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Techsurvey Reflects Consumer Dynamics

A look back over Jacobs Media survey data tracks the evolution of consumer media use

BY RANDY J. STINE

The origins of Jacobs Media's Techsurvey can be traced to the early 2000s when the scale of change in consumer electronics and media consumption was becoming evident.

Fred Jacobs, president of the research and consulting firm, says he had a natural curiosity about how changes in listening habits, devices and platforms affect radio stations.

The rise of the connected car and smart speaker systems like Amazon's Alexa, Google Home and Apple HomePod are having a significant impact on today's radio listening environment, as are the podcast movement and other on-demand entertainment options.

However, the online survey also reveals the remarkable steadiness of radio listening levels through the years,



even when you consider the radio-centric nature of these non-scientific studies.

So it's both fun and enlightening to look back at other devices and platforms that were prominent, and when, in years past, Jacobs Media did that in a recent webinar highlighting the survey's 15 years and the digital transformation that radio and its listeners have experienced over that time.

"Our mission with Techsurvey has always been to help radio broadcasters

(continued on page 5)



Operations Manager Laura Wenus, left, interviews "Muni Diaries" co-founder Eugenia Chien and producer Peter Clarke.

KSFP Highlights Journalism, Public Affairs

San Francisco Public Press launches a time-sharing LPFM in the City by the Bay

BY JENNIFER WAITS

Just a few blocks from San Francisco City Hall, news and public affairs station KSFP(LP) launched out of a "glorified storage closet" that once housed thousands of newspapers.

The San Francisco Public Press, a 10-year-old non-profit, membership-based print and web newspaper focused on in-depth local news, is an unusual entrant into the community radio space, although it owes its very existence to a public radio-style model.

"We always considered ourselves a newspaper inspired by public broadcasting, and now we have a radio station inspired by a newspaper inspired by public radio.

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Washington State EAS Is Evolving

Why we renamed our state plan, and other progressive steps to improve alerting

ALERTING

BY CLAY FREINWALD

The author is chairman of the Washington State Emergency Communications Committee. In 2016 Radio World interviewed him about EAS reform (read it at radioworld.com, search term "Freinwald reform"). We checked in with him for this issue.

The Washington SECC has a reputation for thinking outside the box when it comes to how they deal with Public Alert and Warning, in particular EAS. We think of ourselves as "progressives."

The structure of the Washington SECC is an open, ongoing, cooperative and collaborative process that welcomes everyone involved with public alert and warning. We meet every other month, operate two in-state email list-servers, and often have ongoing committees working to deal with specific needs and tasks.

Our EAS plan is unique in that it covers a broad range of areas that go well beyond what is required by the FCC. For example, Amber,



Getty Images/Pashalgotov

Wireless Emergency Alerts, Organizational Structure, etc. The FCC is only interested in a portion of what we do. Yet, the idea is to be more inclusive for more public alert and warning systems.

Not long ago, the FCC announced that they are moving toward hosting State EAS Plans online via a process they call Alert Reporting System or ARS. After closely looking at what the FCC was proposing, it was decided that this would be a good time to perform an extensive update to our State Plan.

To accomplish this task, the SECC created the Plan Revision Committee. Its goal was to review our existing plan and make changes indicated by the FCC's proposed changes.

WA-PAWS

One of the first addressed was to rename our new Plan. Whereas the FCC would be hosting the Washington State EAS Plan (online) and whereas the contents would likely differ from our Plan, it was determined that having two plans with the same name was not wise.

Therefore, the Plan-Revision Committee proposed to the SECC that the name of our new Plan be WA-PAWS, or Washington Public Alert and Warning Systems. This title has been approved by the SECC.

The new WA-PAWS plan will be like the existing EAS Plan and be printable as well as be available online. We will continue to use "tabs" to house specific items that will make updating much easier.

Unlike the present plan, the new one will be broken into segments: Overview, Structure, Distribution, LECCs, Amber and Additional Resources. And finally, rather than duplicate what the FCC will have online for the State EAS Plan, we will simply provide a link to the FCC site hosting that tab information. In other words, the State EAS Plan will be a segment *within* the WA-PAWS Plan.

The process of getting from here to there is a gradual and deliberate one. We meet via a conference bridge about every two weeks, with periodic in-person meetings. Ongoing are a lot

(continued on page 4)



Shown, a FEMA info sheet for young people about Wireless Emergency Alerts. Clay Freinwald writes, "It is important to understand that today, broadcasting is no longer the primary means of alerting the public. ... It can be argued that the most effective tool for that task is WEA."

Today's Console Is Tomorrow's Touchscreen

And maybe we'll see facial recognition used in a console user interface

Jason Ornellas, CBRE, is director of engineering for Bonneville International Corp. and a member of the NAB Radio Tech Committee and SBE national board of directors.

Radio World: The topic at hand is consoles. What's the most important design trend, in your view?

Jason Ornellas: I see consoles becoming more of a touchscreen with layers and a smaller physical footprint. Thinking of the younger folks in the industry, and today's kids only know touchscreens, so it would make sense if we saw studios have touchscreens only. As much of a pain as it would be to support a fully touchscreen type studio, I'm sure they will be common within

RW: What role does the console play today when planning a radio studio?

Ornellas: The console is still the heartbeat of the studio, but so many other factors play bigger roles within the design and planning of a new broadcast studio. I believe they will become more automated and smaller in size as things move virtually within the studio. The days of having big consoles, fully loaded with faders, are not the



Jason Ornellas

future of studio design, especially for music format stations. I can see how a news talk format may still want a more traditional style console, but with AoIP making switching sources easier, I believe time will change that mindset as well as part of the design.

RW: What will the next generation of user interface look like?

Ornellas: I think the next generation of a user interface will be very animated and powerful.

I think we have already embraced in some instances that we will not be using a physical console for some studios and take everything virtual. Think out of the box. And could facial recognition be a way for a user interface to interact or control the layout of the GUI? All of this is a true possibility with enhancement of technology and where we are going as humans, with everything being virtual and dependent on AI.

As much of a pain as it would be to support a fully touchscreen type studio, I'm sure they will be common within 10 years or less.

10 years or less. Also, with software being the backbone of these consoles nowadays, I can see consoles becoming very small, the size of a laptop.

RW: How could equipment manufacturers make your life easier?

Ornellas: I think the console manufacturers do a great job with the layout, hardware selection and color selections of consoles already. They constantly make different flavors of the console with various size and price, so they unanimously know their audience and buyers.

I think, as an industry, it is configuring the equipment or console that gives us the biggest headache or is the most time-consuming. I would like to see more coders and programmers to work with the vendors to make the user interface as seamless as possible while navigating it and configuring your AoIP system.

ALERTING

(continued from page 3)

of emails with electronic document support. The committee reports to the SECC as to its progress every two months during their regular meetings. The Plan-Revision Committee has been working on this process now for over a year.

Once we agreed to the overall concept and structure, we have been dealing with each segment of the new plan's tabs, slowly and deliberately. At this writing we are dealing with what we call our Monitoring Matrixes, which are tables that guide participants as to what they should monitor in each operational area. We are dedicated to getting each segment right before proceeding further. The impact on participants (radio and TV stations and cable systems) of these updates will be minimal, and FCC compliance will be easier for participants.

In the future, participants will be able to view the WA-PAWS Plan online, hosted on the Washington State Emergency Management website. The refreshed state plan will be a wealth of information about how the overall process functions, including such details as "what needs to be monitored," etc. Specifics regarding the State EAS Plan will be available online via FCC ARS. Validation of all the monitoring sources will be determined by the FCC (and FEMA) via the existing ETRS.

BEYOND BROADCAST

It is important to understand that today, broadcasting is no longer the primary means of alerting the public. Today, there are more, and perhaps better, "tools" in the Public Alert and Warning Tool Box. It can be argued that the most effective

tool for that task is WEA.

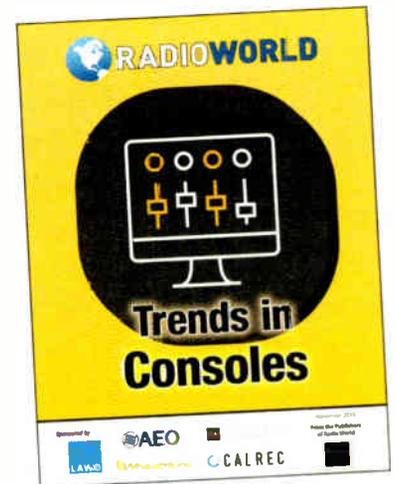
Interestingly, if you look at the software that's used by emergency managers, many of these programs provide a means for launching both EAS and WEA Messages. These systems have been joined by other tools, for instance participation by the National Weather Service, Reverse 911 telephone systems, highway signs, opt-in local alert programs and more.

The challenge for broadcasters is to enhance their willingness to broadcast these public alert and warning messages. Tragically, many broadcasters decline to air anything other than what the FCC requires. Emergency managers know this and, as a result, have had no choice but turn their attention to other additional resources to alert the public.

Our role in this effort is to further educate emergency managers on how to more effectively use all these tools. The need to have broadcasters participate in both the state committees (SECCs) and local groups (LECCs). This participation needs to come from management. Unfortunately, too many broadcast managers have concluded that EAS is a technical function. The truth: It is not. It is a public service function with the goal of saving lives and, as such, deserves attention from higher levels in the broadcast industry.

One more thing our SECC is working on: how to provide post-disaster information to the public after a major event such as the major earthquake that is promised for this part of the country. This effort requires more tools and more training for all stakeholders, and perhaps is another story for another time.

Clay Freinwald has been chairman of the Washington SECC since 1996 and is a past recipient of Radio World's Excellence in Engineering Award. He can be reached at k7cr@blarg.net.



This article is from Radio World's ebook "Trends in Consoles." We've now published more than 50 ebooks on a wide range of topics that are of interest to the broadcast technologist or manager including AoIP, next-gen codecs, cloud technology, digital radio, RDS, DRM, translators and more. All are free to read. Find recent editions by clicking the ebooks section under the Resources tab at radioworld.com.



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TECHSURVEY

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produce a great radio product for their constituencies," Jacobs said during the webinar.

Techsurvey results parse media usage and tech trends. They are compiled from data collected from listeners of participating radio stations in a variety of formats and are designed to elicit information about those listeners' technology adoption and usage.

Techsurvey has morphed since its inception from an original focus on the habits of listeners to rock-formatted stations to include those of multiple radio formats, Jacobs said.

The most recent survey in 2019 explored the habits of approximately 64,000 listeners of 560 North American radio stations, according to Jacobs Media.

Techsurvey 2020, for which data gathering began in January, will accompany specific studies for public radio and Christian music broadcasters that Jacobs Media will present later in the year.

EARLY DITCHERS

When the survey began in 2005, its findings reflected those days of flip-phones and internet dialup, Jacobs said.

"There were lots of AOL accounts, and text messaging was just for young people. Only 25% of those surveyed were texting on their phones," Jacobs said. "Fewer than one in four listened to internet radio, and MP3 players were just coming into vogue."

An important discovery from the first survey was the number of 18- to 34-year-olds who had already ditched their house

landlines and were cell-only, he said.

"It was about 33%, which is significant when you consider that Arbitron at the time was not including cellphone-only in their samples. That was when the Arbitron Advisory Council used this data to pressure Arbitron to use cellphone-only households," Jacobs said.

The cellphone breakout was evident by 2006, Jacobs said, and by 2007 the survey clearly reflected the influx of streaming on YouTube and the beginnings of social media's impact.

trending that shows the rampant growth of iPod type devices along with MP3 players during this time. Really, the whole idea of using the smartphone as a MP3 player hadn't kicked in yet."

PANDORA IN THE PICTURE

Jacobs Media uses a "media usage pyramid" to demonstrate the relative use of various technologies. The 2009 survey revealed growth in the use of streaming audio, social media and text messaging among survey respondents.

If a person is into video on demand, they are also likely to be into audio on demand, better known as podcasting.

—Fred Jacobs

"This was about the time MySpace ruled social networking sites. FaceBook was just opening up to becoming more than just a college campus community, but this is when technology really began to explode," he said.

Techsurvey 2008 arrived just before Apple launched its App Store, Jacobs said. That survey detected a shift in cellphone use, he said. "Along with using them for texting and taking photos, cellphones are being used as alarms to wake up. In fact, a majority of people [in 2008] were using cellphones to wake up.

"iPhones were popular; Android phones were just coming in," he continued. "In addition, you can see some

Nearly four out of 10 people in 2009 said they listened to audio over the internet.

"They were streaming radio station streams, but Pandora is trending up big time. It was when we really started focusing on Pandora and what might be happening with it," Jacobs said. "It's also the first year Twitter shows up on the social networking list."

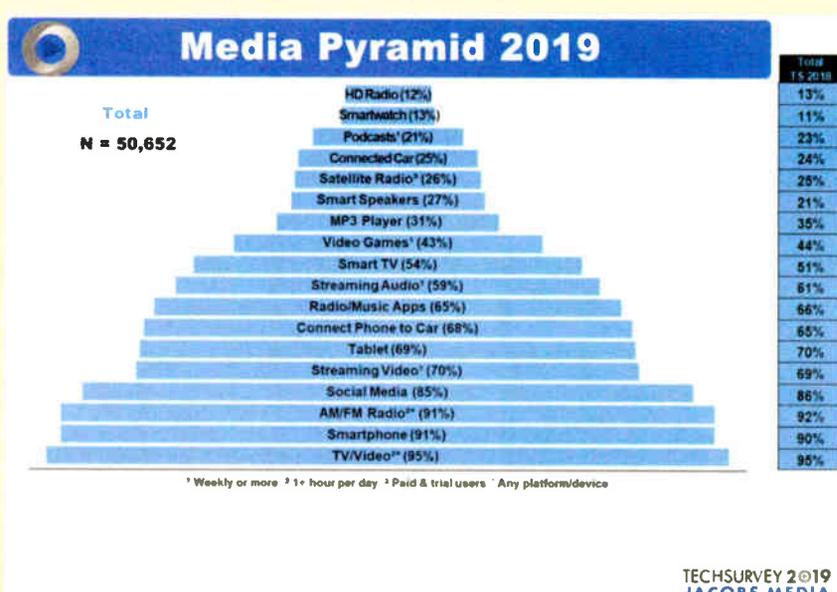
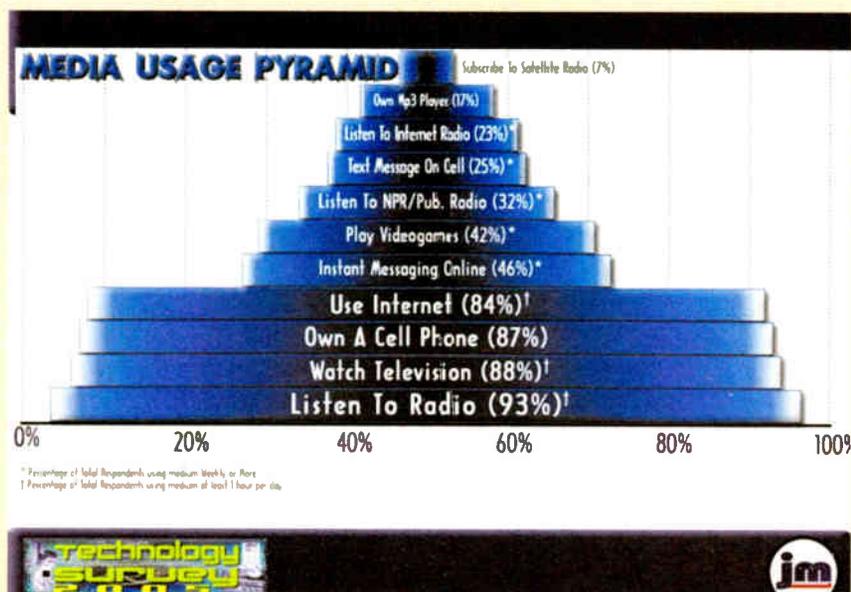
The smartphone revolution was at "full speed" by 2010, which also found the Blackberry on its way out and Apple's iPhone building dominance. And "now everyone is downloading apps," Jacobs said. In fact, eight out of 10 who owned a smartphone were downloading paid

(continued on page 6)

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The Media Pyramid slides for 2005 and 2019 reflect changing consumer tastes. (The early years of the survey focused on a sample of listeners to rock stations, while the survey now covers listeners to 14 formats.)

TECHSURVEY

(continued from page 5)

and free apps by then, according to the survey.

Social media was exploding by 2011, he said, with Facebook beginning to dominate MySpace, and early signs of LinkedIn and Twitter making their marks. Android smartphones gained in numbers on the iPhones.

Jacob's eighth survey, in 2012, was the first to be open to all radio formats and all radio stations, which greatly increased the number of respondents — more than 57,000 total.

By then, Jacobs said, the survey was

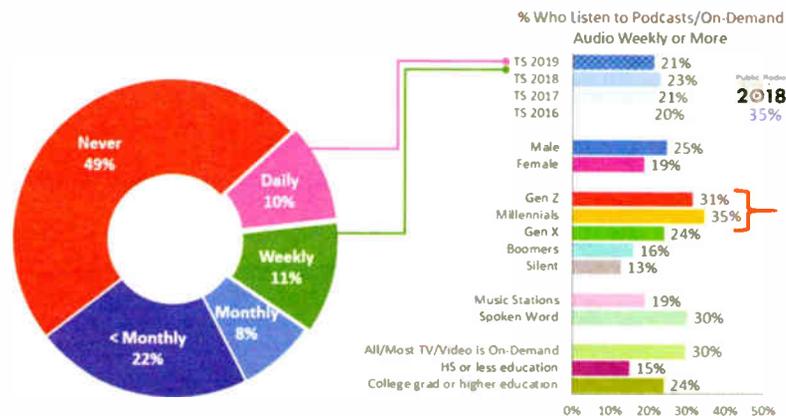
an established indicator of what kind of content people were consuming. "But what it was also starting to do was telling us about distribution. We knew cellphones were very important, but how big? How about in-car entertainment systems and such?"

Jacobs said 2012 was also the first year in which cellphone usage (96%) eclipsed the percent of people who listened to AM/FM terrestrial radio (93%) in the media usage category among mainstream AC listeners.

Also in 2012, Jacobs said, his firm began to discover the "emotional benefits" of listening to the radio.

"By that point you could get music from a lot of different sources. We asked:

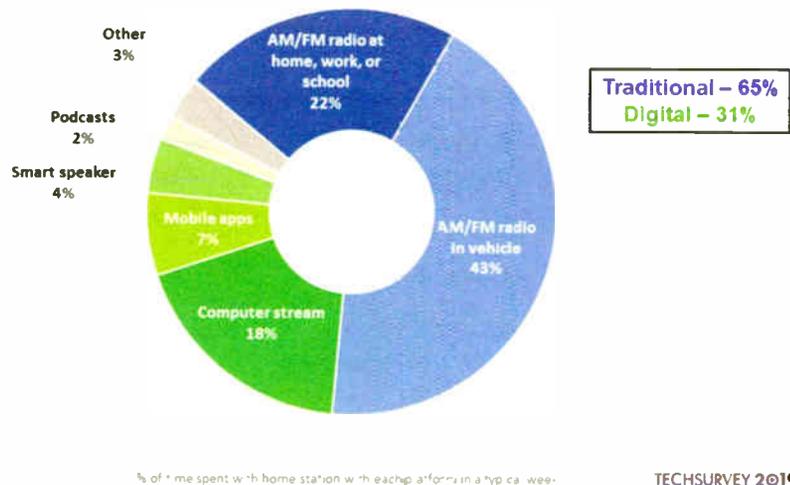
More Than One in Five Listens to Podcasts Weekly or More, Led By Men, Younger Generations, and College Grads



TECHSURVEY 2019 JACOBS MEDIA

Home Station Listening Platforms

Total



TECHSURVEY 2019 JACOBS MEDIA

This 2019 chart shows the percentage of time spent with a listener's "home" station via various platforms in a given week. Non-traditional digital channels now account for 31%.

The survey now includes detailed info about podcast listening habits among radio listeners.

Why listen to the radio? Well, we found that radio is a mood elevator, about companionship and about escape. It's critically important to know what moves listeners in this age of tech," Jacobs said.

Jacobs also discovered about this time the importance of "word of mouth" in the era of social media. "Without questions it's more important than ever," he said.

Techsurvey 9 in 2013 was the first to break out data by generations, Jacobs said, with boomers, Gen Y, Gen X and Gen Z the main categories.

"We also asked those who were listening to less radio why that was the case. Number one was a lifestyle change, such as a change in jobs, moving to a new area or retirement. That stuff is

really outside of radio's control," he said. "However, the next two top reasons were that they didn't enjoy the programming any longer, and too many commercials."

In 2013 Jacobs began asking about the digital dash and things like Bluetooth and iPod connectivity in the car, he said. "It's becoming more and more desirable, and definitely portends what we see currently in that people really enjoy those features."

By 2014 and Techsurvey 10, which Jacobs considers a digital tipping point for social media usage, Instagram and Snapchat inch into the picture for social networking choices.

"More and more people are driving a connected car, in fact one in five. Still, half of all consumption of radio still

takes place in the car, and 29% at work or home. But podcast sneaks into the survey for the first time," Jacobs said. "And more listeners are looking favorably upon radio that they can socially interact with. And Facebook is [by then] the monster it is still today."

In 2015 the survey included more than 220 radio stations and 41,000 respondents, and continued to show radio holding steady in the overall media usage pyramid at 92%.

IN THE HOME

Jacobs notes that for 2016, the survey began to ask respondents about radio ownership specifically in the home. Boomers registered at 93% while Gen Y checked in at only 78%, he said. "And remember, this is a radio-centric sample."

The impact of on-demand entertainment options like podcasts, Netflix, Hulu and YouTube TV had become more significant by then, with podcasting and other on-demand options being driven by millennials: 31% of Gen Y respondents said they listen to podcasts weekly.

"Young people were way into TV on demand sooner than anyone else obviously," he said. "And if a person is into video on demand, they are also likely to be into audio on demand, better known as podcasting."

Listening in connected cars, like those with Ford's Sync Connect, became more fragmented by 2016. AM/FM listening was at 55%, while satellite radio, personal music on phones, podcasts, Pandora and audio books accounted for the rest.

The 2017 survey shed more light on why people are still listening to AM/FM radio despite having so many other options. Jacobs said the answer is easy: "Because it's free. And surprisingly, it's the younger demos, perhaps because they are the most cash-strapped, which appreciate the fact that radio is free. And more are cutting the cord and moving away from premium pay services."

Radio listening continued in 2017 to tip from traditional terrestrial on-air listening (74%) toward more digital listening via streams (22%).

"Most digital listeners are still streaming off a radio station's website, but more and more are accessing the stations app," Jacobs said, "which means it's becoming more and more critical for radio stations to have a Millennial or Gen Z strategy. And smart speakers and the voice command feature on devices have become a big thing by 2017."

Jacob Media's brand pyramid in the 2018 survey showed significant growth by Hulu, Amazon Prime Video and Netflix, Jacobs said, as on-demand video streaming exploded. Radio was still the top "brand" (92%); but for the first time

the survey asked about the most important features in a new connected car, and it differentiated between AM and FM radio.

"FM radio is the more important new car feature in the dash (81%), but only 37% say AM radio is a must-have in [their] next car. Things like Bluetooth connectivity (72%) and smartphone aux connector is (63%) are growing in demand," Jacobs said.

The most recent survey, released in 2019, revealed growing privacy concerns among listeners, especially via home speakers and social media plat-

forms such as Facebook.

"Nearly a quarter of those surveyed said they were seriously considering deleting Facebook due to privacy concerns. And we are seeing a connection to a decline of the number of people willing to sign up for a radio station's stream. We think privacy is a big reason why fewer people are willing to sign up for the stream and provide us information," Jacobs said.

In addition, a big conclusion of the latest survey is that satellite radio is making a strong comeback, he said.

SiriusXM "bought Pandora. They

also have a great program with Amazon so that now you can listen to any SiriusXM channel on an Amazon Echo device. Now nearly one in four respondents in 2019 subscribed to satellite radio. And the top two options for satellite radio subscribers are the spoken word, sports and news/talk programming."

Jacobs said Techsurvey this year will delve deeper into smart speakers and voice control, podcasting and CarPlay and Android Auto in the dashboard, as well as "hearables" — smart headphones — such as AirPods.

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BBC Assesses 5G's Broadcast Capability

Shona Croy is strategic advisor for Renewables and Connectivity at the Orkney Council.

designed to emulate 5G) was designed to give BBC engineers total control over transmission parameters, such as modulation and coding settings, and to alter them to assess performance in different situations. The trial used 2x10 MHz bandwidth in the 700 MHz band.

The trial featured the broadcast-mode delivery of radio over 4G (eMBMS with MPEG-DASH), enriched by mobile broadband to give listeners access to live (broadcast) and catch-up (unicast) content, as well as internet access, using a mixed mode in 3GPP Rel-12, providing both broadcast and unicast.

DETAILED TELEMETRY

The broadcast mode can reduce the amount of bandwidth needed to air the involved content since in this approach the base station is only sending one transmission rather than multiple versions (one to each different user).

This means that when many users request the same live program at the same time, broadcasting it over 5G helps reduce congestion on the rest of the network.

BY DAVIDE MORO

STRONSAY, ORKNEY ISLANDS, SCOTLAND — BBC Research & Development (www.bbc.co.uk/rtd) extensively tested live radio broadcasts over a purpose-designed 5G network to assess the capability of the technology to successfully reach people living in rural areas.

These areas often suffer from inadequate radio coverage as well as low and unstable bandwidth on both fixed and mobile data connections.

IP FUTURE

The trial took place in Stronsay, a remote island in Orkney, Scotland, off the northern coast of mainland United Kingdom. Before the trial, islanders complained that it could take up to 10 minutes to download an email.

"We chose Stronsay because of its very limited existing coverage overall," said Andrew Murphy, lead engineer for BBC R&D. "There is almost no mobile phone coverage, no DAB coverage and even the FM is not strong. It was definitely a good place to run a test."

BBC R&D worked closely with the

local council and authority. The test in the far reaches of Scotland is part of the "5G RuralFirst" (www.5gruralfirst.org), a government-funded initiative deployed at multiple locations across the U.K. to experiment with new approaches to connectivity in rural areas.

"We were interested in radio," Murphy explained. "We wanted to assess whether people living in remote areas (where there is a lack of traditional AM/FM or digital radio reception) could access the medium through 4G and 5G and were able to listen to BBC radio programming live."

Looking toward an IP future for media, BBC is aware that consumers are increasingly using smartphones to access content over mobile networks. The broadcaster is also active in EBU and 3GPP standardization committees.

"BBC needs to be able to test and understand the forthcoming technologies so that we can work on them and see how we can improve them where appropriate," Murphy added.

BROADCAST MODE

BBC had some concerns about the capacity and coverage (BBC needs universal availability) mobile networks can effectively ensure. It questioned whether 4G and 5G technologies could potentially help broadcasters overcome these challenges.

Murphy said they decided to assess the delivery of radio through 4G and 5G broadcast technology because radio is a naturally mobile medium, and people enjoy listening to the radio on the move.

The trial demonstrated that people liked the convenience of having radio readily available on a smartphone.

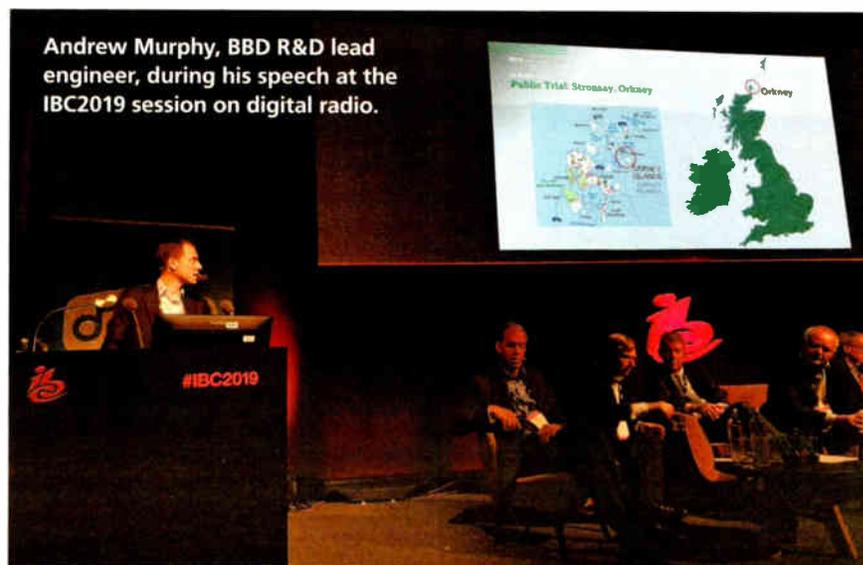
At the same time, smartphones are increasingly not fitted with broadcast receivers.

Since no commercial 5G system was available, BBC decided to design and build its own base station, which Murphy's team deployed in the center of the island at Stronsay Junior High School.

The base station (4G technology but

"We incorporated 13 live radio services, including BBC Radio Orkney," Murphy explained. "We recruited 20 people to use broadcast-capable handsets featuring 4G technology but designed to emulate some features we hope to see in the forthcoming 5G standards."

The specifically designed handsets
(continued on page 10)



Andrew Murphy, BBC R&D lead engineer, during his speech at the IBC2019 session on digital radio.

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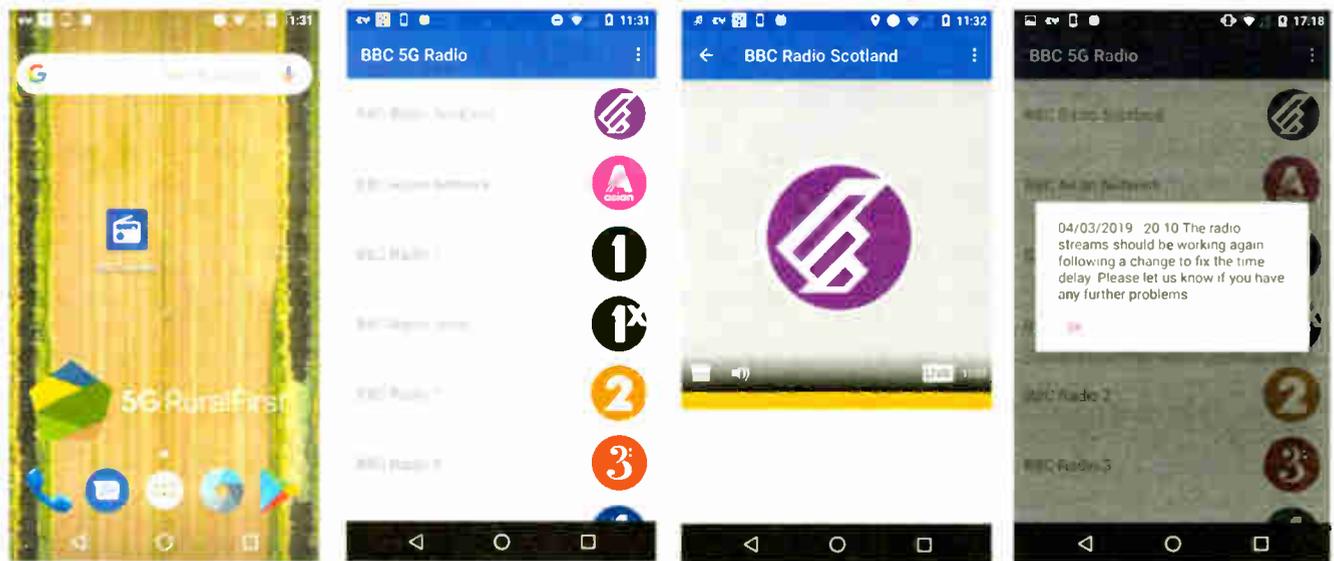
BBC

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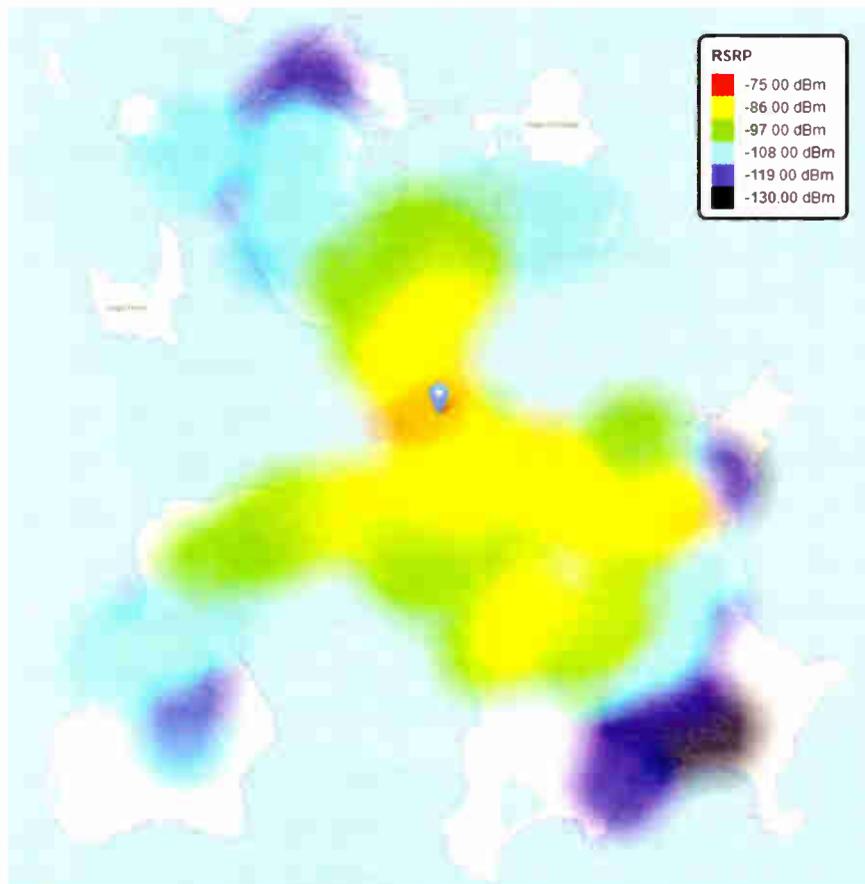
allowed the tests to achieve greater results than currently possible with equipment commercially available today. The handsets included Rel-16, LTE-based 5G terrestrial broadcast. SIM-free reception as well as transport-only mode with AAC+ audio over RTP/UDP/IP.

A dedicated app, built on standard BBC app components, powered the receiving device and comprised detailed telemetry data of reception quality as people listened to the radio services.

"This enabled us to build-up an anonymized, crowd-sourced coverage map across the whole island and to assess the performance of different transmission parameters on the quality of service," said Murphy.



Screenshots from the radio app the BBC developed for the 5G broadcast radio trial.



A crowd-sourced coverage map built on data coming from the BBC app installed on trial receiver.

ALMOST SATISFIED

The distributed availability of the monitoring probes built into the receiving devices allowed BBC engineers to run an analysis over a much longer time period and over a wider area than drive testing alone would allow.

In addition, since the data came from real-life handsets, a more accurate picture of how the technology works in practice was depicted.

Across the 16 active handsets over the first five weeks of the trial, average broadcast listening measured at just over two hours per day, which would be

the equivalent of around 1.5 GB of data over a month in the conventional unicast scenario.

"This a very significant proportion of the average monthly mobile data per active connection in the U.K. of around 1.9 GB per month and would leave little allowance for other uses," he added.

The trial demonstrated that people liked the convenience of having radio readily available on a smartphone, and almost all (nine in 10) were satisfied with trial internet service. They often used the handsets as mobile hotspots, giving them access to faster download speeds for films and music.

BETTER OPTIONS

Anecdotal evidence from teachers at the island's junior high school — backed up by data from the devices — suggests that teenagers in Stronsay have become big fans of the music played on the BBC's Asian Network, one of the 13 BBC stations they could access as part of the trial.

In a BBC video (<https://tinyurl.com/rw-bbc-5g>) illustrating its 5G project, Shona Croy, strategic advisor for Renewables and Connectivity at the Orkney Council said: "We were really keen to do something that overcomes this barrier of rural areas being last to get a service, or not getting it at all. But the economic case for coming here is poor, so are there other ways we can look at delivering services?"

5G as a technology is still being developed and deployed, and it has a completely different level of maturity with respect to, for example, DAB digital radio.

"The BBC will continue working in this space together with the European Broadcasting Union to try to influence current and future standards that provide broadcasters with better options for these purposes," Murphy concluded.

Daide Moro holds a Master of Science in engineering and has been a radio enthusiast since the age of seven, when he first began as a radio presenter. He lives in Bergamo, Italy, has worked for Telecom Italia and the Italian public broadcast RAI, and specializes in RF coverage planning, network design and field measurement.



The BBC R&D is working on 5G technology to provide broadcasters with better connectivity options.

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World Radio History

A New Ultrasonic Leak Detector Pinpoints Leaks

Also, the mousetraps just keep on coming!

WORKBENCH

by John Bisset

Email Workbench tips to johnbisset@gmail.com

You may be familiar with Amprobe; for years they have manufactured a clamp-on ammeter, which you clamp around a wire to measure the current.

The company has released a product that detects leaks. It's the ULD-420 Ultrasonic Leak Detector. The handheld detector is easy to use and provides an accurate location of an inaudible air or non-flammable gas leak. The detector can also identify vibrations and

I'm happy to report that big box stores like Lowes and Home Depot are now stocking the safety "volt pen" I discussed recently as a Telos representative on an SBE webinar. Head to the electrical aisle to pick up one of these lifesavers.

For those unfamiliar, it's shown in Fig. 2. It's an AC inductive probe that glows red when it senses AC voltage. Before reaching into any equipment, pass the volt

Fig. 1: Amprobe ULD-420 Ultrasonic Leak Detector



electrical discharge by picking up the ultrasonic sound produced by the leak or disturbance.

This product sounds like it is ideal for detecting transmission line air leaks, but the manufacturer says it can also be used on plumbing, heating and air conditioning systems, even motors or electrical systems. Read more at Amprobe.com; enter "ULD-420" in the search box.

pen around breakers and disconnects to ensure they are "off." The version shown in the photo is a Southwire Non-Contact AC Voltage Detector, model 40116N. We also found it on Amazon.

Newman-Kees Principal Engineer Frank Hertel makes note of a relay contact transmitter and receiver pair that monitors eight separate switch contact input signals, and sends the status of



each via an embedded device server to the matching relay output receiver. The combo costs under \$900. Use it when you want to send contact switch or relay information over a Local Area Network or a wireless network link using TCP/IP protocol. The device is model IPG-8T and IPG-8R and you can get more information at www.fmsystems-inc.com/product/ippg-8tipg-8r.

While you're on the site, click on the FM Systems Publications tab, then "Engineers Corner." In addition to some interesting articles on relays and maximum cable lengths, read the article "When LEDs Act Like Photocells." The article explains that in addition to providing an efficient light source, an LED can be used as a photocell to supply a voltage output that actually responds to the light levels in a room. It turns out that when light strikes the P-N junction



Fig. 2: An inexpensive volt pen detects high voltage before your hand does.

of the silicon, electrons flow, generating a voltage, albeit a small one. You'll find the article fascinating.

Frank also passed on an interesting note for engineers returning equipment for repair.

He and his son Dave provide equipment repair services at Newman-Kees. They have noticed that some products were shipped by UPS but with final delivery handed off to the US Postal Service. Many of these shipments arrived damaged.

This damage issue is not unique to Frank and Dave's company. Other repair techs report similar instances of rough unconcerned handling. It appears to Frank that the problem is not UPS, but rather when the shipment is handed off to the USPS for final delivery. His suggestion is to instruct the UPS agent to ship UPS Ground (or UPS 3 Day Select, UPS 2 Day Air or UPS Next Day Air). Failure to stipulate a UPS service leaves it up to the agent to choose USPS Handoff Delivery, which saves UPS money.

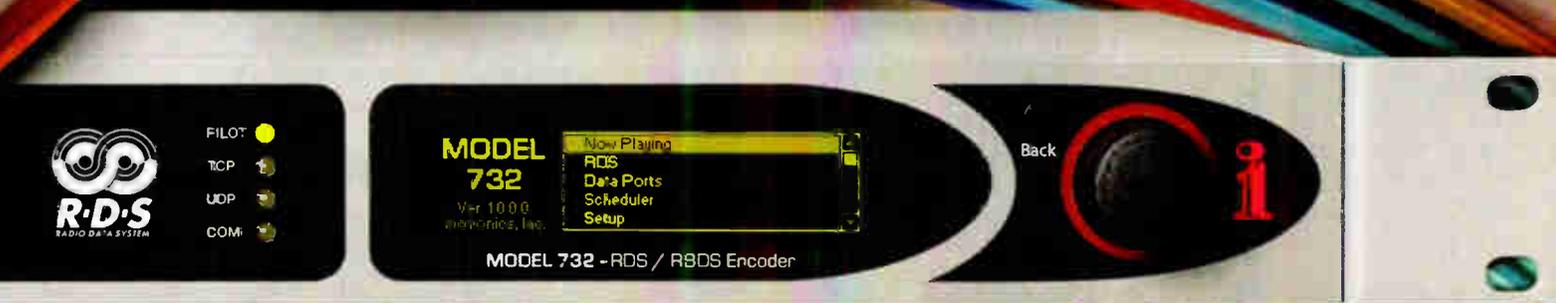
So the bottom line is to be sure to specify one of the UPS services when shipping equipment, and ensure there is no handoff to USPS for final delivery.

 <p>Studio Items Inc.</p>   <p>Mic Booms On-Air Lights Speaker Mounts www.studioitems.com</p>	<p>TORPEY TIME (The Good Time People)</p>   <p>Clocks Up/Down Timers www.ram68.com</p>	<p>Dixon Systems</p>   <p>News Mixers Line Matchers USB Audio Codecs www.ram68.com</p>	<p>RAM Systems</p>   <p>Broadcast Furniture Systems Integration Sound Absorption Panels www.ram68.com</p>
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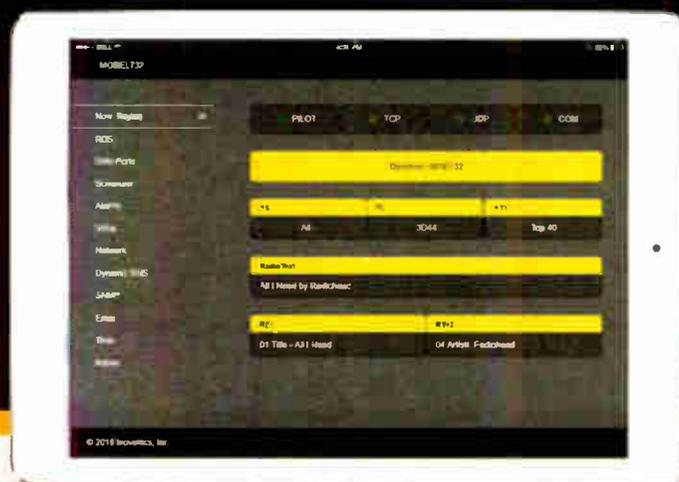


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KSFP

(continued from page 1)

so we've kind of come full circle in a way," said San Francisco Public Press Executive Director Michael Stoll.

TIME SHARE

Hitting the airwaves in San Francisco last summer, KSFP joined time-share partner San Francisco Community Radio KXSF(LP) on 102.5 MHz. One of the last low-power FM radio stations to launch from the 2013 application window, KSFP broadcasts daily from 4 to 10 a.m., and from 4 to 10 p.m. via an antenna on Sutro Tower.

For about a year, San Francisco Community Radio's KXSF was the sole station on 102.5 FM, transmitting during the other 12 hours (see story at radioworld.com, search "KXSF").

Funding for the effort came from Public Press members as well as institutions like the James Irvine Foundation, the California Endowment and the Ethics and Excellence in Journalism Foundation.

While KXSF's crew of volunteers was full of folks with radio experience, San Francisco Public Press staffers were less seasoned and sought help from the broader radio community, including KXSF, to get up and running.

As the vision for the station crystallized, two experienced radio producers were brought on board to oversee the station and its programming.

At an evening event last August, community media supporters gathered at Impact Hub in San Francisco's Mission District to celebrate the debut of both KSFP(LP) and its flagship show "Civic" (sfpublicpress.org/civic). It had been a long road to the airwaves for San Francisco Public Press; and radio veterans in the room shared that they were happy about the rare launch of a new radio station in San Francisco.

"ENORMOUS RESOURCE"

KSFP Operations Manager and reporter Laura Wenus and KSFP Program Director Mel Baker are the core team managing KSFP, with Stoll serving as general manager. Wenus and Baker also are host and producer, respectively, of "Civic."

Rather than launching with a full slate of original content, they opted to



start slowly, beginning with the radio show and podcast "Civic," which developed out of the journalism being done in the Public Press newsroom.

Stoll acknowledges that while there's been a lot of buzz in journalism circles about podcasting, KSFP wants to ensure that it's taking full advantage of the opportunity that it's been given with LPFM.

"Everybody's been talking about this sort of pivot to audio in the nonprofit local journalism space really for the last two to three years. ... People have been starting to take it really seriously, but most of the organizations have tepidly dipped their toes into podcasting ... they haven't put a lot of energy into the volume of content or staffing or the distribution. It's often considered kind of an add-on," Stoll said.

Understanding that 12 hours of daily airtime on KSFP is an "enormous resource," Stoll and team have tried to be thoughtful and methodical about bringing their current work to the airwaves.

Although they are entering a crowded radio dial in San Francisco that includes a variety of non-commercial powerhouses, KSFP's hyperlocal news focus sets them apart.

"We have a reputation for truthful, careful journalism in print, and we're translating that into other media in a way that is aimed at keeping the work that we're doing in print and print style journalism on the web relevant to new audiences."

With "Civic," airing at 8 a.m. and 6 p.m. on weekdays), San Francisco Public

(continued on page 16)

WORKBENCH

(continued from page 12)

Phil Florig, W9IXX, wrote to pass on a link to a small company that manufactures another version of the "walk the plank" mousetrap. Head to <https://kentuckymousetraps.com/store> to see several versions for both mice and rats. Phil just bought the rat version, we'll wait for a report on its effectiveness.

Randall Davidson is the director of radio services at the University of Wisconsin/Oshkosh's WRST(FM). Randall was pleased to see Dan Slentz's submission about the Public News Service. Randall's station uses it and has told others who are looking for a good, free news source.

Randall also wanted to tell you about another inexpensive option for stations to consider. Feature Story News offers hourly five-minute, three-minute and 30-second audio newscasts each weekday via download from stable URLs. The five-minute version is the three-minute offering plus "FSN Extra," a 90-second feature on one topic. The last newscast on Friday evening is branded "Week in Review" and can be used throughout the weekend.

The network was founded in 1992 by former ITN reporter Simon Marks. They have reporters in 30+ bureaus around the world, providing video and audio packages for a variety of clients, and they offer this news service to radio stations

for \$15/month.

Randall uses a software package called Radio Spider to download the newscasts twice an hour and direct them to buttons in their playback system, so the content is always fresh. WRST has carried this service since 2011, and Randall says he couldn't be happier with their service. For information, go to featurestorynews.com.

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John Bisset has spent 50 years in the broadcasting industry and is still learning. He handles western U.S. radio sales for the Telos Alliance. He holds CPBE certification with the Society of Broadcast Engineers and is a past recipient of the SBE's Educator of the Year Award.

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MARKETPLACE

Management Upgrade:

Digigram has released a firmware update to its IqoyaX/Link and Iqoya Serv/Link IP audio codecs that will enable them to manage up to 32 mono or stereo full duplex IP streams during remote broadcasts.

The company says it added new graphical interfaces specific to the configuration and operating phases. In two clicks, users can place calls to the field or the studio.

More Access: Codec specialist Comrex has announced a new firmware version available for its Access and BRIC-Link lines of codecs.

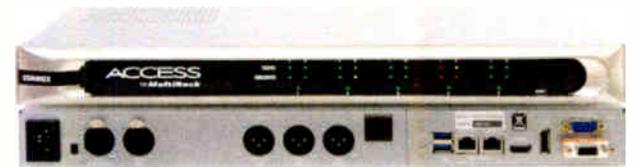
Version 4.5p2's main thrust is to provide multi-instance capability to the line in the wake of the launching of the Access MultiRack codec. A release says, "This new firmware simplifies CrossLock connections between

the new Access MultiRack and legacy Comrex IP audio codecs."

In addition, the new version will replace the resident Adobe Flash-based GUI with an HTML5-based user interface. Flash security has been suspect for some time.

Firmware V4.5p2 is available for Access Rackmount, Access Portable 2USB, Access NX Portable, BRIC-Link, BRIC-Link II, Access MultiRack (pictured) and Access NX Rack. Comrex warns that codecs with firmware numbered 2.7.1 or earlier will need to be handled specially, requiring a call to Comrex Support.

Info: www.comrex.com



With the update, the codecs support SIP, direct SIP and symmetric RTP connections using the address book.

In remote broadcast mode, FluidIP integrates stream redundancy functions such as forward error correction or dual streaming with spatial or time diversity to establish reliable and resilient connections on unmanaged networks.

Additionally, Digigram says the updated firmware features low-latency audio connections and EBU/ACIP compliance for third-party codecs and SIP infrastructure interoperability.

Iqoya Serv/Link has the highest codec density in 1U, according to Digigram. In remote mode, it can manage up to 32 mono or stereo full duplex IP streams regardless of the audio encoding format and the audio connectivity; and when in the "program distribution" configuration, it supports up to 128 mono input and output channels and able to simultaneously encode, decode and transcode IP audio streams.

Info: www.digigram.com

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KSFP

(continued from page 14)

Press hopes to not only have something “of interest to San Franciscans,” but that also “encourages and enables civic participation,” according to Wenus.

“Civic” features interviews and stories focused on local San Francisco issues and news. To pique interest in the show, the launch party featured a live on-stage interview that would form the basis for a future episode. Wenus’ entertaining conversation with the team behind public transportation-themed storytelling blog/podcast “Muni Diaries,” had the audience engaged, with many sharing their own amusing and harrowing public transit stories during the Q&A that followed.

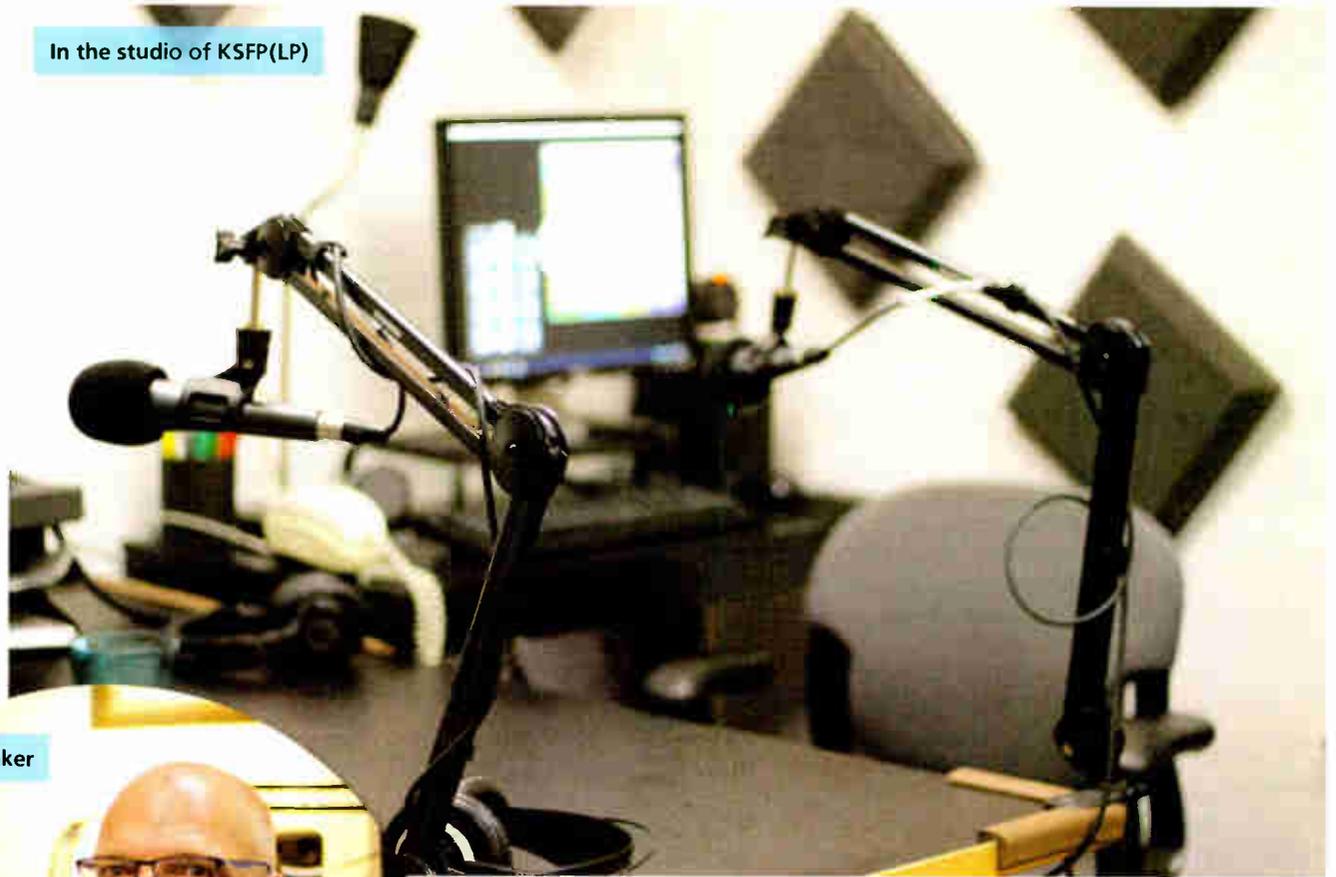
Other recent shows have included stories about climate change, homelessness, mental health and San Francisco elections. With an understanding that audio on demand is increasingly important, “Civic” is running both terrestrially over 102.5 and in podcast form, with additional bonus episodes available online.

For now, the station is an FM-only venture, with a live stream on its wish list. Wenus shares that one of the exciting aspects of the project is the simultaneous launching of a radio station, radio show and podcast. She said it’s been interesting “trying to straddle those worlds.”

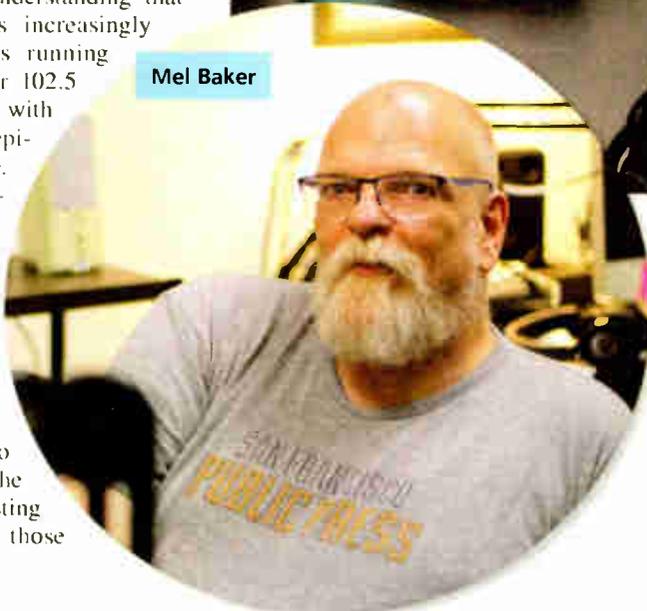
“EXCITING POWER”

From its small studio, Wenus and Baker record “Civic” and oversee the daily tasks of the radio station, slowly building out the schedule. It airs syndicated news and public affairs shows such as “Radio Survivor” and KQED shows like “The California Report Magazine,” “Political Breakdown,” “Making Contact,” “Bioneers,” “Reveal” and “Philosophy Talk” — and rounds out the remaining hours with PRX Remix, a stream of “stories, podcasts and documentaries” from non-profit media company PRX’s 24-7 stream.

In the studio of KSFP(LP)



Mel Baker



They’re also in talks with several independent audio producers for original programming that would have its broadcast home on KSFP. The hope is that local producers will take to the KSFP airwaves, bringing additional programs to the schedule in months to come.

The team is optimistic about its place in the media landscape.

“There is just so much enthusiasm for the idea of ... expanding the airwaves,” Stoll said, “and bringing new voices to the air and new choices.”

Radio will allow them to reach new audiences. Baker speculates that, “Audio is a living breathing medium for communicating. People have more ear time than eye time. You can listen to more stories than you can ever read or watch, so that’s the exciting power of this medium.”

Jennifer Waits writes frequently about community, college and low-power radio. She is a co-founder of Radio Survivor, which produces a free syndicated weekly show that airs on KSFP.



MARKETPLACE

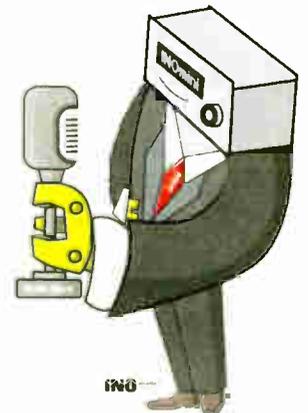
Firming Up: Inovonics has released firmware updates for five of its INOmini receiver-monitor models. The company says the update “improves the internal reference clock” as well as addresses other issues since the June release of these products.

The new firmware is available at each product’s description page and is also aggregated in the Downloads section. The models with available updates are:

- INOmini 661 DAB+ Firmware
- INOmini 673 FM/RDS Receiver
- INOmini 674 AM Receiver
- INOmini 676 NOAA Receiver
- INOmini 679 HD Receiver

Instructions for downloading and installing the updates can be found at the company website.

Info: www.inovonicsbroadcast.com



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Stations should tap into the natural benefits of outside activities

PROMO POWER



Mark Lapidus

I love to hike, bike and walk, especially on trails through the woods. Judging from the quantity of people I encounter on my excursions, I am not alone in my passion for the great outdoors. It's one of the few remaining places in America where people actually openly smile and say hello to one another. I suppose we are all in a better mood when carefree and breathing fresh air.

Radio stations are always searching for ways to project fun, tap into good feelings and show support for public institutions. By appointing one of your on-air personalities as your "outdoors person" — or hiring a freelancer — you can capture this feel-good attitude. And

Duluth, Minn., rock station KQDS(FM) hosts a Great Outdoors blog at <https://95kqds.com/>. It features "experiences, tips and discussion."

play out on your station and then across your brand's platforms:

1. On-air pre-recorded piece: "Hey, it's Smokey O, the Outdoors Guy. During this amazing spell of mild winter weather, have you considered hiking in the nearby George Washington National Forest? Parts of the forest are less than two hours from DC. One trail I particularly recommend is the Woodstock Tower Trail, a moderate 45-minute gradual climb. When you get to the top, you can climb the ranger tower where you can see for miles over the Shenandoah Valley. Entrance to the park is free. Get more details about how to plan your day at [station's website], Facebook page or see pics at #SmokeyO."
2. Tag: "Smokey O, the Outdoors Guy, is brought to you by Smoot's Outfitters, where all your climbing gear is now 20% off."
3. On Instagram, you'd post pics of the hike.
4. Your host, Smokey O, could do a weekly five-minute podcast about his forays.
5. Some of these clips could be recorded while Smokey O is actually hiking, a great way to inspire listeners to get up and go.

No doubt, part of the appeal of communing with nature is that many outside activities are either inexpensive or even free. It's important to communicate the financial facts and other details when talking about park entry fees, activities and events.

Here's an example of how this could

(continued on page 20)

Ozarks Public Radio capitalized on June as Great Outdoors month at www.ksmu.org, branching out from its regular coverage of Missouri news and politics.

yes, there's even a way to generate revenue by doing so.

A clever name or title for this al-fresco role will help you to build affection for the person presenting information on-air, online and via your social platforms. You are creating a subject matter expert — an influencer, in today's parlance — who has the street cred to guide your audience into the great outdoors.

Sowegalive.com features its own "The Great Outdoors Radio Show" and a podcast for Georgia outdoor enthusiasts.



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Adventures in 1970s AM Radio: Helloooo, Punkie!

A format change proves more complicated than WOHO's GM expects

PROGRAMMING

BY KEN DEUTSCH

In 1976, WOHO(AM) was second in the ratings to the legacy market leader in Toledo, Ohio, WSPD(AM), a stuffy bastion of Frank Sinatra records and call-in recipe shows pushed by air talent well past its prime. At the time, Ken Deutsch served as WOHO's "outgoing program director." Here, he recalls some of the efforts and misadventures the station embarked on while attempting to unseat its chief rival.

"I want you to get rid of that bubblegum crap we're playing, and fire those rock jocks!" shouted our general manager. "Do it now!"

And with that subtle directive from the GM, Toledo's WOHO(AM) began the transition from a successful top-40 operation to an adult news and talk format.

We did this by gradually adding more information segments and nighttime talk shows, and by tweaking what music we did play to reflect adult tastes. At that time, AMs around the country were heading in this direction in order to reach a more desirable demographic for advertisers: 18-49.

But our GM failed to predict the cost of this upgrade, and how long it would take to change our image in the mind of the public.

Rock n' roll disc jockeys were relatively cheap; skilled and experienced news people were expensive, and we had many to hire. To get the message about our format change out to the public, we also had to invest in billboards, newspaper ads and TV spots, some of which couldn't be traded out, no matter how we tried.

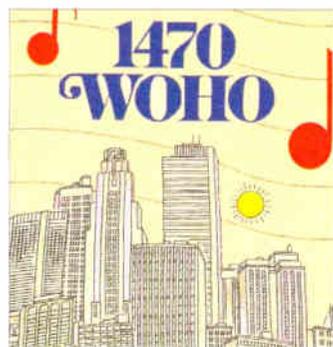
After about six months we sent an intern out on the streets to take an unofficial survey on what people thought of the new WOHO. Most "Joe and Jane Lunch Pails" (as our general manager referred to our listeners) thought WOHO was *still* top 40, and several mentioned the names of jocks who had not been at the station for over a year. Uh oh.

It looked like it might take a while longer to convert those people who had been listening to WSPD(AM) for most of their lives.

The GM put up with the high costs for about a year — which I estimated was one third of the time it would have taken to change public perceptions — before he exploded in his office one day while looking at some financials.

"Ken, what the hell have you done to our station? We were doing great playing the teen hits, and we were making money like crazy! Now look at this!" he shouted while shoving a balance sheet in my face. "I told you that switching to an adult format was a bad idea!"

I looked at him standing there, veins popping out on his forehead, and it was at that moment that I made a decision: to just let him yell at me until his anger subsided. The next few months were difficult as our GM put increasing pressure on everyone to get the ratings up, something that was largely out of our hands. That



would just take time.

Then our beloved GM, who as you may have guessed ran more on raw emotion than research, let me know he was bringing in a "consultant" to tweak our programming.

By that, he meant he was hiring a hatchet man to dismantle the news format and get us back into top 40, no matter who got crushed.

INTRODUCING PUNKIE

Shortly thereafter I met this guru, whom I'll call "Punkie." He was a California rock jock with no programming credentials, and he brought with him a character called "Timmy the Frog," who existed as a sound effect on a cart.

During his air shift, Punkie talked to Timmy and spewed jive talk. Punkie didn't have a title at our station, but he seemed to have the power to make whatever changes he liked to our personnel and our music.

I ran an aircheck of Punkie one day to preserve his shtick for posterity.

"More More More," and the Andrea True Connection, and here comes Timmy the Frog —

(Sound effect: ribbit ribbit splash)

Hanging around in the WO-HO porcelain palace in the WO-HO powder room at 3:02, baby. We also have the Disco Lady —

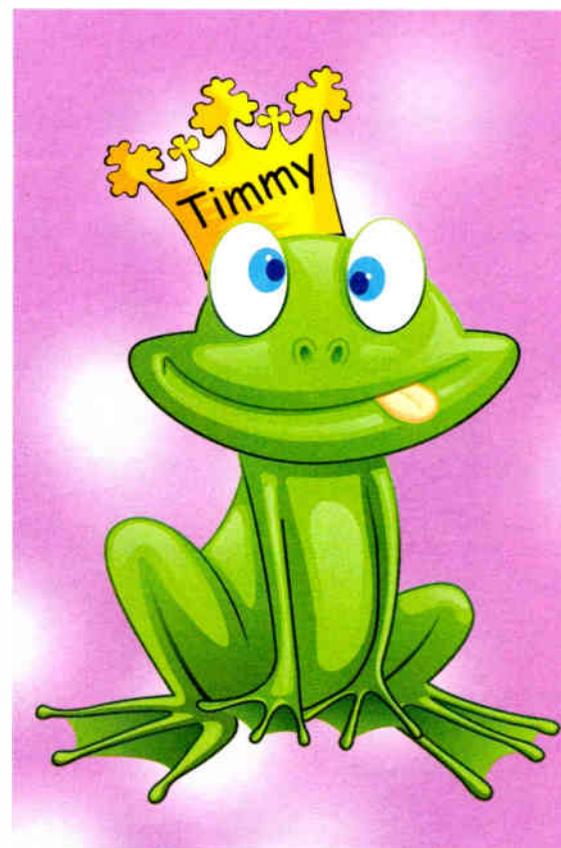
(Sound effect: lady sighing suggestively)

Oh, right in my ear, dear! I love it!

(Starts next record)

You're in a giving mood, I'm in a taking mood, I'm in a shaking mood, I'm in a quaking mood, baby. I'm in a mood that's so good I got to deliver, man! I got to give give give, I got it all to live. Starbuck and "Moonlight Feels Right" at WOHO.

One of Punkie's first acts was to fire the news writers and the woman who worked part time handling traffic reports on the air. This left our afternoon anchor, whom we'll call "Lawrence," bereft of support.



Lawrence calmly approached Punkie and told him that without these people he was unable to do his job, and furthermore that it was unfair to his staff to fire them so abruptly.

Punkie's response to Lawrence: "Oh, I see, you got an integrity thing going on. I can dig that."

But within three weeks the adult news and talk format had been dismantled, and we were back to bubblegum. It was the collapse of a two-year experiment.

I lost track of the station after that because I had already given my notice. But listen, if you see Punkie, or Timmy the Frog for that matter, give them my regards.

Ken Deutsch is a writer based in Sarasota, Fla. You can reach him at kenrdeutsch@gmail.com.

OUTDOORS

(continued from page 18)

After you've established your Outdoors Person as an authentic, reliable personality and he or she has gained a following, you're really ready to run. They can begin making appearances at nonprofit events and activities to strengthen your station's community relations, then also serve as a personality doing live cut-ins from retail establishments and commercial exhibitions related to anything outdoors.

FINDING YOUR SMOKEY O

I've left the most challenging part of this plan for last. You're likely wondering how in the world you are going to find the right person for this role.

Aside from the normal job sites, like LinkedIn and Indeed, and getting recommendations from locals connected to the outdoor scene, have some fun!

Run a contest and do "tryouts" for a month. You

could feature contestants on your morning show, have them guest-post photos on your Instagram, and then let your audience vote.

You could also check to see if there are any local influencers with an active lifestyle who are already big on YouTube or Instagram. Likely, they'd love to reach a new audience via radio and your social channels.

Remember that this concept is not limited to hiking. Depending on your location, you can cover fishing, hunting, skiing, snowboarding, kayaking, sailing... virtually any outside activity that your audience enjoys in your area.

More than 150 years ago, Massachusetts native Henry David Thoreau wrote in his journal, "What is Nature unless there is an eventful human life passing within her?" Encourage your listeners to experience the world outside, and who knows what they may discover.

Mark Lapidus is a multi-platform media, content and marketing executive and longtime Radio World contributor. Email mark.lapidus1@gmail.com.

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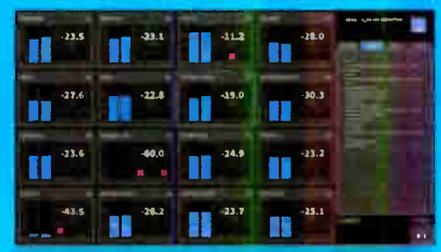


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MicPort Pro2 Delivers the Smartphone Audio Goods

CEntrance has a pro-grade recording interface for radio reporters and voiceover artists

PRODUCT EVALUATION

BY PAUL KAMINSKI

Though technology has made great strides in the last decade, voiceover artists and radio reporters have been tethered to tablets and laptops when recording audio. Smartphones by themselves weren't an option for the kind of professional audio recording necessary for a radio reporter or voiceover artist to do their job. CEntrance's MicPort Pro 2 offers to change that by bringing professional audio recording capability to the smartphone as well as tablets and laptops.

SMALL PACKAGE, MANY FEATURES

The MicPort Pro 2 connects to a smartphone, tablet or laptop via a USB OTG cable. Users of iOS devices (iPhones) with Lightning connectors, would use a Lightning to USB connector that CEntrance describes on their website (centrance.com). Once connected and recognized, the MicPort Pro 2 is ready to process audio in three flavors: microphone level, line level, and (for the musician) Hi-Z guitar or bass level. There is switchable 48 V phantom power for microphones that require it.

The MicPort Pro 2 has a control to blend send and return audio, useful if connected as an audio input device for a codec app, such as Luci Live Lite or an audio recording app, such as Audio Evolution Mobile. Headphone connections are made with a 3.5 mm TRS jack. There are LED indicators for signal presence (white) and signal overload (red). Switches for the high-pass filter (6 dB cut below 130 Hz) and Hi-Z line input selection are recessed and require a small object like a paper clip to move.

Recordings made with the MicPort Pro 2 are two-track recordings, although

the device is a single-channel input device. One of the tracks (left) is recorded at normal level; the other is recorded -12 dB below the normal level. If the normal level track is unusable due to clipping, the -12 dB safety track can be used. The MicPort Pro 2 is offered with an optional soft-knee limiter, which is used primarily on vocal recordings. A recessed switch and LED indicator control and monitor its operation.

The MicPort Pro 2 has a rechargeable battery that can be recharged by any device with a USB micro connection. The battery needs to be charged for five hours before its first use, and is not user-replaceable. The product can be mounted on a 1/4-20 bolt (like those on a mini photo tripod), so a user can connect microphone, headphones, OTG cable all on one tripod, saving space in cramped quarters like a press area. The unit is sold with a one-year warranty. The downloadable operators manual is very detailed and, if referenced, will help users solve most problems that they may encounter.

RECORDING

I recorded two episodes of my "Radio-Road-Test" program using this device, along with an Audio-Technica AT897 shotgun electret condenser mic, Koss Pro 4 AA Titanium headphones and Future Sonics earbuds. One was recorded on a Google Nexus 7 tablet,



The Centrance MicPort Pro 2 can be used as a front end for smartphone apps like Luci Live Lite. It can be used (with the proper adapter) with iOS phones, and as shown here, Android phones such as the Samsung Galaxy A6.

the other on a Samsung Galaxy A6 smartphone. I used the Audio Evolution Mobile app on both devices to record the raw audio, consisting of my spoken voice with the limiter engaged. The Nexus 7 recognized the CEntrance MicPort Pro 2 as a USB sound card and I could monitor audio. The Galaxy A6



The Centrance MicPort Pro 2 fits on a small photo tripod with convenient controls and jacks for connections.

PRODUCT CAPSULE

CENTRANCE MICPORT PRO2 Audio Interface

Thumbs Up

- + Compatible with most soft codecs and phones
- + 48 V phantom power
- + Onboard high-pass filter

Thumbs Down

- Some flakiness with certain phones; took a while to connect to Cleanfeed via the Chrome browser

Price: \$249, with limiter \$279

Contact: CEntrance in Illinois at 1-833-236-8726 or visit www.centrance.com.

also recognized the MicPort Pro 2 as a USB sound card and I could record and monitor audio when recording with Audio Evolution Mobile.

I also tried the MicPort Pro 2 using the Luci Live Lite app on the A6 and the phone recognized it as a sound card, allowing me to send and receive audio. When trying to use Cleanfeed (through



Google Chrome browser-based Opus codec) with the Galaxy A6 and the MicPort Pro 2 connected, the A6 did not recognize it as an input. CEntrance and Cleanfeed worked through this issue with me and identified that it was a Chrome browser issue.

The arrival of the CEntrance MicPort Pro 2 coincided with the failure of my studio recording console. When comparing the sonic quality of the MicPort Pro 2 and the setup that I've been using for more than 10 years, I could find no difference. It is a plug-and-play solution



What makes the CEntrance MicPort Pro 2 useful: 48 V phantom power, and a switchable soft limiter

for any mobile, laptop or desktop device that allows a corded connection by USB, which, when equipment fails and a production schedule beckons, brings peace of mind because the backup is as good, if not better, than the original equipment. For a simple home or office studio recording setup, the MicPort Pro 2 would make economic sense, because of its onboard limiter, monitor, 48 V phantom power preamp and rechargeable onboard battery.

The CEntrance MicPort Pro 2 costs \$249 for the base version. The version with the optional limiter goes for \$279. The MicPort Pro 2 will most likely find its way into the bags of audio technicians, voiceover artists who'd like to be even more mobile, guitarists and bass players, and, most importantly for the Radio World reader, the radio reporter who may need to record voice tracks or connect via codecs.

Paul Kaminski, CBT, is a mostly retired radio reporter, host of msrpk.com's Radio-Road-Test program, and since 1997, a Radio World contributor. Twitter: @msrpk_com. Facebook: PKaminski2468.

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

MARKETPLACE

Mix Master: The Telos Alliance has announced a new software update for its Axia iQx AoIP mixer.

Version 1.3.2 should make talk show producers and hosts happy with an automix function as a new feature. The function should balance open mics where there is more than one mic hot. Using algorithms it can prioritize microphones dominance and silence those of quiet guests to eliminate room, background and system noise along with bleed.

V1.3.2 is now available for download on the iQx product page.

Info: www.telosalliance.com



Moseley

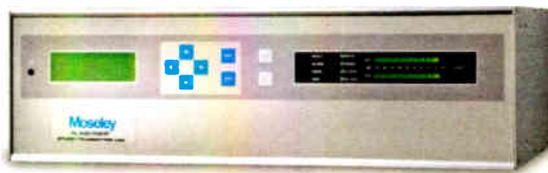
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Small Station Finds It Needs More Space

Radio World checked in with Dan Slentz to see how Ohio's WDNP(LP) is faring

FIRSTPERSON

BY DAN SLENTZ

WDNP(LP) went on the air in Dover-New Philadelphia, Ohio, on July 13, 2015. Five years later, this little LPFM has continued to grow.

Being in a small market with four commercial stations and two full-power noncoms has been an advantage. The fact that signals from a larger market (Canton and Akron) penetrate the county could have been a little more of a concern; but the initial focus of the station was to fill a void in programming, with the added element of hyperfocus on localism and being a real part of the

community.

This has proven to be the right thing to do as the station holds a 6.1 rating and is near the very top of the 14 rated stations in the market.

That success has translated to strong support not just from underwriters but from listeners, donors and organizations who recognize the station as a nonprofit with a mission to support all the other nonprofits of the area as "their voice." And to the listeners, DNP 102.3 "sounds" like any full-power station with strong imaging and playing "hits all day, rock all night, and oldies and specialty shows on the weekend."

For five years, this slogan (and "your hometown station") have been the foundation of growth.

GROWING PAINS

The station started as a studio, transmitter "room" (rack in closet with glass door facing the control room), reception area and small office that doubled for editing areas for content). The growth of volunteers and the huge increase in production has taxed the tiny studio and has made it necessary for volunteers to work at midnight or overnight to produce content or even voice-track a show.

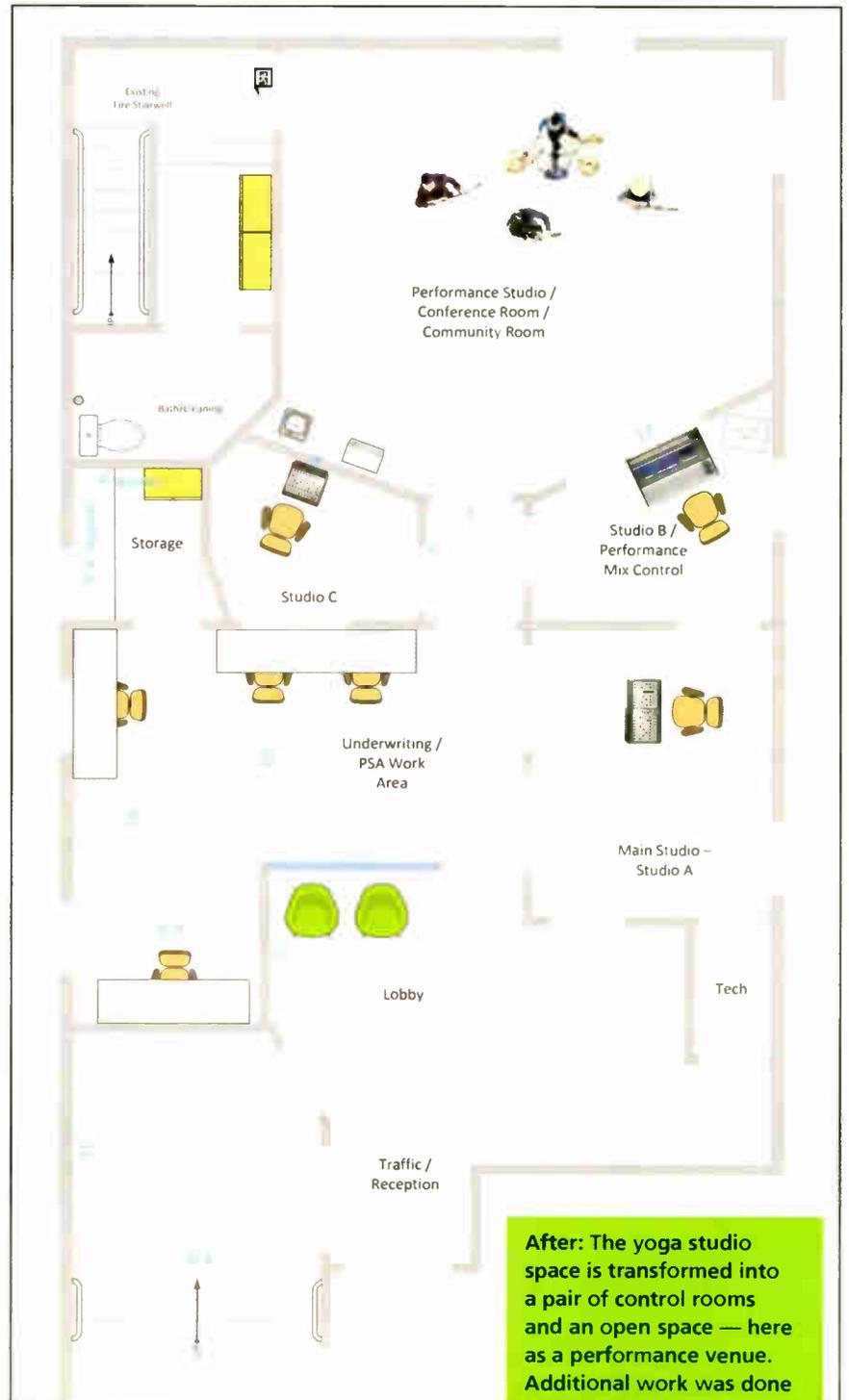
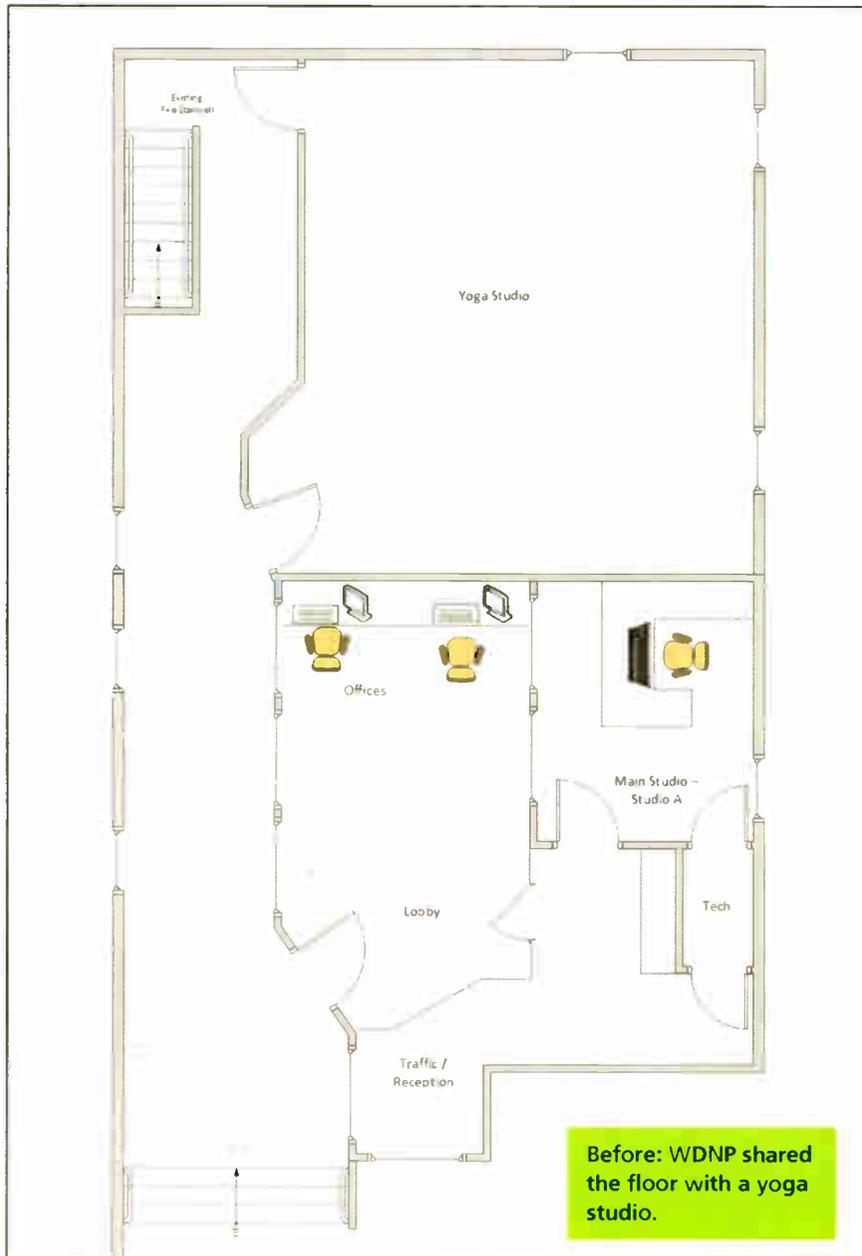
The problem of too many people and too few resources is a nice problem to have!

The station started the process of improvements two years ago, planning

to add an additional production studio, but it quickly became apparent that the community had bigger requests than a single additional studio could support. With this in mind, we took it to "Phase II," and that would include a major amount of significant upgrades.

The upgrades included increasing the office/work area size to accommodate the PD, plus numerous volunteers. And with many guests arriving to be a part of live shows like "Gimme That Shu," we had to be able to give a good impression to the numerous listeners that were finding their way into our office and studio.

In addition to the office growth, a production studio (B) would be added along with a multitrack studio (C) for



more complex editing and production. The big addition would be the very necessary large space to hold volunteer meetings (which now numbered more than 25 people), but this space would be far more than a meeting area. The new area would be designated the Performance Studio/Conference/Community Room.

Since DNP has an all-volunteer organization with no paid staff, the board supported the idea of creating space that our small nonprofit could allow other small (or smaller) nonprofits to use at no cost. As a nonprofit, WDNP (or Dover/New Philadelphia Educational Broadcasting) has been fortunate to continue to grow and have great sup-

port. It is the intent to share that blessing with other nonprofits who might not have a place where they can meet, so sharing our community room aspect of the performance studio was added.

But that performance studio with a digital multitrack room was going to be pushed even further. In a rural county of about 90,000 people, the station felt that giving local musicians a place to record CDs or even perform live on-the-air would be something that would take DNP to the next level.

So the design allows musicians to create music. And since DNP wanted to relaunch "Saturday Night Live & Local," a live music show Saturday nights from 10 p.m. to midnight, creating this new

performance space would allow us to do what we couldn't before, which was to have five or six band members together to perform live. Previously, two or three were in our main studio, and another two or three were miked out in the office with cables running into that studio. The show sounded great, but very difficult to manage in that scenario.

So we cut to where things are today. Over the past few weeks, the remodeling has started and things underway for Phase 2. The office size is increased, new studios framed and insulated and the shell is nearly complete. Drywall is being finished shortly and doors installed.

To create a broadcast-quality studio,

things were done in a less-than-traditional method, yet my own experience working with some incredible people (including acousticians) allowed the design of primary walls between the performance studio and studios B and C to be double walled with mineral wool in each wall, and the walls isolated from each other with foam board between them. Truly, one wall has no contact with the inner wall. As high-priced acoustic doors aren't possible in a "budget environment," outdoor doors and windows that are double-paned and insulated with argon-filled gas serve to provide excellent acoustic isolation between areas.

(continued on page 26)

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WDNP PROJECT

(continued from page 25)

The pictures (page 24) show the original WDNP and the new DNP with Phase 2. To prep for the necessary cabling, three 2-inch conduits were run inside the interior wall to allow cables to chase above the ceiling. As the ceilings in this original building are 15 feet, a standard height studio allows for six feet of storage above each studio. So in the sound-lock hallway between each studio, a heavy (400-pound rated) pull-down ladder was added.

To give us a unique and unusual space, the station opted to create a "loft" (of sorts) above Studio C so guests/groupies/friends of bands could actually sit up in that "cozy" area and watch their bands perform ... and even be a part of a "live audience." Later we may add a small spiral staircase up to this loft from the performance studio side of the wall.

What comes next is a split zone, low-noise HVAC system to each studio. I've done this before with KERA(FM) in Dallas, and the noise level of these systems is acceptable (and surprisingly quiet) since they use low velocity fans that run very slow and quiet but only ramp up in heavy conditions (still, at a low volume).

HARDWARE

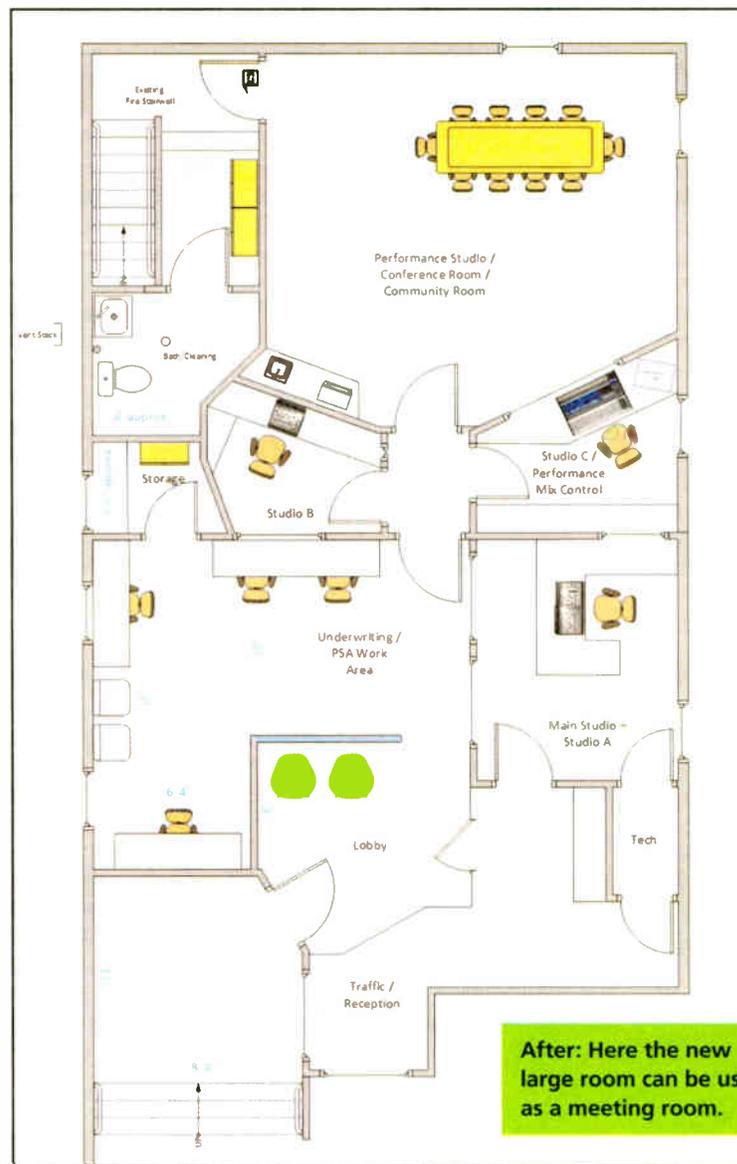
Finally, the equipment! When all the area is fully prepped and HVAC ready, the consideration of adding equipment to Studio B and Studio C made one thing very clear: Staying with traditional point-to-point wired audio consoles (whether analog or digital) made

little sense. For only a very slight increase in cost, the station could go full AoIP and network the whole thing, greatly simplifying all aspects of installation.

Which system is still to be determined as there are a number of good manufacturers with excellent products out there. It will need to be something "in our price range," but that doesn't exclude much but the highest "major market-type" AoIP systems. With the primary air studio A and the production studio B being AoIP, it will only make sense to take that digital multitrack system into a similar world, so a board like the PreSonus Live32 is being considered. The "musician's world" includes things not native to radio, like AVB networking, but to interconnect a broadcast AoIP system with a multitrack digital "musician's mixer/recorder," the easy answer will simply be to bridge them with their AES digital interfacing to keep everything clean and digital.

There's still a lot of work to go, but things are looking excellent for the future and growth of this small market station. And weighing in the fact that it's an LPFM with an ERP of 100 watts makes it an even sweeter success story. The station certainly hopes the FCC considers small rural LPFMs for a future 250-watt upgrade, not necessarily to increase coverage as much as giving a stronger signal in the six miles around the station, featuring better signal penetration into local factories and offices.

The author is a regular contributor to Radio World. He has written about WDNP(LP) at several stages of its conception, launch and growth.



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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

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

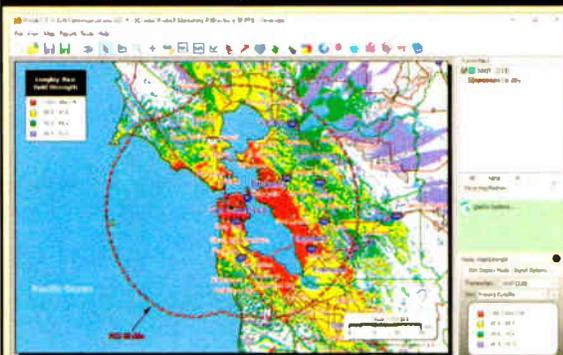
Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

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

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

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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 or ronwtamm@yahoo.com.

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example news-cast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBK, KSF, 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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Radio Public Affairs: How Far We've Come

FCC rules are less onerous now but they are still a serious consideration

PROGRAMMING

BY REED PENCE



The author is vice president of MediaTracks Communications and executive producer of "Radio Health Journal."

Public affairs programming on radio is vastly different than it was a few decades ago.

For one thing, there's a lot less of it. Prior to the first round of radio deregulation in 1981, AM stations were required to air "non-entertainment" programming for 8% of their weekly broadcast hours; for FM's it was 6%.

The stringent rules resulted in stronger news commitments on most stations than are present today. However, most music stations didn't want to break the format during prime hours, so the edict meant lots of overnight newscasts and public affairs blocks starting at 4 a.m. on Sunday, when a lonely board op would drag a big stack of reel-to-reel tapes into the studio. There was often a requirement to send the tape back to the local organization or syndicator so it could be used again.

"Non-entertainment" also didn't always mean "news and public affairs," as regulators probably intended. For example, back in the 1970s, the half-hour religious "Powerline" program aired seemingly everywhere on Sunday mornings. "Church programming," as some used to refer to it, was easy to acquire, cost stations nothing and was accepted as public affairs. It was well produced and helped clock the needed hours.

PUBLIC AFFAIRS TODAY

The quota requirements are long gone, and today stations can concentrate on what they do best full-time. There's much less public affairs on radio, but it's usually still aired on Sunday mornings.

However, without having to scramble for programs

simply to fill the time, today stations have no need to run anything less than the best, most informative and entertaining public affairs shows. Weaker national shows have been winnowed out. Highly produced programs featuring nationally prominent guests with in-depth coverage of the issues have taken their place.

But while there's less public affairs on air, the FCC still takes it seriously, and expects stations to be good public trustees in return for the privilege of holding a license and absence of strict regulations.

The main requirement today is a quarterly report, uploaded in a timely manner to the FCC's online database, listing local problems and issues, and describing the station's programming (usually public affairs) that has addressed these issues.

Each station's quarterly report is available for public view at any time as part of their Online Public Inspection File. Previously, stations were required to maintain a public file on paper at the studio, and they were typically unread by the public. So now, public affairs is much more visible — if a station is derelict in its issues-based programming or filings, it's readily apparent. Instead of having to send an FCC inspector on an unannounced visit, now the agency can simply look online, and while it's exceptionally rare to lose the license, some stations have been fined tens of thousands of dollars for deficiencies in the public file.

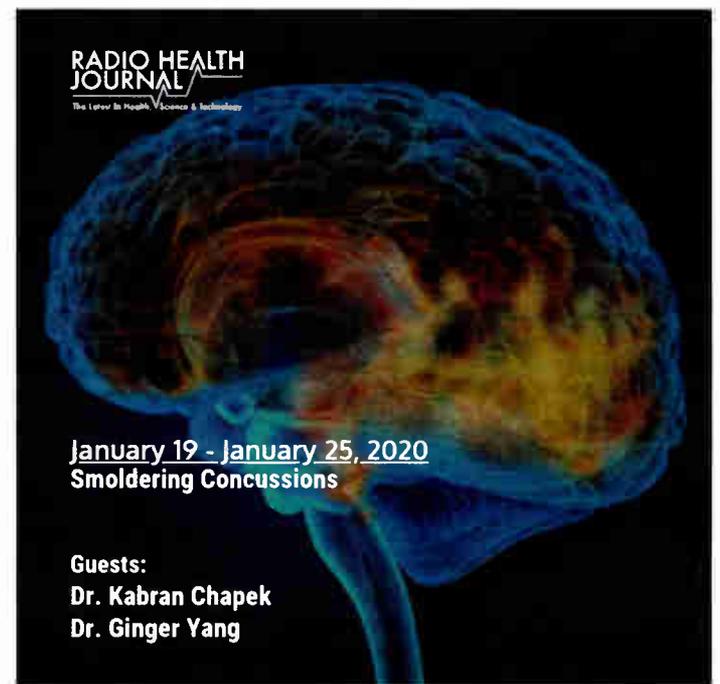
Over the last few years, there have been a couple of trends in radio public affairs that run in opposite directions.

One is toward running exclusively local public affairs — programs produced by a station or cluster for its own air, utilizing local guests. Many clusters admit it's not a job they relish, especially when staffing is already tight. But when multiple dayparts are voice tracked from out of town, some local content may

be perceived as necessary. Stations may also be concerned that since the issues they're addressing are local, the response must also be.

However, as far as the FCC is concerned, there is no requirement that public affairs programs be locally sourced, only that they address the issues important to their community in the quarterly report. The vast majority of problems and issues listed by stations are universal, such as "education" and "unemployment."

This has led to the second trend: the use of syndicated public affairs programs by thousands of stations



A segment of "Radio Health Journal" focused on concussions. Other recent topics have included medical debt, hoarding, melanoma and the increase in medical emergencies around the holidays.

READER'S FORUM

A PASSING GENERATION

I read Tom Vernon's great article on the passing of two radio engineering icons, Warren Shulz and Jeff Nordstrom ("Shulz and Nordstrom Made a Difference," *radioworld.com*, keyword Shulz).

Tom quoted me saying that a compatriot of ours told me, "If you're going to get help on the phone from Warren, my advice is to pack a lunch." That was so true, but now the engineer who uttered that statement, Lane Lindstrom, a superb broadcast engineer in his own right, has himself passed on, last July, from kidney cancer, at age 59. Far too young, and so very sad.

Since 2013, I've had to replace four engineers at various stations, all belonging to one station group, as their chief engineers have passed on, one by one. What more can I say?

Art Reis
RadioArt Enterprises LLC



A Problem With FX Pretzel Patterns



Getty Images/Jen Pollack, Bianco/EyeEm

The FCC should tighten up regulations on exotic directional translator patterns

COMMENTARY

BY LARRY LANGFORD

The job of a consulting engineer is to do everything possible to maximize the facilities of a client within the constraints of FCC regulations, the laws of physics and the budget of the applicant.

In the case of a full-power FM that needs a directional antenna system, the FCC demands strict conditions before the License to Cover application is granted.

These include detailed paperwork from the applicant showing the antenna was designed by a reputable manufacturer using a test range with full-size or modeled antennas that take into account

the tower design, other antennas mounted to the tower, cables, conduits and anything else that could cause pattern distortion.

The commission wants to see sketches, notes and test results from the maker of the antenna. It further requires you to use a licensed surveyor to certify that the antenna was mounted at the correct azimuth as called for by the manufac-

consultant can specify a complex contour that requires a composite antenna design, it does not mean that the antenna company can make it happen for less than a king's ransom.

What is shocking is that for translator directional, the FCC demands only a checkbox that promises that the antenna meets the required contours as shown in the CP. Talk about faith and trust.

I will admit that for some "off-the-shelf" directionals and omni antennas that are side-mounted with a predict-

Why allow translators to be put in with these very difficult patterns on just a wink and a promise that there is no cheating?

turer. Lastly the commission requires an affidavit from a qualified engineer that everything was done by the book and the resulting pattern is good based on a proof of performance.

All of this can be required of the simplest of directional systems for full-power FMs.

CURIOUS PATTERNS

With consultants now being asked to shoe-horn translators into the tightest of places, we are seeing some rather curious antenna patterns in FX applications. Some stretch physics to the absolute limit!

Again, understand, just because the

able pattern, just the antenna sheet and a promise that it was put up pointing the correct direction are probably enough.

But let's take the case of the antenna pattern granted on a Chicago translator. It is a real head-scratcher. Fig. 1 shows a pattern that is obviously protecting more than three co-channel translators and full-power FM stations. These pretzel patterns are becoming more and more common in metro areas where FX openings are tight. In this case, the CP application specifies a two-bay "penetrator" style antenna with parasitic elements to get this very complex and non-symmetrical pattern in both the

(continued on page 30)

READER'S FORUM

TUBE TALKBACK

A comment on the article "Factors to Weigh in Your Tube Talk." While Jeff Welton makes several cogent points, he missed the boat on one and ignored another.

I found the wording of this Radio World question odd: "What's the expected life of a tube *these days*?" Was Radio World attempting to imply that tube life is somehow different today as opposed to five, 10 or even 50 years ago?

Then Welton's reply started out OK by stating the obvious: "It varies a lot." But after that, I was left scratching my nearly-bald head due to his responses.

Of all the transmitters I've cared for over 52+ years, even recently, the worst tube life I ever got was about three *years* on a brand-new tube. That's over 26,000 hours. In the same time frame, I had two 50 kW FM rigs that got five years on a tube (43,000+ hours). Finally, I had one Class A FMer that got *seven* years between tube changes (61,000+ hours).

If my experience had been with only one transmitter, I would not have written this. But having that many transmitters, at basically *average* transmitter sites, it did make me wonder. Perhaps I am indeed one

of those "folks who know how to manage tuning for maximum tube life."

The area where Welton made no comment was in real estate requirements for a new solid-state transmitter. While there have been advances made in making a high-power transmitter more compact, many that I have personally seen take up substantially more floor space than their "hollow-state" fore-

runners. In many locations, there simply isn't any more space to use. That would be the number one consideration, at least in my own "factors to weigh."

PS: The article "Hotels Leave the Light on for Audio" brought back some distant memories. The first commercial station at which I worked, KIEV(AM) in Glendale, Calif., had a studio in the Glendale Hotel. By the time I started working there in 1967, the main studios were in a different building, but I believe



when the station went on the air in the early 1930s, the studios were in the hotel.

I am attaching a picture taken around 1955. You can see the call sign on one side of the building, where the main door was to get in. In the background you can see part of the towers that held the station's Marconi antenna, which was used for almost 50 years.

Jerry Amund
Terre Haute, Ind

PATTERNS

(continued from page 29)

horizontal and vertical planes.

If this pattern can be done with this type antenna, it would take a lot of range testing and a big box of parasites installed with great precision and care to pull it off. The price tag for that would be in the thousands.

TEMPTATION TO CHEAT

I have seen more than a few installations that demand such complex antennas that are simply built with an omni and no attempt to follow the one-of-a-kind design in the app. The temptation to cheat here is just too great, and the results are a mess when there is an interference complaint and the commission relies on these sometimes fantasy patterns to be accurate.

I cannot blame the consultants, they just show what needs to be done. And often the person signing the License to Cover app is just one of the owners just checking the box, with no idea as to what pattern they really have. The License to Cover app should require

that an actual engineer certifies the installation.

There are other cases where the commission is just plain wrong by its own mistakes on issuing a license. I know of a Chicago-area translator with a detailed application on how the system would take care of second-adjacency interference by using a multi-bay antenna to attenuate downward signal. The details were part of a waiver request. But when they put in the License to Cover application they specified a single-bay omni ... and guess what? The commission granted the license anyway. Obviously this one slipped through the cracks.

With AM it's pretty easy to check on a directional antenna system, just drag out the Potomac and find the monitor points. But trying to do a field proof on a 250 watt translator DA with a meter to check on an installation after the fact will drive you crazy and tell you very little, especially

OPINION

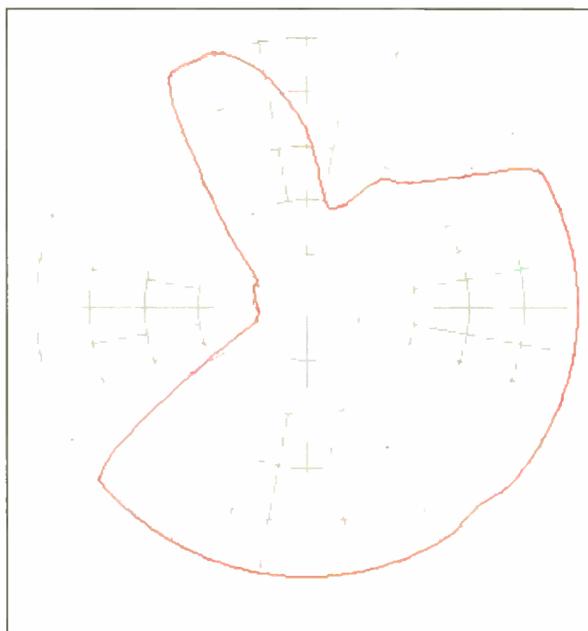


Fig. 1. The author writes, "Pretzel patterns are becoming more and more common in metro areas where FX openings are tight."

the License to Cover.

Since the commission requires detailed proof that a directional was actually built and installed correctly for a commercial FM, why not at least *some* documentation that shows that a composite directional FX antenna for the requested CP was actually built and tested on a range with proper proof of performance?

The commission would never accept the "word" of an AM operator that his multi-tower array was good without paperwork, so why allow translators to be put in with these very difficult patterns on just a wink and a promise that there is no cheating?

While some old and outdated rules are being tossed out, here is one that needs to be revised for more, not less, paperwork.

Larry Langford is the owner of WGTO(AM) in Cassopolis, Mich. and W246DV, South Bend, Ind. His opinions on AM radio and other issues are a recurring feature in Radio World.

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

if the antenna is mounted in close proximity to other antennas.

The FCC must tighten up regulations to make sure these exotic patterns drawn to get a CP are in fact built to get

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READER'S FORUM

HOTEL RADIO

I liked the article on radio in hotel lobbies ("Hotels Leave the Light on for Audio," *radioworld.com*, keyword "hotel").



The aux studio of KXCI is in the Hotel Congress. Bridgitte Thum is shown at the controls.

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*Doug Groenhoff
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