



RADIO WORLD

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RED, WHITE AND BLUES



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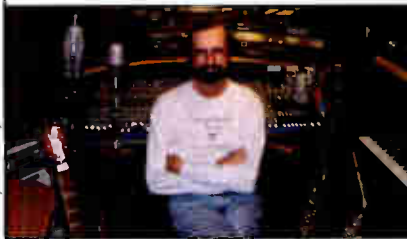


Photo by Jennifer Ryba

HE RAD iPad

Crawford Broadcast embraces Apple's product as broadcasting tool — **Page 30**



Dial Global Amps Up Olympic Coverage

Network's Infrastructure Was Pre-Assembled For Shipment to the Summer Games

BY RANDY J. STINE

NEW YORK — Like gymnasts coming off the uneven parallel bars, Dial Global Radio Network engineers and technicians hope to "stick the landing" following lengthy preparations for coverage of the 2012 Summer Olympics in London.

The road to England began months ago for the radio network, with studio measurements, diagrams and technical planning. In fact, much of the radio network's technical infrastructure was pre-assembled in New York for shipment in advance of the July 27 opening ceremony.

To provide the technical expertise for what basically is a two-week live remote, Dial Global engineers and technicians tackle numerous tasks ahead of time, said Mitch Glider, vice president of engineering at Dial Global, New York.

"We build, design, stage and test all the equipment in New York City at the [Dial Global] Broadcast Center, so once we get onsite we don't have guys out there with soldering irons and

crimping tools." The planning process started about a year ago once Dial Global secured the rights for the London games, according to Glider.

The infrastructure shipped to London by Dial Global consists of ten fully loaded road cases and at least a half-dozen miscellaneous equipment boxes. Glider said.

Dial Global will provide its affiliates exclusive coverage of the Olympic Opening and Closing Ceremonies, two-



Dial Global VP Engineering Mitch Glider holds a Rubicon road console, made by SAS.

Dial Global acquired the radio rights to the Olympics as part of its merger with Westwood One Inc. last fall.

The radio network's on-site operation will be based within the International Broadcast Center at the Olympic Park. Dial Global will occupy just a small part of NBC Television's 65,000 square feet space within the IBC. Several control rooms and associated studios will be used by the radio network in addition to broadcast capabilities at five Olympic venues.

minute updates three times an hour 24/7, a two-hour nightly Olympic wrap-up show and long-form coverage of several sports, including men's and women's basketball and women's soccer.

The five hour time difference between London and the United States' Eastern time zone will present some programming challenges for Dial Global, Glider said.

"We always strive to bring as much live programming as possible. There

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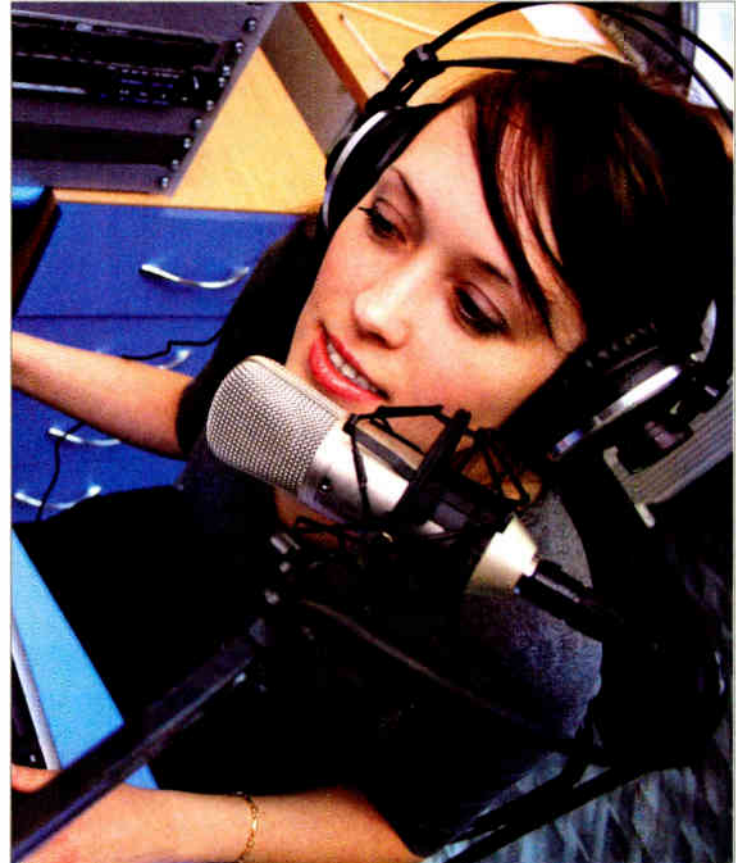
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London Games Get Ready for Radio

Radio Rights-Holders Join Other Journalists At the International Broadcast Center

BY JAMES CARELESS

Radio broadcasters from around the globe will cover the 2012 Olympic Games beginning with the opening ceremonies on July 27.

A total of 1,275 broadcast commentary positions are available when all venues are counted; each position accommodates one, two or three people. Approximately 18 percent of bookings for these commentary positions are from radio rights-holding broadcasters, or RHBs, according to Matt Mason, director of information and publications for Olympic Broadcasting Services.

OBS, an agency of the International Olympic Committee responsible for providing continuity in Olympic coverage, has been host broadcaster for all Olympics Games since 2008. Based

Games site, BBC Radio will be use 46 of those, which is interesting to a large part of the readership of RW's sister publication Radio World International.



Aerial shot of the Olympic stadium in London

Photos courtesy of the International Olympic Committee

temporary station dedicated to the Games transmitting a DAB signal.

THE NITTY-GRITTY

Radio RHBs will be housed with television, print and other journalists at the International Broadcast Center. Located in the northwest corner of the Olympic



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Jeeppers, maybe if dad shopped at BSW he could afford a bigger cake!

on Mason's numbers, radio broadcasters will occupy up to 288 commentary positions through the London Olympic

As part of what it's calling the first "digital Olympics," the BBC will provide coverage of the Games on a



OBS has been host broadcaster for all Olympics Games since 2008; it filled that role at the 2010 Singapore Youth Games, shown, and will do so in London. Of 1,275 London broadcast commentary positions, about 18 percent are booked by radio rights-holders.

Park, this multistory building is roughly 302 yards long, 114 yards wide and 23 yards tall, according to the IBC website, www.london2012.com/libc-mpc.

Mason said some radio rights-holders have booked radio studios in the IBC and dedicated radio "mixed zone" positions. The radio studio facilities generally include office, control room and a studio.

The standard studio module of Olympic Broadcasting Services is just over 49 square yards, large enough to support a basic radio production facility. This said, many RHBs have requested custom-tailored facilities.

The mixed zone is an interview area at the venue for radio organizations and members of the written press to "mix" with athletes, conducting post-event interviews. The area is adjacent to the field of play, or as close as possible.

Then there are the commentary positions at the venues, where radio broad-

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Why Radio Should Go Back to School

American College Stations Deserve More Than They Get From Our Industry

American college radio deserves more than it gets from the broadcast industry at large — more attention, more nourishment, more celebration and more opportunities for young people who will graduate soon.

Pursued wisely, such a strategy offers a great potential payoff: What could be more valuable to stations in 2012 than access to a larger pool of young people excited not only about radio but about all forms of new media, ready to experiment with mixing the two in ways we haven't thought of yet?

Blogger Jennifer Waits writes in this issue of Radio World that college radio continues to offer an alternative for adventurous radio listeners.

"Throughout the course of profiling stations and DJs, I've found that college radio isn't just alive," she says, "it's thriving, even as the listening landscapes changes." These comments are welcome particularly given that some educational institutions apparently would rather enjoy one-time cash infusions than continue to operate their radio licenses.

THANKS, WXDR

College radio played a crucial role in my own career.

I well remember tightening my courage to the proverbial sticking place and walking into the offices of tiny FM station WXDR at the University of

Delaware. That decision may not have changed much of radio's history but it sure changed me.

Not only had I discovered an outlet for my love of performance and words, but I'd found a place that would teach



me to look beyond the conventional and the expected, to appreciate the diversity available in music, words and other art forms if I'd take the trouble to listen.

We students liked sharing an anecdote, perhaps a wishful one, that our call letters stood for "sex, drugs and rock and roll." But beyond the recreational veneer, WXDR offered me my first chance to talk into a microphone when someone actually was listening; to learn how to operate broadcast equipment; to report a news story in an environment where making an error would bring actual consequences; to interview government and business people; to manage my peers in a newsroom.

I found out how to create an effective

audio package; I sat behind the foul ball screen near home plate and announced baseball games; I served on the station board and eventually was consulted by administrators who sought to make professional hiring decisions.

Critically, I discovered the delights of jazz and urban music and bluegrass and comedy, and with that came a broader realization that my personal boundaries had until then been pretty narrow — and not only in matters of music. (WXDR also brought me treasured, lifelong friends, but that's for a different column.)

Not every college station offers such opportunities, and as Waits writes on page 37, the medium takes many forms; but the potential benefits to a student are evident. Perhaps less apparent are gains to commercial stations and large noncoms of engaging more closely with colleges.

I'm troubled by a dismissive attitude I've sensed from many people in radio about college broadcasting. Maybe the mindset came about because radio long had more talent than it could handle knocking on its doors, trying to get in. However, we're not the cool game in town anymore, or not the only one. I'm making a generalization but it seems to me that college radio has operated far too long on the fringe of the business. A closer relationship between college stations and the rest of our industry would offer benefits in both directions.

FROM THE
EDITOR



Paul McLane

Have you wondered why some young people in college radio are skeptical about the established industry and perceive it as hidebound? Have you asked them? (Not via a survey or poll, but an actual conversation?)

Is there a college station nearby that would benefit from your expertise as a counselor or éminence grise? Have you contacted the GM, engineer or student advisor to offer such a relationship?

Does your station or cluster promote job opportunities and internships via school stations? Does your corporation have an outreach program to colleges for hiring and internships?

Is there a way your station and a local college outlet could partner on a promotional campaign or event, benefiting both? Remember, the school station may have something you don't: "ears on the ground" in a desirable youth demographic.

Could your programming department create a "next-generation advisory" position whereby a talented young person could, say, pick out an hour of your weekend music, or help set up focus groups among young people so you can glean ideas from his or her peers?

Do you know the name of the communications professor or head of the media department at the local school? Have you asked him or her how changes in perceptions of radio and new media are affecting their curriculum?

How can we make it easier for students and other young people to participate at major trade shows?

Are you aware of the annual College Radio Day, launched last year, and considered whether your station might cross-promote it? Organizers tell me they'd hoped for 50 participating stations last year; they ended up with 364. They've surpassed that for this year's event, set for Oct. 2, and plan an album to raise funds for college stations.

Do you have an underutilized HD2/HD3 channel? If so, have you considered that students or young people might have both the programming ideas and the marketing energy to try to make something out of it?

Have you attended a college radio convention in recent years, to see what's happening in that arena and to scout for talent?

Have you donated time or money to a college station?

It seems to me that any station manager or engineer concerned with future development and evolution of radio might want to consider these questions.

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Courtesy of the International Olympic Committee

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Photo by Jennifer Waits

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NEWS**NEWSROUNDUP**

INDECENCY: The Janet Jackson wardrobe malfunction indecency case — which led to more profanity delay equipment installations for radio stations — has come to the end of the road. The Supreme Court declined to review a lower court ruling that overturned the FCC's \$550,000 fine against CBS Corp. for televising a fleeting view of Jackson's breast during the live 2004 Super Bowl half-time show. The Supreme Court earlier in June tossed out FCC indecency fines against Fox and ABC on narrow procedural grounds, telling the agency it's free to update its broadcast indecency guidelines.

OWNERSHIP: Also at the end of its term, the Supreme Court left in place a lower court ruling on media ownership, saying

the current rules are constitutional. The justices declined to hear broadcasters' appeal. The case was based on the FCC's 2008 decision to leave radio ownership caps, radio-TV cross-ownership limits, and TV duopoly rules in place and to vacate the agency's proposal to relax the broadcast/newspaper cross-ownership rule. The decision clears the way for the commission to complete its review of the media ownership rules.

SBE: The Society of Broadcast Engineers is moving forward with a self-examination plan that will help the organization identify and define opportunities and challenges. SBE President Ralph Hogan said participants in a meeting on the issue identified six areas of focus, such as increasing chapter support and reinvigorating the effort to attract youth.

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OLYMPICS

(continued from page 6)

at some point, either at the IBC or at the venues," Glider said.

The combination of mechanical, logistics and usage is responsible for telecom issues, he said. The sheer scope and diversity of the services provided combined with being in a foreign country can create telecom issues.

"Unfortunately we cannot test the telecom on site until several days before the games begin. Then we'll check them every day for noise floor and continuity. We carry McCurdy extended-range test sets to constantly monitor the four-wire connections between the venues and the IBC," Glider said.

Dial Global's 35 x 22-foot space within NBC Television's complex will house a small master control and several auxiliary studios, Glider said. Short radio packages will be mixed and produced onsite and at Dial Global's New York City broadcast center. Producers in New York take the source analog audio and insert commercials and then direct the audio through the multichannel network Harris automation system to the external routing system. The Olympic feeds are sent to affiliates via

satellite uplink from New York.

Dial Global sports anchors and reporters will carry Marantz PMD 620 hand-held digital recorders and use portable Comrex Access units to connect to the IBC or directly to New York operations.

Dial Global, which relies on NBC Television for its telecom, electrical and video service needs, will use Furman AR-Pros AC line voltage regulators to protect its equipment. "All of our equipment is 120 volts at 60 Hz, while the site will provide us with Euro 220 volts at 50 Hz."

Glider said wireless spectrum in London will be monitored "very closely, be very limited and very expensive" to use.

Glider declined to disclose Dial Global's technical costs involved with covering the 2012 London Olympic Games.

Dial Global engineers Wally Tienken and Zach Akey are making the trip to London to manage onsite engineering services, Glider said. Meanwhile, Howard Deneroff and Mike Eby are the event's senior producers for the radio network.

Dial Global provides 200 programs and services to 7,000 radio stations.

LONDON

(continued from page 3)

casters can provide live coverage of actual Olympic competitions. The audio feeds from these locations are routed to the Commentary-Switching Center in the IBC.

The Commentary-Switching Center is the network's main hub for coordination circuits and international sound for radio, or "IS-RA." All RHB/OBS coordination and IS-RA circuits will terminate in the Commentary-Switching Center and may then be extended to the radio broadcasters' spaces in the International Broadcast Center.

Beyond their own original coverage, radio rights-holders will have access to feeds provided by the Olympic Broadcasting Services, akin to its host broadcaster feeds for television rights-holders. OBS provides radio rights-holders with IS-RA produced for mix with their commentary feeds, said Mason. This will be available to the RHBs in the IBC, as part of their package, in either analog or AES/EBU format.

A LONG HISTORY

Radio began covering the Olympics in 1928, when the Games were held in Amsterdam. However, it was not until the 1936 Berlin Games that the medi-

um reported the Olympics in depth.

According to an OBS' online history, "The 1936 Games received extensive radio coverage, as a total of 2,500 radio broadcasts were made in 28 different languages."

At that same event, German television manufacturers Telefunken and Fernseh televised the 1936 Olympics to "public television offices" in Berlin and Potsdam. Approximately 162,000 viewers saw the televised games. That was far fewer than heard them on radio, but enough to spark the long-running relationship between television and the Games.

World War II resulted in the cancellation of the 1940 and 1944 Olympics. The Games resumed in 1948 with the so-called "Austerity Games" in war-ravaged London, where athletes used existing venues and housing. The BBC seized the opportunity to televise the event. But radio was still a major player: The BBC's Broadcasting Center (inside the 1924-era Palace of Arts) had eight radio studios.

Today, 84 years since its first Olympic broadcast, radio remains an important part of Olympics coverage, according to Mason.

James Careless reports on the industry for Radio World from Ottawa, Ontario, Canada.

He wrote about RadioFlag in the Feb. 1 issue.

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WORKBENCH

by John Bisset

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Engineer Mike Vanhooser sent in a note about a story we featured a year and a half ago, regarding covering your AM base pier copper strap with roofing tar to discourage copper theft. Mike writes, "Been there, done that, and the

copper was still stolen!" Apparently all a thief has to do is soak the cut strap in gasoline or diesel fuel for a day, and the copper comes out clean of any tar.

But, Mike adds, it's still a good idea, since it covers up that glistening, shiny copper. The technique is certainly not a foolproof deterrent. Even engraving the copper with the call letters from one end to the other didn't help. It was still stolen. Mike's solution was to cover the

strap in concrete.

He does that now for the base straps, as well as any strap/coax/wiring in trenches. Now, it's all covered in concrete, which makes it just about impossible to steal. Yes, I suppose so, but if you ever have to repair or replace anything in that trench, better bring a jackhammer.

Head to our Radio World links page for this issue, radioworld.com/July-18-2012, for a link to the original story

showing how to cover the pier (and strap) with tar. Mike Vanhooser can be reached at novaelec@sbcglobal.net.

We're in the middle of another remote season, and Charles "Buc" Fitch, P.E., has a neat modification to add a squelch "open" light to an older, but still functioning, Moseley RPL Series RPU. Buc writes that this is vintage gear from Moseley, and he considers it to be the Mercedes-Benz of broadcast gear.

This squelch-open modification is simple: The Moseley operates a relay,

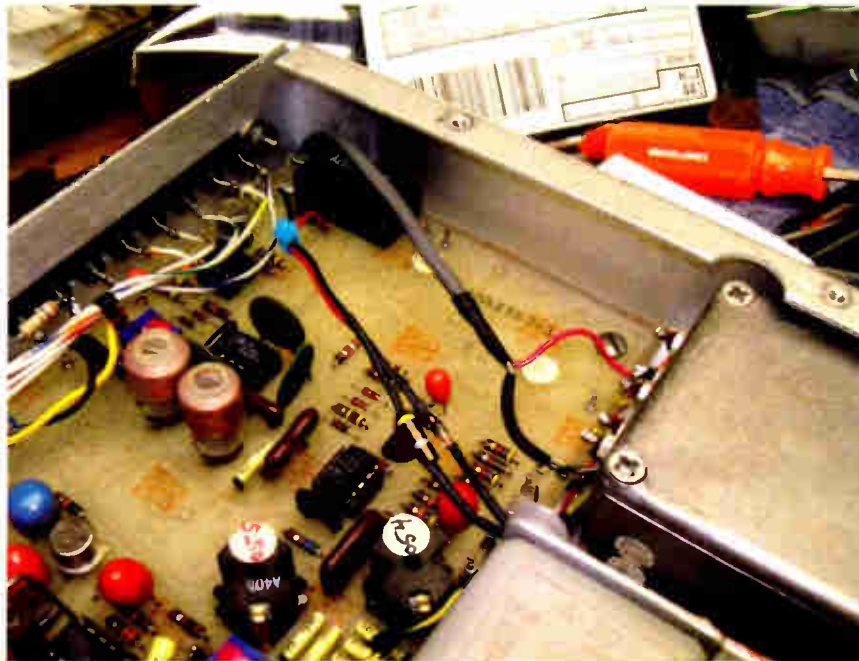


Fig. 1: A close up of the zener and current limiting resistor, attached to the LED leads.



Fig. 2: Inside the Moseley RPU, showing the overall modifications

which sends received audio to the back panel of the receiver. The twist here is that when the signal that drives the relay is off, this does not drop the voltage to zero (or at least not to a value under the illumination voltage of the LED — 1.4 volts or so).

Buc chose a yellow LED (Digi-Key L10007 — a little more than \$1) to contrast with the red "on" front-panel LED. This L10007 LED pressure-mounts in a quarter-inch hole and is well anchored after pushing the LED into this diameter hole. The LED is encapsulated and has leads that are about 6 inches long, which makes wiring convenient. Buc put the zener in the positive lead (anode towards the +/red lead of the LED) and a 470 ohm, 1/2 watt current limiting/voltage drop resistor in the negative lead seen in Fig. 1.

The easiest place to pick up the voltage on the relay coil was at the back EMF diode, which is across the coil. Referring to Fig. 2, you can see the LED mounted to the right side of the photo,

(continued on page 12)

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American Vets Tune In Online

Founder of Soldiers Radio Now Serves Vets With Music, Info

BY PAUL KAMINSKI

Growing up in Leesburg, Fla., in the mid-1960s, the radio bug bit Clark Taylor while he was still a teenager, working at WLBE(AM). That early experience would instill an abiding interest in radio, later motivating him to change the way American soldiers around the world receive radio and television news about the United States Army.

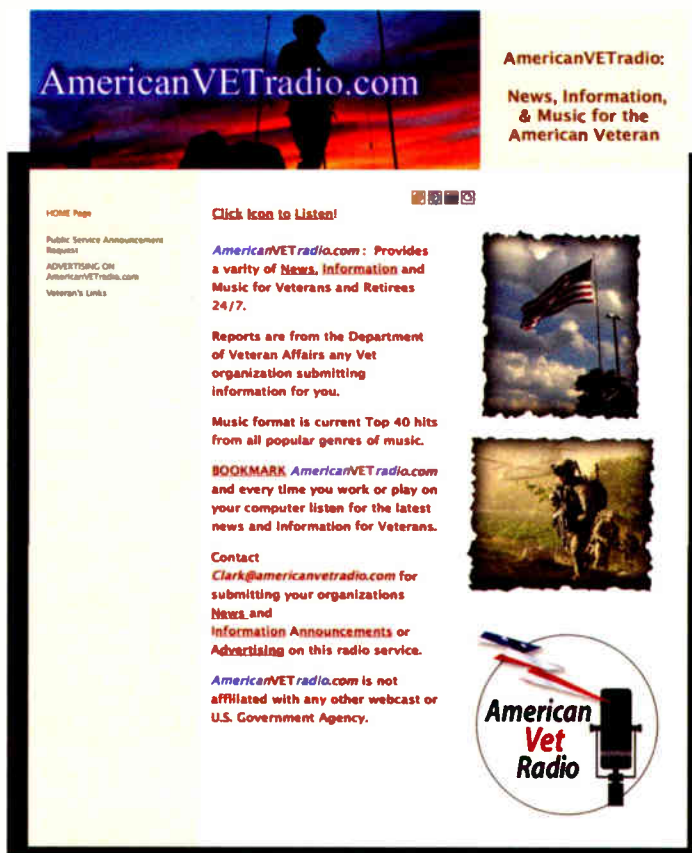
I myself worked with Taylor at Soldiers Radio and Television during my service in the U.S. Army. He was not just an effective administrator and a talented broadcaster; more importantly, Taylor was a great team builder, able to focus divergent talent in a common direction and draw upon the strength of that talent to achieve amazing results—not unlike an effective infantry squad leader.

Now, Taylor is applying what he has learned as a Vietnam veteran, station manager for the American Forces Network (AFN) in Würzburg, Germany, and founder and director of Soldiers Radio and Television, to reach a growing and under-served veteran audience online.

AmericanVETRadio.com, Taylor's most recent venture, began serving the veteran community worldwide on Jan. 1 this year. It plays a mix of top 40, adult contemporary, current country and golden oldies. "Stir that up and you have the typical GI radio from Korea or South Vietnam or Germany [from] the 1950s to [the] 1990s," he said.

The site also provides a "constant feed of information, as current as possible, with a lot of reinforcement of things they [veterans] forget about doing, like setting up a will," Taylor said.

Music and information are interspersed in a style similar to traditional local radio. Of course, finding filler for broadcasting 24 hours a day is one of Taylor's bigger challenges. "I'm looking for information from state and local veterans service offices, and state veterans organizations like the Veterans of Foreign Wars, American Legion and all the others," he said.



Not only is the music familiar, but some of the voices are, too. Over the years, Taylor has recruited former Armed Forces Radio and Television Service colleagues to do voice work for the program. "In fact, if any AFRTS alumnus would like to cut a voice track or offer some work, I'll gladly put it on the air," he said. "A different voice might bring back a memory for a veteran who might be listening."

Taylor's the recipient of two Silver Anvil Awards for his work with the Soldiers Radio and TV branch of the

Army's Chief of Public Affairs office, which is where he established the Soldiers Radio Satellite Network.

Under Taylor's management, the SRSN transitioned into what was formerly *SoldiersRadio.com* (now run through the military's media website), expanding the information mix to reach a broader worldwide audience of soldiers, families and Army civilian employees.

Because the soldiers currently returning from Iraq and Afghanistan are more likely to have been raised with computers, Taylor says he's reaching a younger demographic right now. "The older guys like me are just catching up, and we're having to go to our laptops to order prescriptions, check appointments, etc."

A different voice might bring back a memory for a veteran who might be listening.

— Clark Taylor

In keeping with current trends, however, Taylor believes that the number of older listeners will increase as more veterans do business and get entertainment online.

One of Taylor's goals for *AmericanVETRadio.com* is the carriage of daily news programs focusing on veteran news and issues, perhaps produced by some of the veteran advocacy organizations.

Though there are other online offerings and radio programs available to the veteran community, *AmericanVETRadio.com* and Taylor believe the power of radio will help make the continuing transition from warrior to veteran easier with information and entertaining, familiar music.

Paul Kaminski, Sgt. 1st Class, US Army, Ret., is the news director for the Motor Sports Radio Network, a freelance reporter for CBS News Radio and, since 1997, a columnist for Radio World. Email him at motorsportsradio@msrpk.com or follow him on Twitter, @MSRnet.

WORKBENCH

(continued from page 10)

with its red and white leads running to the left of the chassis. The red wire is the positive lead on the diode.

The shielded audio lead coming from the cast metal enclosure, seen at the top of the photograph, houses the last IF and demodulator circuitry. It provides a tap on the signal level point. This is an analog voltage between about 20 – 185 μ V of input level of the incoming signal. It is connected to one of the remote control telemetry channels.

Running this signal to your remote control is a big help when aligning the remote antenna. Having access to the signal strength at the remote pickup point allows the remote crew to zero in on the best alignment of the outgoing



The front panel showing the completed modification.

beam antenna. It eliminates guesswork.

The site where Buc's modified receiver is located even has a switchable attenuator to extend the range of the input signal reading to 300 μ V for even more careful alignment. The front panel of the completed mod can be seen in Fig. 3. Thanks, Buc, for what's sure to be a great afternoon of fun! Buc Fitch can be reached at *fitchpe@comcast.net*.

Contribute to Workbench! You'll help your fellow engineers, and qualify for SBE recertification credit. Send Workbench tips to *johnpbisset@gmail.com*. Fax to (603) 472-4944.

Author John Bisset has spent 43 years in the broadcasting industry, and is still learning! He is SBE certified, and is a past recipient of the SBE's Educator of the Year Award. John just joined Elenos USA, an FM transmitter company based in Miami.

What will you do with all the extra rack space?

EXCLUSIVE "UNDO" TECHNOLOGY
Restores peaks and dynamic range to poorly mastered source material.

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Dynamically widens or controls stereo sound field, providing a consistent stereo image.

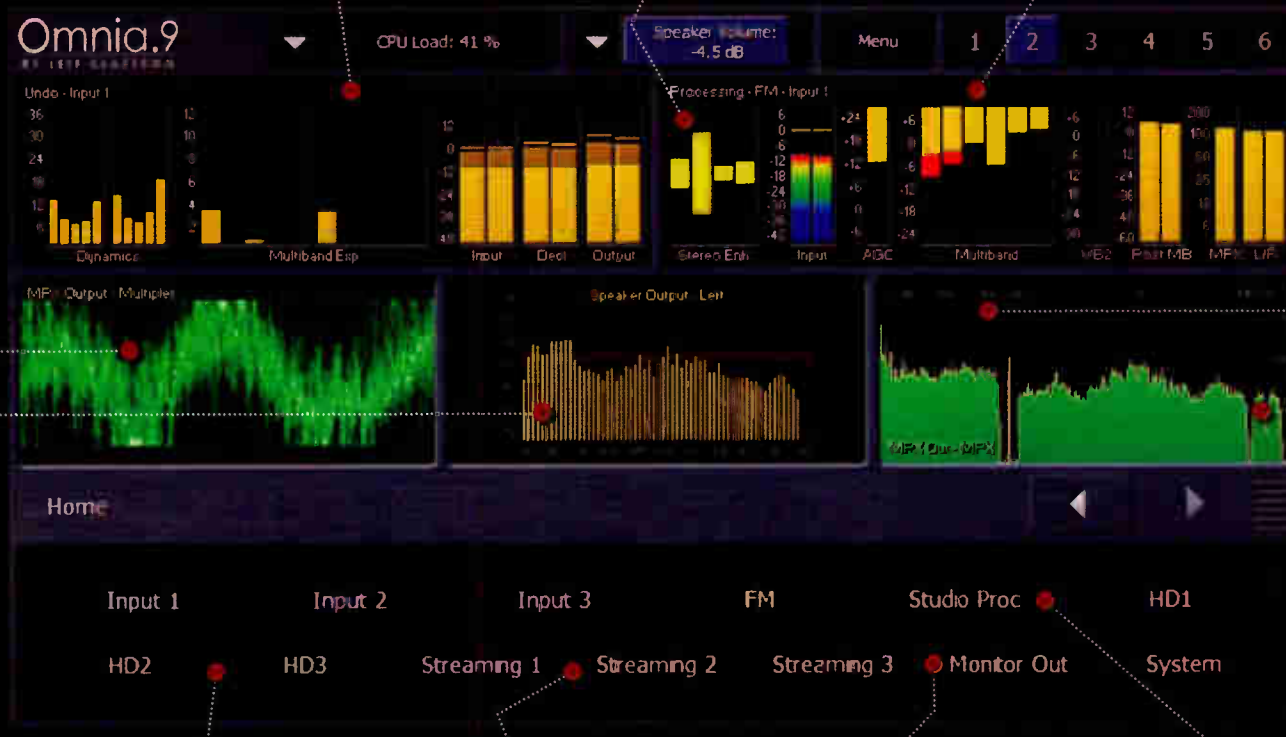
VERSATILE DYNAMICS PROCESSING
Input AGC, up to three wideband AGCs, and up to 7 bands of multiband compression and limiting.

DISTORTION MASKING COMPOSITE EMBEDDER
Enables up to 140% Left/Right peak modulation within 100% total modulation, making the choice between being loud or clean a thing of the past. (Due to special sauce inside Omnia.9)

ON BOARD DIAGNOSTIC AND ANALYSIS TOOLS
A built-in digital oscilloscope, FFT spectrum analyzer, and RTA provide a visual reference so you can see what you hear.

SPEAKER CALIBRATION
Built-in RTA and pink noise generator allow you to calibrate your speakers to ensure your processing decisions are made on accurate, calibrated monitors.

RDS ENCODING
Send RDS without losing loudness by using the built-in RDS encoder. Loudness is maintained due to the method of embedding the RDS signal. (More of that special sauce makes this possible)



PROCESSING FOR FM, HD, AND STREAMING AUDIO
FM, HD-1, HD-2, HD-3, 3 audio streams, all have independent processing cores (multicast version).

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No need for outboard encoders. Encodes to AAC, MP2, MP3, WMA, or Vorbis formats (multicast version).

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MEET THE NEW AXIA xNODES!

IP-AUDIO JUST GOT AN UPGRADE.

Everybody knows that Axia introduced broadcasters to IP-Audio in 2003. 3,000 studios and 30,000 connected devices later, the competitors who said "it'll never work" are now eating their words. How do you follow up that sort of success? If you're us, you open up a case of Monster and go back to work. So we did.

The result: Axia xNodes, smart new AoIP interfaces that transform your audio devices into an intelligent network. Use them to turn analog, digital or mic-level signals into routable IP-Audio, with associated GPIO logic. They're so advanced, they won two major awards at their NAB debut.

WHAT CAN YOU DO WITH THEM? HERE ARE A FEW IDEAS.

- » **BUILD A ROUTING SWITCHER.** One stand-alone xNode is an 8x8 (4x4 stereo) routing switcher. Connect 8 xNodes to a switch and make a 64x64 routing switcher. Need more I/O? Connect more xNodes. Like all Ethernet-based networks, Axia systems are naturally scalable, up to 10,000 stereo signals (plus logic).
- » **STL OVER IP.** Today's cluttered RF spectrum makes IP a great alternative. Put an xNode at either end of a fiber run, OC-3 circuit or a pair of inexpensive Ethernet radios to send eight channels of uncompressed audio to your TX – and get eight channels of audio backhaul too.
- » **SAY SO LONG TO SOUND CARDS.** PCI, PCIe, USB3, FireWire... who needs 'em? Load the Axia IP-Audio Driver onto your PC workstation and connect it to an xNode to get eight professional, balanced outputs and eight inputs. Use an industry-standard DB-25 breakout cable for pro XLR connections. You'll get studio-quality audio and save some green, too.
- » **ADD MICS TO THE MIX.** xNodes make awesome multiple Mic preamps. They have ultra-low-noise, ultra-high-headroom, studio-grade preamps with selectable Phantom power. Put your Mics in, bring your analog line level out. And that IP-Audio network jack? Ready to be used whenever you upgrade to a full IP-Audio network.
- » **MAKE AN A/D/A.** Take one analog and one AES/EBU xNode and rack-mount them side by side. Voila! Eight precision A/D converters and eight precision D/A converters, in just 1RU. Studio-grade, 48 kHz, 24-bit Delta-Sigma A/D and D/A convertors, with 256x oversampling, make difference you can hear.
- » **SLIM DOWN YOUR SNAKE.** Connect two analog or AES xNodes with a single Ethernet cable for an instant 8x8 bi-directional snake and bid the multi-pair bundle goodbye. Add a few more xNodes on each end for a 16x16, 32x32 or 64x64 snake. Use off-the-shelf media converters for long-haul fiber connections.

XNODES ARE SMALL. Mount them on your wall, under the counter — mount 'em on the ceiling if you like. Optional rack- and wall-mount kits provide plenty of options.

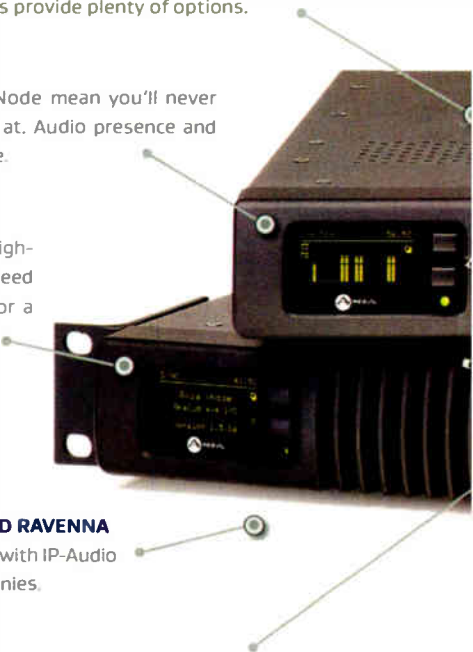
CONFIDENCE METERS on every xNode mean you'll never have to wonder where the audio's at. Audio presence and levels are both displayed at a glance.

INFORMATION OVERLOAD? Not here. Sharp, high-res OLED displays put all the information you need right on the front panel, without the need for a distracting multi-colored lightshow.

xNODES WORK WITH BOTH LIVEWIRE AND RAVENNA AoIP networks — making them compatible with IP-Audio gear from over 40 major broadcast companies.

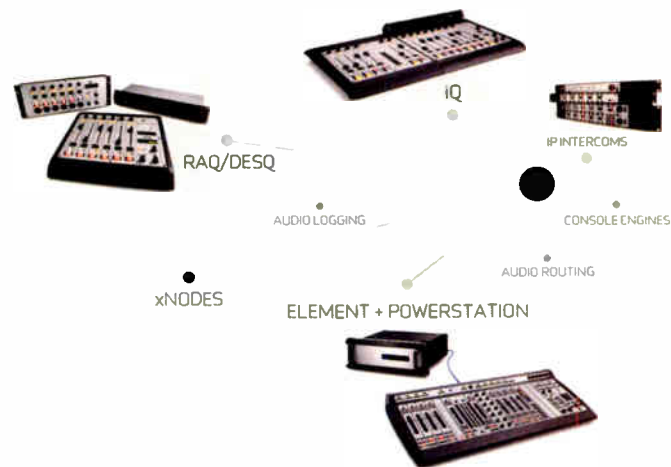


RAVENNA



NO NOISY FANS HERE. Front-mounted heat sinks on xNodes calm, cool and collected using air-conditioned air (instead of that hot air in the back of the rack).

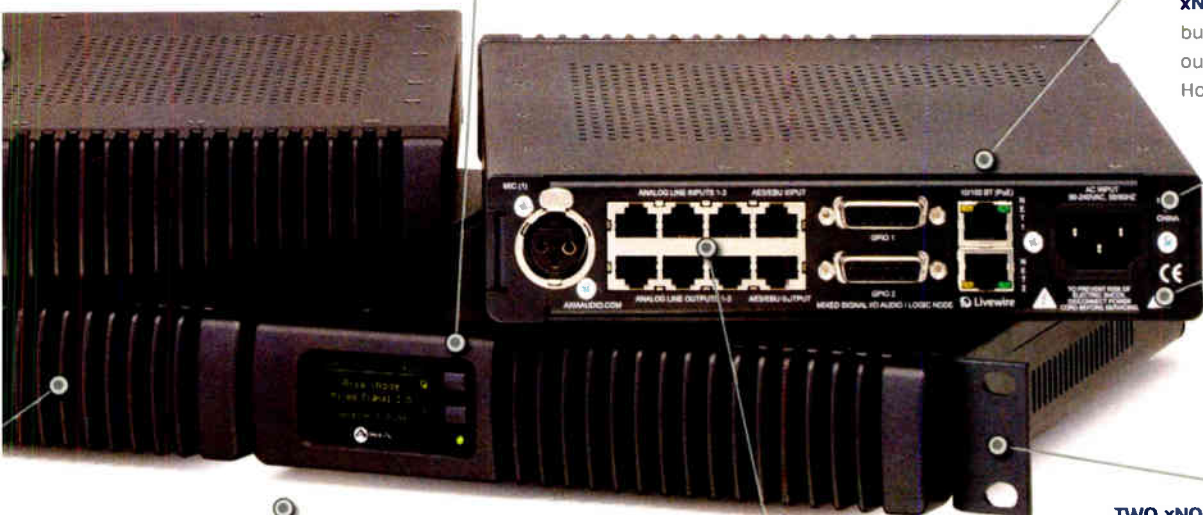
NOT AT ALL
an xNode
entire fa
softwar



RJ45 OR DB-25? xNodes give you I/O both ways, so you can choose whichever industry-standard breakout cable you prefer.

FAST, ONE-BUTTON SETUP. Hit the switch and plug 'em in — your xNodes will be streaming audio in under 30 seconds.

DUAL ETHERNET PORTS for redundant network links. The overnight jock kicks out a connection? No problem; the other one takes over so your programming never skips a beat.



xNODES HAVE AUTORANGING INTERNAL POWER SUPPLIES, but can use PoE (Power over Ethernet) too. Perfect for those out-of-the-way places where a power cable is inconvenient. Hook 'em both up for redundant, auto-switching backup power.

VERY VERSATILE. 5 different xNodes handle nearly any signal type. AES/EBU, Analog, Microphone and GPIO xNodes are perfect when you've got a lot of one audio type to work with. But what if you need a little of everything? This is the Mixed Signal xNode. Think of it as your utility MVP, with a switchable Mic/line input, 2 dedicated analog ins, 3 analog outs, a digital AES/EBU input and output, and 2 GPIO logic ports.

TWO xNODES MOUNT SIDE-BY-SIDE, so you can create your own custom mix of I/O types within a single rack space. Pair up an AES/EBU xNode with a microphone xNode, or match a GPIO xNode with an analog unit. Or combine a couple of Mixed Signal xNodes for the ultimate mix of mic, analog, AES3, Analog and logic I/O.

MONO OR STEREO ROUTING. Choose from 8-in, 8-out mono operation or 4-in, 4-out stereo. Both signals intermix seamlessly on your Axia network.

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AxiaAudio.com/xNodes



Party for Fun ... and Profit

To Create a Young, Loyal Following at Your Station, Head to the Local Watering Hole

How would you like to earn between \$25,000 to \$50,000 a year just by hanging out once a week for a few hours at a bar?

While this may sound like a line from one of those cheesy infomercials you see on late-night television, the reality is that if your station has young single people listening, you, too, can belly up to the bar.

While social media may be soaring, it still takes face-to-face time to generate action. That's where you can deliver as the organizer, facilitator and promoter of weekly listener parties at your local watering holes.

It will take commitment from the sales and programming departments to sell and promote enough to drive attendance. I've seen events like this sell for as little as \$500 and as much as \$1,500 per party. It's best to start low and drive the rate as attendance climbs over time.

These parties will initially be fun for your talent, but after four or five of them, compensation will be a key to keeping up the motivation. So, while it may be tempting to require your on-air talent to host these events as a routine part of their employment obligations, it's only fair that as you make money, they make money.

When you raise the rates, try sliding in a talent fee of \$150 that the client pays the DJ directly.

Some more advice: Be consistent. Give your party a name, so people know what to call it regardless of where it's being held.

6-8 p.m. If you start later than 6 p.m., there's too much of a gap between after-work and going home. Do your best to convince people to come directly from work. This will not only increase your attendance; it will increase the level of professionalism, since for the most part everyone will be better dressed.



Set a regular time and day of the week for the social hour, so you cultivate some regular attendees. Thursday works well because it's close enough to the weekend and people are more eager to go out and let loose. Successful bars don't need any help on Friday and Saturday nights, so stay away from weekends.

Ideal time slots are 5-7 p.m. or

The next thing you need is free munchies for people to snack on, since most will not have had dinner yet. While your sales people could be reluctant at first to ask the client to provide food on the house, the fact is that bars put out wings and similar items on a regular basis anyway.

Your clients know the Golden Rule of

bartending: A snack layout gets people primed to drink more or to look at the menu for more substantial food options.

Theme parties are an excellent idea, particularly around holidays. The prizes

PROMO POWER



Mark Lapidus

you give away (and you should always have prizes) should match the theme. Example: "It's 96 Rock's weekly House Party and this Thursday, 6 to 8, we're at Joe's Crab Shack for a pre-Thanksgiving throw-down. The grand prize is a pair of autographed drum sticks from Weezer."

At the bar, you will need access to a microphone and P.A. system, or you'll have to bring your own. It doesn't have to be huge, but must have the capability of allowing the crowd to hear your host welcome everyone and announce giveaway prizes or hold games every 20 minutes or so.

Don't overdo the mic time, of course, but it's important to connect with the crowd as a group as well as individually. You can also direct your talent to mingle and introduce themselves during their entire event.

Your on-air promotion should consist of a combination of live reads and recorded promos (included as part of the sales package). Make sure that at least 40 units run for five days before the party. Supplement this with Facebook posts and Tweets. Your website should contain the full details with a (working!) link to a map.

The bonus in throwing these parties is that you'll drive a relationship with many listeners by making a regular personal connection. With a little free food, a few drinks, free prizes and increased station billing — everyone's a winner at an after-work party. Cheers!

GR

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What Comes After Radio?

On Finding That Second Career After
The Rug Gets Pulled Out From Under You

BY **KEN DEUTSCH**

What will you do after your radio career is over?

Since the Telecommunications Act of 1996 encouraged group owners to acquire more stations in each market and consolidate personnel, many talented people have found themselves — voluntarily or by executive fiat — looking for work elsewhere.

"I believe that the executives have decimated radio," said Ken Dardis, president of Audio Graphics, a Chagrin Falls, Ohio consultancy. "It's been one misstep after another. While owners were in their consolidation mindset, people like me were asking how they'd pay for it. The multiples they were paying for the stations were not reasonable."

Ownership might feel otherwise. But it's indisputable that for some companies, the solution to the red ink was cutting costs, which meant staff. But where do the employees who were downsized go? Some have gone into allied fields

such as voice work, mobile music or equipment sales, satellite services, production companies or radio's various software suppliers.

"A general manager once told me that radio is built on sand," said Michael Neff, freelance radio commercial producer and voice specialist. "He said that no matter how good the reputation of your station or what its heritage status may be, you should be prepared to shift laterally or else shift downward. My dad told me that what's important is how you recoil."

Neff said that when people are removed from their jobs, they have a choice. "They can say 'I got screwed' or they can regroup and go on. I chose the latter."

During his 40-plus years in radio, Neff worked at stations as big as 10,000 watt WMAL(AM) at 630 on the dial in the nation's capital, and as small as 1,000 watt WBAX(AM), Wilkes-Barre, Pa.

"Some people have a disgruntled attitude, exemplified by the philosophy, 'The way we did it in the past is best.' I don't want to be like that," he said. "I



Photo by Jennifer Ryba

Ed Ryba, shown here with an RCA 44BX, an RCA 77DX and a TLM-103, all classic mics. The console is an analog Mackie 32-8 board.

have tried to shift, bob and weave to stay alive. Middle management, which I occupied during my peak years, has been eliminated."

Even during his stints at non-radio jobs with United Way of Lackawanna County in Scranton, Pa., and the Pocono-Northeast Chapter of The Lupus Foundation of Pennsylvania, Neff kept up his broadcast chops by doing local radio production from his own studio. He is now doing radio production and voice work in non-ranked Arbitron market Wellsboro, Pa., but he says he has learned from every opportunity he had.

"I never burned my bridges. There have been disappointments but everyone I met helped me get where I am," said Neff.

ONE DOOR CLOSSES ...

"You're not a broadcaster until you've been fired at least once."

So said Ed Ryba, who hit the air in 1977 on the overnight show over a 1 kW blowtorch in California. The pay was pitiful and the hours worse, but the skills

he eventually acquired there and at subsequent stations up and down the dial set him up well for his after-radio future.

"I routinely did things in the production room that went way beyond what the equipment was supposed to do," he said.

As is often the case, one of the stations he helped make into a ratings success was sold and Ryba was fired. He began recording film sound for MTV's original "Rock Against Drugs" campaign, then got a job mixing audio at Financial News Network, which was later bought by CNBC and killed off. Ryba was out of a job again.

"That's when I went freelance," he said. "I began doing voice-overs at Fox TV, ESPN and others. I built a studio where I could do the work in my condo in the San Fernando Valley, and recorded music there as well."

Ryba estimates he has recorded more than 10,000 radio spots; he credits radio for his ability to work fast while keeping up the quality. He is still recording his own music and currently has a song available through iTunes.

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Don Murley's personal, self-built home studio, capable of audio and video editing from the same chair.

The big question remains: What does the broadcast industry want that someone with roots in radio can provide?

A VARIETY OF ANSWERS

"There is a growing demand for people who understand radio's analytics and metrics," said Dardis.

"What is happening with digital advertising delivery? We don't have enough people who understand the complexities of gathering these metrics. Which numbers do you ignore? How do you formulate the data into a concise, actionable report you can hand to management? That's one need that I see." Others have mentioned the need for engineers, IT professionals and social media/online experts.

But those with an entrepreneurial spirit will follow their own paths. While still on salary with a radio station in northeastern Pennsylvania, Don Murley was doing so much outside voice talent work that he discovered he could make more money on the outside, and eventually left and began a long series of radio-related ventures.

"I found niche services I could provide," he said. "I was one of the pioneers with in-store broadcasting for Sears and ShurSave supermarkets. This was before satellite-delivered announcements in the stores, but I built a huge network of clients. If I had stayed in radio, all my extra activities might have been considered a conflict of interest."



Don Murley uses the facilities of WAEB(AM) in Allentown, Pa., to cut voice-overs for N3 Oceanic, an infomercial producer.

Murley also created radio and television spots for local advertisers he met through his station, and worked with ad agencies too. Then he got into voice-tracking, another service for which he was well-suited after his on-air experience. Murley soon got to the point where he was quite speedy at voice-tracking, but he prided himself on making his shows sound "live."

"I can always tell when I hear some station that's badly voice-tracked," he

said. "The guy's head is not in the game."

Another radio-related revenue stream Murley developed was broadcasting AAA winter road condition reports from his own studio. Called the AAA Iceicle Network, Murley explains, "It was great for the stations because they got up-to-date road condition information on the air, and it was great PR for AAA."

Eventually the broadcast ended up on 65 stations daily. "I had a goldmine, but I worked 105 days straight all winter, getting up at 3:30 a.m. to start compiling the data," Murley said. "When it would start to snow around 6 a.m., it screwed every-

thing up because I already had begun calling stations with reports."

But perhaps the biggest step Murley took was when he began producing and serving as on-air national spokesperson for a company's radio and television infomercials.

"They were selling fish oil and other health products, and I'd host the shows, interview the doctors and give out the 800 number. We were doing so many shows that I eventually moved into a facility they built for me in their building and became their full-time employee."

And on it went for this post-radio

entrepreneur. Over the last 20 years he has also shot video for TV news stories and placed broadcast time for advertisers.

"At some point I began voicing on-hold message tapes for companies," he said. "It's not a lot of money for each one, but you put 15 of those together every month and you can pay your mortgage."

There can still be life after radio, so let us know about your next career by writing the author at ken@kenddeutsch.com.

Ken Deutsch is another one of those ex-DJ types floating around. He has authored four books, which are available at www.amazon.com.

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- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.



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"Considering the LX-24's attractive good looks, modularity, traditional console layout and functionality, I can't wait to get my hands on one!"

*Greg Landgraf, Senior Engineering Manager,
Corus Radio Western Canada*

"A high performance, reasonably priced, great looking console integrating common sense features such as overload indicators for meters and ergonomic controls. Very impressive and well thought out."

*Benjamin Brinitzer, Regional VP Engineering
Clear Channel Media & Entertainment*

"Wheatstone continues to hit balls out of the park and this year they did so again with the LX-24 control surface. This new product marries the best of the old (modular design architecture) with the new (Audio-over-IP). Continuing in that theme was a Wheatstone module that marries their bridge router system to the new "BLADE" audio-over-IP system. This has the potential to extend the life of bridge router facilities indefinitely."

*W.C. Alexander, CPBE, AMD, DRB, Director of Engineering
Crawford Broadcasting Company*

"Wheatstone's innovation continues to make AoIP a viable product for professional broadcasting facilities. Just a few things that make the LX-24 stand out to me are the clear and decisive metering, individual fader modules, and "out of the box" thinking with faders for the headphone and monitor volume controls instead of rotary knobs."

*Phillip Vaughan, Chief Engineer KFROG,
CBS Radio*

"Leave it to the exquisite design talents of Gary Snow and the Wheatstone team to really hit the nail on the head. The LX-24 is not only the most functional, feature-laden IP based console for radio, it also raises the bar for the finest ergonomic radio command center on the planet."

*Tim Schwieger, President / CEO,
BSW- Broadcast Supply Worldwide*

"The LX caught my attention on the NAB Show floor. The look, form and function are unlike any other IP console available today. The easy-to-read buttons and displays are just second to none, not to mention the most bang for the buck. I can't wait 'til I have the opportunity to deploy my first LX."

*Anthony A. Gervasi, Jr., Sr. Vice President
Engineering & Technology, Nassau Broadcasting*



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World Radio History

“gotta have it!”



“Wow, Wow!”

Rick Hunt, Vice President & Director of Radio Engineering, Entravision Communications Corporation

“I didn’t think Wheatstone could improve upon the E-Series of consoles, but they have done it with the new LX-24. This is a beautiful, well designed console and the individual faders, integrated meters with overload indicators and low profile table-top design make this a must have for our facilities.”

*Michael Cooney, Vice President of Engineering & CTO
Beasley Broadcast Group, Inc.*

“Cool and sexy (I sound like Bruno from Dancing with the Stars). A great addition to the WheatNet-IP family.”

*Norman Philips, Vice President of Engineering,
Townsquare Media*

“I am very impressed with the sleek new design that incorporates single channel-strip architecture, integrated metering and stereo cue speakers in a thin, sloping chassis that needs no cabinetry cut out. Well done.”

*Erik Kuhlmann, Senior Vice President of Engineering,
Clear Channel Media + Entertainment*

“By far the most elegant and feature rich control surface on the market. The attention to detail and functionality is remarkable. Its architecture, such as “hot swappable” modular design, is a winner. A traditional meter bridge is appreciated by users and your millwork guy will appreciate the fact that it’s a table-top design.”

*Kris Rodts, Director of Engineering, IT & Facilities,
CKUA Radio Network*

LX-24

**ADVANCED MODULAR
NETWORKABLE CONSOLE**

 **Wheatstone**

World Radio History





High summer is when many companies begin shipping the new products they introduced in the winter and spring convention season. Over several issues, Radio World is featuring new notable products that manufacturers have introduced to serve the U.S. radio broadcasting industry.

VERSION 4.3 OF iMEDIATOUCH FEATURES HOURLY EMAIL NOTIFICATIONS

OMT Technologies has introduced Version 4.3 of iMediaTouch. It provides hourly email notifications to keep the user current with what's happening on the automation system as well as any missing log content.

Features include database "Auto failover" in the event of a primary (network) failover resulting in playback from the secondary (local) on-air computer. General equipment maintenance is made easier by allowing users to switch between primary or secondary storage for audio playback. Automatic Storeforward of audio from the network to local has increased 200 percent, OMT said, resulting in much faster download times.

A new log priority scan feature gives priority to the current day's scheduled items when backing up audio using Storeforward. V4.3 also contains improvements in iMediaTouch's On-air, Production, Remote Voice tracking and Scheduling applications.

Also new is the iMediaTouch Remote Voice Tracking Portal, which replaces the RVT server. OMT says, "It dramatically simplifies and streamlines our current Remote Voice Tracking process."

Info: www.imediatouch.com



LOGITEK: LIKE A ROC

Logitek Electronic Systems is showcasing a new console with a familiar name, the ROC. Available in six, 12 or 18 faders (including split configurations), it includes P&G faders, OLED source indication and a durable reverse-printed overlay surface in an attractive tabletop enclosure.

RGB-addressable lighting in the On/Off and softkey buttons allow users to specify color for console functions. The monitor control module includes source selection, timer start/stop, two monitor feeds and headphone output along with 12 user-assignable softkeys. Front headphone jacks (1/4-inch and mini) are provided.

Options include onboard router control panel; additional control modules with 12 softkeys per module; and an C-SBRIDGE LED stereo meter (pictured) with OLED display that indicates meter source.

Logitek also is offering retrofit kits to owners of its AE-32 Audio Engine to convert existing TDM system to the AoIP JetNet networking system. It is expected to cost \$2,300 per Audio Engine and be available by the fourth quarter. And the company developed a remote control system for its JetStream network audio system. Called JetSet, the remote control system is cloud-based and can be accessed by tablets, smartphones and standard computers. JetSet is compatible with Internet Explorer, Firefox, Chrome and Safari browsers.

Info: www.logitekaudio.com



NEW REMOTE MIXER FROM JK AUDIO

JK Audio is looking afield with its latest product, the RemoteMix 3.5, a desktop three-channel field mixer and headphone amplifier. It also has an onboard phone hybrid with alphanumeric phone-style keypad, IP/ISDN/POTS PBX handset interface plus a wired cell phone headset interface, as well as a Bluetooth interface, a JK Audio specialty.



The unit has pot controls for inputs and headphone outputs. There are send and receive jacks for interfacing with external equipment. It is battery-operable with two 9 V batteries or AC-powered for use North America, Europe and Australia. Weight is 3.7 pounds.

Info: www.jkaudio.com

FROM BW, AFFORDABLE STL PACKAGE, TRANSMITTERS

The year 2012 brings the launch of a new STL from BW Broadcast; it uses an adapted "Cool Stuff" winner from 2010 in the RBRX1 receiver and a specially designed transmitter side to create what the company describes as a bullet-



proof UHF STL. It encompasses digital, analog and composite in and out as well as multi-band audio processing, plan B silence detection, backup audio and Ethernet remote control.

Later in the year the Aptus range of FM transmitters will be released, an "all-in-one solution" for an LPFM site. BW Broadcast also announced the addition of Ethernet, multiband processing and AES/EBU to the existing TX range and new updates to its processors, as well as a new U.S.-based service center.

Info: www.bwbroadcast.com

Got Gear?

Send information about new product offerings to Radio World. Email radioworld@nbmedia.com. Be sure to include a photo.



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Ready for the best caller audio you've ever heard? You'll have it with the new Telos Nx6 talkshow system. With four advanced digital hybrids (each with its own carefully tuned AGC and Digital Dynamic EQ), Nx6 delivers smooth, sweet, consistent audio, from cell phones and landlines alike.

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Hardware and software products for processing, encoding and streaming your audio content.

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PC Software for archiving and logging all of your stations audio.

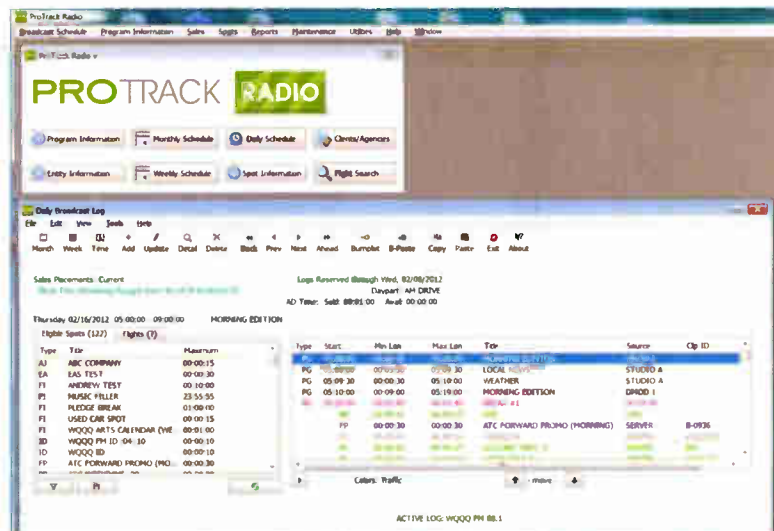
MYERS DEMONSTRATES THE LATEST PROTRACK RADIO

Myers Information Systems has the latest version of its ProTrack Radio broadcast management suite.

ProTrack can be used by single stations or network operations. It can also cooperate with ProTrack TV for networks operating both radio and TV properties. It also works with online audio outlets.

It builds tools including programming schedules and inventory management while also providing logs and tracking ads. It offers traffic and content management modules. Accounting and sales management features are included.

Info: www.myersinfosys.com



We're Ready For CAP (so you can be, too)

SAGE DIGITAL ENDEC

01/28/12 09:26:41
MENU MENU MSG

Enter



Computer

Incoming Alert

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Mic

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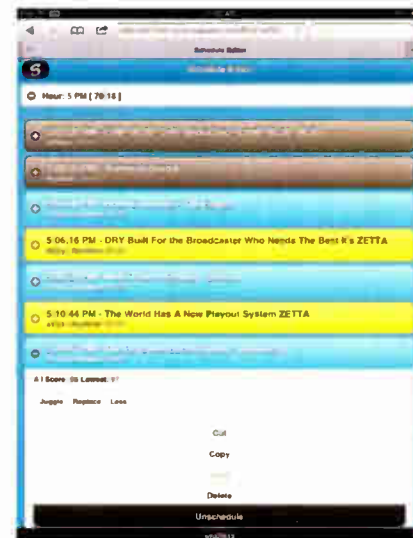
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NEW CONCEPT IN SCHEDULING BY RCS

Selector2Go is a new Internet-based multi-platform scheduler from RCS. The company says it puts the Selector and GSelector scheduling engine in the hands of radio programmers no matter where they want to schedule, as long as they are connected to the Internet.



"This first professional, commercial Internet-based scheduler will revolutionize the way PDs and MDs work," promises RCS. "You can juggle your music, while you snuggle at home. Work on a log, while having lunch."

RCS says the tool enables users to work on a station's log on a smart phone, a tablet or a computer, with Mac or PC operating system.

Info: www.rcsworks.com



DIGIGRAM BASKS IN 'CANCUN'



Digigram has introduced Cancun, a range of high-end mobile USB sound cards targeted to "on-the-go" audio professionals and reporters.

The first models are the Cancun 442-Mic and Cancun 222-Mic, a 4-in/4-out and a 2-in/2-out respectively, simultaneous analog + AES I/O device. The cards offer 2x500 MIPS dual-core processing power. Features include a

mic preamp, analog level of +24 dBu max and latency of under 3 ms.

The design has a thin and durable touch panel with LED lights beneath the surface as well as housing connectivity including a Neutrik XLR plug for pro microphones.

Companion software presents the user with status info such as gain values, driver setup, current state, VU meters and locks.

Info: www.digigram.com

RFBA-1 IS A 'TRIPLE' CROWN

Crown introduced the RFBA-1 receiver. Three receivers are incorporated in a single rack unit chassis. The configuration supports any combination of AM/FM/Weather Radio receivers. Applications are EAS, on-air monitor and translator



receiver. Each receiver is DSP-based and frequency agile. Additional features include front-panel display, Web interface, programmable output relay, firmware updates via USB port and RDS encoder/decoder. Balanced line outputs are adjustable up to 2 Vrms.

The RFBA-1MA is a DSP-based modulation monitor that can be integrated with the RFBA-1. This upgrade is available at the time of purchase or may be added as a software upgrade later. Mod monitor shows total deviation, stereo modulation analysis, pilot, SCA and RDS amplitude and multipath analysis.

Info: www.crownbroadcast.com

ARCTIC PALM UNVEILS CSSOCIAL

Arctic Palm Technology unveiled the CSSocial plug-in for its Center Stage Live and CS Contest Management software. Many broadcasters have embraced social media to enhance their image and expand their presence. CSSocial allows you to update your Twitter and/or Facebook pages with a selected artist, songs or to use your playlist to show all songs. Additionally, you can add hash tags and URL links. By using CSSocial with CS Contest Management you can post winning entries to the station's social media accounts.

A single post can update all datacasting services such as RDS, Web, stream, HD Radio, Twitter and Facebook. A 64-character message may be sent to RDS while a different 140-character message may be sent to Twitter. Updating traffic, weather, sports, news or other events can be accomplished by a single post.

Info: www.arcticpalm.com



STUDER SUPPORTS RADIO WITH ON AIR 1500



Studer's digital On Air 1500 is available in six- and 12-fader surfaces and features OLED channel displays and USB playback and record functionality.

The system uses the NANO Core, housing DSP and I/O that includes 16 mic/line in, 16 line out, eight GPIs and eight GPOs, with four AES pairs and a switchable USB playback and record port on the front for quick show deliverables.

Channel parameters such as EQ and dynamics can be edited using console controls in combination with the OLED channel displays without requiring an additional screen or PC. For advanced operation, the console provides interfaces for connecting a PC screen, keyboard and mouse.

Info: <http://usa.studer.ch>



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InoMini 632: Pro Features, Reasonable Price

Petite FM HD Receiver From Inovonics Solves Problems in Monitoring Signals



PRODUCT CAPSULE

INOVONICS INOMINI 632
HD Radio Monitor/Receiver

Thumbs Up

- + Decent receiver sensitivity
- + Handy status outputs for remote telemetry monitoring
- + Retains settings through signal loss or power outages

Thumbs Down

- No actual remote control or metering, only status outputs
- Balanced analog and AES audio only, no composite

Price: \$850

For information, contact Lukas Hurwitz at Inovonics in California at (831) 458-0552 or visit www.inovonicsbroadcast.com.

PRODUCT EVALUATION

BY AARON READ

In May of 2010, the FCC codified an informal policy of allowing analog FM translators to rebroadcast an HD Radio multicast feed, thus bringing that programming to a (theoretically) wider audience. For many operators, this was a golden opportunity to allow greater localization to their markets via transla-

tors. For critics, it breaks some rules by effectively allowing translators to originate unique programming without counting towards the market ownership caps.

Either way, if a translator owner wanted to relay an HD2 or HD3 or HD-whatever station, using over-the-air reception, they had limited options: use a consumer-model receiver, trying to

modify it or otherwise working around its lack of professional features; or spend a lot of money on a professional diagnostic model that might be overkill for the purpose.

PROFESSIONAL

Enter the Inovonics InoMini 632. Building on a tradition of "pro" Inovonics receivers often used for OTA

reception and relay, the 632 is a solid choice for that purpose. Even though it's technically sold as a confidence monitor, meant to be used in a studio with lots of clean signal, it works well in remote applications, as I discovered.

The 632 is a compact, 1RU tall, 1/3-rack width box. The front has a multi-function display, controller knob with push-to-select, and a 1/8-inch headphone jack. The back has three male XLR connections: left and right balanced analog out, plus AES digital out. There's a female F connector for RF in, a four-conductor Phoenix block for status out and a pair of power jacks; the 632 is designed to be able to daisy-chain one power supply for multiple units in one rack.

The status outputs are HD loss, audio loss, signal loss and ground. HD loss is when the DQ (Digital Quotient — an iBiquity measurement of several factors inside the codec) meter drops to zero. Audio loss is determined by a user-adjustable silence sensor (1–120 seconds), and signal loss is by a user-adjustable hash mark on the RSSI (received signal strength indicator) meter. I typically set the hash mark one bar below the seemingly-most-stable signal level on the RSSI.

On the bench the 632 demonstrated the usual solid receiver performance that most HD Radio receivers have: the inherently low signal levels of HD (running from 1 to 10 percent analog power) demand quality receivers. It was comparable to my Boston Acoustics Receptor

(continued on page 28)

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*Qualified Omnia models for trade-in: Omnia Classic, Omnia Hot, Omnia 4.5, Omnia 05, Omnia 06.
Offer ends September 28 or may be withdrawn earlier if Frank Foti returns from his vacation and gets wind of this.

World Radio History

INOVONICS

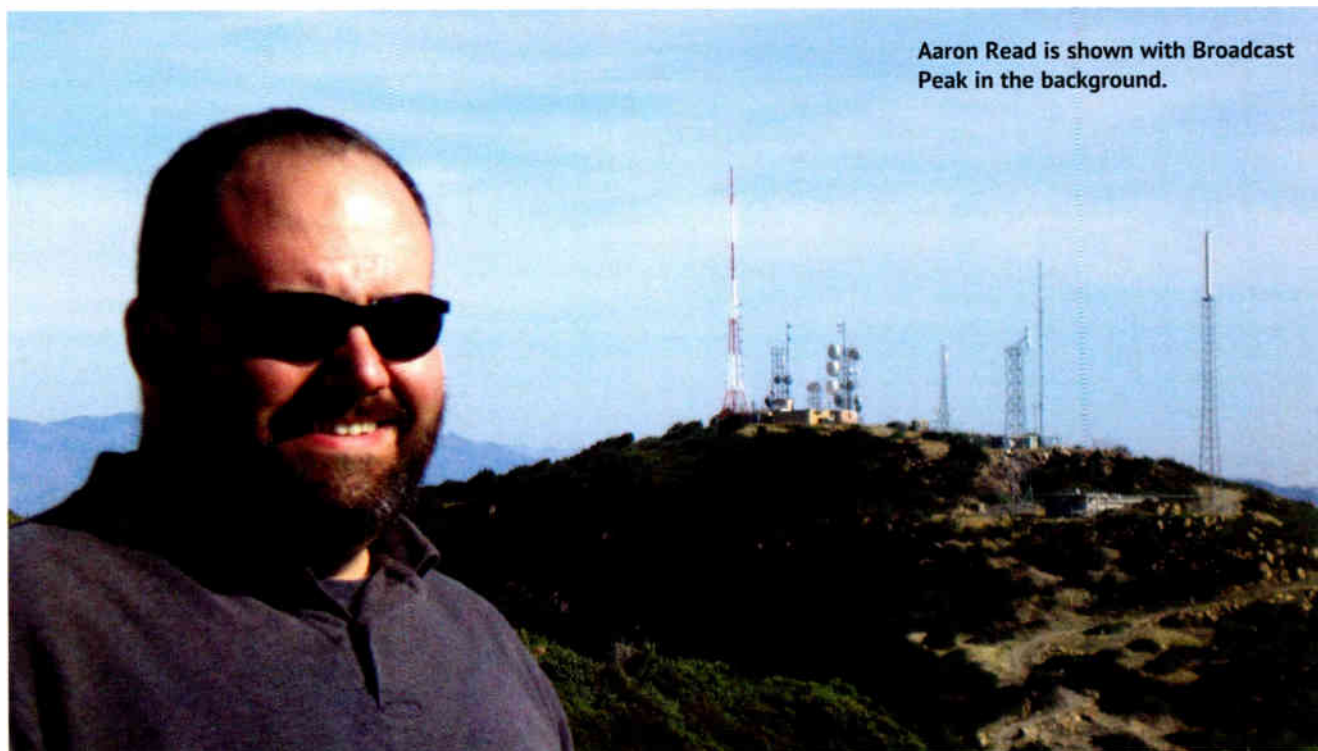
(continued from page 26)

HD I had hooked up to the same antenna via a splitter.

I noticed that the brick-style power supply put out a surprising amount of noise on the FM band. I suspect it's partly because it has hefty capacity to handle up to three 632s via the aforementioned daisy-chain method. A lower-amperage wallwart I had handy produced no audible noise effects. In the field, a receive antenna would normally be more than far enough away to avoid any RF interference.

For field testing, I elected for a challenge: reliably receive KCBX-HD3 up on Broadcast Peak, a 4,100-foot mountain about 20 miles northwest of Santa Barbara, Calif.

KCBX is a Class B FM that's 70 miles NNW on Cuesta Peak near San Luis Obispo, a hefty distance for a 5,300 watt ERP analog signal. Reduce that ERP to -14 dBc, and then add in several



Aaron Read is shown with Broadcast Peak in the background.



loss or power outage. The 632 will do all those things ... which are mighty important for limited-access facilities like mountaintops ... and it performs nearly as well as the Sony if you add the external filters/preamps.

There are some features I wish the 632 had, namely a composite output and actual remote control instead of just status outputs. However, such features would add to the cost and are, strictly speaking, not necessary. Doubly so on what's designed to be an in-studio confidence monitor.

grandfathered high-power "Super B" stations on Broadcast Peak (34 kW, 108 kW, etc.) and a known, consistent tropo path over the Pacific Ocean from San Diego, coupled with daily external temperature swings from mid-50s to mid-80s, and you've got a challenge!

I had two medium-sized Scala yagi FM antennas at my disposal. One was in the compound, and thus subject to more interference from nearby stations, but it had better filtering (bandpass and notch) and a short coaxial cable feed. The other was several hundred feet away horizontally, and several dozen feet vertically, mounted on the north side of the mountain.

The location reduced interference

issues (only a bandpass filter here) and eliminated the San Diego tropo path problem, but added a lot of cable loss. Normally it needs a preamp located at the receive antenna. We used an Advanced Receiver Research gallium-arsenide FET preamp that's wideband, very clean, and adds about +20 dB of signal. But at first I took the preamp out since they often raise the noise floor enough to swamp the inherently low-powered HD carriers.

Using the first antenna, the "compound" antenna, the signal seemed OK at first, but quickly developed significant dropout-to-silence problems. The 632's RSSI read about 40 of 48 bars, but during silence the telemetry outputs indicated "HD loss," implying that the RSSI was adequate, but a high noise floor was too much for a weak HD signal.

I switched to the "down the hill" antenna, sans preamp, and there was less silence but still dropouts. The RSSI was 30 of 48. During silence the telemetry read "signal loss" before the "HD loss" appeared, indicating the signal was clean but just too weak. Finally, I put

For field testing, I elected for a challenge: reliably receive KCBX-HD3 up on Broadcast Peak, a 4,100-foot mountain about 20 miles northwest of Santa Barbara, Calif.

the preamp back into the circuit. That seemed to do the trick. RSSI jumped to 47 of 48 bars, and reception of HD3 was suddenly rock-solid.

LOCKED IN

To put this in perspective, at one point I hooked up a Sony XDR-F1HD, often considered the modern-day gold-standard for receivers, to the same antenna systems but without the external filters and preamps. The Sony could easily pick up several distant stations that the 632 could not in that situation.

So is the Sony receiver "better?" Not necessarily. The Sony lacks the ability to lock to a specific HD multicast and it won't hold its settings through a signal

In the end, if you're looking at using over-the-air reception of an HD signal to feed any destination, be it another transmitter or just a confidence monitor, the 632 is an excellent choice. It's small, rugged and a pretty good receiver. Challenging reception situations may require investment in more professional antennas and filters, but for serious applications such things are recommended anyways.

Most important, the feature set finally delivers what many broadcasters have been wanting for some time and does it without breaking the bank.

Aaron Read, CBT, is the new ITI engineering director for Rhode Island Public Radio.





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



1876: Alexander Graham Bell's commercially viable telephone.



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



1920: Every home is working toward having a telephone!



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



1963: Push buttons usher in the thoroughly modern world. Touch tones enter pop culture.



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



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Forbidden Fruit Shows Up in Alabama

Crawford Broadcast Turns Apple iPads Into Useful Tools for Broadcasters

BY TODD DIXON

As a matter of full disclosure regarding this article, I wouldn't have been able to write it just six months ago. You

RADIO IT MANAGEMENT

see, in terms of Apple products, I have had little to no use for them. To give you an idea — my daughter received college graduation money and wanted to get an iPad and didn't even tell me. She simply did not want to hear "it" from me.

One day early last fall, my Crawford Broadcast Alabama colleague Chief Engineer Stephen Poole and I were discussing computer trends on the way to a tower site and the issue of tablet computing came up.

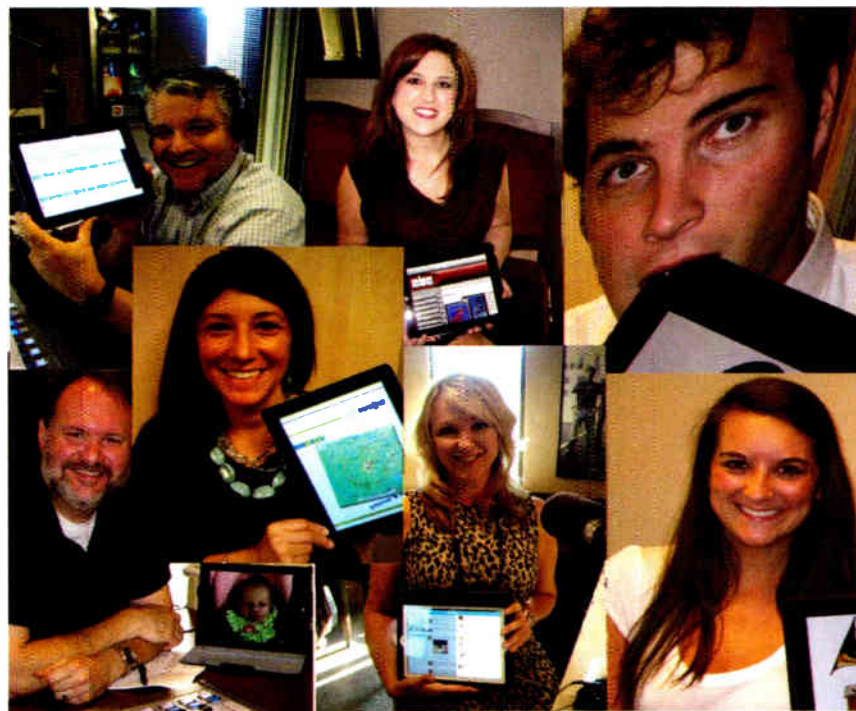
We were talking about desktop environments and what Microsoft had coming down the pipe (i.e. their Metro interface) and also that Linux distributions had some new desktop environments coming out (Ubuntu's Unity and GNOME 3). Apple's iOS 5 and Google's Android OS were already the proverbial 800-pound gorillas in the room. All of these desktop innovations are meant to take full advantage of the trend of touchscreen tablet computing.

OVERKILL

While we were considering all of this, we came to the realization that newer quad-core, 4 GB RAM laptops were massive overkill for what most of our employees needed. We surmised that about 85 percent of them could get by with the computing power that a modern tablet would offer. Most employees use their computers for email, Web surfing and word processing suites and don't use any specialized software to accomplish those tasks. Since modern tablets now have 1+ GHz dual-core processors and 1 GB of RAM, they are more than capable of handling that kind of typical usage.

Late last fall, General Manager Laura Scotti asked me to research if and how we could make tablets work in Crawford's Birmingham operation. So I took up the challenge of determining whether Apple's iPad would fit our needs.

When it comes to "gadgets," you can learn a little from reading about them; but until you have one in your hands, you cannot appreciate how they might revolutionize your work or if they will work at all. So I read a lot about them and I talked to a number of personal owners of them. One of our hosts, Chris Mileski, had one and is what I would



The iPad guinea pigs at work: upper left, Chris Mileski (WDJC morning on-air co-host); upper middle, Laura Scotti, general manager; upper right, Mark McCollister (management); lower left, Justin Brown (WDJC afternoon on-air host, with a picture of his three-week-old baby girl on the iPad); lower middle, Roxanne Holifield (WDJC morning on-air co-host); lower right, Ashley Petty (writer) and inset, Jennifer Paepcke (national sales manager).

call a highly competent user. He helped me wrap my head around what was different about using them.

However, tablets are so new to the computer market that I couldn't really find any articles about businesses or organizations that were using them effectively. I wasn't going to put my recommendation behind the platform until I had talked to someone in a business environment that was using them and where I might be able to see them in action.

In particular, I had some real questions about tablets. How durable were the iPads? We didn't have any of the recommended printers (about 10 of them) that were guaranteed to work with iPad, and obviously, we needed to be able to print with them. They have limited storage capacity (8 GB, 16 GB, 32 GB or 64 GB), so how do you work around that if there is a need for more? I was also concerned about whether the office apps that were available were up to commercial usage. One thing I didn't want to do was put a glorified play toy in front of our employees.

Then, it hit me: The local school system that my kids go to have full-blown iPad labs. I emailed their IT staff and asked if I could schedule some time with them to discuss how the tablets function in their workplace. They promptly got back with me and we spent about an hour and a half on the phone.

When the IT people told me that they had over 800 iPads in service throughout the district and that only two of them had ever come back to them broken (one from obvious neglect), I was sold on their durability. They explained that setting up a print server and some network storage would alleviate my other concerns. They also assured me that the office productivity suite was up to the task as well.

With all of my research in hand, I handed Laura and Crawford Broadcasting Chief Financial Officer Mike Cary a justification to purchase three Apple iPads.

For just over \$2,200, I purchased three iPads (Wi-Fi, 32 GB), three cases, three Bluetooth keyboards, three stylus and some software.

Several key attributes made the iPad a recommended choice. The first was comparable price when compared to laptops. It looked like we were getting equivalent equipment for the same price or less.

The second reason was software price. During my research, I found out that each iPad can be linked to up to five Apple IDs. In short, I could buy software one time and add it to each iPad that the company purchases. So, as part of that \$2,200, a \$50 iTunes card was added in so that I could buy apps that would be part of a "standard" core that would go on every iPad that the company gets in Birmingham (whether it be three or 33). As far as I can determine, this is both legal and ethical.

Think about that for a minute. I bought a set of office suite apps for \$36 and I can put them in all of the iPads I purchase here. If I were to buy MS Office for one laptop, I would pay \$149. For the next laptop, I would pay \$149. In my mind, we are already ahead in the game by that fact alone.

Some other reasons to consider: Employees end up getting more done when they are not waiting on software to load or for their machine to boot-up. The apps load nearly instantaneously and the iPad is in an "always on" state.

They also allow our employees to be more mobile. The batteries in them last nearly all day on a single charge. With over 500,000 apps available on the iTunes App Store, the tablets truly become the Swiss Army knife of the computing world.

Lastly, in the event that someone leaves the company, the iPad is easy to restore to factory defaults and all of the "core" software that I have purchased for each iPad can be loaded in about 15 minutes. With our current standard issue laptop, that process typically takes me about two to three hours.

GUINEA PIGS

The hard part really started when we got them on hand. Laura wanted a writer (Ashley Petty), a sales person (Jennifer Paepcke) and a member of her management team (Mark McCollister) to each have one. Then, she could get a good feel from each of three different kinds of work flow regarding how they were using them and if they would be viable in our offices.

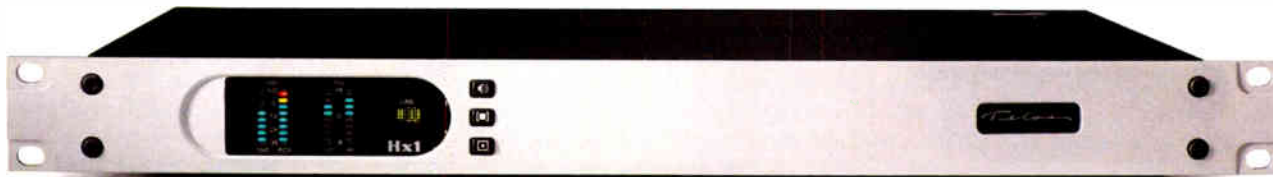
Our standard "core" of apps contained the following: Keynote presentation app, Numbers spreadsheet software, Pages publishing program, iBooks e-book reader, Dragon Dictation and the Twisted-Wave audio editor (See sidebar, page 32).

The big change for our users was that the Apple iOS requires Windows users to think a little differently about how you are going to do things. I call it a

(continued on page 32)

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You also get Telos' most advanced, best-ever POTS hybrid, the Hx1. It's crammed with cutting-edge tech to make callers on even the iciest POTS connections sound great: Telos' famous Dynamic Digital EQ, pitch-shifting and studio-adaptation routines that let talent take calls over open speakers while minimizing feedback, caller-audio sweetening by the processing gurus at Omnia, front-panel send/receive meters and lots more.



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- ✓ Buy a new Radius and QOR.16 console engine from Broadcasters General Store.
- ✓ Make your purchase before September 28, 2012.
- ✓ Your Radius console arrives. Along with it comes a Telos Hx1 (with analog I/O).
- ✓ Hook up your sources with CAT-5 cable and start making great radio!



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World Radio History

iPAD*(continued from page 30)*

sand box, you can play in one corner of it with a lot of the toys, but if the rake is on the other side of the box, you either have to find a way to get to the rake or you have to make the toys you have act like a rake. So it is with the iPad, when a file is created with an app — the app owns the file. Unless the app is programmed to “share” (called ‘open in’ functionality) it with other apps, it is not available to the other apps.

Most of the work I did involved putting print servers, network file servers and the apps in place so that all of our users can work in a way that is comfortable on iOS. Colobos

software made the print server part easy. Once their “Fingerprint” software was installed on one of our networked computers, it allowed all of the iPads in the building to see and use all of our network printers. It cost us a whopping \$10.

We are using free app called WebDAV Navigator so that the iPad users can share and store files and folders in a way that Windows users are more accustomed to. I have given each of our iPad users some extra storage on a local Web server we have that allows them upload or download their documents securely whenever they are connected to the Internet via WebDAV.

(continued on page 34)

Morning show host Chris Mileski uses the TwistedWave audio editor on the iPad in a break to excerpt an interview that was just recorded live. The clips can be used for ads, other shows and promos.

TWISTEDWAVE AUDIO EDITOR

The TwistedWave audio editor app shows off the versatility of the iPad (or iPhone!) for radio.

The app is a feature-complete audio editor including amplification, normalization, fades, delay, dynamics processing and pitch and speed alteration settings. Editing audio using the single-track editor is painless and easy. Our hosts use it to record segments of their shows daily for later editing. Our creative writers can record clients or testimonials quickly and efficiently.

Where the TwistedWave app really shines is in its abilities after the editing of the audio is done. When the editing is completed, they have the freedom to export the file in any number of file formats and at a choice of audio bitrates as well. They can send the audio to iTunes, upload to an FTP server, send the audio via email or place the audio in their Dropbox cloud storage account.

Another nice thing about this app is that the developer is approachable. One of the only problems we had was that the MP3 bitrate offerings topped out at 128 kbps. We simply don't allow anything below 256 kbps to touch our HD radio signals. That required morning show host, Chris Mileski, to upload files as uncompressed raw WAV audio, which often took 10 to 15 minutes to upload to our FTP server. Also, Chris contacted the programmer about adding higher quality MP3 audio bitrates. It was available in the very next update put out by the developer.

Chris said he has come to rely completely on TwistedWave for all post-production needs for his radio show.

“I am able to record in real-time elements of the show and edit them if needed. Via the FTP function within the app, I can upload directly to our in-house network and playback immediately or at a later date. The broadcast-quality export and FTP functionality makes all the production elements extremely efficient. Feedback to the app creator has been extremely positive and they are open to the upgrades to make the app even better.”

TwistedWave is available for \$9.99 through the iTunes App store.

— Todd Dixon

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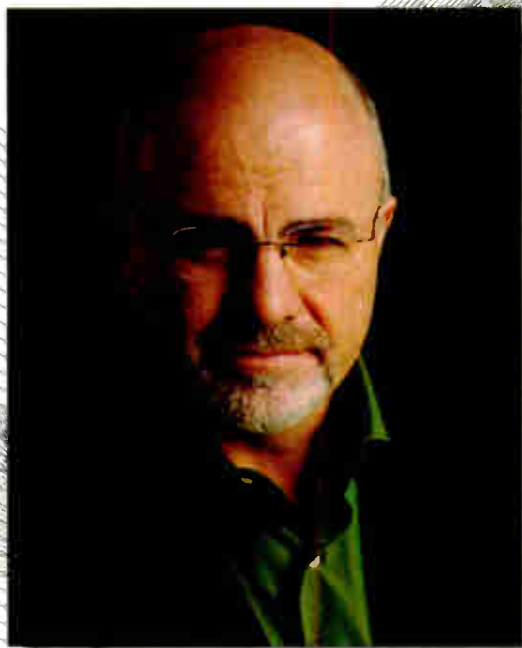
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World Radio History

Audio-Technica BP4001/BP4002

BY PAUL KAMINSKI

Like carpenters, audio field recordists (and radio news people) sometimes need more than one tool to achieve desired results efficiently. Audio-Technica's BP4001 and BP4002 will likely find their way into the field kits of those who desire quality results on a budget.

SHORT TAKE

The BP4001 is a dynamic cardioid microphone with a published frequency response of 80 Hz to 18 kHz, with an output of -54 dB. I used it as a field microphone to control feedback and gain isolation of a voice in a more formal interview/voiceover setting and also in field news opportunities at the 2012 Daytona 500. You can hear the mic in action recording sound from the garage at the Daytona 500 at www.radioworld.com. (ST-AT sound clip BP4001)

The BP4002 is a dynamic omnidirectional microphone with a published frequency response of 80 Hz to 20 kHz and a slightly lower output of -56

dB. I used it as a field microphone in informal interview settings where there was no time to set up a microphone, but quality sound was required. I recorded natural sound of the race cars at speed at the Daytona 500 as well as voice tracks. You can hear this microphone recording the start of the Daytona 500 at www.radioworld.com. (ST-AT sound clip BP4002)

Both microphones have internal windscreens as part of the A-T S8 style case. A 1.5-inch foam windscreen, vinyl carrying case, and stand adapters for a camera (3/8-16) and standard 5/8-27 microphone stand is shipped with each unit. The microphones each weigh 9.7 ounces; are 9.5 inches long and have 300 ohm impedance.

The BP4001 and BP4002 each have a manufacturer's suggested retail price of \$259. These are mid-priced microphones which are built for field duty and will likely provide years of full fidelity field news gathering and sound recording.

For information, contact Audio-Technica in Ohio at (330) 686-2600 or visit www.audio-technica.com.



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iPAD

(continued from page 32)

Dropbox and the Apple-owned iCloud, both cloud-based storage services, have been used to help move files where they are needed. Dropbox gives every user 2 GB of storage for free. iCloud gives Apple users 5 GB of storage for free.

The other thing that really put the icing on the cake for our Birmingham iPad users was migrating to a new email server. Our old email system simply was not up to handling mobile computing. It should be noted that we had been in the process of doing this already and going mobile did not necessitate changing email servers. Our new email server really opens up a lot of possibilities for iPad users. In fact, the new server allows our users to not only sync their email, but also their calendars and contacts as well.

Stephen and I were considering getting iPads to see how useful they could be to us as well. Several shortcomings stood in our way regarding this. We really needed external USB (the iPad doesn't have it, although some Android-based tablets do) so that we could add a USB to serial adapter to troubleshoot legacy serial equipment. Secondly, even if the USB connection was available, nearly all radio equipment manufacturers code for the

Windows platform only.

The kind of thing the iPad could be used for in radio engineering is mostly network-related. Troubleshooting wireless connectivity and testing network activity. Of course, a number of pieces of equipment that are network-capable have runt Web servers in them and the iPad could be useful in adjusting settings.

What you are limited to, as always, is connectivity. We have purchased the Wi-Fi versions and our equipment network is not on a network accessible by Wi-Fi. In order to have that kind of usefulness in the field, you'd need to pair the iPad with a paid cellular data-type service to really get the best benefit from it. So, disheartened, we decided that we were a part of the 15 percent that would need to stick with a more conventional computing platform with both Wi-Fi and Ethernet — our laptops; for the time being.

With all of that behind us, our three testers have let go of their old laptops and begun using the iPad full time. With other laptops in our service approaching seven to 10 years of faithful service, I believe that the work we have put in as a proof-of-concept will allow us to add more iPads to our stable then we have already and really allow us to take advantage of their truly mobile nature.

Todd Dixon, CBNT, is an assistant engineer for Crawford Broadcasting Co. in Birmingham, Ala.

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Campus Stations Hit All the Right Notes

College Radio, and Its Record-Spinning, MP3-Playing DJs, Have More of a Following Than You Might Think

COMMENTARY

BY JENNIFER WAITS

Commercial radio has had its challenges in the past few decades. So when I started blogging about college radio, back in 2008, I felt it was important to remind people that there was an alternative out there for adventurous radio listeners.

The United States features an astounding range of college radio stations, available in every corner of the country. Throughout the course of profiling stations and DJs, I've found that college radio isn't just alive; it's thriving, even as the listening landscapes changes.

Some schools are selling off their radio licenses in a grab for extra funds, perhaps motivated by reports that digital music is the wave of the future. But that's not the whole story for students, who say they are still drawn to radio, despite rumors to the contrary. From personal experience, I can understand why.

Having been a college radio DJ off and on since 1986, I've lived both the challenges and the magic of college radio up close. My experience included work at an all-student, campus-only carrier current station that could only be heard in the dorms and dining hall; an FM station in a conservative Midwestern town that served as the hub of alternative culture there; a staunchly indie FM station outside of Los Angeles that had a healthy listener base at a nearby prison; and a community college FM station with an underground music orientation and a big volunteer staff that included many DJs who had been on the air for decades.

The beauty of college radio is that it is accustomed

to living on the edge. College radio stations throughout the ages have had to be comfortable on their toes due to tiny budgets, aging equipment and transient DJs and volunteers.

My experiences are representative of many stations, and through my blog I wanted to bring those stories to light. College radio exists on the fringes of radio culture and as a result isn't often covered in the mainstream press. I've dug up news articles buried on blogs and college newspaper websites; sought out college radio-themed dissertations and conference papers; delved into the history of college radio (dating back to the 1920s).

I also began systematically to profile radio stations in each of the 50 states. In four years, I've managed to cross off 16 states from that Spinning Indie 50 State Tour project and I've also visited more than 20 college radio stations (as well as numerous commercial, community, high school, and religious stations).

I saw stations in California, Massachusetts, Pennsylvania, Illinois, Indiana, New York, and all the way across the pond in Ireland.

There are visual trappings of college radio, too. Some things I simply expect to find every time I stop by a station — sticker-covered metal cabinets, crusty couches, U.S. postal service mail tubs full of records and CDs, weird pop culture artifacts (you wouldn't believe the number of skulls I've clapped eyes on).

Another generalization that rings true is that the people you meet through college radio are passionate about music and truly love hanging out at their respective stations.

However, from early on, I began to notice that



Photo by Jennifer Waits

Studio at KSJS(FM) at San Jose State University, 2009

college radio is far more diverse than it's cracked up to be.

When I was a college freshman working my first radio show, all of my fellow DJs were 18-to-22-year-old students. These days, at some stations, you'd be just as likely to run into a 70-year-old non-student DJ playing free jazz and psychedelia or a 15-year-old high school student spinning noise records and Japanese pop.

In fact, many stations rely on a stable of non-student DJs to keep their schedules filled, particularly during weekends and holiday breaks. Some of these community members are alumni who have been on the

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**READER'S FORUM****AS TIME GOES BY**

Over the years, Radio World has covered many changes. I guess one doesn't notice these until one looks back through time.

Back in 2007 and 2008, surround sound was the "hot new ticket" to get radio into the "new century." You never hear about it now. It's all about HD Radio. Seems like we all missed that boat, as some high-end cars have surround sound that is THX certified. Of course, it is complicated to set up, although even that is becoming simpler with emerging technology.

This next one I completely missed (and thought, wow, was I really that asleep?): GSSnet, way back when. Now look at them. They are one of a group that is playing an important part in CAP.

And last — but certainly not least — let me thank you for the webinar on "The 25 things you may have missed" for this year's NAB Show. It was very interesting. I plan on pulling up the webinar from the archives area and watching it again.

Mike Payne
Contract Engineer
Townsquare Media
Twin Falls, Idaho

MYTH UN-BUSTED

Jim Hilliker's dismissal of the McPherson tale ("Time to Debunk an Early Radio Myth," June 20) is a bit peremptory. McPherson was a successful evangelist, yes, but also a thrice-married, litigious alcoholic and drug addict who once faked her own death and kidnapping. She died of a barbiturate overdose. She was quite possibly an insane person.

The story that she might have sent a crank telegram to Hoover is on its face believable. Two first-hand witnesses — Dillon and Hoover — corroborate the story. (Dillon only corroborates the technical complaints.)

For his own part, Hoover spoke of the incident only after McPherson's death. The timing could have been out of courtesy, or it could have been the case of a savvy politician not wanting

to give undue attention to an attention-seeking McPherson. Whole history books have been written on less.

On the scale used by (Discovery Channel's) "Mythbusters," this would have to remain, at the very least, "Plausible."

Jose Fritz
Arcane Radio Trivia blog
New York, N.Y.

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COLLEGE RADIO

(continued from page 37)

air since their undergraduate days, whereas others might be radio and music enthusiasts looking for a station to call home.

There are still student-only stations, too. In some cases, especially when the station is tightly connected to a broadcasting program (like San Francisco State's KSFS and San Jose State's KSJS), radio shows are only granted to students enrolled in radio classes.

While some stations operate more like extracurricular clubs, others provide professional training to future commercial radio DJs. These different station orientations can have a big impact on how stations are run, how music is programmed (by the DJs or by management) and on the overall air sound.

There are free-form college radio stations where DJs have total control over music choices and playlists and there are also stations where there is a tightly formatted list of music that DJs must play. Some stations pride themselves on schedules consisting of live DJs 24 hours a day, 7 days a week, whereas others use automation to fill in the gaps when DJs don't show up or when access to campus buildings is restricted (some schools don't allow access late at night or during school breaks).

Some college radio stations eschew all mainstream, commercial music, asking DJs to refrain from playing anything that has ever been a Billboard hit. WZBC at Boston College even prides itself on its emphasis on music with "no commercial potential."

Others closely follow the playlists of fellow college radio stations and mirror CMJ charts. Some have fully embraced the "digital revolution," and have eliminated physical music libraries in favor of digital files.

At the same time, there are stations that lovingly catalog their libraries of vinyl and CDs. Foothill College radio station KFJC(FM), where I am a DJ, is even making room for new cassette tapes in its library. That's in direct contrast to tiny KSMC(FM) at St. Mary's College, where I was told the CD library was just for show since most of the DJs play music from their computers.

Although the college stations that I've encountered have a variety of guises, they all serve an important purpose for their students, schools and communities. For many students, college radio provides lasting memories and is a highlight of the college experience. For some, it's a stepping-stone to a career in music or radio. And for others, it's the beginning of a life-long love affair with noncommercial radio.

Jennifer Waits earned a master's degree in popular culture and writes about the college radio scene for her blog *Spinning Indie* and about radio in general for *Radio Survivor*. She's been a college radio DJ at four stations and has been on the air at KFJC(FM) since 1999.



Photo by Jennifer Waits

There's one of those ubiquitous skulls seen in the on-air studio at KALX(FM) at University of California, Berkeley, 2009

BOSTON, MASSACHUSETTS



left:

The 'TIC' newsroom airs a Public Affairs Program

below:

A graduate of Talking Information's Voice Training Program; Kati Crocker is now the Public Service Director

below left:

Janet LaBreck; commissioner for the blind and creator of the VOICE program with her guide dog, Osborne

A V.O.I.C.E. FOR THE VISUALLY IMPAIRED



Special software provided by Radio Systems allows the visually impaired to operate their broadcast consoles unassisted.

From high above Boylston Street, at their new custom studios at the Massachusetts Commission for the Blind in Boston, four blind or visually impaired students are the first class of VOICE, or Vocational Opportunities in Communication Education.

The program was created by Janet LaBreck, commissioner of the Massachusetts Commission for the blind as an intensive, interactive and hands-on learning experience with longtime collaborator Ron Bersani, executive director of the nearby Talking Information Center.

To build the new studios, Bersani contacted long-time supplier Radio Systems. Says Bersani; "their StudioHub+ wiring system made meeting our multiple deadlines easy and when we needed special software to aid our visually impaired operators in using the console, Radio Systems provided it at no charge."

VOICE program participant Kati Crocker, 24 says: "In a way I think this is life-changing. I didn't think I could do this before, but it has really broadened my scope for employment."

Commissioner LaBreck feels they've all worked closely to develop a curriculum that bolsters students' confidence in broadcasting but also "diminishes the isolation" felt by many blind people entering the job market.

below, from left to right:

Gerrett Conover
Vice President

Daniel Braverman
President

Michael Sirkis
Chief Engineer

Dennis Greben
Manufacturing Manager

Jo-Ann Dunn
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