the Telos Alliance, holds CPBE certification with the Society of Broadcast Engineers, and is a past recipient of the SBE's Educator of the Year Award. Workbench submissions are encouraged and qualify for SBE Recertification. Email johnpbisset@gmail.com.

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RADIO AT 100

(continued from page 1)

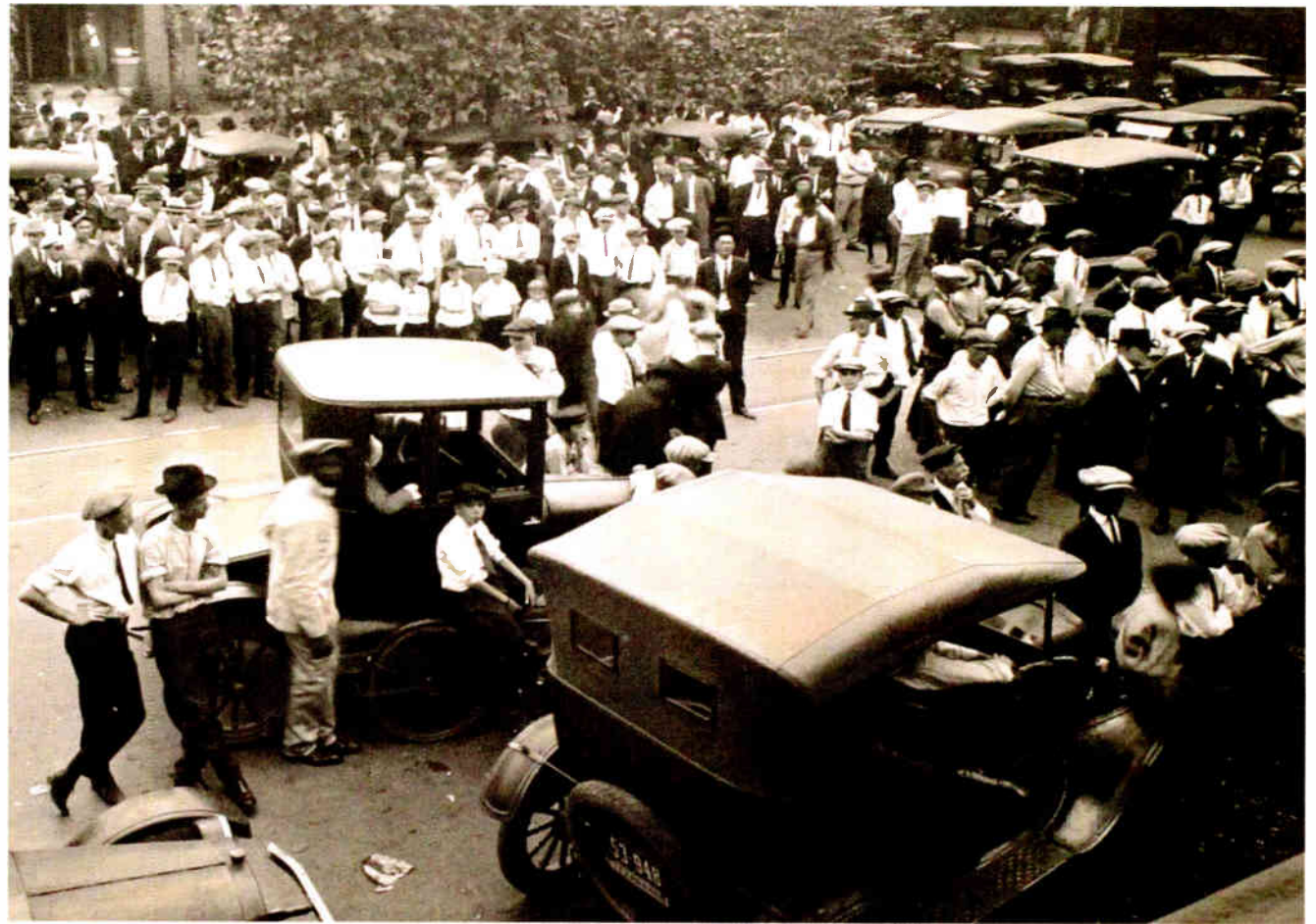
was little or no notification of how to "listen in." Nor were there regular operating schedules, nor readily available receivers for the general public. Radio sets were marketed to commercial enterprises, the military and radio amateurs.

U.S. involvement in "the Great War" further put the brakes on broadcasting, with a government edict mandating the dismantling of virtually all privately owned radio stations and apparatus in an effort to thwart possible enemy espionage involving radio.

But the war also indirectly advanced radio broadcasting. The government lifted patent restrictions on various communication technologies including the vacuum tube, which allowed multiple companies to manufacture radio gear for the U.S. Army Signal Corps. Also, large numbers of young men received Signal Corps training in radio, providing a talent pool that would help fuel broadcasting's launch.

WESTINGHOUSE AND CONRAD

With the end of the war in late 1918 and a "reconversion" to a pre-war way of life, there was another key development in the road to broadcasting, an unintentional one involving a Westinghouse Electric and Manufacturing Co. self-taught radio engineer and a farsighted



Prior to the advent of radio broadcasting, this was a common scene in U.S. cities and towns, with citizens flocking to newspaper offices for updates on breaking news events. The crowd in this early-1920s photo is following baseball's World Series via scores posted on a second-floor chalkboard by a Texarkana, Arkansas/Texas daily. (Nearly a decade would pass before the city got its first radio station, KCMC.)

We became convinced that we had in our hands the instrument that would be the greatest and most direct means of mass communication and mass education that had ever appeared.

— Harry P. Davis, 1930

senior official at that company.

Westinghouse had been producing radio gear for the U.S. military; with the armistice, this foray into a new field and its lucrative revenue stream abruptly ended.

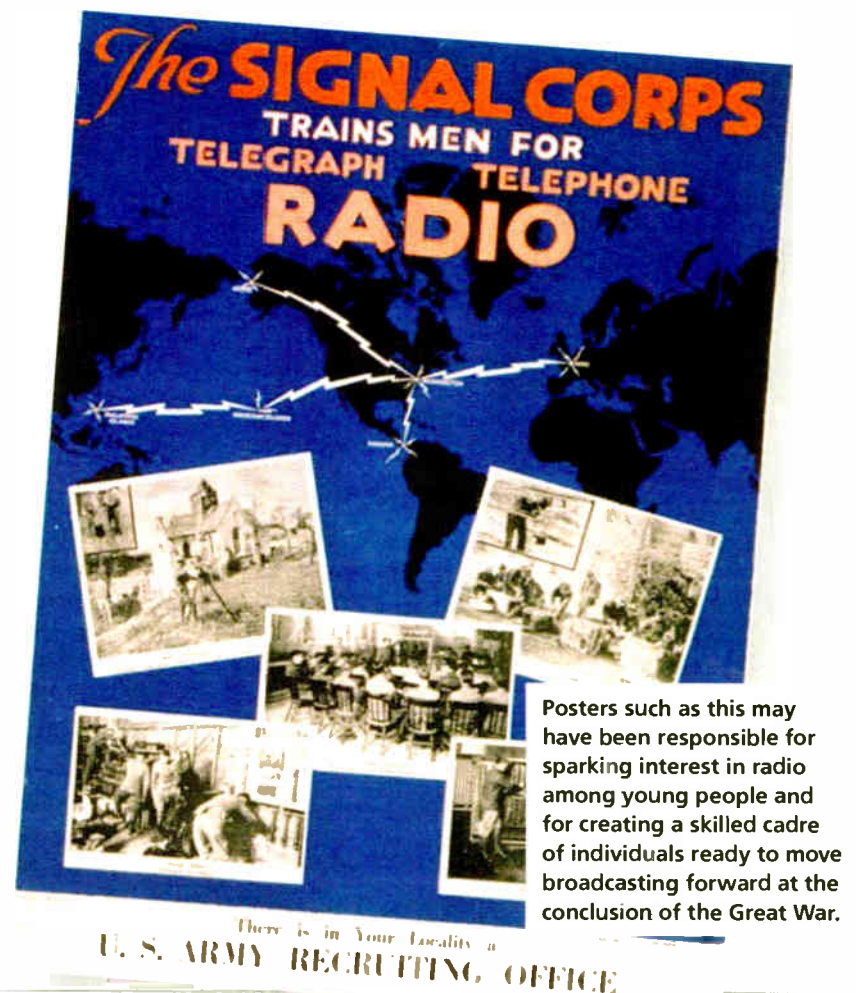
The company still desired to retain a footprint in the radio sector, and started exploring another frontier that was

opening up: international radio communications.

This stemmed from the government's decision not to allow foreign corporations such as Marconi to exert a virtual monopoly in this area of radio, as had been the case before the war. While that chapter in radio history is too involved to relate in detail here, it resulted in the creation of the Radio Corporation of America.

RCA, along with General Electric, a large player in radio communications, wound up controlling most of the valuable radio patents.

Westinghouse attempted to enter into international radio communications, joining with the International Radio Telegraph Co., successor to Reginald Fessenden's National Electric Signaling Company, in an attempt to secure a



Posters such as this may have been responsible for sparking interest in radio among young people and for creating a skilled cadre of individuals ready to move broadcasting forward at the conclusion of the Great War.



place in this field. The initiative failed due to postwar agreements in place by others including Marconi, Telefunken, and RCA, the new kid on the block.

This failure, coupled with the end of lucrative wartime contracts for tubes and radio apparatus, appeared to close the doors on Westinghouse's future in radio.

In the book "The Continuous Wave: Technology and American Radio, 1900-1932," Hugh Aitken wrote that "Westinghouse, barred from international radio by the cross-licensing agreements, seemed to have few options left; the sensible course of action was surely to call it quits as far as radio was concerned."

Such corporate goings-on were way above the pay grade of Frank Conrad. He had helped his company develop military radio gear, and he continued to experiment with radio on his own time through his amateur radio station. Conrad joined with many other pre-war "hams" in taking to the airwaves. However, he enjoyed an advantage not available to most of his fellow amateur operators: ready access to Westinghouse vacuum tubes.

This allowed Conrad to cobble up a radiotelephone transmitter based on Raymond Heising's "constant current" modulation system.

Tinkerer that he was, Conrad wished to monitor the performance of his station and appropriated the family phonograph as a source of audio while he stepped away to do listening tests.

Other "hams" heard the music and encouraged Conrad to provide more such "entertainment," often requesting specific records. He soon tired of responding to individual requests and decided instead to air a "concert" on a regular basis. A local music store even began contributing new records in exchange for on-air "plugs."

By the fall of 1919, Conrad's broad-

casts were attracting an estimated audience of some 400 to 500. An area newspaper took interest in the activity, and a Pittsburgh department store began marketing inexpensive receivers to those wishing to enjoy Conrad's music programs.

Westinghouse's vice president, Harry P. Davis took notice of the attention being generated by Conrad's "wireless musicales," realizing that an interest in radio might exist outside of hobbyists and commercial message handlers.

Here's how he recalled it for the 1930 book "American Beginnings":

We watched this activity and the activity of various others who were experimenting with radiotelephony very closely. Soon came the idea which led to the initiation of a regular broadcast service. An advertisement of a local department store in a Pittsburgh newspaper calling attention to a stock of radio receivers which could be used to hear the programs sent out by Dr. Conrad led me to the conviction that efforts then being directed to develop radiotelephony as a confidential means of communication were wrong, and that this field instead offered one of wide

spread commercial publicity. Right in our grasp, therefore, we had the service we had been groping for. A little study developed the great possibilities. We became convinced that we had in our hands the instrument that would be the greatest and most direct means of mass communication and mass education that had ever appeared. The natural fascination of its mystery, coupled with the ability to annihilate distance, would attract interest and open many avenues of application. It offered the possibilities of service that could be ren-

(continued on page 18)



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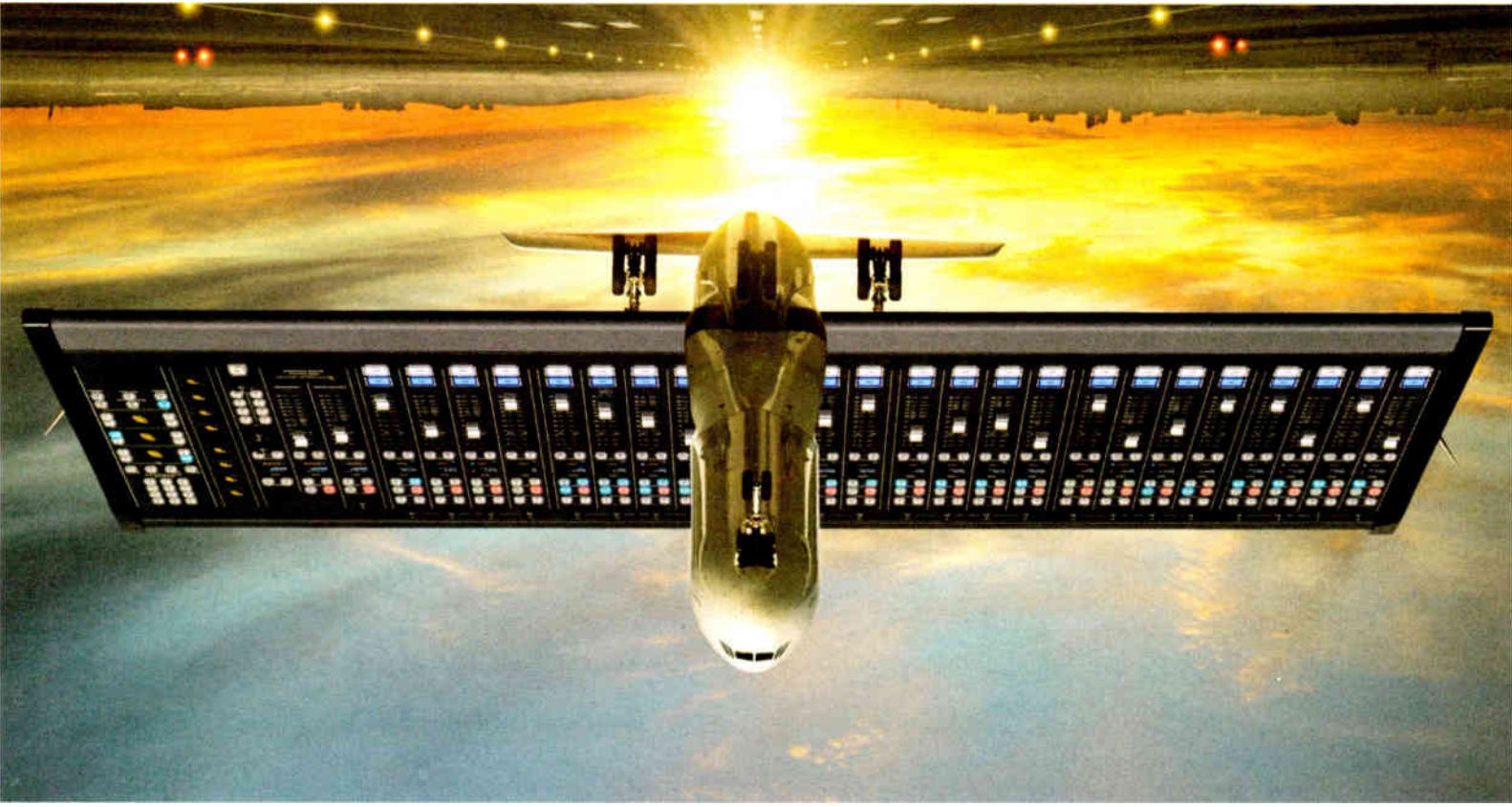
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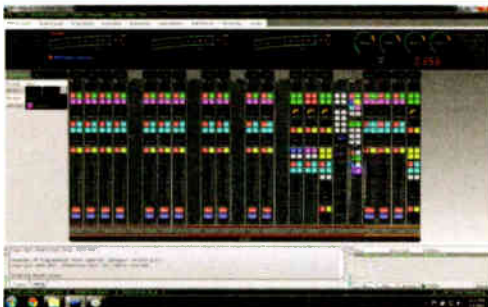
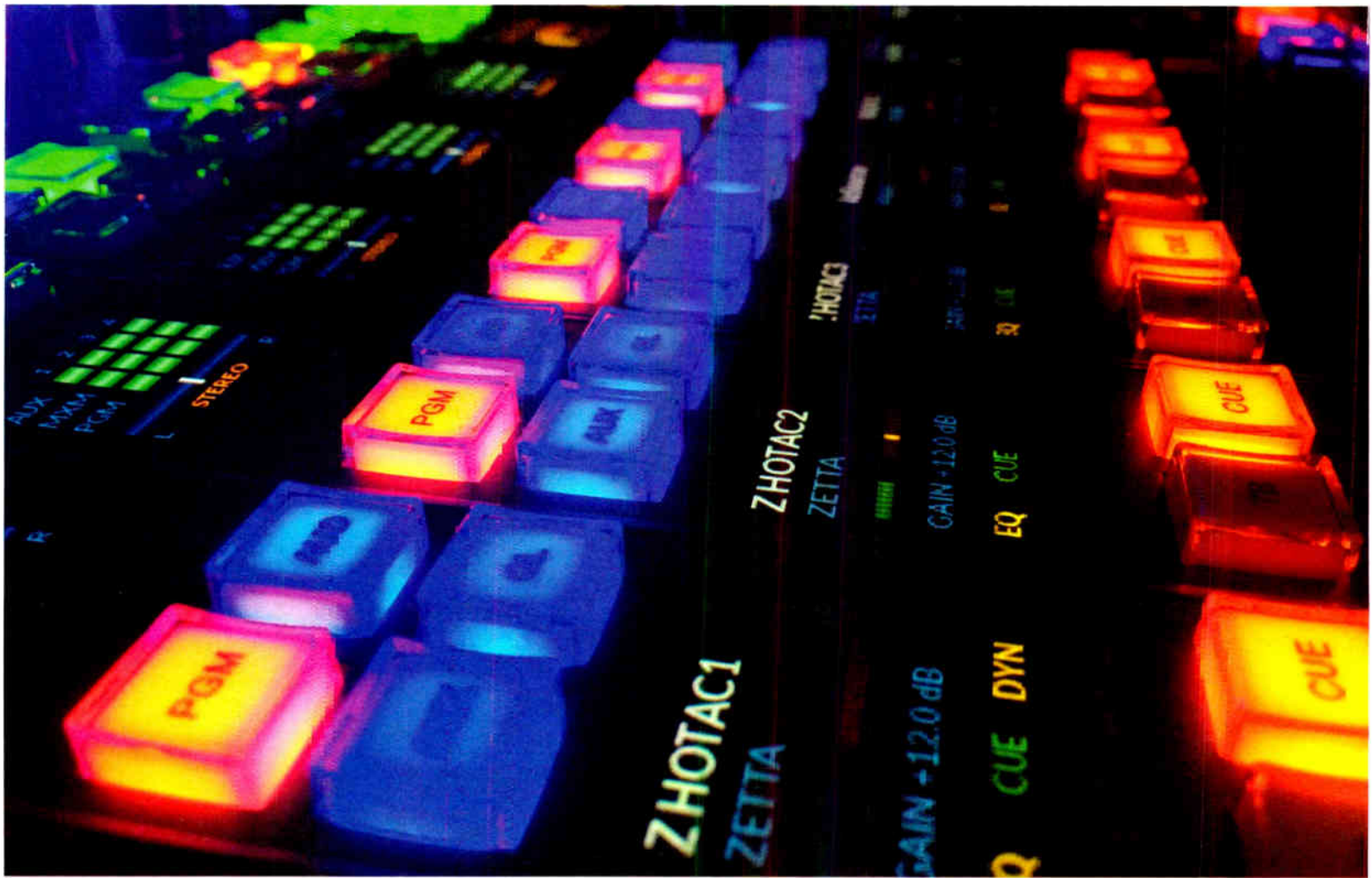


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See Page 106



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By Dr. Lee de Forest
FUNDAMENTAL OPERATION OF VACUUM TUBES
By David S. Brown

GRAND OPERA BY WIRELESS
By H. Gernsback
GUARDING THE ETHER DURING THE WAR
By P. H. Boucheron

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BUDAPEST OPERATION PREDATED KDKA

KDKA's arrival in late 1920 set the stage for broadcasting as we know it. However, the concept of electronically transmitting entertainment, news and information to many people simultaneously was not new when the seminal Pittsburgh station took to the airwaves.

As early as 1880, delivery of opera performances was being demonstrated via wired telephone networks. In 1893, a successful enterprise called Telefon Hírmondó or "telephone newspaper" launched in Budapest, Hungary utilizing telephone connectivity.

It delivered a steady stream of news, sports reports and occasional musical entertainment for 12 hours or so each day.

Access to the news and entertainment service was on a subscription basis, similar to present-day cable TV operations. This wired broadcasting enterprise was apparently quite successful and well received, as it lasted on a standalone basis for more than 40 years before being "merged" with over-the-air radio broadcast streams in 1925. It's reported that the 1920s and 30s the service was attracting more than 10,000 subscribers.

Telefon Hírmondó continued well into the World War II, ending only when the Budapest telephone system was destroyed in the conflict.



In 1883 in Budapest, Hungary, daily news transmissions were delivered CNN-style to subscribers via the existing telephone network.



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The Budapest Telefon Hírmondó broadcast service was not limited to newscasts but included such entertainment fare as operas.

RADIO AT 100

(continued from page 15)

dered without favor and without direct cost to millions.

Davis encouraged Conrad to continue his experimentation on company time, with the installation of a 100-Watt trans-

mitting station at Westinghouse's East Pittsburgh plant.

He also made sure that the station received its share of publicity, and began to plan an event to call even more attention to the radio experimentation, one that would forever place Westinghouse and Pittsburgh in the history books as the launch point for radio broadcasting: live reporting of the 1920 presidential election returns.

"THE BIG BROADCAST"

Davis made arrangements with the Pittsburgh Post to deliver election eve ballot counts via telephone to the combination transmitter room/studio and tapped Leo Rosenberg from the company's publicity department to do the on-air announcing.

Donald Little, who'd worked with Conrad in designing and construct-


ing the KDKA transmitter, was designated as the station's "chief engineer," and William Thomas, who possessed the necessary commercial radio license, was assigned as transmitter operator. And to ensure that the big event would not be spoiled by a transmitter failure at the company site, Conrad agreed to keep his ham transmitter on "hot standby" in case the KDKA rig failed.

Little described the Nov. 2, 1920 scene 35 years later in a story in American Heritage magazine: "The first program, which ran from about 8 p.m. to some time after midnight, consisted only of the election returns repeated into our microphone by Rosenberg from what he heard by phone from the Post downtown, interspersed with recorded music."

(continued on page 20)

Davis made arrangements with the Pittsburgh Post to deliver election eve ballot counts via telephone to the combination transmitter room/studio and tapped Leo Rosenberg from the company's publicity department to do the on-air announcing.

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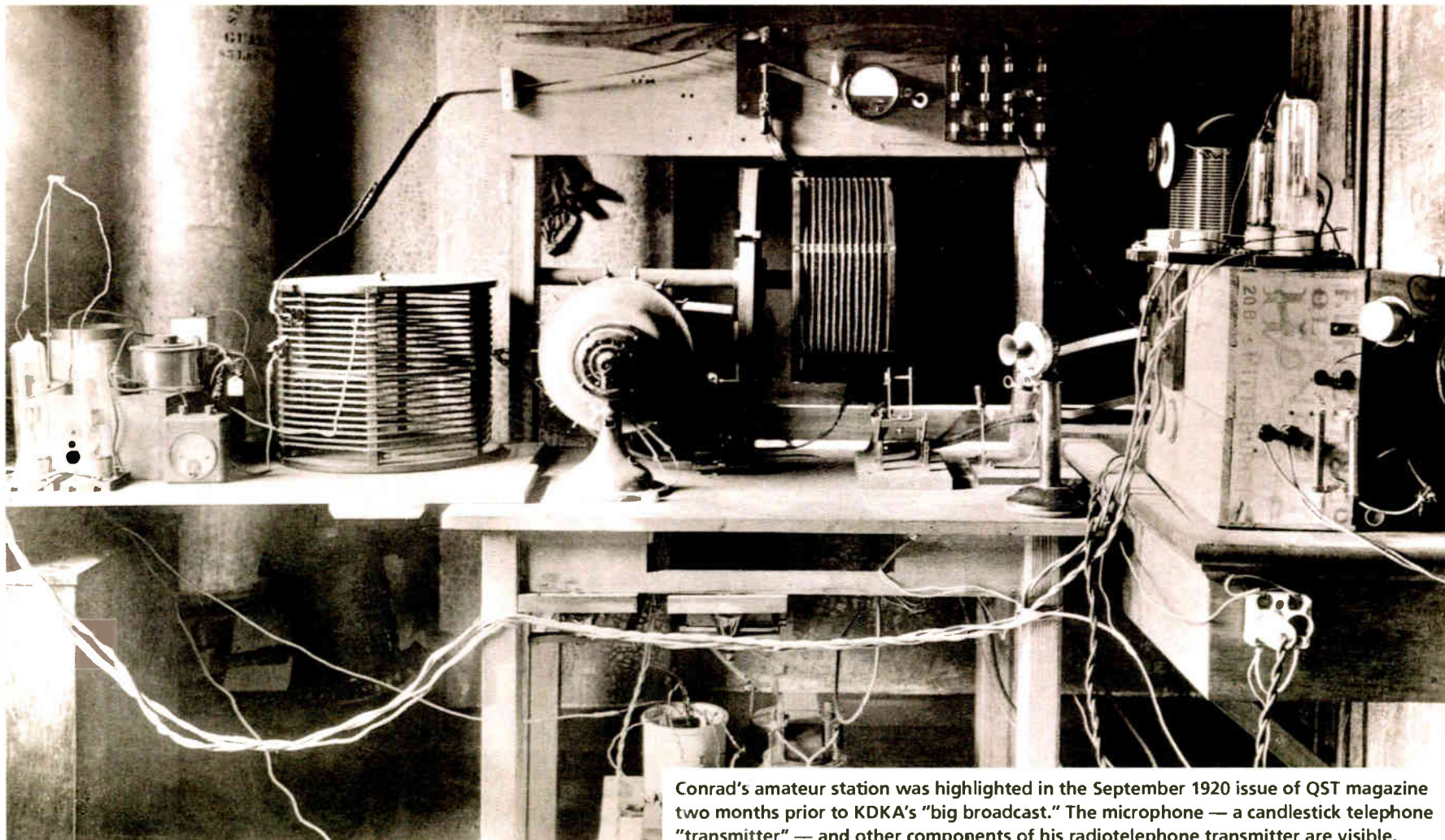
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World Radio History



Conrad's amateur station was highlighted in the September 1920 issue of QST magazine two months prior to KDKA's "big broadcast." The microphone — a candlestick telephone "transmitter" — and other components of his radiotelephone transmitter are visible.

Getty Images

RADIO AT 100

(continued from page 18)

'PERFECT STORM' FOR RADIO

This seminal "broadcast" was a success in every sense.

There were no reported technical glitches, with election returns flowing smoothly from the newspaper to the East Pittsburgh "broadcast center." Rosenberg was not prone to "mic fright," and professionally and unfalteringly delivered the election news. And those who "listened in" that night let Westinghouse know about it.

As observed by Little: "The company received quite a lot of mail on this broadcast."

This response came not only from radio amateurs who shared headphones with neighbors, but also from an election-eve "listening in" party organized by another Westinghouse employee, Lewis Warrington Chubb, who'd been placed in charge of radio engineering. Again from the American Heritage article 35 years later:

"Our election night broadcast was also picked up by a receiver and a loud-speaker which Mr. Chubb ... and I installed at the Edgewood Club — this was in Edgewood, just outside

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Harry P. Davis

IEEE History Center

of Pittsburgh. The club had an auditorium and a good many of the club members congregated there on the evening of November 2, as it was pre-advertised that they would get election returns. From time to time during the evening Mr. Chubb phoned us comments on how the program sounded and I recall he told us once that the audience preferred less music and more election returns."

SEIZING THE MOMENT

In order to gain a better insight into what made Davis' decision for this launch timely and successful, it's instructive to recall that the past decade had not been an especially good time for most, with major and minor tragedies punctuating the entire decade — the sinking of the Titanic, the world war and a global influenza pandemic. The real "capper" came in late 1919 with the Volstead Act, making it illegal even for Americans to drown their sorrows in strong drink. Clearly, some-

Further Reading:

[Aitken, Hugh G.J.](#), "The Continuous Wave: Technology and American Radio, 1900–1932," Princeton University Press, 1985

[Douglas, Susan](#), "Inventing American Broadcasting 1899–1922," The Johns Hopkins University Press, 1987

[Christopher H. Sterling, John Michael Kittross](#), "Stay Tured: A History of American Broadcasting," Lawrence Erlbaum Associates Publishers, Mahwah, N.J., 2002

Among other sources for this article are "Amateur Radio Concerts" in Radio Amateur News, January 1920; "Amateur Radio Stations — 8XK and 2NW" in QST magazine, September 1920; "Wireless Telephone Here" in the Pittsburgh Gazette Times, Oct. 26 '19; chapter "Radio and Its Future" in the book "American Beginnings" by H.P. Davis, 1930; "The Telephone Newspaper" in World's Work Magazine, April 1901; "How the World's Only 'Telephone Newspaper' Took Off," The Article, June 16, 2019; and "A Telephone Newspaper" in Electrical Review, April 27, 1901.

thing was needed to help lift people out of this gloom, tragedy and misery.

That something proved to be radio.

The author wishes to acknowledge Rick Harris, chairman of the National Museum of Broadcasting's Conrad Project; Mark Schubin, for information about Telefon Hírmondó; and Alex Magoun at the IEEE History Center.

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ENCO enConveyor Serves Delmarva

Addition of automated file download utility solved a problem

BY CHRISTOPHER RANCK
Associate Director, Program and
Operations Services
WESM(FM)/Delmarva Public Media

USERREPORT

PRINCESS ANNE, Md. — Once a two-station NPR based in Salisbury, Md., Delmarva Public Media expanded to a three-station group in January through a collaboration with WESM(FM), a local public station based in southern Maryland.

While WESM still broadcasts limited NPR programming, Delmarva Public Media has become an independent public radio group, with each station establishing a unique programming identity.

The three stations share some common technology platforms that, while mostly used autonomously, can also be used collaboratively across the three stations. This includes ENCO's DAD radio automation and production system, which has long been the automation choice at WESM and sister stations WSLC(FM) and WSDL(FM).

Like most public radio stations, WESM has syndicated and independent programming coming into the station over multiple platforms. Some of these programs, such as "The Red Rooster Lounge," have long been manually downloaded — an often time-consuming



ENCO in the studio with Delmarva Public Media show host Yancy Carrigan.

and confusing process.

Thankfully, the recent addition of ENCO's enConveyor automated file download utility to WESM's DAD immediately solved this problem.

enConveyor not only automatically downloads these programs off of FTP and other websites, but it automatically places these programs in the proper folders. enConveyor is a fire-and-forget

application that eliminates the operations manager eternal anguish of, "Did I remember to load that show?" while driving home from work. It also reduces the workload burden for our nontechnical staff, now that they only have to look at the enConveyor program to confirm that all programming is in the proper folders.

enConveyor runs within DAD as a standalone module, which makes it easy to add to existing systems. It runs in the background, which eliminates any danger of turning off the application accidentally. Once downloaded, enConveyor assigns the audio to the correlating cart number, and overwrites the content from the previous week. When everything is where it should be, the operator simply adds the programming to the playout schedule.

DAD is used across four locations at WESM: the on-air host station, two production studios, and a central computer running automation by the transmitter. We use DAD in the production studios to record underwriting messages, weather reports and other short-form interstitials that are subsequently uploaded to FTP. enConveyor again provides value here by adding these into the appropriate playlists upon recognizing the upload.

FURTHER SOLUTIONS

While enConveyor was added in the past several months, DAD's feature set runs deep and we continue to benefit from other ENCO applications.

This includes ENCO's Scheduling Wizard program, which specifically creates playlists for our syndicated pro-

ABOUT BUYER'S GUIDE

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

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TECHUPDATES

ARRAKIS RELEASES ITS APEX

Arrakis Systems highlights its Apex Automation for combining the best attributes of radio automation as software and as a service.

The base package, Apex Hard Disk, includes software for the on-air machine and production studio, along with a Harmony soundcard, a four-play, one-record, USB rackmount soundcard. The Apex Hard Disk package is for stations that need only to play audio off their PCs, whether prescheduled or live. Users can voicetrack, play hot keys and cue files from a playlist. Apex also has the ability to be controlled anywhere on a local network, or remotely using a secure VPN.

The Apex Satellite package replaces the Harmony soundcard with a 16-channel switcher with built-in sound cards called the Bridge. This hardware allows users to take satellite feeds to play live or record for later playback. It also allows users to play ballgames and create professional quality remotes.

Arrakis also emphasizes its customer support for the monthly Apex service.

Coming this year, an addition to the Apex line will be Apex Connect. This software will allow users to download files from anywhere on the internet for immediate or delayed playback.

For information, contact Arrakis Systems in Colorado at 1-970-461-0730 or visit www.arrakis-systems.com.



gramming. That application also inter-operates with our Marketron traffic and billing system, which allows our traffic operators in Salisbury to send underwriting messages to WESM.

The Scheduling Wizard merges these messages into our DAD system, and most importantly, has eliminated the longstanding WESM process of creating playlists by hand, again saving us time and money. It's an excellent example of how we can share ENCO's workflow benefits across all three Delmarva Public Media stations.

DAD's general ease of use is noteworthy. DAD is known for its colorful and legible interface, and our on-air hosts can easily switch between sev-

eral customized mini-arrays for playing out show promos, public service announcements and other content. We have a small staff, and our hosts find it helpful to click from one page of mini-arrays to another to quickly find what they need, rather than searching through extensive libraries.

We have consistently updated our DAD system at WSCL(FM)/WSDL(FM) over the years, and we have taken that philosophy to WESM. Beyond enConveyor, we've purchased the Weatherology appli-

cation from ENCO.

Like enConveyor, this is a module that will silently run in the background and ensure that weather reports are consistently accurate and up to date. Weatherology will automatically receive and schedule forecasts within DAD, so there will be no more reports of sunny weather when it's raining outside.

DAD has been a technical win for all three stations while helping us change the way we work. Our workflows are simpler, our cost savings are up, and

we are covering a much larger underwriting territory with WESM in the mix. And in the COVID-19 era, ENCO provides the flexibility to record underwriting and other content from home, and drop it into an FTP site where enConveyor once again does its magic. DAD has ensured that our operation continues uninterrupted, without added effort.

For information, contact Mark Stewart at ENCO Systems in Michigan at 1-248-827-4440 or visit www.enco.com.



TECHUPDATES

BE'S NEW AUDIOVAULT 11 BRINGS EXPANDABILITY

Broadcast Electronics is introducing AudioVault 11.

The company highlights the long history and reliability of AudioVault, and said it recently received the largest order for AudioVault in its history, which has helped prompt new capabilities.

AudioVault 11 is scalable, so it's suitable for small users as well as large corporate broadcasters.

Suitable for pandemic-challenged times, its new features include AudioVault Anywhere, which schedules and controls a station from any place via a browser on any device.

Also new is AudioVault Enterprise Radio Automation, which controls any part of an audio delivery network from any place. Its companion CloudVault distributes and synchronizes audio assets via the cloud to all locations as needed.

BE says AudioVault now offers full integration with its music and traffic system partners.

For information, contact Broadcast Electronics in Illinois at 1-217-224-9600 or visit www.bdcast.com.

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Radio Rioja Chooses AEQ Automation

On-the-fly migration to AEQ AudioPlus system is a success

USERREPORT

BY **MARÍA EIZAGA**
General Manager
Radio Rioja

LOGROÑO, SPAIN — On Feb. 25, 1933, the Spanish General Telecommunications Administration issued a broadcast license for the area of Logroño for a radio station with the call sign EAJ 18 and the name "Radio Rioja" to Ismael Palacio.

Today, the station is still active in Logroño, the capital of the province of "La Rioja," and now has two sisters in other cities in the Rioja province. It is an independent broadcaster affiliated to the Cadena SER Networks, broadcasting the general programming of that group in AM and FM.

Depending on the time of day, it provides its audience with the signals from the networks of SER and SER+, Los Cuarenta Principales and Cadena Dial.

Throughout its long history, it has been committed to regional sports and politics, with a very active news operation. For decades, public figures and groups from Logroño and La Rioja have passed through the main studio to appear on programs.

Thousands of interviews and local and regional reports have been produced from its recording studio as well as national news stories in contribution to the SER Network headquarters in Madrid.

The newsroom dedicates most of its time to providing content for the regional and local slots as well as contributions for Madrid. However, apart from the conventional SER and SER+ radio programming, there are other important



sources of income with low production costs for content such as musical products centrally produced at the company headquarters.

A highly automated operation along with other applications allows Radio Rioja to cover expenses and continue being the news station that Riojans demand.

AUTOMATION NEEDS

Radio Rioja has paid attention to its automation systems, valuing reliability, availability and good operation. When renewal of its legacy system was due, they opened up to evaluate the most common systems used in Spain.

During the presentation and evaluation of AEQ AudioPlus, we found that

its performance was outstanding and easy to learn and use. We obtained references from other radio stations about compatibility with work practices and requirements for daily SER servicing along with a standard compatible scheduling and billing system.

Then Radio Rioja made one of the most difficult decisions that broadcast technicians and engineers can be faced with: installing and integrating a new and different automation system.

AEQ has been developing and installing radio automation for more than 30 years, with experience of the requirements and demands of thousands of customers. AudioPlus is its third-generation system, developed after Mar System and Mar4win. It's designed to

run on Windows operating systems and with SQL Server databases. It includes a self-installation wizard.

It is compatible with professional, low-cost, USB and virtual AoIP soundcards and provides a set of complementary editing and management tools, as well as links to all kinds of external software applications.

AudioPlus also offers a remotely controlled playout module compatible with Cadena SER commands, and a module for exchange with external management software applications, both for advertisement traffic and musical programming.

Finally, it has a file import module that is adapted to database formats used by various manufacturers. In particular, the format used by Dalet had been used by Radio Rioja and debugged in previous migrations. It worked like a charm, moving the audio files in a few hours while each file's ancillary information was migrated to AEQ format.

Thanks to its intuitive user interface, the transition to the new system hasn't really needed additional effort. The person who traveled there to perform the migration trained users on the system's operation in a few days. During this period, AEQ AudioPlus scheduling was done in parallel with the earlier system's scheduling.

The system includes four recording/playout workstations: one for each control or automatic playout station, one for programming, and a high-availability server with a RAID disk system. Everything was connected over an IP network.

System preconfiguration and installation was done by AEQ personnel, as there were some specific tasks that required special treatment for this "on the fly" migration.

Raquel Cortés of AEQ Technical Assistance Service was on site; she installed the system, transferred the audio files and data, and provided a training course to Radio Rioja staff. Support was carried out by AEQ Sales Area Manager Eduardo Guerrero.

During the installation, the audio codecs for external retransmissions and program transportation were upgraded to IP technology, so four AEQ Phoenix Mercury units and an AEQ Phoenix Venus also were installed.

For information in the U.S., contact Peter Howarth at AEQ Broadcast International in Florida at 1-800-728-0536 or visit www.aeqbroadcast.com. For international queries, contact AEQ in Spain at +34-91-686-1300 or visit www.aeq.eu.

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TECHUPDATES
DJB RADIO RELEASES ZONE V.2

DJB Radio says its creative minds have been hard at work during the COVID lockdown tuning up and polishing the DJB Zone Radio Automation Suite, which took home a Radio World Best of Show Award at the 2019 NAB Show.

New treats include enhanced remote and local voice tracking interfaces, SQL refinements for wide-area and multi-market operation, a heads up "now playing" display in the Production module to monitor on-air remotely, and a new multi-studio module for seamless transition between control rooms or wide-area studios.

Zone V. 2 comes with innovations such as satellite switching, URL scheduling in the main log, and automated time and temperature announcements for that "live feel" when your station is automated.

DJB Zone On-Air can be remotely managed via iPad, Surface, slate or smartphones with a browser remote interface.

DJB Zone is scalable to small, mid-size or large radio groups. The DJB Zone software is available with or without computer hardware; specifications for the system are provided on request. DJB WebStream Logger, Radio Spider and Button Broadcasters are compatible with DJB Zone systems.

For information, contact DJB Radio in Nevada at 1-702-487-3336 or visit www.djbradio.com.



TECHUPDATES
BSI OFFERS OPX

BSI's flagship product is OpX, which it describes as a flexible suite of automation tools designed to grow from a single station to hundreds.

OPX:One is its latest solution for stations looking to "have the power of the largest radio groups with the most reasonable expense. It is a modular suite of tools used by the largest radio groups and networks.

"Its intuitive GUI studio interface, colorful logs, traffic merging software and custom file management enable stations the highest level of quality and security in today's harsh security environments for LAN/WANs," BSI stated.

"It's specifically designed to be the most resistant automation available against ransomware and other attacks. It supports live, automated and remote operation of local, national or a combination of both for the best programming in the 'new normal.'"

Audio playback is supported via professional Audio Cards, Axia, Dante or Wheatstone AOIP drivers.

For information, contact Broadcast Software International at 1-888-274-8721 or visit www.bsiusa.com.



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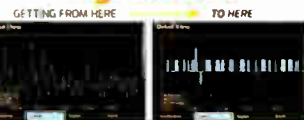
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Connoisseur Leans on Marketron Traffic System

Cloud-based platform provides transparency into the business

USERREPORT

BY MIKE DUFORT
Senior Vice President
Connoisseur Media

WESTPORT, CONN. — At Connoisseur Media, we pride ourselves on our forward-thinking approach to technologies — especially those that help us engage audiences in new ways and give our advertisers intriguing new opportunities to reach consumers.

Advanced and evolving technologies drive our entire operation, which includes 13 radio stations and various digital brands in four markets: Frederick, Md., Nassau-Suffolk, N.Y., New Haven, Conn., and Metro Fairfield County, Conn.

When it comes to back-office systems like traffic and billing, we need technology solutions that will help our sales professionals negotiate and schedule advertising at maximum value.

Of course, any great traffic system needs to streamline and automate workflows and provide seamless, real-time access to consolidated sales, inventory and billing data. For more than 16 years, we've met these requirements with Marketron Traffic.

It is the "fan favorite" in our back office. It's an integral part of our business and a popular solution with our traffic team.

The cloud-based platform gives all of our divisions transparency into the business from multiple locations. With this mature and easy-to-use solution, traffic personnel from various markets are able to step in and cover each other when needed. One of our markets even uses Marketron Traffic Hub — Marketron's traffic management service — to handle all traffic department functions in that market.

UNIFIED REPORTING

One of the strongest features of Marketron Traffic is the integrated reporting capability, which enables key personnel from every level of the business to work from the same set of data presented in a common format.

Based on their individual permission levels as governed by Marketron's multilevel security, everyone — from sales managers at individual stations to GMs of station groups to managers at the corporate level — is able to access the reporting from a single, unified dashboard.

Even if a manager is only permitted to see a slice of the data, it's the same data that will be reflected in larger data sets. This might seem like a simple capability, but it's critical for avoiding confusion, reducing errors and unifying our teams.

With a clean cutoff for running reports and the ability to receive automated reports when we need them, we rely heavily on Marketron Traffic for managing key business metrics such as pacing.

Every morning, I get a PDF report in email with all of the data I need for daily management. It's truly "set and forget it" — you give the system your own reporting parameters and it handles the rest.



Without having to spend time churning out timely reports, our back office team is more efficient, and managers don't have to spend their time pulling their own data out of the system.

Moving forward, we're continuing to partner with the Marketron team as they refine their traffic solutions and introduce innovative new solutions.

For instance, we recently introduced the team to Marketron Pitch, an integrated digital ad platform that has allowed us to build up a substantial digital advertising business. Pitch takes into account the significant differences between digital sales workflows and more traditional radio, such as downstream partners that often need to be prepaid.

We're currently testing a new beta version of Pitch that integrates seamlessly with Marketron Traffic; the result will be an end-to-end electronic workflow for our digital business from proposal to invoice.

With Marketron as our mainstay traffic partner, our radio business is poised for the next generation of profitability. With everyone in the company speaking the same financial language based on accurate and up-to-the-minute data, managers don't have to work for the reports they need to make informed decisions that facilitate revenue growth.

For information, contact Todd Kalman at Marketron at 1-612-790-8464 or visit www.marketron.com.

TECHUPDATES

RCS: REMOTE CAPABILITIES IN THE AGE OF CORONAVIRUS

RCS says broadcasters are faced with the difficult challenge of how to keep stations on air, while maintaining the safety of their employees, so the company is emphasizing its RCS 2GO products in this environment.

It says it has helped customers use 2GO products in a number of creative ways, from running a station "live on the lake," using it as a remote newsroom and using RCS to run everything from home studios.

The 2GO line of products, including Zetta2GO and Selector2GO, can be accessed from anywhere that has an internet connection and security authorization, like a VPN.

RCS recently released Zetta Cloud Based Disaster Recovery. This cloud-based solution was written on Amazon Web Services following AWS security protocols and is not a virtual machine in the cloud. RCS says you can think of Zetta Cloud Based Disaster Recovery as an additional station in another market, only in the cloud. Using Site Replication, any schedules, new audio, metadata changes and backups are uploaded to Zetta Cloud. As needed, users can access Zetta Cloud from a cell-phone or internet browser, like Zetta2GO, and deploy the Zetta Cloud stream.

For information, contact RCS in New York at 1-914-428-4600 or visit www.rcsworks.com.



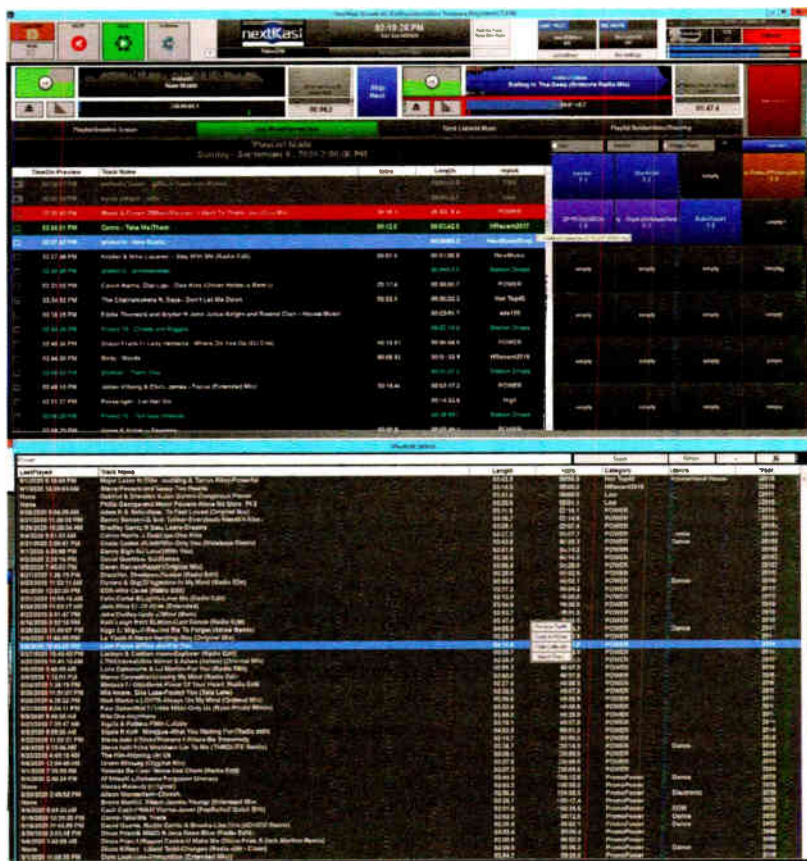
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Zetta2GO powers remote work for Minnesota's KBLB(FM).

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TECHUPDATES
NEXTKAST OFFERS LICENSED VERSION

Axis Entertainment Inc. released its latest NextKast Broadcast automation, Terrestrial License. The latest offering supports customers looking for an intuitive software to run FM, AM, and HD Radio stations at an affordable cost.

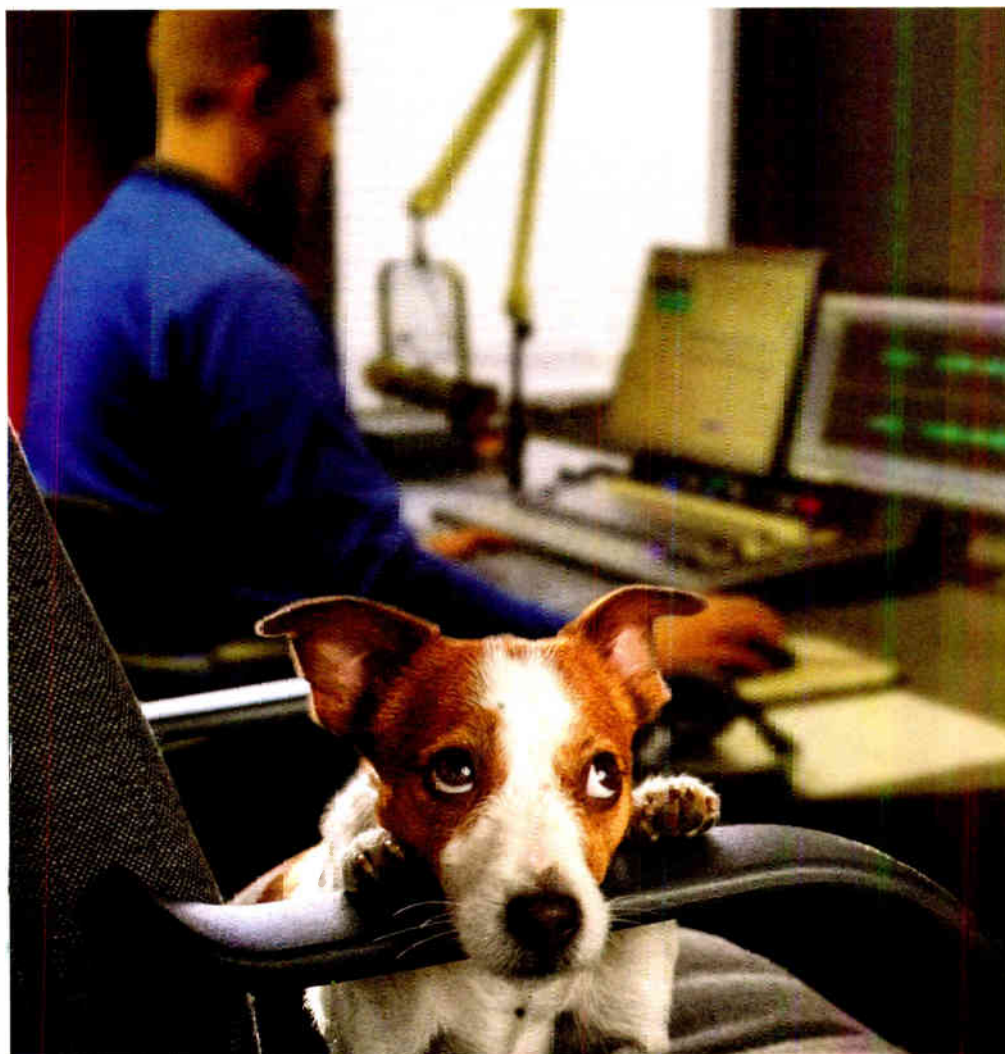
Features include Natural Log, Marketron and other traffic merging; Advanced Nexus Integration with MusicMaster; ability to import external logs from most music scheduling programs; enhanced live assist screen with track search on second screen; current hour remote and in-studio voice tracking; and playlist macros. TCP and cloud-based voice tracking is available for PC, and cloud-based voice tracking on MacOS.

The scheduler includes multipass scheduling (giving power categories artist separation bias), granular hourly mood/feature/gender flow, daypart sectioning for distributing songs in different dayparts, date and time track restrictions, and more.

Hardware triggering is achieved using serial connection USB or RS-232 using Broadcast Tools relay boards like the SRC-16 Plus or SRC-4. The software can run in a virtual server environment because of its minimal CPU and memory requirements. It has been tested in the Telos Alliance Axia IP-Audio Driver environment.

The new affiliate mode allows one main studio instance generating music and voice tracking, while affiliate stations have control of local commercials, imaging and station IDs. The result is that each affiliate's imaging and commercials are unique to the station while voice tracks and music are shared, eliminating satellite or remote triggering scenarios. NextKast Broadcast version now also integrates with syndicated content providers such as local radio networks and others.

For information, contact NextKast in Texas at 1-210-286-2975 or visit www.nextkast.com.



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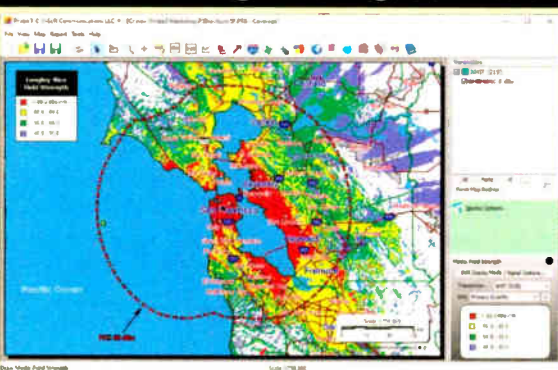
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Wanted: real plate reverb. abgrun@gmail.com.

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Radio broadcasts of Major League Baseball, NFL, and some college football games that are on cassette tapes, approx 100 to 125 games, time period of entire collection os from the 1950's - 1970's, BO. Must purchase entire collection. Contact Ron, 925-284-5428 or ronwtamm@yahoo.com

WYBG 1050, Messina, NY, now off the air is selling: 250' tower w/building on 4 acres; 12' satellite dish on concrete base; prices drastically slashed or make offer. 315-287-1753 or 315-528-6040

WANT TO BUY

Looking for KSFY radio shows, Disco 104 FM, 1975-1978. R Tamm, 925-284-5428.

Wanted: ITC interconnect cables between ITC cart machine and record amp. Manual and idlers for Harris CB-1201 turntables. Don, k8drs1@gmail.com

Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

I'm looking for KTIM, AM, FM radio shows from 1971-1988. The stations were located in San Rafael, Ca. Ron, 925-284-5428.

I'm looking for the Ed Brady radio show in which he did a tribute to Duke Ellington, the station was KNBR, I'd be willing to pay for a digital copy. Ron, 925-284-5428.

I'm looking for KFRC radio special of Elvis Presley which aired on January 8, 1978. I'd be willing to pay for a digital copy. Ron, 925-284-5428.

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

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

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

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1960s-vintage MacKenzie Repeater machines, magazines, spare parts and manuals, complete or "parts" machines considered, James, 870-777-4653.

Schnader telecriptions 16 mm musical films produced in the early 50s. Bill Cook, 719-684-6010.

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College Radio: Great Hopes, Great Fears

Station managers and staffs grapple with the long-term impact of the pandemic

COMMENTARY

BY ROB QUICKE

The author is founder of the College Radio Foundation and College Radio Day, and a professor at William Paterson University, New Jersey.

Across the United States, and indeed the world, college stations have been coming to terms with the start of the new academic year, and how that would impact their operations.

Earlier this year the Federal Communications Commission recognized the challenging operational situations for many college radio stations and made allowances.

Attorney David Oxenford wrote: "The FCC in March allowed noncommercial radio stations licensed to educational institutions to consider periods when schools were closed for in-person instruction as school breaks or 'recess' periods when the minimum operating schedule for these stations did not apply."

For stations that are still online, that guidance still applies, but "If your school has welcomed students back to campus and is operating other student activities, then the question gets murkier."

Oxenford suggests that in "situations where schools are open or partially open to students, if the station cannot meet the minimum operating requirements ... the FCC will likely be willing to grant a station temporary authority to remain silent."

For many radio stations, studios have been physically off-limits for months, as college administrators shut down facilities awaiting hopeful developments in the fight against the global pandemic. Recently that window has been closing, with many colleges electing to bring back some students to campus in a limited fashion.

Some stations never ceased broadcasting operations but found ingenious technological ways to harness the students' talents remotely and kept programming going throughout the summer. Now college radio enters a time where great hopes are matched by equally great fears.

"QUARANTINE TAKEOVER"

A resurgence of the virus is the primary worry for many in college radio.

"Our fear, like everyone else, is that we will have a failure of social distanc-



WKNC's Jamie Lynn Gilbert and WXAV's Peter Kreten

We started a special series of 'Quarantine Takeover' shows based on our normal in-station 'Studio Seizure' shows where musicians become the DJs for an hour.

— John Devecka WLOY

ing and common sense that leads to a second bad wave of illnesses and a return to limited access or closures on campus. We are planning for that unfortunate potential," said John Devecka, operations manager at WLOY. Loyola University in Maryland, in late summer.

The impact of the pandemic earlier did not affect WLOY's ability to continue producing radio.

"Over the course of the closed spring semester we were able to send microphones and/or headsets to a number of key regular DJs and staff to make sure that people had the ability to produce a solid show from home," he said. Recently, WLOY has gone further. "We started a special series of 'Quarantine Takeover' shows based on our normal

in-station 'Studio Seizure' shows where musicians become the DJs for an hour. The Takeover shows are created by the musicians in their home studios for us and have been rolling in from all over the world," said Devecka.

Many college radio stations also took similar actions and have been able to continue to produce content remotely.

But the prospect of continuing like this, operating remotely indefinitely, is concerning for many. There are ongoing consequences that being online only or limiting the amount of time spent in the radio station studios will have on the training and experience that the students will now receive.

Lance Liguez is faculty advisor for UTA Radio.com at the University of

Texas at Arlington.

"My hope is that students will be able to return for a sustained period of time and receive hands-on training in board operation and on-air performance." When he spoke, the plan was to come back in late August with social distancing mandates in the studio, cleaning protocols, and disposable mic covers.

He acknowledged that running a board virtually is possible but said expense is an obstacle. "My university, like many others, is in cost-cutting mode. Getting back into the studio means a chance to further hone on-air and production skills for our advanced students, who conduct shows ranging from sports talk to R&B hits," he says. "Then there's the students new to broadcasting. We typically have around 40 every fall semester, all of whom need to be physically in front of the board."

Not being able to have access to real, hands-on experience will affect the students' development and knowledge, and is a fear shared by many in college radio.

LOSS OF REVENUE

It's not just the loss of valuable

(continued on page 30)

COLLEGE

(continued from page 29)

hands-on experience that causes concern, but also the loss of underwriting revenue coming into the station.

At WKNC 88.1 FM HD-1/HD-2 at North Carolina State University, there has already been a real economic cost to the pandemic. Jamie Lynn Gilbert, associate director of student media, can measure the impact of COVID-19.

"We get a sizable chunk of revenue from airing Wolfpack women's basketball and baseball games each year. We lost several thousand dollars when the season was cut short and we won't see any revenue if the seasons aren't able to start safely," she said.

"We also rely on money earned during a two-night benefit concert every February. While we are brainstorming ways to make this happen, I don't expect to earn \$5,000 from ticket sales in just a few months. Some of our major underwriting clients — local music venues — still haven't reopened, so there is a loss there as well."

Many ... radio jobs, especially in commercial, don't seem to be very stable or full-time. So, I'm hoping our podcasts, videos, social media and articles grow.

— Hannah Copeland, KCSU(FM)

Despite these disruptions, college radio stations are adapting to the precautions needed to continue producing in-person radio during this time, and this is true at WKNC.

"We have mask and cleaning requirements, along with a one-hour break between live DJs," Gilbert said. "We had 15 DJs come back and added another 20 with the start of the new semester on Aug. 10. That's less than half what we normally see in a semester, but it's not surprising."

Despite these effects, there is hope. Adapting to these challenging circumstances means that there has been a necessary refocusing for some college radio stations, and that's not necessarily a bad thing.

Hannah Copeland is general manager of 90.5 KCSU at Colorado State University. "My hope is that more virtual school time will reinvigorate an interest in producing work besides radio, because most of the jobs out there are in audio production, writing, journalism, and online content creation," she said.

"There just are not that many jobs

for regular radio DJs unless a student is incredibly gifted and in the top 1% of talent. Plus, many of those radio jobs, especially in commercial, don't seem to be very stable or full time. So, I'm hoping our podcasts, videos, social media and articles grow."

Despite the uncertainty over the future impact of the COVID-19 pandemic, college stations were busy this summer formulating plans and ideas of how to operate in a variety of circumstances as the academic year now gets underway.

"SMART YOUNG PEOPLE"

Similarly, college media conferences and events have been affected, with many of them becoming online-only in response to the current circumstances.

College Broadcasters Inc. was planning its National Student Electronic Media Convention to take place in Baltimore in late October, but that will now take place entirely online. In a statement to its members, CBI explained its board "has decided, after extensive research and discussion, that

this is best for the safety of CBI members and guests."

Oct. 2 is College Radio Day, an event that typically sees hundreds of college radio stations participate across the country. Recognizing that it is not business as usual for many college stations, College Radio Day is encouraging participating stations to plan on virtual participation and engagement through social media. As organizations embrace new operating models and ideas, college radio stations are doing the same.

At WLOY, John Devecka says that even though they are not on campus, where there's a will, there's a way.

"We are closed for the fall officially now, so our student exec team has been working hard to plan new ways of engagement with our scattered staff, DJs and student body. It's going to be a challenge, but we've got smart young people who will make it work."

This optimism is echoed by Peter Kretzen, director of student media at Saint Xavier University in Chicago and general manager of WXAV 88.3 FM. Kretzen finds reasons for optimism in

READER'S FORUM

RADIO TECH DIVERSITY

Re the article "Blacks Are Few in U.S. Radio Engineering" (RW Sept. 2): I am a part-time independent audio engineer; among my radio clients are some with whom I've worked since 1973. I also do live sound for local venues.

A couple of years ago we needed to add live sound engineers to replace some we had lost. Our production manager was under some pressure to find some minority and diverse staff. It was a folk music club in Berkeley, Calif., and we needed to reflect some of the local community. But it was impossible to find any non-White qualified personnel. Our team of eight engineers includes four women, but no Asian or Black sound people ever applied.

Lou Judson
Intuitive Audio

INSIDE "OVERHEARD AT NAT GEO" — Page 24

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Blacks Are Few in U.S. Radio Engineering
Social justice movement puts spotlight on a lack of radio tech diversity
BY RANDY J. STONE

The recent wave of ethnic and racial tensions across the United States has brought additional focus on the experiences of Black radio engineers employed in the industry.

When news coverage discussed the percentage of women in radio jobs, they failed to include an acknowledgment of the industry's underrepresentation of U.S. radio engineers, most of whom are Black or other minorities. Why that is and what should be done about it are discussed.

Randy J. Stone is a freelance writer for Radioworld magazine and a former radio engineer. He has worked in broadcast engineering for over 30 years. He is currently a freelance writer and editor for Radioworld magazine. He can be reached at rstone@radioworld.com.

They Built New Studios During COVID
Come inside Bonneville's open-concept, interactive AOIP broadcast facility in Daly City, Calif.
BY JASON ORNELLAS

Bonneville International Corp. recently opened a 22 radio studios, state-of-the-art broadcast facility in its new facility in the San Francisco Bay Area. The Bonneville Bay Area cluster consists of four FM radio studios, each of which has a special place in the community. They are 94.5 KBCB, 93.7 KBCB, 94.5 KBCB, and 94.5 KBCB.

Building a broadcast facility during COVID-19 is not for the faint of heart. Bonneville has some definite tips on how to proceed. Daily instructions, under construction, are available on page 18.

IYO Dante Compatibility with Axia AOIP
Hear what the experts have to say about the IYO Dante Mic/Line Interface.

"I would say you have a very good product that will work with Axia and I do see different uses for this device... This would be perfect for having multiple microphones and monitor outputs. The update can be installed through a console or a virtual mixer."

I am quite impressed with the versatility of this AOIP interface unit. It will communicate with Axia Audio both directions using AOIP and Showcast formats. Once on the Axia network, communications worked quite well. IYO showed up on the routing tables in Axia Pathfinder as creating mixes and stack events worked very well."

—Bob H. Vans, Of Speed Catholic Audio Network

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the face of an uncertain future. Because of COVID-19, there has been an acceleration towards embracing technologies and practices that were already underway.

"I see hope. Over the last few years, college radio has begun an evolution. This evolution is seeing students, faculty, and advisors embracing new technologies and practices, while providing students with an educational experience like none other. It is truly an exciting time."

Despite serious concerns, it's possible that there might be unexpected benefits to a situation that a few months ago no one could have imagined. Many involved with college radio believe that they are more than capable of rising to the challenge of this moment.

Comment on this or any story. Email radioworld@futurenet.com with "Letter to the Editor" in the subject field.

PART 15

In a recent letter, Ira Wilner wrote to say that people should be using W-Fi streaming rather than Part 15 transmissions for outdoor events.

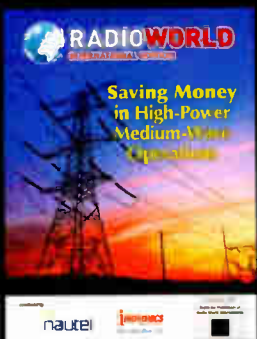
Were latency not a considerable issue, he would be right. However, using Wi-Fi streaming systems can give as much as two seconds latency, which is very disconcerting when you are watching someone speak.

There are some streaming systems out there that claim to reduce this latency but they are not inexpensive and they can still do nothing about the receiving half of the system.

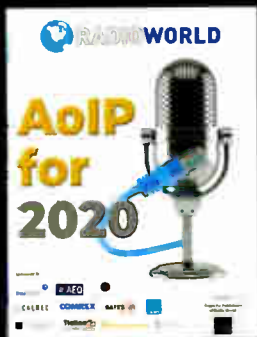
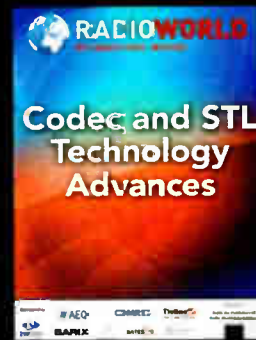
There is, sadly, still a need for leaky coax AM systems taped to parking lot surfaces today.

Scott Dorsey

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