RADIO WORLD

Technology & news for radio decision makers

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Why We Need Shortwave 2.0

Kim Andrew Elliott outlines a new vision for SW in the 21st century.

The human behind the Weather Monster

Bruce Robertson believes in the power of weather on the radio.

Hook them cans

William Harrison and John Bisset share a very simple but nifty DIY project.

Buyer's Guide

Phone and talk show management products from AEQ, Angry Audio, CEntrance, Comrex, NeoGroupe and Telos Alliance.

Photo courtesy WRMI, Radio Miami International

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NAFB: Farm broadcasting is solid

A debrief on the association's annual conference

Paul McLane
Editor in Chief

The National Association of Farm Broadcasting held its annual conference in November. I asked Tom Brand and Brian Winnekins to provide highlights.

The NAFB's mission is to serve the agricultural community and create value for its broadcast member stations and networks. It is a liaison between farm broadcast stations and networks and the agri-marketing community of companies and agencies.

Brand was executive director of NAFB for 12 years, to the end of December; at this writing the association is seeking his successor. Winnekins is a past president of NAFB. He owns WRDN Radio in Durand, Wis., where he serves as a farm broadcaster for the greater Pepin County agricultural community.

Congratulations on your conference in Kansas City. How many people attended?

Tom Brand: We had the strongest attendance at this year's NAFB Convention in several years, with more than 760 registered for the convention and our Trade Talk event. Attendance in 2019 and 2021 was approximately 630 people, with 2023 registration around 730.

How would you characterize the health of farm radio broadcasting?

Brand: Total NAFB membership has surpassed 900 in 2023. This includes 185 farm broadcasters heard and seen on more than 1,600 radio and television stations, as well as on satellite radio and television and online.

Advertisers recognize the connection farm broadcasters have with their audience and the consistent connection with listeners. The strength of farm broadcasting is solid today, and the outlook for the future remains strong.

What were the most important issues or concerns, particularly for radio members, at the conference?

Brand: The AM Radio in Every Vehicle Act continues to be of interest to our members. We were delighted to have FEMA's Manny Centeno and NAB's Shawn Donilon as part of a discussion panel, moderated by Brian, to kick off this year's meeting.

Attendance at the session was strong, and engagement from the members with both panelists showed the continued importance AM radio has to our industry, as well as keeping audiences in rural America connected not only for agriculture programming but for emergency information.

During my address to the membership at our all-member meeting, I stressed the importance of personal involvement — reaching out to members of Congress and their staff, and either thanking them for their support or asking them to support the AM Radio in Every Vehicle Act. I reminded them that this is the first time in the association's nearly 80-year

THIS ISSUE

history that we've endorsed a piece of legislation and that they are the conduit to those lawmakers.

Brian, what did you hear from NAB or others at the conference about the outlook for that bill's passage?

Brian Winnekins: Shawn Donilan from NAB said that as of mid-November there were 40 senators as co-sponsors of the bill and that there are 10 additional Republican senators waiting to co-sponsor the bill if 10 more Democrats come on board. He felt that if a vote was held the bill would pass both houses. There were also 182 co-sponsors in the House. *[In early December an attempt by Senate sponsors to pass the bill by unanimous consent was not successful, blocked by Sen. Rand Paul. —Ed.]*

Donilan encouraged broadcasters to continue to use the "Depend on AM" campaign on their websites and on air, and that a new PSA was being developed.

Is there a chance that the legislation could be tweaked to include specific receiver standards?

Winnekins: Both Manny Centeno and Donilan said that receiver standards were discussed but that it was believed that by adding the receiver standards to the bill now, it would make it difficult for the bill to pass. They both said that receiver standards are an important part of the issue and it would be something that should be addressed after the initial bill is passed.

Continued on page 21

> **I reminded them that this is the first time in the association's nearly 80-year history that we've endorsed a piece of legislation and that they are the conduit to those lawmakers.**

"Weather and radio have always gone hand in hand"

Bruce Robertson serves stations with a turnkey weather service

Writer

Nick Langan

The author wrote in July about AM improvement projects at iHeartMedia.

With nostalgia for the late 20th century all the rage of late, here's another piece of it for you: Do you remember the satisfaction of being able to place a call to your local TV station, bank or phone company to hear the current time and local temperature?

For Bruce Robertson, "time and temp" became his life, forging a path spanning three decades to today, which finds him offering a turnkey on-air weather service to radio stations known as WeatherMonster.

"I called the time and temperature lines, growing up near Buffalo, constantly as a kid," he said. "I always thought of it as radio on the phone."

In the mid-1980s, not long after college, he was the news director at heritage WHOT(AM/FM), which were simulcasting at the time in Youngstown, Ohio. His tenure included a historic weather event in the Mahoning Valley region: an F-5 tornado on May 31, 1985, that caused devastation in a path from Niles, Ohio, to Wheatland, Pa., not far from where Robertson lived.

"I lie awake at night still thinking about that day," he said.

Growing business

In 1991, seeking a change and looking to combine his radio voice and his interest in weather, Robertson started RTI Media out of his home.

Installing a studio in one's residence was uncommon at the time. Robertson wanted a high level of production quality and was helped by engineer Wes Boyd, whom he knew from WHOT. The studio later went with Robertson when he moved to the Raleigh, N.C. area, where he resides today.

RTI's original purpose was to provide telephone auto-attendant and on-hold messages for businesses, including custom scriptwriting. These would be played on hardware devices made by RTI and installed at each business location.

Above
Bruce Robertson at his home office and recording studio in Sanford, N.C.

RTI's telephone on-hold audio customer base grew into the thousands — "every state except Hawaii," Robertson said — with customers ranging from hotels to nudist colonies. "What people do for a living is always fascinating."

This led to a second venture, the telephone time and temperature business, launched in the 1990s.

One might expect that interest in automated telephone time and temperature had started to fade by then, but Robertson discovered otherwise when he began working with a client in Owensboro, Ky. A local business had offered a time-and-temp service previously but it had been discontinued months before. Seeking to revive it, another local company contacted RTI.

As a test, Robertson set up a prototype of a time and temp device his company was developing on the phone lines in Owensboro. He was astonished to find that the phone number for the service received 14,000 calls in the first month. People clearly still valued knowing the time and temp.

This led to the introduction of RTI's Time & Temperature division, first manufacturing hardware to take time and temp calls at customer premises and later transitioning to server-based software that answers the calls. "It's essentially time and temperature as a service," he said, adding that the approach is superior to using on-site devices that rely on a customer's broadband.

The audio content consists of audio files recorded by Robertson himself — more than 2,000 sound files, with every possible temperature, humidity percentage, wind speed, and common weather phrases to match current weather data.

Between RTI and its partners, that service still averages more than 1 million calls per month in more than 2,000 markets. The busiest days come twice a year when most of the United States resets its clocks. He calls these the Super Bowls of time and temperature.

Today, while you can set your smartphone to show the local temperature on your lock screen, old habits die hard.

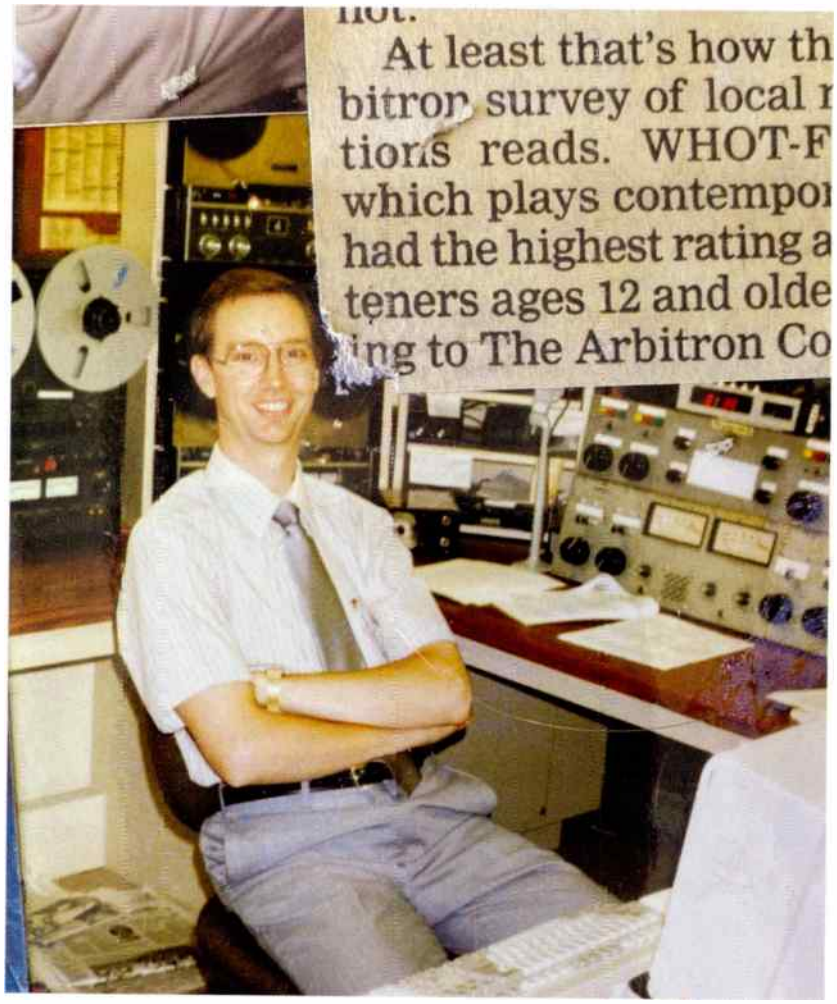
"The use of dialing a number for time and temperature shows that, for many people, new forms of information come along and you use them, but you do not abandon what you've always relied upon," said Robertson.

Returning to radio

Expanding RTI's weather-related service to radio became Robertson's objective.

Several stations were clients for time and temperature, including WGSM, a low-power FM station with a religion format in Madisonville, Tenn. "They asked me to provide an audio file of the same content you'd hear if you dialed their time and temp line over the phone," he said.

It took a while for his vision to be realized, but in 2013, Robertson formed WeatherMonster to bring RTI's services to the radio market.



Above
Robertson in the WHOT newsroom, approximately 1988. The photo is part of a montage prepared for him by a colleague.

Its website states: "When your station is unattended, try our unique audio platform providing broadcast quality automated weather audio for radio stations, community broadcasters, LPFM, ad insertion in streams, internet radio, radio reading services and more. Real human voices with personality — no AI robots!"

Today, the WeatherMonster service is cloud-based and hosted on Microsoft Azure. Its central application produces for each client station a ready-to-air audio file, with options for a customizable station tagline and background

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music bed, insertable into the user's broadcast automation system. Timing and numerous other features can be customized in the application.

"It's all real voices, humans talking to humans," Robertson said, noting that the company does not use synthetic or AI-based voices.

RTI aims to make the inserts — "the current temperature is 55 degrees and the wind is out of the south at 7 miles per hour" — sound as natural as possible. He employs two software programmers who have been integral in developing the application.

"Within four seconds, based on a unique link for the station, the application grabs hourly weather observations and updated forecast data, and adds a background music bed to the voice. And the file downloads onto their network," Robertson said.

BRUCE ROBERTSON MORNING NEWS

Gary Hoppe, operations manager of Tri-County Broadcasting in St. Cloud, Minn., said, "We found the WeatherMonster searching for an audio weather service. We liked the fact that it's a human voice and its phrasing is well thought out. A unique concept."

He began using WeatherMonster on classic country outlet WVAL(AM) in Sauk Rapids about a year ago and has added it on standards-formatted WMIN and sports WBHR, both of which are AMs with FM translators in Sauk Rapids.

Each of the stations had particular requirements for its weather.

"WVAL serves a farming community, so an accurate forecast updated every hour with its own jingle bed was a must," Hoppe said.

"WBHR's weather updates needed to be exactly 30 seconds and updated three times an hour in the morning. Bruce has a can-do attitude and together we have found solutions." Hoppe is now working with Robertson to craft updates for a new morning show on rocker WHMH(FM).

"The idea here is to give the station something to make money with," Robertson said. He wants the service to be seen as a revenue generator for stations, not an expense. For instance a station might equip a client with external temperature sensors to feed WeatherMonster, to air inserts that say, "The current temperature at Smith Automotive Group is 72 degrees."

While WeatherMonster serves commercial radio stations, RTI also created a brand serving religious-formatted stations called Sonshine Weather.

Regardless of format, with many stations in the country running on automation for some or all of the day and perhaps airing pre-recorded forecasts that can become outdated quickly, Robertson sees an opportunity for RTI to provide up-to-date weather information with a friendly presentation, either 24/7 or just nights and weekends.

"Ultimately in radio, to me, only the stations truly serving the community will sustain themselves. Weather and radio have always gone hand in hand, and what better way to gain trust from your audience than with a local forecast that's continuously updated?"

But with tools that use artificial intelligence now on the market to deliver weather and other content, why should a radio station use WeatherMonster?

"The short answer is that AI can't do the same thing," he said.

"In my view, having computers speaking to your listeners every day does not meet the definition of being in the 'communications' business. That is some other business — perhaps the business of Spotify or others like them. Not local radio."

He said the impact of AI on RTI's business, and whether he'll have to adjust his services, remain to be seen.

"Ultimately, the decision lies with listeners. Will they be content to listen to simulated humans instead of the real thing? Perhaps we should consider turning to AI for things humans can't do, not things they already do. As our company continues to innovate and add features to our services, we are reminded that AI may never have the creativity — and ambition to put that creativity to work — the way humans can."

Above
Robertson as news director of WHOT circa 1990, around the time he conceived his own time and temperature business.

Below
At left, an image from the WeatherMonster website. Right, RTI Media formerly made hardware for installation at client sites; the service is now cloud-based.

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John Bisset
CPBE
The author is in his 33rd year of writing Workbench. He handles western U.S. radio sales for the Telos Alliance and is a past recipient of the SBE's Educator of the Year Award.

Send your tips
Workbench submissions are encouraged and qualify for SBE recertification credit. Email *johnpbisset@gmail.com*.

Hook them cans

Here's a little DIY project that solves a common headache

So you're in your rack room searching for a set of headphones. Or you have some plugged into equipment, but no place to store them, so they dangle onto the floor. Sound familiar?

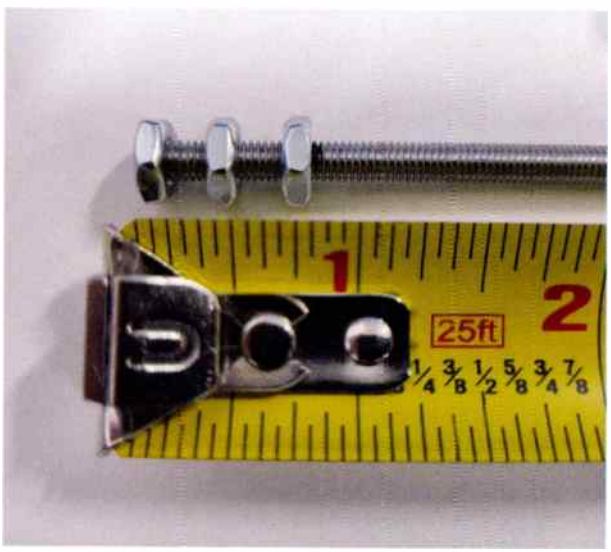
Chief Engineer William Harrison at FM station WETA in Washington, D.C., developed a solution and shares it with Workbench readers.

We've received so many positive comments about the "do-it-yourself" construction projects we've published, and William's submission is definitely worth considering. In addition to these photos of the construction, William included a parts list to construct 10 headphone rack hooks. They're are designed to screw into a standard broadcast-type equipment rack, accepting 10-32 rack screws.

The finished quality is impressive. The 10 steps of this project are shown here and continue through page 14, and the parts list is at the end.

Top
William Harrison's convenient headphones hook.

Step 1:
Gather your materials, including three 10-32 standard nuts to use in making the hooks.



Step 2:
Place the 10-32 nuts onto the end of the threaded rod, one each at 1/4-inch, 1/2-inch and 3/4-inch from the end of the rod. These will prevent the threads from being crushed as you bend the threaded rod.

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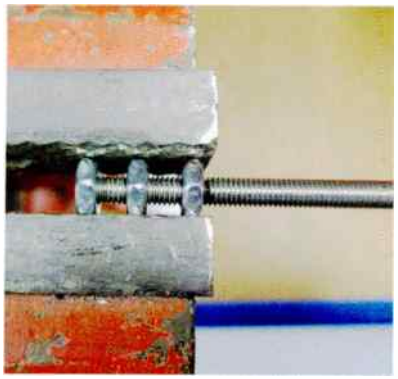
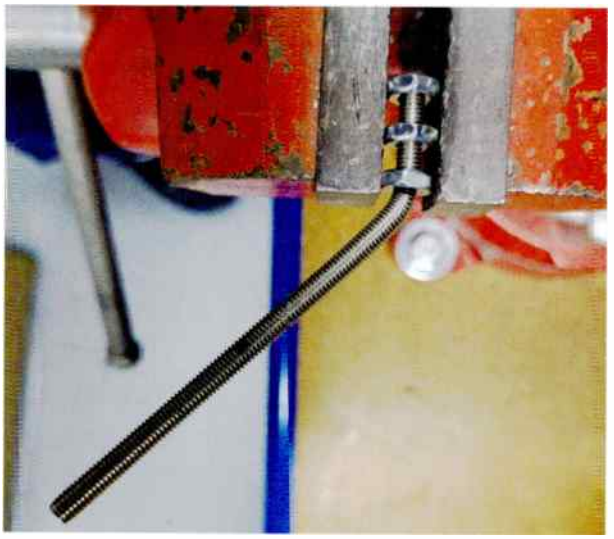


Step 3:
Clamp the nuts/threaded rod assembly in a vise so that the threaded rod is horizontal. In addition to preventing the threads from getting damaged, the nuts act as a pivot for the first bend.



Step 4:
Pull the rod towards you until it bends to about 45 degrees.

Step 5:
Remove the nuts and slide the tube onto the bent end of the threaded rod, then screw on the knob. Doing so will push the tube down to the correct position on the threaded rod.

Step 6:
Now clamp approximately 1-5/8 inches of the assembly in the vise, again making the rod horizontal, with the first bend pointing up at its 45-degree angle. The threads at the bend point won't be used, so there's no need to protect them with nuts.

Step 7:
Pull the rod towards you a second time until it bends to about 45 degrees.

Step 8:
Unclamp the assembly from the vise; it should look like the picture.

Step 9:
Add the knurled nut and washer.

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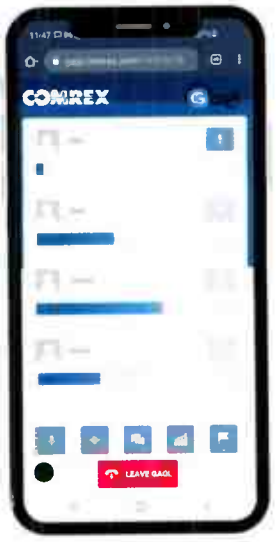

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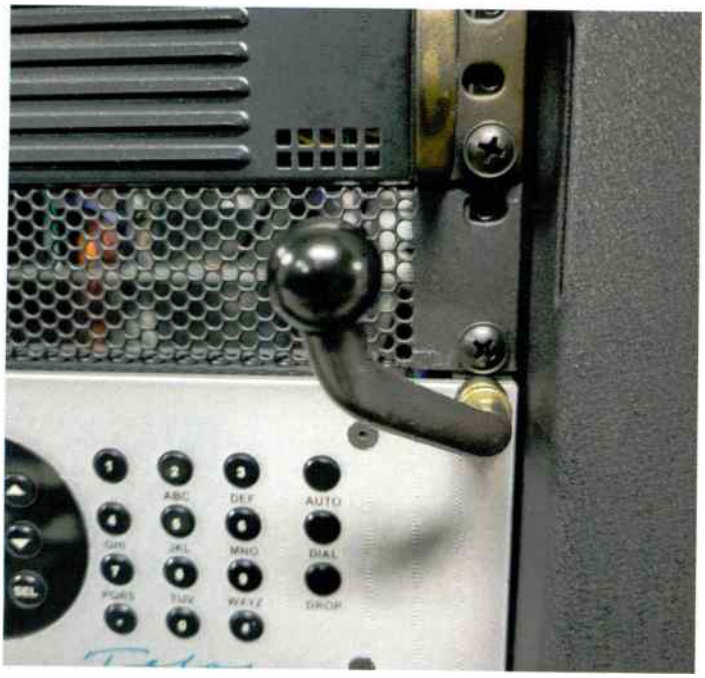

Step 10:
Screw the hook into an available hole in a rack rail. Tighten down the knurled nut so that the hook does not freely rotate. Hang a pair of headphones and go make another one!

Materials List (10 Hooks)

William spent $50.93 to build 10 of these hooks, or about five bucks each. You can lower the cost to under $3 by using standard nuts and washers instead of the knurled thumb nut and self-retaining washer.

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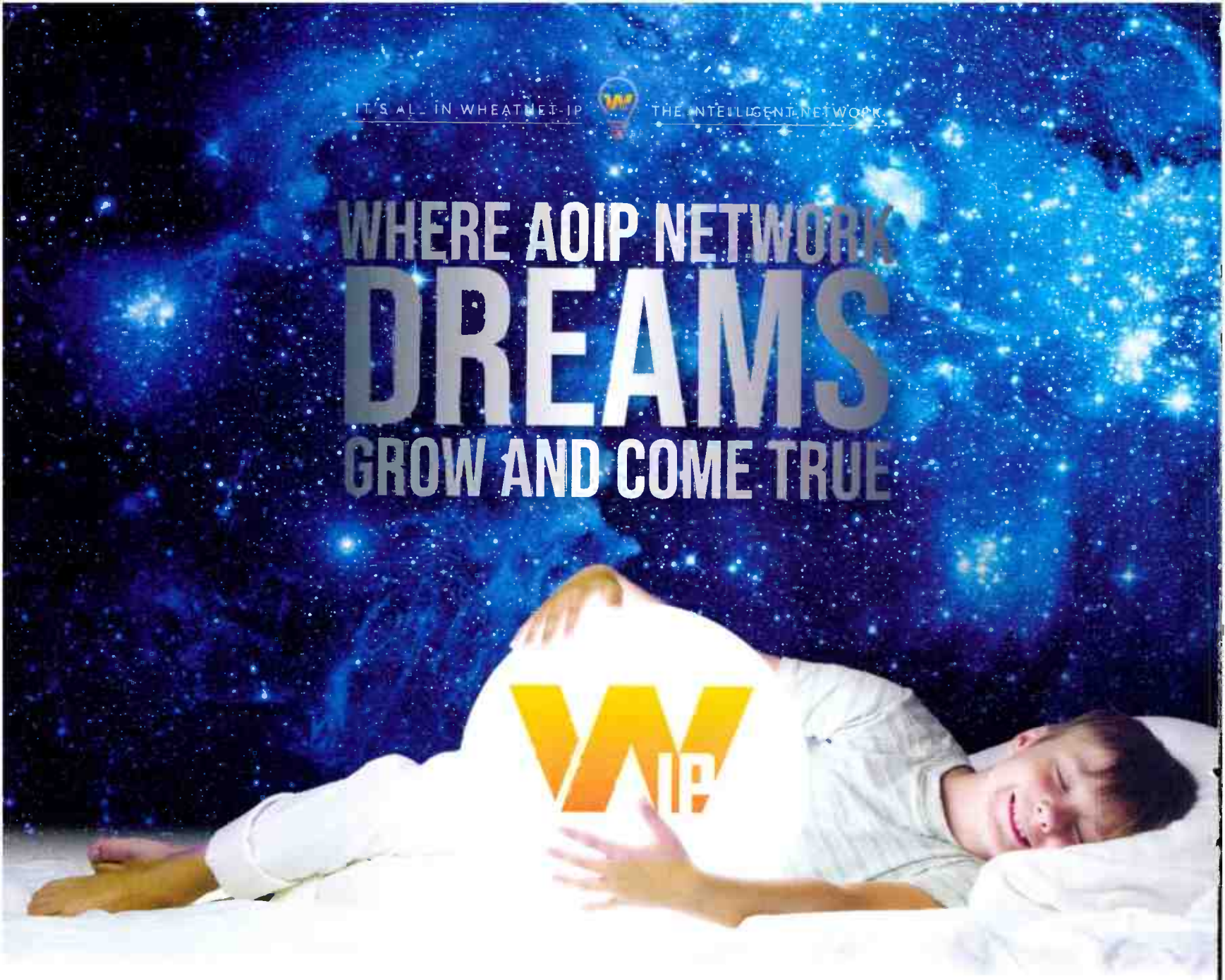

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Writer

Chuck Gloman

Associate Professor & Chair, TV/Film Department, DeSales University, Center Valley, Pa.

What makes a college radio station work?

Here's the view from WDSR in Center Valley, Pa.

As the faculty manager of WDSR, DeSales University's online and on-campus Part 15 radio station, my primary tasks are populating the station with students who handle the on-air functions, ensuring the equipment is functioning and up to date, and monitoring the internet feed as well as the FM broadcast.

Jarret Brown, our part-time engineer and adjunct professor, teaches our students the concepts of radio in his TV230 class and troubleshoots any problems that may arise.

My goal over the last 20 years has been to find those students interested in radio (very easy), training them to operate the equipment in our station (not too difficult), have them willing to spend a block of time as on-air talent (a little more difficult), and replacing the veteran talent once they graduate (very difficult).

Do college students still listen to radio? They have many options, including SiriusXM, AM, FM and internet. College students watch videos on their phones, but do they still listen to music, sports or the news in just an aural format? With CDs no longer being the trend, vinyl and MP3s seem to be the formats of choice.

My question still stands: How do we get students excited about listening to radio — on their phones, computer, or in the car? Does anyone still have a desire to work in radio?

Once that question is answered, how do we get our leaders of tomorrow interested in becoming radio broadcast engineers?

I reached out to Jarret and asked how he believes we can get students excited about listening to or possibly working in radio.

"It's important that we expose young people to radio's versatility and uniqueness," he told me.

"Radio gives listeners and industry professionals things they can't get anywhere else. Even in this era of podcasts, social media and streaming video, radio has an immediacy

Above
Ally Agnellino, Joe Biello, Ben Bateman and William Borusiewicz are among the team keeping the station on-air 24 hours a day.

that allows for discovery for listeners, and creativity from presenters, in a platform accessible to everyone. That combination simply cannot be matched by any other current means of communication.

"When young people recognize this, they become more receptive to the idea of listening to radio and perhaps even exploring a career in the field."

William Borusiewicz, our student station manager and 2023 DeSales theater graduate, had this to say when I asked the same question:

"Younger people are more interested in what radio provides than they think. It provides a way to express your voice and who you are to the public at large through the comfort of a studio and allows for listeners to connect on what can feel like a personal level," he said.

"These are the exact things that social media like Instagram and Tiktok are built on. The difference is that radio has a structure and form that can be built on to fit a creator's or broadcaster's voice."

I asked William if he thought we could get students interested in becoming radio broadcast engineers.

"I think that they can be. I think there is still a feeling of prestige when broadcasting on air," he replied.

"When students broadcast here, you can see them understand the weight and for some, the rush, of putting themselves out there. I think it is very much about showing younger people that the format is alive, well, and willing to accept their unique and interesting perspectives more than any other entertainment industry.

> **When young people recognize this, they become more receptive to the idea of listening to radio and perhaps even exploring a career in the field.**

"On-air is still the glamourous job. Engineering is behind the scenes. Each student who uses our station acts as an engineer too. A few prefer the behind-the-scenes aspects and don't want to be on the air. This number of students is much smaller, but there are still a few who would rather work on the technical aspects and be an engineer."

Jarret Brown thinks that not enough young people are even aware of the radio engineering profession.

"When we do take the time to explain it to students, we can easily find ourselves barking up the wrong tree trying to promote engineering to aspiring on-air talent or radio producers. These are not necessarily the most likely folks to be interested," he said.

"The nature of modern engineering relies heavily on a combination of computer/IT and technical skills, and I find more interest among computer science majors rather than those majoring in TV, film or journalism. I think we should spend more time making a case for engineering by reaching out to those passionate about computer technology."

At WDSR, Jarret continued, he tries to emphasize to students the many opportunities that college radio offers.

"The freedom to express themselves in a thoughtful way to an audience of their peers. The spontaneity and creativity associated with a truly live platform and the opportunity to learn the preparation/presentation skills needed to do a radio show. Skills that are useful to all students going forward regardless of their career choice.

"Combined with the sense of camaraderie that develops among the students over time, all help make for a successful college radio station."

Above
Freshman Michael Dugan starts his shift during the lunch hour.

So what makes a college radio station work? I believe it's the passion students have and their willingness to share that passion with others. Putting our radio station in a prominent spot on the campus attracts the attention of other students.

"How can I be a part of that?" The more we can get students to ask that question, the faster our station will grow — and yours can too.

Continued from page 4

What message did Manny Centeno bring to your members?

Winnekins: Manny discussed the importance of AM radio to FEMA. He told us that before FEMA began hardening some of the 50 kW Primary Entry Point stations, FEMA asked DHS to look into AM radio before FEMA spent that money. He also stressed that FEMA believes that while using new technology like cellphone alerts that AM radio is an important part of emergency communications.

He mentioned that FEMA had talked with auto manufacturers about removing AM and the car companies had offered to put portable radios inside the glove compartments of vehicles, but that FEMA wanted AM radio on the dash and easy to access.

He also talked about how broadcasters need to be in contact with their local emergency management officials and build relationships with them so when a local emergency happens, broadcasters are in the loop. He talked about the lack of communication from emergency management to broadcasters during the fires in Maui as an example of what happens when broadcasters and emergency management don't have a relationship. He also talked about the importance of broadcast station owners to improving and evolving AM radio.

I brought up the issue of man-made interference issues. My point was that it doesn't matter if we still have AM and hardened AM PEP stations if the noise floor isn't dealt with and the FCC doesn't start enforcing the Parts 15 and 18 rules. It really the dash as the public will not receive the emergency messages. Manny said that is a concern at FEMA and that FEMA has expressed this concern to the FCC.

As for interference to other vehicles caused by EVs, both Manny and Shawn said while there have been no reports of that yet, it's something that needs to be investigated, especially the high-speed chargers.

Manny also called on broadcasters to partner with Spanish-language and religious broadcasters to raise the volume on industry-wide efforts to preserve AM radio. He was concerned that even if the bill passes now, it will be watered down in the future. He wants to see what we can do today to be strong, resilient and permanent.

What else should readers know about the event or current concerns of your members?

Brand: We can share some specific research results with you in early 2024, but the preliminary results from third-party research company Aimpoint prove the connection that farmers and ranchers have with farm broadcasting.

Among those surveyed nationwide, 83% reported they listen five or more days per week *specifically* for ag news, ag markets and ag weather information. Over half those respondents listen over an hour per day; the average listener's farm had 11 radios, with over half reporting that the number of radios on their farming operation was 20 radio or more. Farm broadcasters are consistently rated high for being credible, timely and accurate.

About Buyer's Guide
This section appears in every other issue, focusing on a particular category of equipment and services. It is intended to help buyers know what's on the market and gain insight into how their peers are using such products.

Gagl cruises across country with Cadillac Jack

Married morning duo uses Comrex contribution tool for remote work

WEKS "The Bear 92.5" is a country music station serving locally produced programming to suburban Atlanta. Since 2020, its morning show has been hosted by Cadillac Jack, a long-time fixture of Atlanta broadcasting, and his wife Donna, who is a relative newcomer to radio.

"[Donna]'s a superstar," said Steve Mitchell, executive program director for "Mornings With Cadillac Jack."

"The two of them are so good together — the content is so natural, because they're married."

The couple frequently travel separately for work, and so Mitchell needed a solution to get them both on the air from anywhere.

Being new to radio, Donna needed equipment that was intuitive and comfortable for her to use without technical support. They were looking for something portable and user-friendly that would also provide great sound quality, Mitchell said.

"As a program director, I ask myself: Will it work? Will it be a pain in the a**? Those are my two major considerations."

Mitchell settled on Gagl, a cloud-based remote contribution tool from Comrex. Gagl allows users to send and receive audio from consumer equipment, like cellphones and laptops, to a Comrex BRIC-Link or other Comrex codec located in a studio. By clicking a link in a common web browser, broadcasters can get on the air in seconds.

For their morning show, Cadillac Jack will often be located in WEKS' Georgia studio, and Donna will be connecting from elsewhere in the country. Mitchell has found that no matter where they're calling from, the calls sound great. "This is just good clean audio, and that's why we like it so much," said Mitchell. "It's like having an ISDN line. It's amazing that you can have ISDN quality audio from a cell phone."

"With the sunset of ISDN, voiceover guys should consider using this," Mitchell added.

The couple also uses Gagl to record their podcast, My Second Act.

"During the morning show when they're live, Jack will send Donna a Gagl link from the studio, and they'll connect to their BRIC-Link unit that way," Mitchell said. "When they want to lay down audio for the podcast, he creates a Gagl from his home studio, they'll do their show and he'll record it for later. But it sounds like they're in the same room."

Gagl eliminated one of the biggest challenges that Mitchell had been dealing with: setting up a mix-minus.

"Non-radio people don't understand what a mix-minus is," said Mitchell. "Even explaining the concept is sometimes challenging. It's a blessing that it's built into this thing."

Mitchell has used Gagl for other elements of the morning show as well. "We tested it with a contest winner, and it sounded like they were right there in the studio." To get the winner on the air, Mitchell sent them a Gagl link, which they were able to easily open on their phone.

"You're accustomed to hearing contest winners sound garbled on a less-than-perfect device like a telephone," said Mitchell, "but that's the beautiful thing about this. You might as well be in the studio."

He concluded: "The versatility of Gagl is really cool — we're able to maintain a consistent quality of sound, and be remote from any location. That flexibility is important. It's gotta be easy and it's gotta work. So far, Gagl has worked every time."

Right
Cadillac Jack and Donna

More Info
http://comrex.com

Tech Update

AEQ Adds SmarTalk Service

AEQ says its new SmarTalk web-based management portal generates links to be sent to a correspondent by email, WhatsApp, QR code or other means.

"When the correspondent clicks on the link, a browser opens and connects to the station's AEQ Phoenix audio codec, sending Opus-encoded audio to it. Without further intervention, the audio link between the device's microphone and speaker or headset and the station's audio codec is ready."

AEQ said the user does not need to have an audio codec or install software. "Sporadic collaborators can broadcast from anywhere there is internet connectivity."

The participant receives the link and clicks it to see a welcome screen. With a second click, the person can participate. "Sending a reporter or a mobile unit, or moving the guest is avoided, as they use their own computer or smartphone to connect and participate."

Users of AEQ Phoenix audio codecs can request a trial of SmarTalk, which is available under a renewable license that can be purchased based on the number of audio codecs per studio to be enabled.

"Subscribers can make any use of the service as they see fit, and send their connection link as many times as they need during the subscription period, for the number of licensed Phoenix audio codecs."

When a license is activated on a PC at the station, the web application is activated so that SmarTalk users can create the "Guests" or users of remote terminals, send them the links, assign calls to audio codecs and put them on the air. An administrator window is used to register or modify stations, codecs and other users.

If SmarTalk is enabled for a Venus 4 Phoenix codec, individual audio codec channels can be preset to SmarTalk, allowing a studio codec to dynamically work with SmarTalk or other portable codecs. In other Phoenix audio codecs, channels can be assigned to the service manually.

AEQ says that to ensure availability and low delay, a redundant infrastructure was designed across cloud servers in different regions of the world.

It adds that there are two working modes. In Guest mode, the most common, the studio sends a link by email, WhatsApp or QR code. Accepting the link opens a welcome screen, and clicking on it registers the user on the operator's waiting list, to go on air at the right time.

Reporter mode does not require an operator in the studio. "By tapping on the welcome screen, the user remains active in the air on the pre-assigned codec line or the one available at the station."

Info: *www.aeq.eu*

Tech Update

CEntrance Ships Portable Channel Strip

CEntrance recently began shipping The English Channel, a portable analog audio processor that records to SD card and streams online via a smartphone.

The company calls it a simple way for podcasters, musicians, journalists and YouTubers to improve the quality of field audio. It includes a mic pre with dynamics, a parametric EQ and an audio interface with online streaming capabilities, in "a small desktop cradle no larger than a book."

The English Channel connects to laptops, phones and tablets. It has a 24-bit 48K SD card recorder and is powered by USB; a lightweight carrying case is included.

"The English Channel allows the artist to use any XLR microphone, reduce background noise, add body and confidence to their sound, and go online from anywhere, all in broadcast quality."

Centrance offers a choice of MixerFace or PortCaster as the recording interface in the package. The three devices in the English Channel can be used separately or together as part of the bundle.

Info: *https://centrance.com/english-channel/*

Illiana stations deploy Telos VXs

ICBC is using the platform, installed by Inrush Broadcast Services

WGFA has been a pivotal voice in the Illiana community, broadcasting from Watseka, Ill., since 1961. Founded by Dick Martin, the station emerged to fulfill the need for radio services in the underserved regions of eastern Illinois and western Indiana.

Over six decades, WGFA has expanded from a single station to three under the Iroquois County Broadcasting Corp. umbrella, still owned and managed by the Martin family. ICBC's 400-foot tower continues to dominate the landscape of cornfields, embodying the slogan that inspired its initialism "The World's Greatest Farming Area."

The station's commitment to local businesses and community engagement has placed a premium on listener participation. However, technical limitations with standalone VoIP hybrids led to frequent dropped calls and busy phone lines, undermining attempts to run contests, record farm reports and engage with listeners live on air.

Erik Bonilla-Sanchez of Inrush tests the system.

More Info
https://tls.al/Telos-VXs

> **Inrush installed the necessary hardware, a small Lenovo server, at the ICBC studios.**

In 2023, ICBC partnered with Inrush Broadcast Services to address these and other engineering challenges. ICBC embraced Inrush's proposal to overhaul its phone system using the Telos Alliance VXs platform.

Inrush installed the necessary hardware, a small Lenovo server, at the ICBC studios. The physical setup, involving two network cables and power, was straightforward. Remote configuration, from the operating system installation to test calls via VXs, was completed in under 24 hours, aided by Inrush's installation workflows and WGFA's Livewire infrastructure.

The station's staff say the introduction of VXs transformed its operations, with enhanced audio quality and reliability. Sports Director Andy Moore told Telos, "The difference is night and day. I can now confidently put calls on the air without worrying about audio clarity or dropped connections. It just works, allowing me to focus on what matters most: serving our listeners."

Tech Update

Angry Supports Your Phones

Angry Audio has several products that help radio broadcasters with their phone and talkshow needs.

The Talkshow Gadget, top, adds radio studio functions to non-radio consoles. The ability to remotely turn mics on and off, activate warning lights and mute monitors are all provided with the device.

The Bluetooth Gadget, bottom, allows you to connect smartphones and other devices up to your console wirelessly. You manually link each device so there are no "accidental" connections. The Gadget automatically selects the best audio codec available. You can play audio clips or connect with a Skype caller and even send them a mix-minus.

And the company says that its compact Rave! radio mixer is suitable for talk shows with an emphasis on phones. It includes four mic preamplifiers, two program busses plus PFL, two independent mix-minus busses, monitor muting logic, Warning Light output logic and remote control functions, and it includes a built-in headphone amp.

Info: *http://angryaudio.com*

Tech Update

NeoSIP: Phones, Codecs, WebRTC in One Interface

NeoSIP is a software-based solution to integrate phones and codecs in the same simple user interface.

A recipient of the Radio World "Best of Show" Award at the IBC Show this past fall, it is described as a comprehensive solution for the processing of voice calls.

NeoSIP is available on-premise or based in the cloud. It allows the user to handle phone lines through different studios or across the country. ("Or across oceans," the company adds, "we tried it.")

Calls can be transferred between studios with one click. "Get your journalists to phone in with a standard SIP smartphone app or with hardware codecs, or simply send a WebRTC link to your guests for high-quality audio communications," NeoGroupe states.

"NeoSIP provides end-to-end Opus or G.722 communications, interfaces any phone line type, outputs to consoles or any audio technology, has a console drop-in panel and can use standard SIP phone sets. It can be implemented as a service in the cloud, or even in your own virtualized environment."

For example, a user could have multiple studios with WheatNet-IP in Chicago, Livewire-enabled studios in New York and an analog temporary studio at a venue in France for a remote broadcast, to avoid calls audio transitioning through the original studio.

The company said broadcasters in the United States, France and Mauritius have started using this solution to replace existing POTS or ISDN lines systems.

NeoSIP integrates with existing NeoScreener, NeoWinners and NeoAgent applications.

Info: *www.neogroupe.com/en/home*

BROADCAST EQUIPMENT EXCHANGE

Why we need Shortwave 2.0

Radio is the ultimate internet circumvention tool because it is NOT the internet

Writer

Kim Andrew Elliott

The author is a former audience research analyst at the Voice of America, where he also hosted the media news program "Communications World" and the experimental "VOA Radiogram." He produces "Shortwave Radiogram," broadcasting text and images via analog shortwave broadcast, from WRMI in Florida and WINB in Pennsylvania.

Debate about the future of shortwave broadcasting focuses on the correct observation that shortwave listening is no longer a mainstream activity in most of the world.

The future of shortwave broadcasting — "Shortwave 2.0" — will not involve any revival of those large audiences. Instead, it will be an activity of communications enthusiasts and professionals. They would comprise a reserve corps able to relay information to larger populations in their countries when newer media are blocked or otherwise become unavailable.

The beginning of the end of "Shortwave 1.0" was described in "Shortwave Broadcasting Begins Its Long Slow Fade," an article I wrote in the 1995 World Radio TV Handbook. I noted the elimination, in the post-Cold-War media environment, of shortwave broadcasts in some languages, as well as some entire transmitting sites, e.g. Trans World Radio on Bonaire and Far East Broadcasting Company in California (KGEI). In my (then) role as audience research analyst at the Voice of America, I listed examples of declining shortwave audiences.

Courtesy Jeff White/WRMI

Right International shortwave sites are essential to relay information when the internet is blocked, which the author believes will happen more frequently. Shown is a curtain array antenna used by WRMI in Florida to reach Europe.

The really big chunk fell from the shortwave glacier six years later, when BBC World Service ended its English broadcasts to North America. In the following years, other international broadcasters followed, first dropping shortwave to North America, and eventually to other parts of the world. The aforementioned 1995 World Radio TV Handbook listed 27 European countries with English broadcasts on shortwave to North America. Now only Radio Romania International has shortwave English to North America.

The exodus from shortwave (for both international and domestic broadcasting) was due to competing media, including relays on FM stations in the target country, satellite broadcasting (mostly television) and, especially, the internet.

For the audience, internet content is easier and more reliable to receive. It also allows content to be received on demand, and text or video in addition to the audio to which shortwave was restricted. As an audience researcher, I could see in the datasets that audiences for international media were migrating from radio to

internet-based media. For the broadcaster, in addition to keeping up with audience preferences, the internet is a cheaper way to transmit information to the world.

Internet, increasingly blocked

Because of the internet's ability to move uncensored news and opinion within nations and across boundaries, it was seen as a transformative tool for democracy. But, soon enough, regimes developed methods to block information they did not want coming into their countries. Prominent among these are China's "Great Firewall" and Iran's "Halal Internet."

Circumvention tools and VPNs have emerged to allow access to websites and platforms that have been blocked. The circumvention tools work only as long data is on the lines. Ultimately the lines can be switched off or cut. In this circumstance, no circumvention tool will work other than wireless ones.

Radio is the ultimate internet circumvention tool because it is *not* the internet. And it can't be tracked.

This brings us to "Shortwave 2.0."

Shortwave 2.0 won't reach the audience of millions as in the heyday of shortwave decades ago. It will reach those who seek comprehensive, reliable, credible information. This audience will be technically inclined: radio amateurs, hobbyist shortwave listeners, scholars, technology enthusiasts and government and military personnel with access to receivers. They will pass on the information they have received to the larger audience.

> **Shortwave 2.0 won't reach the audience of millions as in the heyday of shortwave decades ago. It will reach those who seek comprehensive, reliable, credible information.**

Text via shortwave

An important feature of Shortwave 2.0 is that it is not limited to audio.

Starting about 2010 I was introduced to the digital modes of amateur radio. I was amazed that such a weak signal, in noisy conditions, could produce text. At that same time, VOA, RFE/RL and RFA were starting to feel the effects of internet blocking, especially in China and Iran. These two developments, combined, pointed to radio as a possible solution.

Starting in 2013, I was able to test the concept in "VOA Radiogram," an experimental weekly program on the Voice of America. Instead of voice and music, we transmitted, on a conventional amplitude-modulated double sideband transmitter at Greenville, N.C., the warbles of the amateur radio digital modes. We tried most of the modes available to the amateur radio community. After several weeks, we concluded that MFSK32 (120 wpm) and MFSK64 (240 wpm), which can transmit images as well as text, provided the most satisfactory performance for conditions on the shortwave broadcast bands.

In 2017, when I retired from VOA, "Shortwave Radiogram" (*swradiogram.net*) succeeded "VOA Radiogram." Transmission of text moved to private shortwave stations WRMI in Florida and WINB in Pennsylvania.

Because "Shortwave Radiogram" is transmitted on a regular amplitude-modulated shortwave transmitter, it can be received on any shortwave radio, from inexpensive portable radios with no sideband capability, to more elaborate communications receivers, amateur transceivers (most of which nowadays have general coverage receivers), and software-defined radios (SDRs).

For now, the audio must be piped to a PC equipped with decoder such as Fldigi from *w1hkj.com*. For Android devices, AndFlmsg and its receive-only version TIVAR are available. Decoding can be as simple as placing a mobile device next to a portable radio, for "acoustic coupling."

The big advantage of text via shortwave is that it can be received successfully in poor reception conditions, in which voice broadcasts are difficult to comprehend. Text can be read and re-read, and passed on to others through personal media. The content can start online in the broadcaster's country, shifting to wireless or satellite to get past blockage at the border, then back online within the target country. Text can be received while away, or while sleeping, when reception conditions are optimum, then read at a convenient time.

This radiogram concept is not Digital Radio Mondiale. DRM requires special transmitters (or exciters) and hard-to-find receivers. I know from hundreds of hours of DRM reception since the early part of this century that DRM signals drop out too often in the face of a weak signal, fading or even modest amounts of interference — i.e., typical shortwave conditions.

A hybrid digital-analog system

As shortwave listeners know, analog carriers degrade but do not drop out until reception is very poor. The digital mode clings to the tenacious analog carrier, using its error-correction tricks to convey content successfully even in unfavorable conditions. It is therefore a hybrid communications method, employing the best of both analog and digital. (Text via radio was also resistant

to jamming in a few experiments that I was able to conduct.)

In future wars, conflicts and crises, we can expect a hostile environment for international media. If online communication is interdicted, shortwave can come to the rescue. But, in recent decades, so many shortwave (and medium-wave) transmitting sites have been dismantled that signals will often have to be transmitted to the affected region from distant or less than ideal locations. The radiogram concept of text via radio is robust and can survive this situation.

Although text via radio can be received on any existing radio, international broadcasters need to pay more attention to the receiver market. Many consumer-grade portable radios with shortwave bands, especially those sold in developing countries, are of poor quality. International broadcasters should provide advice to audiences on how to select, and where to buy, radios with satisfactory performance. Further, broadcasters should become involved in the design of shortwave radios. An ideal radio of the near future should receive and decode text. (Some amateur radio transceivers already do this.)

In the meantime, international broadcasters should not close any more shortwave transmitting sites. They are essential facilities to relay information when the internet is blocked, which will happen in more places, more frequently and more thoroughly.

On those transmitters, text should be broadcast at least once a week. This will enable early adopters to become familiar with the concept. It will also get the attention of receiver manufacturers and software developers.

During wars and crises, the internet will be most tightly restricted at a time when uncensored news is most needed. Information gathered at great effort and expense may not be able to reach an audience. International media organizations lacking radio capability risk becoming trees falling in the forest.

Above
An example of receiving text via shortwave. An Android device with the necessary app sits next to a portable shortwave radio. No patch cord.

> **Although text via radio can be received on any existing radio, international broadcasters need to pay more attention to the receiver market.**

Readers' Forum

To cure AM, look to the past

I'm sure this will be a very unpopular opinion, but it's mine. I think the way to save the AM band is to reimplement AM stereo.

The current problem with AM isn't on our end unless you're running IBOC (should have called it "IBAC"). Receiver bandwidth, vehicle radio antenna compactness, hidden antennas and man-made noise in the AM band are mostly to blame. I believe the cure for AM is technology from the past.

Remember when AM stereo was starting to become a thing? C-Quam AM stereo was brilliant in nearly every way. As soon as the receiver would lock onto the 25 Hz pilot and go full bandwidth, it was just beautiful. The AMs I was in charge of at the time were running stereo. It was pretty much set it and forget it, unlike digital AM.

As late as 1998, I bought a new truck, and the factory radio had AM stereo. Unfortunately, in 1998 there were only a few AMs on the expanded band running AM stereo, and that was it. Most AMs in my market were already reducing their bandwidth to a muddy 5 kc for the sake of "loudness" and in mono.

Today, tuning across the AM band in my markets, not a single AM station is running stereo.

What if — and this is a BIG "if" — we petitioned to make AM stereo the standard, and drop the IBAC? The AM receivers would no longer have to include an expensive proprietary technology and they would inherently have wide audio bandwidth.

It would be easy on our end, no Smith Chart required. No optimizing of a DA bandwidth, rotation, nothing. Just an inexpensive stereo generator in place of the crystal or PLL, and a 25 Hz pilot source, done.

The listener end, that's another story. But ... "what if?"

Paul Shinn

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Radio World welcomes comment on all relevant topics. Email *radioworld@futurenet.com* with "Letter to the Editor" in the subject field.

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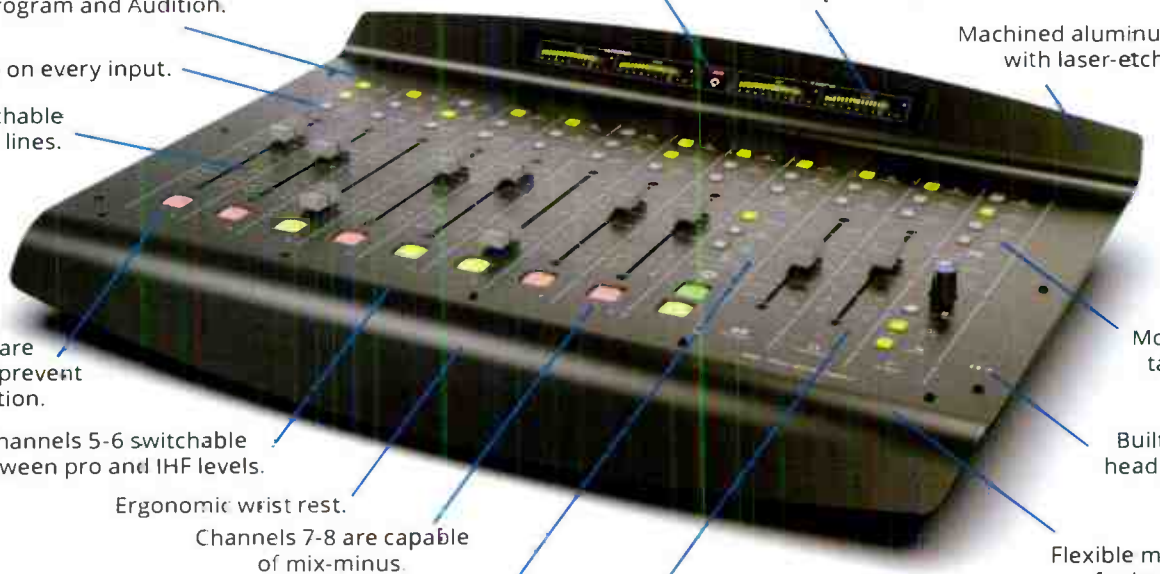

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