

RADIOWORLD

MARCH 1, 2011 | The News Source for Radio Managers and Engineers | \$2.50 | RADIOWORLD.COM

INSIDE

ENGINEERING



• No wisecracks:
Helpful stuff from
the Duluth Trading Co.
— Page 16

GM JOURNAL

• Clear Channel says the iheartradio mobile app is the most popular radio app on every smartphone platform that can access it. — Page 28

STUDIO SESSIONS

• Ty Ford takes a Zoom camcorder for a spin and likes what he sees.
— Page 34



OPINION



• CBI looks ahead to the Spring National College Media Convention. — Page 38

FCC Eyes Expanding Role of TIS

Highway Groups Propose Increasing Power, Programming

BY RANDY J. STINE

WASHINGTON — The FCC is considering making adjustments to the rules governing Travelers' Information Stations.

On the table are requests from some highway groups and TIS stations themselves to increase their power levels and widen the types of programming the low-wattage AM stations can air.

The commission is considering requests from three different groups for modifications to existing TIS rules in a Notice of Proposed Rulemaking. In the proposal, the agency asks what kinds of limits it should impose on TIS stations, if it does in fact expand their capabilities.

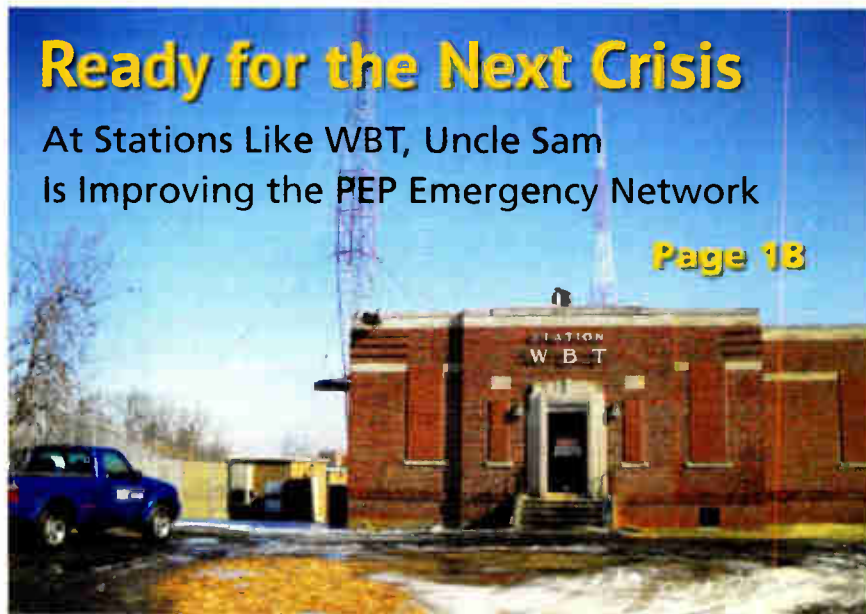
Low-power TIS stations, licensed

(continued on page 14)

Ready for the Next Crisis

At Stations Like WBT, Uncle Sam Is Improving the PEP Emergency Network

Page 18



'Battle For the Dash' Is On

Automakers, OEMs Expand HD Radio Offerings as Other Media Options Proliferate

BY LESLIE STIMSON

LAS VEGAS — HD Radio is gaining traction among automotive aftermarket receiver makers and among automakers themselves. But it was clear from walking the floor at this year's CES that traditional radio increasingly is just one among several options in the dashboard and that automakers' plans for future cars are accelerating the number of in-dash choices available.

HD Radio proponents say the fight for the dashboard is real, and stations need to go digital to remain relevant.

"The dashboard wind is blowing away from radio — and in favor of

smartphone functionality, streaming options and other attractions that can diminish radio's share of in-car audience," blogged Jacobs Media President Fred Jacobs after the January show. "It has been gradually happening during the past couple years, and is accelerated by systems like Sync, now in 3 million vehicles, and Toyota's new Entune."

IBiquity Digital President/CEO Bob Struble agrees, telling Radio World that the features Toyota has included in the Entune multimedia system to compete with the Ford Sync — such as built-in HD Radio, satellite radio and Internet

(continued on page 5)

#0009383 1# RDM4 0009383 E1101
S139M E17
TOM MILLER
ARIZONA BROADCAST SERVICES
203 S AUGUSTA PL
TUCSON AZ 85710-7905

Live Audio Broadcasts from your iPhone

Download the Report-IT Live App and connect to all Tieline IP codecs now!

Watch a live demo www.tieline.com/videos



Live bi-directional 15kHz audio



Tieline
www.tieline.com

*iPhone and App Store are trademarks and/or registered trademarks of Apple Inc., registered in the U.S. and other countries.



E-1 IS PURE GENIUS!



The compact E-1 Control Surface Console and associated ip88cb Console Audio Blade provide all the networked control, mixing, and I/O needed for small to mid-sized studios at a price comparable to similar sized standalone analog consoles. The E-1 features an integrated LCD Monitor for metering and control, a streamlined user interface with password protected access to complex functions via LCD display and touchpad, and 4 Main Mix busses as well as Control Room and Studio Monitor outputs with selectable sources from the audio network. Complex Mix Minus setups are made simple thanks to per channel Mix Minus outputs with selectable reference mix and talkback interrupt. You also get auto switching between off line Mix and on line Mix Minus per channel. The E-1 features 99 show presets and a programmable per-channel A-B Source/Select switch which emulates traditional broadcast consoles. Of course the E-1 will work just fine with Wheatstone TDM products, too! Completely made in the USA and available TODAY!

- Digital Control Surface in new compact frame
- Integrated LCD Monitor for metering and control
- Monitor / Channel Display area is angled for better ergonomics and display view
- Streamlined user interface with password protected access to complex functions via LCD display and touchpad
- 4 Main Mix Busses
- Control Room and Studio Monitor Outputs with selectable sources from Audio Network
- Per Channel Mix Minus Output with Selectable Reference Mix and Talkback Interrupt. Complex Mix Minus setups made simple.
- Auto Switching between Off Line Mix and On Line Mix Minus per channel
- 99 Show Presets
- Incredible new price!



With the brand new ip88cb Console Audio Blade, a complete standalone/IP-Networkable Wheatstone console is well within the reach of any studio. And with the E-1's integrated LCD monitor, all functions are immediately viewable and editable with no additional hardware needed.



E-1 CONTROL SURFACE CONSOLE



AUDIO NETWORKING-SIMPLY EVOLVED

phone 1.252.638-7000 | www.wheatstone.com | sales@wheatstone.com

Walking CES, With a Mind on Radio

Will Technology Make Possible a World Without Free Local Radio?

FIRSTPERSON

BY DAVE WILSON

Radio World asked Dave Wilson, who is both a radio station owner and employee of the Consumer Electronics Association, for impressions of the organization's winter CES show.

The 2011 International CES in Las Vegas provided a glimpse of what the world might be like without free local radio. Such a world isn't right around the corner and may never arrive; but we're rapidly reaching the point where technology could make it possible.

In the beginning, radio was the only electronic source of information and entertainment available to people. Radio used to have a monopoly in the home and in the car. As competing

away at AM/FM listening.

For now, free local radio still attracts a large audience, and we all hope it will continue to do so indefinitely. But the days when free local radio was helped by consumers having no other choice for real-time content in the car are long gone; and we must pay close attention to the innovations that competitors are rolling out.

CANARY?

As one would expect, there were quite a few car radio receivers with Internet radio capability on display at CES. Most allowed a car stereo to control Pandora Internet radio streams when the car stereo was connected to a smartphone capable of receiving Pandora.

But for free local radio broadcasters, the canary in the coal mine may have been Alcatel Lucent's concept car. Alcatel Lucent makes telecommunica-



This concept car from Alcatel Lucent connects to the world through an embedded 4G LTE wireless link. It has touchscreens with buttons for functions like e-mail and Internet media – but no AM/FM.

broadcast gear from people you trust



Lowest Prices and Largest Inventory on EVERYTHING For Broadcast

BSWUSA.COM 800-426-8434

content conduits appeared in the form of TV channels, fewer people listened to the radio at home. As cable television expanded and TV channels multiplied consumers spent even less time listening to the radio at home. But radio still owned the car.

Then satellite radio appeared in cars, and morning drive-time AM/FM listening began to decline, according to Arbitron's "Radio Today" studies, which show 28 percent of Persons 12+ listening to radio during the 7 a.m. hour in 1998, dropping to 18 percent in 2009 and 17 percent in 2010. According to Arbitron's 2009 "National In-Car Study," 12 percent of people subscribe to satellite radio.

Is it a coincidence that AM/FM listening declined by 11 percent from 1998 to 2010, while satellite radio listening went from zero percent to 12 percent in the same period? I think not. And now that Internet radio connectivity is available in cars, I think that will further chip



LaCrosse Technology showed a clock/weather station that uses Internet data to show the weather forecast.

tions infrastructure equipment, and for it to grow this business it needs mobile phone network capacity to expand.

More consumers using more wireless data is good for Alcatel Lucent and other telecommunications equipment makers. The concept car featured four touchscreens, one for the driver and one for each passenger. Each screen

was about the size of an iPad and featured large, easy-to-navigate buttons for e-mail, phone, Web browser, car diagnostics, Internet radio, Internet video, locally stored audio, locally stored video and navigation, but no AM/FM radio. The car's connection to the outside world was through an embedded 4G LTE wireless link.

This car was just a concept, not an actual product for sale, but it illustrated how continuous innovation by wireless telecommunications providers is making the services provided over their spectrum more and more attractive to consumers. Spectrum, like real estate, is a resource to be developed. Those who develop their spectrum to best serve the needs of people will enjoy the most success.

DEVICES YOU CAN USE

Traditionally one of the keys to radio's success has been its ability to

(continued on page 12)

27,281 products in stock at press time!

**You Save...
Time & Money
at BSW!**



Get A FREE Omnia AXE with Omnia ONE FM!!

Buy an Omnia ONE FM and get OMNIA AXE streaming software absolutely free. Now put your best sound forward on the air and on the internet (or wherever else you'd like to stream it!) BSW Exclusive. While supplies last.

OMNIA1FM-AXE-PKG



SHURE



Shure SM7B Mic Super Bundle

Get the classic Shure SM7B studio vocal mic, a sturdy O. C. White deskmount mic boom and a high quality 10-foot Pro Co mic cable at one great price!

SM7B-PKG List \$479.99

only \$399!



OC White ProBoom Double Header!

What's better than your FAVORITE boom stand at a GREAT PRICE???

TWO OF THEM! That's right. A customer favorite for years, the OC White ProBoom is now on a SPECIAL SALE.

Get two for ONE LOW PRICE!

PROBOOM-B2PK List \$218.00

only \$179!



Broadcast Supply Worldwide

Knowledgeable Sales Staff

BSW's sales professionals have decades of real-world broadcast and recording experience to offer expert help with your purchase.

Distance Makes Their Ears Grow Fonder

Readers Enjoyed Our Story About an Early Love Affair

Many readers responded passionately to Jim Withers' story "AM Radio: My First Real Love" a few issues back.

"Really well-written and fun article," posted one at *radioworld.com*. "Besides the AM radio thing, it gives a good insight into American life of back then."

Gil Garcia, technical director for Clear Channel Radio Austin and the company's disaster coordinator (who remembers working for that company when it had only six stations), wrote: "Jim, I just read your article about AM memories in Radio World. I was doing about the same thing you were. I had the HX-11 transmitter and the GR-91 Heathkit receiver when I was about 12. I too started as a ham, then began working in radio in the early '60s at KRYS, KEYS ... I then went to Austin and became the Johnsons' chief engineer at KLBJ. In high school I loved picking up WLS."

Another online reader posted: "I cut my radio teeth on AM 'DX' as a kid in the mid-'70s. I (much) later obtained an amateur radio license, but turning the dial and listening for faint IDs is still my #1 radio hobby."

"I enjoy the plethora of options online streaming radio has brought as well, but it doesn't compare to slowly turning the dials from 530 to 1720 after sunset. There is something magical about it, and I don't think I'll ever tire of it, even if most of the programming on AM broadcast is not my cup of tea."

Ken Martin at WDNA(FM) in Miami told me that the "old-time" radio photograph we used with the article "brought back memories of hours of great listening, as we had that radio in a number of

Buicks in the family"

For Doug Boyd, professor of communication at the University of Kentucky, the piece brought a flood of pleasant memories. "My listening actually started with my driving; I had a license at 14 and a car at 15, and started working in small-town Texas AM radio at 17. Before my father retired from the Navy, we lived in Pensacola, Fla., and spent many evening hours with WLAC Nashville, Tenn. My son-in-law's father, still living in southern Indiana, and I still remember the address of Ernie's Record Mart!

"Yes, driving home after sign-off in West Texas there was, indeed, KOMA, and later when driving to and from college in Austin I listened to Gordon McLendon's KLIF in Dallas," Doug continued. "Then driving from Austin to Dallas and back late at night there was WLS in Chicago. We loved the station and always shivered when they noted the temperature was -3 on 'Lake Shore' when it was 60 degrees in Austin."

Louis Brown in Chantilly, Va., wrote to tell Jim Withers: "I just got done reading your article in the latest issue of Radio World, and I think I've found a kindred spirit. I too have a love affair with AM radio that's never really gone away."

"I got started in 1963 at 1 kW daytimer WNOS in Winston-Salem, N.C. Since then, my career has had a lot of zigs and zags (including one zig as chief engineer at KIII in Corpus Christi in the late '70s) until winding up as director of engineering at system integrator Innovative Technologies in Chantilly."

"Along the way I spent time with

the ABC Television Network and 10 years as director of operations at Radio Free Europe. Now that was AM! There's something awesome about a 250 kW brute-force Class B modulated AM shortwave transmitter. We had four of them at our Holzkirchen, Germany, transmitter site. If memory serves, the combined output of all five of RFE's transmitter sites was 54 megawatts, operating into curtain antennas with as much as 17 dB forward gain.

"I'm sure modern-day solid-state transmitters are more efficient and more reliable than the old rigs that you and I cut our teeth on, but I miss the glow of the tubes, where you could set the modulation by watching the plates flicker."

"By the way, my father was an engineer at KWTO in Springfield, Mo., back in the 1930s before moving on to become the first chief engineer at KOAM in Pittsburgh, Kan. I guess I caught the bug from him."

Bill Mackie in Austin, Texas, grew

FROM THE EDITOR

Paul McLane



up in a small North Missouri town; much of his life centered around radio. "I was a regular listener to WHO Des Moines, WDAF Kansas City and KFEQ St. Joseph. I mainly listened to WHO since it boomed in clearly day or night, but I had to switch around to hear my late afternoon radio serials for kids. My dad was an understanding man and always let me sit in the front seat and operate the dashboard radio, which included choosing the programs to hear."

Bob Cockrum in Lubbock, Texas, listened using his Burstein-Applebee AM/shortwave regenerative radio kit. "Ahh, the days when we could tune in one of the Soviet bloc nations to hear ourselves called 'imperialist dogs.' Of course, we only had to grab nearby Radio Havana for similar insults. But wait, that's too far up the AM dial ... but only slightly lower, I too remember KOMA in Oklahoma City with its winkin' blinkin' weather tower and tons of reverb.

"I suppose I am the 50th person to notice that KOB actually is in Albuquerque, N.M., and it's KOA that's in Denver, as Radio World noted in a subsequent correction," Bob continued. "KOA had a great golden days sound — really authoritative announcers and

(continued on page 10)



**Around the World,
Across the Spectrum,
Your Single Source
For Broadcast Solutions**

Electronics Research, Inc. delivers innovative, high-quality, integrated solutions for broadcasters around the world and across the spectrum. When planning your next broadcast system call us toll-free at 877-ERI-LINE or visit us online at www.eriinc.com.

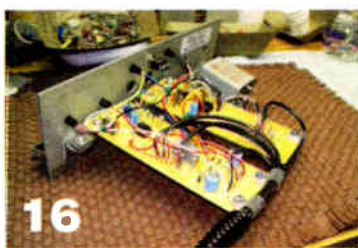
ELECTRONICS RESEARCH, INC. ERI Antennas | Transmission Line | Filters/Combiners | Towers | Broadcast Services

THIS ISSUE

MARCH 1, 2011

NEWS

- FCC Eyes Expanding Role of TIS 1
 'Battle For the Dash' Is On 1
 Walking CES, With a Mind on
 Radio 3
 Distance Made the Ear Grow Fonder ... 4
 NPR Labs Seeks Receiver Makers'
 Input For Personalized Radio 6
 News Roundup 10



16

FEATURES

- Workbench: Cyclops Eye Shines
 Light on Problems 16
 WBT(AM) Again Heeds FEMA's Call ... 18
 WILB Control Room, 1942 22
 Saving the Case of Tower vs. Tower... 24



24

GM JOURNAL

- Attributes of a Great Radio Client... 26
 Growing Personalities Is an Art 27
 Clear Channel: It's the Content,
 Stupid 28

STUDIO SESSIONS

- Cell Phone Calls Shine Aurally..... 30
 Marketplace..... 32
 The Zoom Q3 Puts Faces to Voices ... 34

OPINION

- Radio World Talkback 37
 College Media Meet at the
 Marriott 38



30

CES HD*(continued from page 1)*

connectivity for apps like Pandora — will be the norm.

"The battle for the dash is real. We've been talking about it for some time. You're now seeing it now in mainstream vehicles," as in-dash choices that take the listener away from traditional radio proliferate, said Struble.

"I think the reality for broadcasters is they need to embrace that, and quickly, because there's a risk that they're going to get left behind," he said. "There was a monopoly position in the dash. It isn't anymore and it's only getting worse. Our view is the task of gaining a fair share of a driver's time and attention is a lot easier to get in digital. There's more you can do."

As reported in the Feb. 9 issue of Radio World, various OEM and after-market receiver makers are increasing their offerings that enable users to connect their smartphone to the unit for in-dash control of apps, such as Pandora, Twitter or iTunes.

Several receiver makers, such as Pioneer and Kenwood, as well as car-maker Toyota told Radio World they see HD Radio, satellite radio and Pandora as complimentary services, not duplicative. The automakers are also able to switch out smartphone applications on the car displays should some apps become less popular with customers than others.

CONNECTIVITY RUSH

Several observers told Radio World that it remains to be seen how many listeners will actually be willing to pay for Internet connectivity in the car.

Struble agreed, saying that satellite radio, which is also a paid service, has held steady at 20 million subscribers. Contrast that with traditional radio, "which 250 million people listen to every week. You'll see that same dynamic play out with Pandora because it's a paid service and there's only a certain amount of people that are going to be willing to pay for audio services," said Struble.

Pandora offers a 40-hour cap on free listening per month; additional listening requires a payment. But listeners are more likely to run into fees from their wireless carrier as cellphone companies move away from unlimited data plans.

Struble cautions that broadcasters need to upgrade their offerings to match the requirements of this new digital world by making sure they have good content on their HD2 or HD3 stations and that those stations are promoted.

Audiovox President Tom Malone said during a connected car session that his company sees the value of HD Radio and offers it, but the technology's big-

gest issue is "customer awareness," which Audiovox would like to see improved.

Indeed, when told that some broadcasters offering HD Radio have been frustrated with its slow but steady rollout, Kenwood Senior Vice President of Car Electronics Keith Lehmann said that although Kenwood is satisfied with the rollout, "We understand that it will take a very strong presence in OEM to really make this a format that could be considered an industry standard vs. regular AM/FM. But we're excited about it. We



Clarion unveiled its first receiver with built-in HD Radio. The CZ401 CD-receiver features an iTunes Tagging button and is Sirius Direct Connect-ready.

still command a premium for it. What *may* need to happen here is to teach people more about what it really is and have them come in and ask for it. That

(continued on page 6)

**YOU MAY FIND YOURSELF
 CREATING PROBLEMS JUST
 TO USE OUR COOL STUFF..**



...but don't make problems. There are plenty of them to go around. And Henry is there to help you get them solved.

SixMix: USB Broadcast Console is a full-featured professional radio station audio mixer. It's designed for live broadcasting as well as recording, editing, remotes, and other production tasks.

AutoSwitch: Multi-purpose stereo audio switcher and silencesensor. Switches to backup audio if your main audio source fails. It can also be used to manually select between two stereo audio sources.

Multiphones II: Multi-user distributed headphones system with Zoned Talkback. Multiple "Guest Pod" listening stations can be daisy-chained with cat5 cable.

Minipods: Compact stereo headphone amplifier for single or multi-listener systems. Use with or without MultiPhones II master unit.

The Matchbox HD: Rack-mountable Matchbox HD is the new high performance version of the industry's most popular analog level and impedance converter.

USB Matchbox II: A this ultra-high performance interface gives you both digital and analog audio, and eliminates the hum, buzz, and interface problems of computer sound cards. Supports Windows XP, Windows 7, Mac and Linux O/S..

Superelay: Multi-circuit controller for any application where multiple circuits, including AC line voltage, need to be switched simultaneously. Ideal for controlling **ON THE AIR** warning lights, muting monitor speakers, etc.

WE BUILD SOLUTIONS.
DIGITAL SOLUTIONS. ANALOG SOLUTIONS. FUNCTIONAL. RELIABLE. AFFORDABLE.
 Visit www.henryeng.com for all of Henry's solutions!



Henry Engineering • T: 626.355.3656 • www.henryeng.com • email: info@henryeng.com

CES HD

(continued from page 5)

will be the real challenge.”

By the end of calendar year 2011, iBiquity expects a total of 109 vehicle models from 17 automotive brands will be available with OEM radios factory-installed as standard or optional. At this time last year, the tech developer predicted that a total of 80 vehicle models from 17 automotive brands would offer HD Radio in 2010, with 36 offering HD as standard equipment.

The commercialization of HD Radio data services was a big theme for iBiquity; last year the tech developer was showing traffic data services. Now it's also featuring other advanced services in OEMs like live pause and bookmarking, which allows listeners to capture and store information about radio content in real time for later reference. The bookmark feature can also deliver QR codes to HD Radio receivers, enabling consumers to link to a website or other resource using a smartphone app.

NPR LABS SEEKS RECEIVER MAKERS' INPUT FOR PERSONALIZED RADIO

BY LESLIE STIMSON

LAS VEGAS — NPR Labs has completed prototype HD Radio receivers that include the latest software refinements for its Personalized Audio Information Services capability.

The Labs, with advice from the International Association of Audio Information Services, has been working to create a practical way to identify radio reading service programs by category, as well as topics across categories, and to transmit that information as Program Service Data in an HD Radio channel. The goal is to develop a working HD Radio receiver that enables blind and low-vision listeners to select desired programs for capture and later listening — including traditional rewind/fast forward/scan transport functionality. (See “PAIS: Personalized Radio Explained” in the Dec. 15, 2010 issue.)

Some of the prototype receiver software and hardware has been refined based on feedback from test participants. At the NPR Labs accessible radio meeting at CES, Dr. Ellyn Sheffield, NPR Labs researcher and co-chair of the International Center for Accessible Radio Technology at Towson University, said that in recent in-house trials, most of the 30-some test participants said they feel PAIS is an upgrade to analog reading services delivered on FM subcarriers. The fact that PAIS would offer a text display on a future mobile device is enticing to those with low vision, she said.

WireReady provides automation and playout services to an installed base of some 2,000 stations that air radio reading services; because of that installed base, NPR Labs asked the company if it would support PAIS. Reading services are especially popular with older listeners, said WireReady founder and



Alpine's first built-in HD Radio head unit is the INA-W910 audio/video/navigation receiver, available in May.

Struble encourages stations to offer images synched with audio, the latest feature of HD Radio called Artist Experience. Radio competitors like satellite radio and Pandora already offer such images too, he said.

Milford Smith, vice president of

radio engineering at Greater Media, agreed the industry needs to offer album art and other images along with audio to stay relevant. His company plans to implement the feature, Smith said.

Clear Channel Radio is testing the feature in 20 markets, according to

President David Gerstmann, because many older adults lose the ability to read well before they're considered legally blind.

To save money, many reading services are only staffed in the mornings and their volunteers record items for later playback using computer digital storage and playout automation technology, Gerstmann said. With these systems, any embedded text that has been stored is transmitted along with the audio, he said, adding that iBiquity Digital has a software developer kit that helps incorporate PAIS within the HD Radio metadata, a kit any automation vendor can use.

WireReady's system can now support PAIS tagging. "Since NPR is offering PAIS as an open standard, all manufacturers should be able to implement this," Gerstmann said, adding that stations transmitting in HD wouldn't need to make any software modifications to add PAIS capabilities.

"An automation system is cuing a lot of things in the background" to make the on-air radio product work, he said, adding that program directors can program their automation systems to send the right PAIS tag at the correct time so the on-air staff wouldn't necessarily need to do anything more.

Artist Experience, the new HD Radio data feature in which images are paired with audio, usually consists of images such as station call letters or logos, but that data can also be displayed as text, enabling someone who has a hearing impairment to benefit from the AE display, said iBiquity Digital Senior Vice President for Broadcast Programs and Advanced

sources familiar with the AE rollout. In iBiquity's booth, a Volkswagen Jetta was equipped to display the AE data feature with the necessary visual data transmitted by Clear Channel KWNR(FM), Las Vegas. iBiquity said that was the first OEM implementation for Artist Experience.

The Artist Experience feature was first available on the updated portable Insignia HD, the NS-HD02 now in Best Buy stores.

Struble predicts the Artist Experience rollout will be phased in over time, much as iTunes Tagging was at HD Radio stations. iBiquity believes AE gives stations a chance to bring in some HD Radio-related revenue. For example, "There's no reason when that Geico ad is playing that I shouldn't see the picture of the lizard on my radio screen," Struble said.

Overall, the automotive aftermarket continues to be strong for new HD Radio radios as manufacturers grow their offerings. JVC, Kenwood and

(continued on page 8)

Services Joe D'Angelo.

Speaking generally on universal design, Livio Radio Founder/CEO Jake Sigal said that keeping products easy to use is important as boomers age.

The company, which just released an updated version of its in-car Internet radio app, is now focused on the human-machine interface. "Automotive has previously been about which buttons to press" but now, with attention being paid to preventing driver distraction, "displays and panels" are the focus, Sigal said.

Dice Electronics, which made the first tabletop HD Radio with conditional access, is now focused on making a unit "similar to a car radio" that's not distracting and easier to use, especially for seniors, said Chris Cook, executive vice president of sales and marketing. Dice is developing a radio that features a hands-free user interface and hopes to have such a product on the market by the end of next year.

While it won't have conditional access right away, the company is prepared to add that feature in the future, said Cook.

And what about the end users of accessible radios? In his job as supervisor of the Technology Center for the Helen Keller National Center, part of Anindya "Bapin" Bhattacharyya's job is evaluating and testing prototypes of new accessible products before they are manufactured and marketed.

He is both deaf and blind and uses American Sign Language to communicate. Through an interpreter, Bhattacharyya said the overarching goal of the accessible radio discussion is for people who have vision and hearing impairments to have quick access to vital information. Some deaf-blind individuals perished during Hurricane Katrina because they didn't know the storm was coming, he said.



Photo by Leslie Stimson

Anindya "Bapin" Bhattacharyya of the Helen Keller National Center discusses evaluating and testing prototypes of new accessible products during the NPR Labs "Radio With Vision Showcase" at CES.

The World's Most Popular IP Codec...



...Is Now Even Better!

Introducing ACCESS 2USB

Get the story wherever you are with more ACCESS than ever before. ACCESS 2USB now gives you two USB ports, support for select 4G Wireless USB modems and now includes MPEG-4 AAC Coding Algorithms standard! The best just keeps getting better and better!

IP • 3G • Wi-Fi • 4G • BGAN / VSAT • PSTN • DSL

50 years
COMREX
ESTABLISHED 1961

19 Pine Road, Devens, MA 01434 USA. Tel: 978-784-1776 • Fax: 978-784-1717 • Toll Free: 800-237-1776 • e-mail: info@comrex.com

CES HD

(continued from page 6)

Clarion are expanding their automotive HD Radio choices. JVC displayed what it and iBiquity say is the first auto aftermarket launch of Artist Experience. This model includes Clear Channel Radio's Total Traffic and iTunes Tagging, marking the first time these three features are available on one consumer electronics device, according to iBiquity.

Alpine announced its first built-in HD Radio head unit.

Insignia unveiled the first HD Radio-enabled "built for iPad" docking system.

The family of HD Radio portables is growing; Cydle unveiled a multimedia player that includes an HD Radio receiver.

Here's an overview of some of the HD Radio news coming out of CES.

MEDIA SYSTEMS

TOYOTA: HD Radio and XM Radio are part of Toyota's new Entune multimedia system, which offers pre-integrated support for a number of mobile apps, including iheartradio, Bing, MovieTickets.com, OpenTable and Pandora. Entune will be offered on some Toyotas in calendar year 2011. Toyota will be the first OEM to offer iTunes Tagging on all radios that include HD Radio technology, according to iBiquity.

FORD: The new Ford Focus was the official car of the show. The Focus, with its updated Sync system, includes MyFord Touch, HD Radio and in-car Wi-Fi capability.

VOLKSWAGEN: Model year 2012 cars featuring VW's Premium VIII touchscreen-controlled radio will include HD Radio technology as standard or optional; the new radios will feature Artist Experience and iTunes Tagging.

CAR RADIOS

ALPINE: The manufacturer's first built-in HD Radio head unit is the INA-W910 audio/video/navigation receiver; the AM/FM/CD/DVD receiver also features iTunes Tagging and Bluetooth capabilities. The INA-W910 can control the Pandora app from an iPhone. Available in May, price to be determined.

CLARION: The receiver manufacturer has expanded its HD Radio-ready tuners and offers five new CD models that are HD Radio-ready. It unveiled its first receiver with built-in HD Radio. The CZ401 CD-receiver features an iTunes Tagging button and is Sirius Direct Connect-ready. The CZ401 lists for \$229 and will ship this month.



The DNX9980HD multimedia/navigation receiver is Kenwood's first multimedia model to feature built-in HD Radio.

KENWOOD: Kenwood introduced a new flagship multimedia/navigation receiver, the DNX9980HD, Kenwood's first multimedia model to incorporate HD Radio as a built-in feature. The unit includes Pandora Internet radio link and Navteq traffic. The receiver is available this month for \$2,000 list. Bluetooth, HD Radio and a Pandora link are included in Kenwood's Excelon CD receiver, the KDC-X995. Both radios are set for March availability with list prices of \$350 and \$380 respectively.

An integrated HD Radio for 2011 is the KDC-HD548U with suggested \$200 list price. This is a successor to an earlier model; the receiver maker says the NPD Group reported that sales of that unit gave Kenwood the top-selling in-dash player with an integrated HD Radio tuner from April through October 2010, based on unit and dollar volume.

JVC: The JVC KW-NT50HDT, the first auto aftermarket launch of Artist Experience, was displayed. This model includes Clear Channel Radio's Total Traffic and iTunes Tagging, marking the first time these three features are available on one consumer electronics device, according to iBiquity. This and a second navigation receiver will also feature Clear Channel's Total Traffic HD+Network. Newly added to the KW-NT50HDT is connectivity with the iheartradio iPhone application from Clear Channel. Models KW-NT50HDT and KW-NT30HD are available this month for \$1,199 and \$999 respectively.

PIONEER: In addition to a map database from Tele Atlas, the AVIC-Z130BT features built-in HD Radio, 4 GB of flash memory, a 7-inch touchscreen display, DVD playback, dual zone capability for rear-seat playback, built-in Bluetooth for hands-free calling and music streaming, USB connectivity for iPod/iPhone connectivity, SD card slot and backup camera input; it is Sirius XM satellite ready. The AVIC-X930BT will be available in March for \$800 list.

to expand their HD Radio Technology-equipped lineups. New models range from \$300 to \$2,000. The offerings join a total of more than 35 HD Radio equipped models from several brands including ADA, Anthem, Auvio, DaySequera, Denon, Insignia, Integra, Marantz, McIntosh, Niles, Onkyo, Sangean, Sony and Yamaha.

Denon models range from the AVR-1911, listed for \$599.99 to the AVR-4311CI at \$1,999.99. Yamaha models are priced at \$749.99 for the RX-A800 to \$1,699.99 for the RX-A3000. Marantz models range from the SR 6005, listed for \$999.99 to the AV 7005, priced at \$1,999.99. New market entries include the full-featured Anthem



JVC displayed the first auto aftermarket launch of Artist Experience. The KW-NT50HDT navigation receiver includes Clear Channel Radio's Total Traffic and iTunes Tagging.

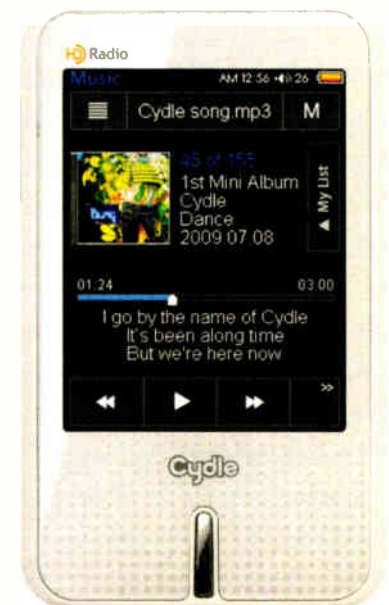
PORTABLES

CYDLE: The South Korean manufacturer unveiled the P29 multimedia player which includes an HD Radio receiver. This new unit has a 2.9-inch LCD touchscreen. The device also functions as a video and audio player, picture viewer, voice recorder, document viewer, calculator, calendar, clock/stopwatch and notepad. The company plans to add Artist Experience capability and price the unit at just under \$100. Cydle also makes the T43H GPS navigation system with built-in HD Radio receiver and plans an updated version.

HOME AUDIO

BEST BUY: The retailer's in-house brand Insignia announced the NS-IPHDR1, the first HD Radio-enabled "built for iPad" docking system. The product also features iTunes Tagging, now implemented across many product categories since the initial launch on docking speaker systems.

AUDIO VISUAL RECEIVERS: Denon, Marantz and Yamaha continue



Cydle unveiled the P29 multimedia player, which includes an HD Radio receiver.

MRX 700, priced at \$1,999.99, and the Sherwood RD 7405HDR for \$299.99, designed to reach into the mass-market price range.

OMNIA ONE STICKER SHOCK. THE GOOD KIND.

- Critics have spoken • 5,000 success stories • hear it and you'll be sure that someone spent a fortune on their processing • truth is, Omnia ONE costs a fraction of what it sounds like • shocked?
- you shouldn't be, its an Omnia.

Find out more: www.omniaaudio.com



NEWSROUNDUP

EAS GEAR: Broadcasters will continue to be the backbone of any new warning system. That's according to several emergency-warning experts speaking in an early-February webinar about broadcasting's transition to the Common Alerting Protocol for the next-generation Emergency Alert System. Damon Penn, assistant administrator of the National Continuity Programs Directorate for FEMA, said certification for CAP-compliant equipment "is in full swing." He anticipates a list of compliant equipment will be finalized and posted in March. The webinars are part of an outreach campaign by NAB and the National Alliance of State Broadcasters Associations. The next one is March 10.

NATIONAL EAS TEST: The FCC has adopted rules to facilitate the government's efforts to conduct a national EAS test. The commission said the test, expected in fall 2011, will help determine the reliability of the EAS system.

LOBBYING DISCLOSURE RULES: After looking at public comments about proposed changes to its ex parte rules, the FCC will now require all oral ex parte communications to be docu-

mented, and their content described. Previously, not all oral ex parte discussions were documented, and some descriptions of what took place during those meetings were skimpy, according to consumer advocacy groups who sought the change. New electronic filing rules will help Internet users access the information and stronger enforcement provisions will bolster the new requirements, says the agency.

NEW LPFM ALLOCATIONS: Prometheus Radio Project and other low-power FM advocacy groups have been crunching numbers to figure out if the largest markets have room for any of the new LPFMs anticipated to come to the FM band. Some observers have told Radio World they expect thousands of applications to be filed whenever the commission opens an application filing window; but it remains unclear how many of those new stations could really be licensed after third-adjacent protections for full-power FMs are dropped to fit in more 100-watt facilities.

EMBEDDED ANTENNAS: NAB's Flexible Advanced Services for Television & Radio On All Devices, or FASTROAD,

technology advancement program has released two reports covering the development of improved VHF and UHF antennas to support FM and mobile DTV reception in handheld devices. New embedded-antenna designs offer a more attractive antenna solution to handheld device manufacturers than the headset cords or telescoping "monopoles" now in use, NAB believes.

EMMIS 'TAGSTATION': Emmis Communications says its FM and HD Radio music stations have implemented an interface that lets listeners using the Apple iPod, iPod touch, iPhone or automobiles with iTunes to tag songs heard on FM and HD Radio tagging-capable receivers.



Emmis Interactive and Broadcast Electronics developed the interface, called TagStation. It is available to non-Emmis stations. Emmis said it plans to build on TagStation to support advanced features like Artist Experience, which syncs audio with images on HD Radio receivers.

LIVIO RADIO: The Michigan-based company says its updated in-vehicle Internet radio iPhone app sets the stage for users who want to access Internet



audio streams through a vehicle's stereo using a software interface installed on a compatible mobile device. "Car Internet

radio is what's happening in 2011," says company founder/CEO Jake Sigal. The new app, boasting better features and stability as well as song tagging capability, ships this summer. An Android version is planned.

COX: Dave Siegler is Cox Media Group's new vice president of technical operations. He was promoted to take over the position held by Sterling Davis, who retired at the end of 2010. Siegler was director of broadcast operations and engineering for Cox WSOC(TV) and WAXN(TV) in Charlotte, N.C. He'll lead engineering and technical operations of CMG. NAB honored Sterling Davis with its Television Engineering Achievement Award in 2009, saying he's been a prime force in helping move the TV and radio industry into the digital age.



Dave Siegler



Sterling Davis

TUNELINK AUTO: New Potato Technologies said its TuneLink in-car audio interface operates via Bluetooth over FM or connects to the Aux input. A free Android app controls the TuneLink device to play stored or streaming audio content through the car's sound system. The Speedtune FM database provides a "seamless FM transmitter experience" for users in the U.S., Canada, Australia and most of Europe, according to New Potato.



LOVE

(continued from page 4)

newscasters, and an entertaining nighttime talk show host, Bill Barker, prominent from his time at the Denver Post for his articles and book on Bridey Murphy."

And this from an engineer who signs his online posts "Crusty Old TV Tech":

"KRMD. My father took me on a visit to the Jefferson Hotel, across from the (now completely gone, then just derelict) Union Station in Shreveport, and I saw a DJ working a turntable and

board, next to a beautiful, shiny Collins transmitter with big, glowing finals ... I was hooked.

"Listening to 'Seventy-One KEEL,' WWL, 'W-L-S, Chicago!', KOA Denver, the cowbell and WFAA/WBAP, a crystal set, then a Knight Star Roamer, then an NC-98 ... It was that early experience, that visit, those faraway voices that intrigued me so that I made comm engineering my profession.

"So," he concluded, "what would make a kid nowadays so intrigued he decides to go into comm? I wonder ..."

Read the original article at www.radioworld.com/article/108514 or keyword "real love."

***** ALERT *****
EAS/CAP COMPLIANCE DEADLINE AHEAD
CALL DIGITAL ALERT SYSTEMS TODAY

New EAS/CAP Compliant Models Starting Under \$2000

Digital Alert Systems
A DIVISION OF WINDMILL ELECTRONICS
DASDEC-II

The notice is out – a new EAS/CAP compliance deadline looms ahead. And the best way to keep your station in compliance is the DASDEC-II, flexible emergency messaging platform. Cover all your EAS and CAP requirements in one easy to use, easy to maintain, and surprisingly affordable package. Call **585-765-1155** today or visit www.digitalalertsystems.com. Don't delay - the deadline is just around that corner.



Your Partner on the Road to EAS & CAP compliance
www.digitalalertsystems.com



"A fast paced station needs a system that can keep up and is easy to use. Op-X gives us the tools we need to deliver the sound Houstonians have come to expect from KRBE."
 -Leslie Whittle, Program Director
 KRBE, Houston, TX

- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of it's competitors.
- Each studio client is capable of accessing all Audio Server modules on the network.
- Remote voice-tracking allows for creation of content for remote studios also running Op-X.
- The revolutionary design of Op-X's clock builder turns the previous task of scheduling satellite programming into a few simple clicks.
- Share serial devices from any machine using the Op-X Serial Server.
- 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.



AUTOMATION

SIMPLE • POWERFUL • REDUNDANT

Not since Axia audio-over-IP was introduced to the broadcast industry have we at BGS been so excited! It is with great enthusiasm we'd like to invite you to take a look at the new Op-X Radio Automation delivery system for any single or multi-station cluster. Op-X's versatility allows it to operate seamlessly with either Axia IP-Audio networks or legacy audio consoles.



**Broadcasters
 General Store**
352-622-7700
www.bgs.cc

WILSON

(continued from page 3)

provide timely weather information when we wake up, and relevant traffic information as we drive to work. For some time now, radio has faced new competition on these fronts; some of the latest forms of this competition were on display at the International CES.

LaCrosse Technology showed off its Four-Day Internet-Powered Wireless Forecaster, a clock/weather station that not only provides the current time and temperature but also shows the forecasted weather for the next four days. The weather service is provided free, with no subscription required.

To provide the forecast, the LaCrosse system includes a component that connects to the user's Internet router, fetches forecast data from the Internet and transmits it to the Wireless Forecaster over a proprietary wireless link, not Wi-Fi. Of course smartphones, computers and other Internet-connected devices like the Sony Dash, which was also on display, can provide weather forecasts, too.

The LaCrosse Wireless Weather Forecast is just another tool that makes it easy for consumers to get up-to-date weather information in the morning without listening to the radio.

Navigation systems have been around for quite awhile, helping consumers get traffic information without using radio. Navteq was demonstrating its LocationPoint advertising service, which allows advertisers to connect with consumers as they approach potential points of purchase.

Navteq's pitch to CE equipment makers is, "Navteq LocationPoint takes care of ad sales, campaign management, billing and reporting. Just plug the LocationPoint advertising service into your application and start earning money." The company offers to work with CE device makers so they can prosper jointly from the sale of location-based ads. This is in sharp contrast to free local radio, which seeks a government mandate to force CE makers to include FM chips in their products.

Navteq says it has about 500 advertising clients right now, mainly through agencies. It may try to go to an auction-based keyword model in the future. Navteq ads are targeted at consumers based not only on location, but user demographics and context, too.

In addition to observing some of the competition facing radio at CES I also spotted a few products that broadcasters might find useful in their day-to-day jobs.

RECORDERS, JUKEBOX SYSTEMS

Streaming Networks was showing off its iRecord Pro Personal Media Recorder, which takes analog audio and video as inputs and outputs them to an iPod, iPhone, iPad, MP3 player or USB device as a digital MPEG-4 file. It's a simple product that anyone can use to put any audio or video onto a portable device without a computer.

Verizon displayed a digital jukebox from TouchTunes Interactive



NAVTEQ Advertising Zone for LocationPoint™ Advertising

Welcome to NAVTEQ Media Solutions' LocationPoint™ Developer Zone. NAVTEQ LocationPoint is a turn-key means for you to monetize your NAVTEQ content-based apps by tapping into the world's fastest growing global location-based mobile ad network.

It's fast and easy to join the NAVTEQ LocationPoint Ad Network via open platform APIs—and can start reaping the benefits immediately. Here you'll find all of the latest information, tools and market intelligence you need to join the NAVTEQ LocationPoint Advertising Network.

Navteq's pitch to CE equipment makers: LocationPoint takes care of ad sales, campaign management, billing and reporting.



The iRecord Pro Personal Media Recorder from Streaming Networks is a simple product that anyone can use to put audio or video onto a portable device without a computer.

Networks. It has 3,000 songs stored on it and access to millions more through Verizon's 4G LTE mobile broadband network.

The device is smart enough to recognize the music that is most frequently requested at a particular location, and it will store the most in-demand content locally to minimize the need for downloads. Customers pay to select a song, just like with a traditional jukebox. But unlike with traditional jukeboxes, the TouchTunes system lets a customer pay again to bump a previously selected song to the top of the list. Customers can also



THE NEW myTouchTunes

INTRODUCING myREWARDS, THE TOUCHTUNES LOYALTY PROGRAM

Members can now earn rewards just for playing the music. Play love myRewards™ "nature bonus" gives members FREE bonus credits when they purchase \$5, \$10, \$15, or \$30 of credits at the jukebox.

MORE \$ = MORE FREE CREDITS

myTouchTunes MOBILE BRINGS THE ULTIMATE MUSIC EXPERIENCE TO THE IPHONE

- Access myTouchTunes from your iPhone
- Find myTouchTunes locations
- Search the TouchTunes music catalog and browse playlists
- Connect with other myTouchTunes members
- Purchase Jukebox credits
- Automatically earn myTouchTunes instant bonus credits
- Play music on any myTouchTunes Jukebox directly from an iPhone

Text MYTT to 10626 from any iPhone to Download the myTouchTunes Mobile for FREE from the App Store

LEARN MORE ABOUT MYTOUCHTUNES AT www.mytouchtunes.com or call 1-847-410-3300

TouchTunes
INTERACTIVE NETWORKS

Verizon displayed a digital jukebox from TouchTunes Interactive Networks that has 3,000 songs stored plus access to millions more through Verizon's 4G LTE mobile broadband network.

pay to keep disliked songs from playing. All of this can be done at the device, or over the Internet, and songs can even be requested in advance. The jukebox sells for \$7,000.

According to Verizon, high-performing jukeboxes are bringing in \$600–\$800 a month. The jukebox owner sets the price per play, and the average price they're currently charging is 51 cents. When the jukebox is not being used by customers, its screen can be used for display advertising, which is perfect for ad campaigns for taxis, beer, concerts and other things.

Rotor Concept Inc. demonstrated a remotely controlled helicopter with a 720x480 video camera that records 30 frames per second. The helicopter can be controlled within a one-mile radius and at elevations up to 2,000 feet, and it can fly for 15 minutes. It retails for \$500. Imagine the tower inspection possibilities.

Are you hard on your equipment? JCB was showing off its Toughphone, a water- and dust-resistant cell phone that can be dropped from over six feet without breaking. It's designed to withstand one ton of pressure and comes in a version that will float if it's dropped into water. And yes, it includes an FM radio. Prices range from \$70 to \$350.

CES was awesome this year. Hope to see you there next year.

Dave Wilson is owner of WHDX(FM) and WHDZ(FM) on Hatteras Island, N.C., and senior director, technology & standards at the Consumer Electronics Association. He's also a contributor to Radio World. His views are his own and do not necessarily represent the views of RW or CEA or its member companies.

Radio World welcomes other points of view to radioworld@nbmedia.com.



TRADESMAN The world's first floating phone. Waterproof and dustproof.

SITEMASTER Built to last. It can withstand a ton of pressure and a 2 metre drop test.

PRO Tough and smart. Fully waterproof with GPS and camera.

PRO-TALK The ultimate talker. Take the Pro and add a two-way radio.

JCB says its Toughphones are more rugged than your average mobile phone.



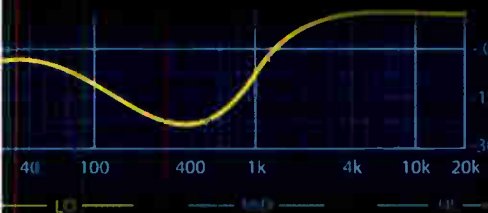
Comes with the most detailed manual you'll never need.

Everyone knows how powerful, flexible and cost-effective IP-Audio is. But configuring the network switch could be time consuming, even intimidating. Until now. Axia's new PowerStation for Element 2.0 consoles is the first IP console system with built-in Gigabit network switch, for easy expansion and connection to other studios. Audio, logic, DSP engine, and power supply are built in, too – plug in audio and power, and you're ready for air. Our proven record of reliability – over 2,000 consoles on-air every day – makes Axia the risk-free choice. So you can spend your time making great radio (not wading through manuals).



axiaaudio.com

Element 2.0 with PowerStation. The fastest, easiest IP Audio ever.



TIS

(continued from page 1)

to federal, state and local governmental entities, are only allowed to transmit travel-related information. Specifically, TIS stations can broadcast voice information pertaining only to traffic and road conditions, traffic hazard and travel advisories, directions, historical and event information and descriptions of local points of interest.

Some TIS operators would like to include such things as Amber alerts, terror threat levels, NOAA weather forecasts, public health warnings and other information.

The 10-watt radio stations, most often found at 530 kHz, air advisories directly



This TIS road sign sits along northbound I-75 in Michigan's Lower Peninsula leading to the Mackinac Bridge.

said the bureau chose to combine the individual petitions into one NPRM.

"The commission is seeking comment on the specific changes to the TIS rules proposed by each petitioner and on the overall approach the FCC should take," the FCC states in the notice.

The three petitioners contend that conditions have changed since the commission initiated the TIS service in 1977 and that the expansion of some of the rules would be in the public interest.

Highway Information Systems' petition asked the commission to consider renaming the TIS service the "Local Government Radio Service" and eliminate the limitation that confines TIS stations to areas near roads, highways and public transportation terminals. In its petition, the group proposes that TIS stations be permitted to transmit information as determined by the government entity licensed to operate the station.

Highway Information Systems is a subsidiary of Vaisala Inc., a Swedish firm that specializes in road weather monitoring systems. It purchased Highway Information Systems in 2009 from Quixote Corp.

Several of the petition groups asked the FCC to consider allowing use of "ribbon systems," in which several transmitters in close proximity broadcast the same material to cover a larger geographic area. Current rules preclude government entities from creating networks of stations.

American Association of State Highway and Transportation Officials asked the FCC to consider allowing Amber alerts and 511 service information on TIS facilities.

William Baker, president of American Association of Information Radio Operators, said his group believes the TIS service can be more valuable for public safety.

"Helpful content is out there now that was not envisioned by the original writers of the rules. Amber alerts, for example, were not available in 1977 when the TIS rules were adopted. The question is whether such critical content should be disseminated widely by all media but excluded from TIS."



Information Station Specialists

Mike Kattich from Century Electric and Tom Coviak from Information Station Specialists install electronics and route services for a TIS station in Aurora, Ill.

to motorists and are located near major auto travel routes, airports, parks or transportation terminals. The FCC established the TIS service in 1977 and authorized them on a primary basis on 530 kHz and on a secondary basis in the 535-1705 kHz band. Transmitting antennas cannot exceed 49.2 feet in height.

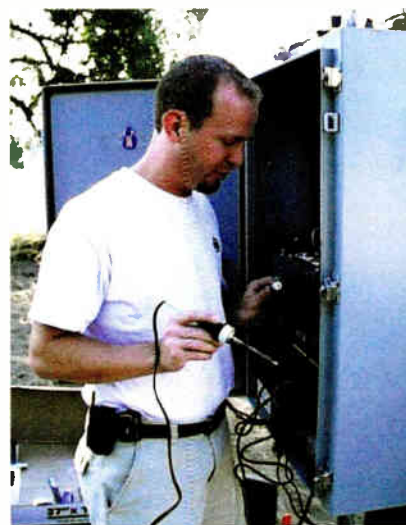
The U.S. National Park Service is one of the largest users of TIS systems, while the California Department of Transportation operates a system of 120 fixed TIS locations and another 12 mobile TIS facilities throughout the state.

The FCC estimates there are 1,300 TIS stations on the air in the United States. Stations typically can be heard in a three- to five-mile radius of the station's antenna.

IT'S NOT 1977 ANYMORE

The groups requesting updates are the American Association of State Highway and Transportation Officials; the American Association of Information Radio Operators; and Highway Information Systems. Each submitted petitions asking for varying degrees of modifications.

Eric Ehrenreich, attorney advisor in the FCC's policy division of the Public Safety and Homeland Security Bureau,



Information Station Specialists

Information Station Specialists' Field Tech Tom Coviak installs a Travelers Information Station.

Baker and his group, which has 335 members, contend that public safety is everyone's business. "Just because someone is seated behind the wheel of a car does not mean that they suddenly cease to have an interest in their greater safety."

Radio World's attempts to reach the other two petitioners for comment were unsuccessful.

WILDFIRE ADVISORIES

Michael Williams, president of the Wildlands Residents Association-San Marcos Pass Volunteer Fire Department in Santa Barbara, Calif., manages a TIS station near State Road 154, where 11,500 motorists pass its location each day.

"Changes in FCC regulations to provide a broader base of information would be helpful, particularly rebroadcasting of NOAA information directly from NOAA. We also get asked a lot, particularly by local emergency officials, about increasing our coverage area."

Williams said since wildfire is the number one public safety threat in the area, it's critical for his TIS station to be allowed to carry advisories from the U.S. Forest Service.

TIS proponents often argue that the stations could benefit the public even more, especially during power black-

outs, when traditional means of communication are inoperable. According to the FCC, a significant number of TIS stations operate on solar power or have backup systems that would allow them to continue operations.

"The FCC has an interest in promoting policies that will enhance the effectiveness of public alerts and warning reaching motorists over diverse communication channels," the FCC states in the NPRM.

In addition to increased content, the commission invites public comment on whether TIS field strength limits should be modified to increase coverage areas and whether to allow stations in more locations.

At least one broadcast consulting firm questions the soundness of any power increase for TIS stations, citing concerns about increased clutter on the AM band, and especially nighttime sky-wave interference.

"Any increase in power level and increase in the number of TIS facilities is obviously going to increase the noise level, or the noise floor in the AM band, especially during nighttime hours," said Ben Dawson, president of Hatfield & Dawson Consulting Engineers. "Nighttime skywave propagation is so variable that any increases in signal will likely raise the noise level."

Commercial broadcasters at first opposed creation of the TIS in the mid-1970s, claiming that it would duplicate information provided by commercial broadcasters, the FCC wrote in the NPRM. However, those issues were settled when the commission ordered that TIS services be non-commercial and low-power, experts said.

Still, the NAB, in comments on the petition for rulemaking filed by American Association of Information Radio Operators in 2009, said there was insufficient evidence to justify a major overhaul of TIS operations and therefore asked that the petition be denied.

Others, including National Public Radio, have voiced similar reservations about changing the TIS rules, arguing that the service is accomplishing what it was intended to do.

"The FCC must ask itself whether there is a compelling need to recast the existing TIS service and if doing so will merely duplicate existing and emerging broadcast services," NPR said in comments filed in response to the petitions for rulemaking.

The FCC's Ehrenreich said bureau staff will review public comments and make recommendations to the full commission, which will ultimately decide whether to modify the rules by issuing a Report and Order.

Reply comments to PS Docket No. 09-19 are due by March 7; initial comments were due by Feb. 18.

Drops jaws. Not audio.



Broadband Internet is everywhere. Which makes it ideal for live remotes.

Unfortunately, the internet is also notoriously erratic. Even if you're lucky enough to get a good connection, it might deteriorate during your show. So you dial back the bitrate, sacrificing sound quality to play it safe.

There is a better way.

Meet the amazing new Z/IP ONE codec.

Telos and Fraunhofer collaborated to develop a unique coding algorithm that adapts to changing network conditions on-the-fly.

If your connection quality drops, the Z/IP ONE uses error concealment, elastic buffers, and bitrate adjustments to keep audio flowing at maximum quality.

The Z/IP ONE now makes it possible to use the internet for great sounding remotes.

The convenience of the Internet. The sound of Telos.

Telos
AUDIO | NETWORKS
www.telos-systems.com

© 2010 Telos, Zephyr, Z/IP and Z/IP ONE are trademarks of TIS Corp.

BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is The Best Way to Hear from Everywhere.

World Radio History

STREAMING AUDIO



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

AUDIO LOGGING



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

Cyclops Eye Shines Light on Problems

Also, Some Ideas for Bob Culver's Open Neutral Problem From January

Chuck Bullett, CSRE, market engineer for Cumulus stations in San Francisco, writes that he received the

WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

coolest catalog in the mail (yes, some companies do still send out catalogs).

Duluth Trading Co. sells work wear and tools. Apparently one of their biggest sellers is a "long tail" T-shirt to cover up plumber's crack.

The cover graphic is a hoot, but the supplier also offers a host of tools and gadgets including unusual selections that could find a home at your shop or transmitter.

For example, for less than 20 bucks you can buy the

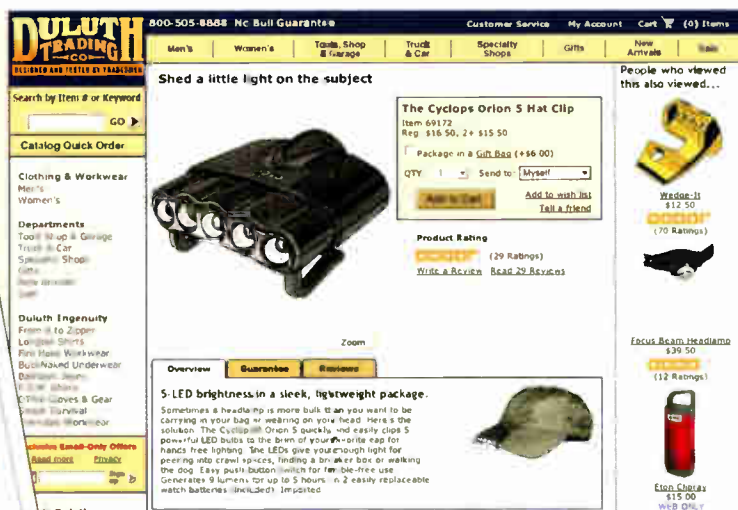


Fig. 1: The five-LED light assembly clips on the visor of your hat.

Cyclops Orion 5 Hat Clip. This is a five-LED light assembly that clips on the visor of any hat, helping to illuminate the subject.

It's available from other online vendors too. (Our editor Paul McLane

recalls a previous tip we published about a hat with LEDs built right into the front of the visor.)

While you're on the Duluth site, surprise your significant other. The company has both men's and women's catalogs. Check out www.duluthtrading.com.

Reach Chuck Bullett at chuckbullett@gmail.com.

Bob Culver's single-phase/neutral issue (see the Jan. 12 column) brought a number of unique solutions.

Scott Johnson, a systems engineer with Wheatstone, suggests replacing the main breaker with one that has a shunt trip on it. Bob could then build a simple circuit with two window comparators ANDED together to monitor the voltages of the two phases. Pass the output through an inverting buffer and let it fire the shunt trip on the breaker.

Scott adds that there also industrial phase monitors (snaprack, relay rack or octal form factor) that will provide a voltage or closure when voltage goes outside limits, and these could similarly trigger the shunt-trippable breaker. These aren't all that expensive and may solve the problem.

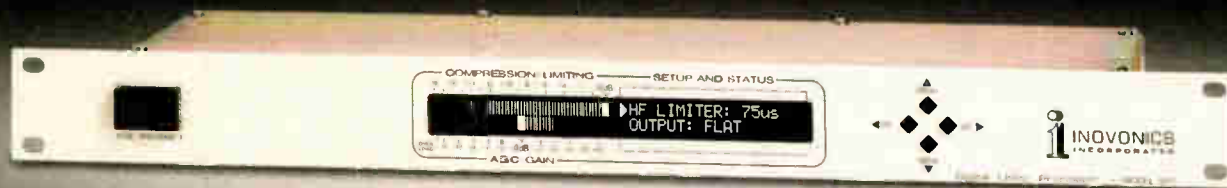
Scott Johnson is at scottjohnson@wheatstone.com.

Jim Schultz is a master electrician and owner of Schultz Communications. Jim has run across this open neutral problem and agrees the results can be devastating.

He is based in Connecticut, where

(continued on page 17)

Control Audio Levels



Inovonics 261 Stereo Utility Processor

The all-digital solution for onsite and offsite level control.



EVALUATION UNITS AVAILABLE
www.inovonicsbroadcast.com
 1-800-733-0552

licensed electricians are allowed to do "live cut and tap" service changes with a written agreement with Connecticut Light & Power. This allows them to remove old services and reconnect to the power company's service lateral.

Every time Jim does one of these service changes, he makes sure that the neutral leg is a few inches longer than the phase conductors. Then if a tree limb comes down on the drop, the *last* connection that is broken is the neutral.

Also, if the weatherhead is installed with a small screw rather than a large one, it will pull free and give a few more feet of slack before the wires are broken. This often is enough slack to prevent breakage of the wires and the resulting service interruption.

Jim also has seen the jacket melted off the cable TV drop, as the shield on the coax has acted as the power neutral conductor when the aluminum conductor, steel-reinforced (ACSR) messenger cable has failed.

Several T-shirts and maybe a case of beer on a hot summer day, strategically gifted to the line foreman (*not* the power company engineering folks!) may win you a favor from the power company. Just ask them to shorten up the phase conductors at the service drip loop.

Jim Schultz can be reached at jamesschultz@optonline.net.

Keith Trantow is president of Rawhide Communications in Tucson, Ariz. He is one of the many readers who scour each issue of RW cover to cover.

With regard to our Jan. 12 suggestion about old cases protecting fragile gear, Keith finds that padded laptop computer cases can be used to carry various items like test gear or remote equipment safely. They can be found inexpensively and usually are rugged enough to give years of service. Keith is at rawhidekeith@earthlink.net.

Buc Fitch is one of the few guys I know who still has time for involved equipment construction projects. He's shared many in *Workbench* over the years. As you probably know, Buc likes to add life to worn-out gear. Figs. 2 and 3 reflect his latest efforts.

The old RCA FM exciter had modular "drawers" that fit into the main chassis. Fig. 2 will look familiar to veteran engineers. Buc constructed a mono/composite input assembly, seen in Fig. 3.

But he laments that the project took over 40 hours of design, layout, construction and test time. At his rates, he says, "I could have bought a new exciter!"

Buc Fitch, P.E., can be reached at fitchpe@comcast.net.

John Bisset works for Teline Technology and is a past recipient of the SBE's Educator of the Year Award. Reach him at johnpbisset@gmail.com or (603) 472-5282.



Fig. 2: The old RCA drawer slides into the chassis.



Fig. 3: Adding the mono/composite input circuitry completed the project.

Moseley

WE WANT YOU TO GO APE OVER OUR DIGITAL STL CHOICES.

EVENT 5800
High Capacity Bidirectional STL
Up to Nine Uncompressed Stereo Feeds

STARLINK T1
Digital Linear Uncompressed STL/TSL
for T1/E1 Circuits and Microwave Links

LANLINK
LAN Extender — Data Link for Ethernet
Networking at the Transmitter Site

STARLINK
Digital Linear Uncompressed STL
for 950 MHz and all Worldwide STL Bands

DESIGNED AND MANUFACTURED IN THE USA

Moseley has tamed the primitive STL jungle and become the world leader in the technology, design and manufacturing of digital studio transmitter links. Moseley, the first to bring a totally transparent digital uncompressed STL to the broadcast industry, continues that same innovative thinking today

Don't monkey around with your on-air sound. Call the digital STL experts today.
Bill Gould (978) 373-6303 | Dave Chancey (805) 968-9621 ext.213

www.moseleysb.com

WBT(AM) Again Heeds FEMA's Call

Government Proceeds on Expansion of the PEP Emergency Network

BY JOHN MERLI

At first glance, the old red-brick building built in 1929 with the big white letters "WBT" above the front door could be one of hundreds of rural radio transmitter sites in America. Yet what has not been visible to casual observers since 1963 has tied this particular site south of Charlotte, N.C., to the Cold War of an earlier era: a small underground transmissions facility resembling a fallout shelter — requested, built and paid for by Uncle Sam.

While the Cuban Missile Crisis of the early 1960s may now seem like ancient history, newer emergency scenarios of both the natural and manmade variety have surfaced in the early 21st century. Thus, the federal government once again sought to install emergency gear at the WBT(AM) transmitter site. The new setup is above ground, adjacent to the station's old transmitter building.

WBT, a talker owned by Greater Media, covers much of the Carolinas during daytime hours; its 50,000-watt signal typically arcs directionally across most of the American eastern seaboard at night. It's a Primary Entry Point station, one of a small group of broadcasters, mostly AMs, designated by the federal government to provide public information prior to, during and after a national or local emergency — which could mean catastrophes ranging from infrastructure-wreaking hurricanes and floods to crippling power outages and terrorism.

In June 2006, several months after Hurricane Katrina devastated the Gulf Coast, President Bush signed Executive Order 13407. It requires the United States to maintain an "effective, reliable, integrated, flexible and comprehensive system to alert and warn the American people," according to the Federal Emergency Management Agency, part of the Department of Homeland Security.

That presidential order established the program within FEMA known as the Integrated Public Alert & Warning System, or IPAWS, whose partners include the FCC and National Weather Service.

"When it comes to emergency management and national preparedness, FEMA is not the team ... FEMA is only part of the team," spokesman Brad Carroll told Radio World. "That team includes federal partners, state, tribal and local officials, the private sector, non-profits and faith-based groups, and most importantly, the general public." Carroll called it a prime example of an ideal public-private sector relationship.

Expanding the number of Primary



Closeup of the older building's exterior.

Entry Point (PEP) stations is part of the IPAWS project.

"FEMA is in the process of expanding the number of private and commercial radio broadcast stations cooperatively participating with the agency to provide emergency alert and warning information to the public."

The facilities buildout is expected to be completed in 2013; the number of PEP stations will increase by 38 stations — from 36 to 74, which FEMA estimates collectively can reach about 90 percent of the U.S. population.

The first station added to the PEP network was Cox outlet WOKV(AM), in Jacksonville, Fla., in 2010. "Legacy" PEP stations are getting the same standard equipment being installed in new stations as part of the effort.

'NEW MILLENNIUM' VERSION

The stated mission of IPAWS is to provide capabilities to local, state and federal authorities that enable them to

alert their respective communities "via multiple communications methods."

Among other things, the PEP network would provide the technological means to allow the president of the United States to speak from any location to the American people under all conceivable emergencies.

(Well, nearly all. The new PEP facilities are being built at ground level and likely cannot sustain a nuclear attack. But they apparently could withstand, for example, an electromagnetic pulse that could cripple parts of the nation's power grid.)

Official sources confirm that the equipment complement for each station consists of a standardized package, but they decline to identify the specific components. However, RW confirmed that a typical PEP station is outfitted with a small modular shelter; a small generator; an EAS encoder/decoder compatible with Common Alert Protocol; satellite communications gear; and surge-protected backup program origination and transmission gear. When connected to the station transmitter, it essentially is a radio station unto itself for use by government officials in times of emergency.

WBT Chief Engineer Jerry Dowd said installation of the latest government facility at his transmission site was completed last fall.

He's quick to add he hopes the new installation will wind up enjoying the same fate as the original 48-year-old underground facility on his site — thus also someday becoming a relic of a

(continued on page 23)



WBT's transmitter building south of Charlotte, N.C., built in 1929, houses a government underground transmission facility constructed in 1963. The new PEP station facility can be seen behind and to the left.

OMNIA.11 EVERYTHING YOU HEAR IS TRUE.

- Effortless dial dominance
- Louder yes, yet always pure & uncompromised
- Pop sparkles
- Rock really rocks
- Country caresses
- Hip hop thunders
- Voice is natural and intimate
- Push it hard and be amazed at how open and clean it remains

Find out more: www.omniaaudio.com



©TLS Corp. 2011. All rights reserved.

Radio never sleeps. Neither do we. We're here for you, anytime, with free round-the-clock, 24/7 technical support. Call +1-216-622-0247

World Radio History

It's a good bet
there's not a single
person in America,
who's listened to
the radio in the last
10 years, who
hasn't heard an
Audioarts D-75 radio
console in action.

D-75

D-75 STANDALONE AND D-75N NETWORKABLE DIGITAL AUDIO CONSOLES

That's how prevalent
and powerful the
Audioarts D-75 is.



FLEXIBLE. AFFORDABLE. BUILT TO LAST.

phone 1.252.638-7000 | www.audioartsen지니어ing.com | sales@wheatstone.com

 **AUDIOARTS**



NOBODY EVER WINS A LATENCY RACE

There was a time not so long ago where 56K seemed like a ridiculously fast speed for surfing the internet. Where a 10 meg hard drive seemed about 10 times more than you'd ever need. When latency was simply a casualty of AOIP networking (still is in some places...) Guess what? Things changed. And they're changing now...

Audio LOVES as much bandwidth as you can throw at it. The more the better. Especially when you're tossing in everything else that travels down that ethernet cable. WHY would you ever limit yourself?

We believe in plenty of overhead. That's why we built it into WNIP. We're 10 times the speed of the other major system. Even if you don't use the speed today, think of it as money in the bank.



THE INTELLIGENT NETWORK™

phone 1.252.638-7000 | WheatNetIP.com | sales@wheatstone.com

IS YOUR AOIP NETWORK AN INTELLIGENT NETWORK?

Download the **FREE** white paper "The Technical Case for the Intelligent Network" at WheatIP.com



WJLB Control Room, 1942

This is a view of the WJLB and W49D Control Room in the Eaton Tower Building in Detroit, 1942 (now called the David Broderick Tower). The 250-watt AM station went on the air as WMBC in 1926, later becoming WJLB when it was purchased by John Lord Booth in 1939. It's still on the air today as WDTK.

W49D, Michigan's second FM station, debuted in 1941 with 1,000 watts on 44.9 MHz, simulcasting the programs of WJLB. In 1945 it moved to 96.5 MHz in the "new" FM band, becoming WLOU and later WMZK. Today it is known as WJLB, commemorating the call sign of its original AM sister station.

In the photo we can see an all-RCA studio package, including the venerable RCA 76C console, an RCA 74B Junior Velocity ribbon microphone, RCA transcription turntables and a 77DX microphone in the adjoining performance studio.

On the wall is the famous Western Union synchronized clock that was found in most radio stations until 1971. The clock was synchronized with Naval Observatory time, and was reset at the top of the hour by a pulse delivered by phone line.

John Schneider is a lifelong radio history researcher. Write him at jschneid93@gmail.com.



AM Ground Systems Co.

www.amgroundsystems.com

1-877-766-2999

PHYSICAL
AM SITE SERVICES



SERVING THE TECHNICAL AND CONSTRUCTION NEEDS OF AM BROADCASTERS FOR OVER 25 YEARS

- Complete Ground System Construction, Evaluation and Repair Services.
- Fast, Efficient Full Site Construction Services.

>>>>>>>>

Scan QR vCard with smart phone to save our contact info



SAMPLE TOROID RETROFIT SOLUTIONS AND
SAMPLE LINE REPLACEMENT FOR
METHOD-OF-MOMENTS DA PROOFING

Contact us today for a no obligation quote on any of our services.

Thanks for Visiting us at

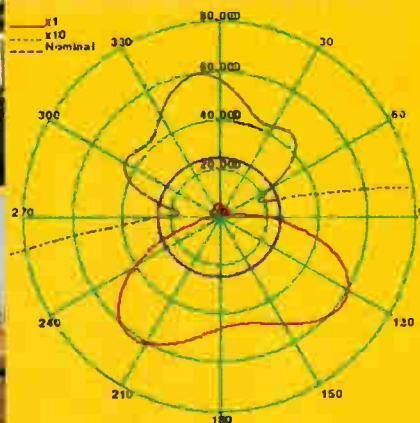
NRB

We plan on being at NAB as well.

**Reliable, On-time Installation
Firm Quotes
Quality Workmanship**

WWW.AMGROUNDSYSTEMS.COM

877-766-2999



PEP

(continued from page 18)

bygone era that will never have to be put into service. "This newer facility is the 'new millennium version' of the fallout shelter built back in '63," Dowd said with a smile.

(The original underground transmission facility remains intact. "Yes we have a can of 1963 crackers; the original water container, since emptied; the 'toilet in a box' thing; a couple of blankets; and the original guide to radiation monitoring handbook issued in 1963. We had the Geiger counters properly disposed of in years back, but we still have the old tube-type civil defense radio, and not much else has changed.")

WBT and the several dozen other broadcast outlets in the network remain an integral component of the far larger Emergency Alert System. All PEP stations are still tasked with providing first-generation broadcasts of any national EAS messages that would be forthcoming.

'Let's hope we never need it, but isn't it comforting to know that it's there?'

"We're directional at night, up and down the East Coast, but [if necessary], we could be 50,000 watts non-directional if ever called upon," said Dowd, whose transmitter site boasts a view that will bring tears to the eyes of some veteran engineers: a trio of now-rare Blaw-Knox Diamond towers.

The goal simply is to maximize the number of Americans who can receive one or more PEP signals. According to WBT's Dowd, "When Katrina hit New Orleans and everyone saw that WWL(AM) could stay on the air, they realized it was the FEMA station and generator and equipment that people could rely on when it was most urgently needed by the most people."

Selecting PEP outlets was fairly straightforward. Starting with the largest radio markets, each designated market area, or DMA, was examined by FEMA and IPAWS officials to determine if it was served by an existing PEP station. If not, the PEP program reviewed all local radio stations to determine which had the widest coverage. Key factors for PEP outlets typically included "superior technical facilities, station reach, cooperation of the station owner, transmitter site accessibility, environmental concerns and station stability."

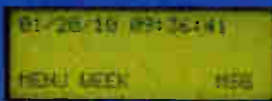


"I think when the day is done, this program is there to simply serve the public," said Dowd. "Let's hope we never need it, but isn't it comforting to know that it's there? This isn't about ratings and the competition ... it's about all these [PEP] stations fulfilling a vital need to the American public, if ever necessary."

Here's a view of the original emergency transmission studios, built in 1963, soon after the Cuban Missile Crisis. The facility, underneath WBT's 82-year-old-transmitter building, still has its original power source.

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

SAGE DIGITAL ENDEC



NEW EAS RULES

Questions?
914-872-4069



SAGE

When you use the Sage Digital ENDEC to meet the new FCC EAS rules for CAP, you also receive an interface to:

- AES/EBU Digital Audio
- LAN/Internet for Web browser control and monitoring, network time, email
- Satellite receivers and Internet for CAP
- Text via CG, RDS, HD Radio
- Free downloadable upgrade to the final version of CAP 1.2

The Digital ENDEC is a drop-in replacement for the classic ENDEC, but new users love it too.

The Sage Digital ENDEC - your one-box solution for CAP and EAS.

Sage Alerting Systems, Inc
800 Westchester Avenue, Suite 641N, Rye Brook, NY 10573
Phone 914 872 4069 info@sagealertingsystems.com
www.sagealertingsystems.com

Solving the Case of Tower vs. Tower

BY MARK PERSONS

As more wind generator towers are built, it is inevitable that some will be erected near broadcast towers including, unfortunately, AM directional antennas.

Any nearby structure over one-eighth wavelength in height can become a significant re-radiator, causing distortion of an AM radiation pattern. That height is 224 feet at 540 kHz down to 77 feet at 1600 kHz.

TECHTIPS

FCC Rule 73.1692 addresses this as "Broadcast Station Construction Near or Installation on an AM Broadcast Tower":

"Where a broadcast licensee or permittee proposes to mount a broadcast antenna on an AM station tower, or where construction is proposed within 0.8 km of an AM nondirectional tower or within 3.2 km of an AM directional station, the broadcast licensee or permittee is responsible for ensuring that the construction does not adversely affect the AM station."

A few years ago, KLOH Radio in Pipestone, Minn., "got wind" of a wind tower project planned for a location about a quarter mile from the station's two-tower AM directional array. Fortunately they learned about it before the wind tower was built.

This started quite a discussion about what to do. The answer: Build the wind tower with a unipole detuning system integrated with the main structure.

The wind tower's 150-foot pedestal was factory modified to accept unipole hardware from Nott Ltd. It is a three-wire unipole with mounts to attach to the huge pipe-like structure. Because of the construction of the tower, it was necessary to use three variable capacitor de-tuning boxes inside the tower, as shown in one of the photos. The on-site wind tower construction took just a few days, followed by my detuning work.

The project was a success, with one interesting exception.

The radio station's day and night AM directional monitor points were below FCC limits when there was no wind. With wind, the monitor point readings were still below limits, but would vary 10 percent as blades on the wind tower turned. You see, the wind tower electrical height varies according to where the blades are at any given instant.

The 104-foot turbine blades, in this case, are fiberglass. However, there are electric drain wires going the length of each blade so lightning can be dealt with safely. Those wires are electrical conductors. That is why the electrical height of the entire structure changes when the blades spin.

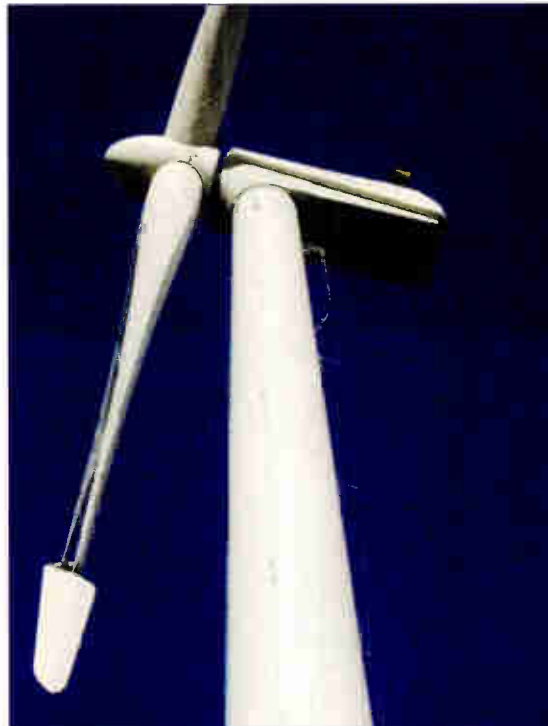
It all makes sense once you understand what is going on.

On a similar note, another broadcaster asked if the same technology could work for his FM transmitter site, which is about to be surrounded by wind towers. The answer was no, but good try. I'd like to hear from any readers who have run into this as an FM problem.

How do I get mixed up in these unusual situations? Just lucky, I guess! Is that good luck or bad luck? All I know is that the radio broadcast engineering profession gets more interesting and challenging at every turn.

On a side note, I usually try to check in on the Society of Broadcast Engineers HAMnet "Chapter of the Air" on the second Sunday of every month at 0000 GMT (6 p.m. Central time in winter or 7 p.m. during summer). Hal Hostetler, WA7BGX, serves as Net Control from Tucson, Ariz. He gives SBE news and comments. The frequency is 14.205 MHz sideband.

Mark Persons, WOMH, is certified by the Society of Broadcast Engineers as a Professional Broadcast Engineer with more than 30 years experience. He wrote about what's in his toolbox in our Jan. 12 issue. His website is www.mwpersons.com.



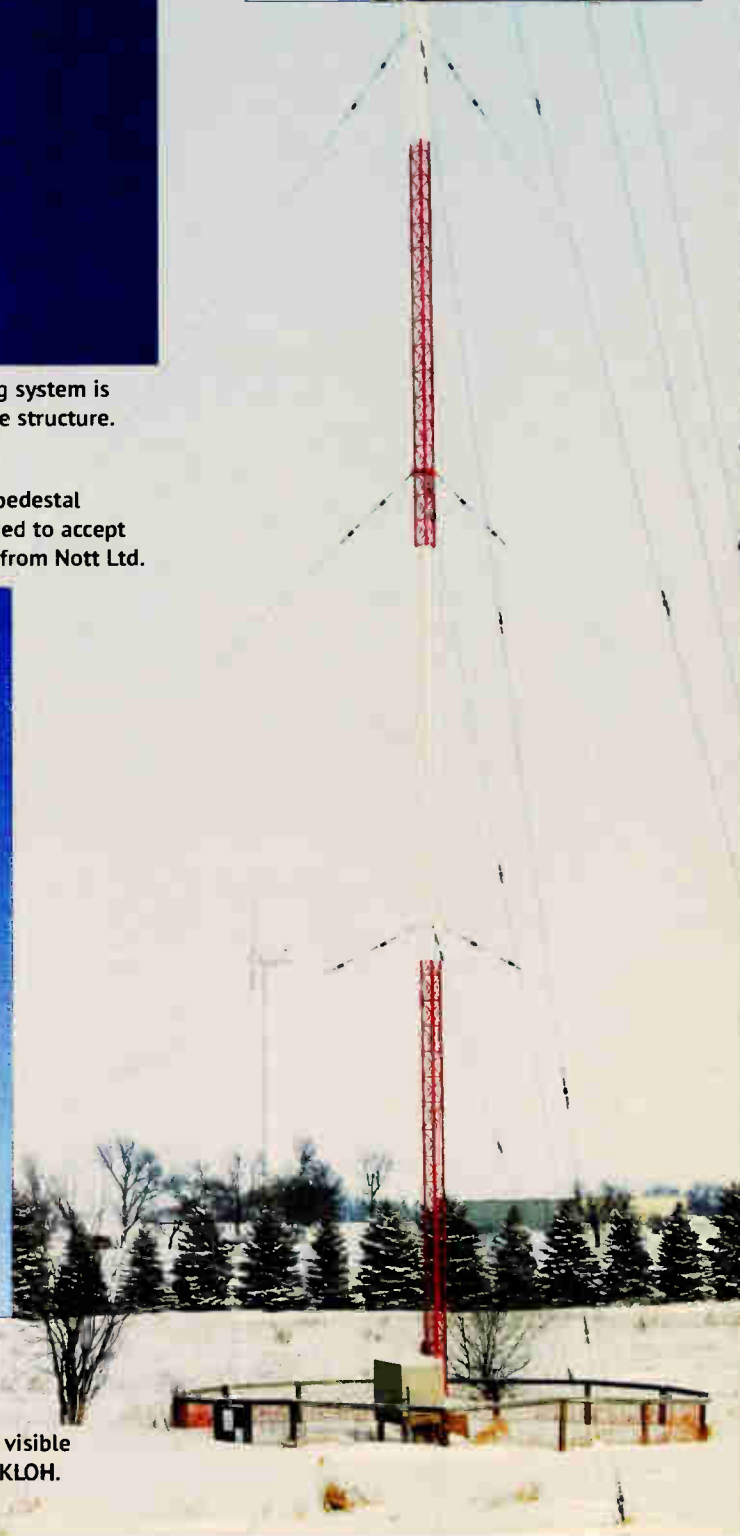
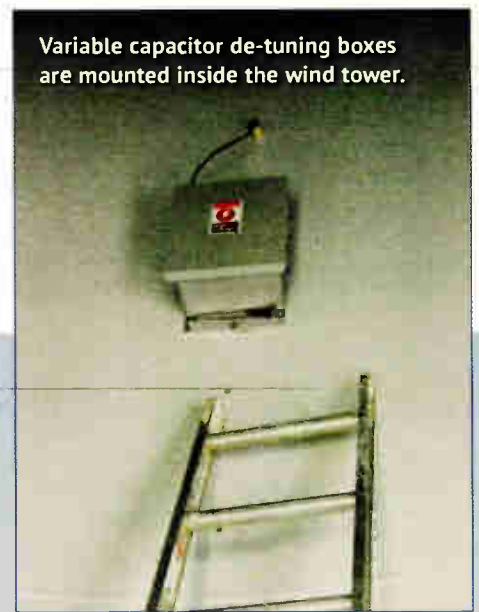
A unipole detuning system is integrated with the structure.

The wind tower's pedestal was factory modified to accept unipole hardware from Nott Ltd.



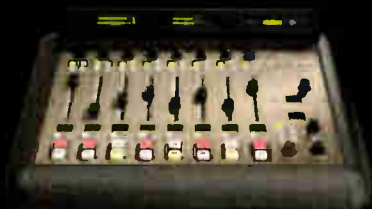
The wind tower is visible near the sticks of KLOH.

Variable capacitor de-tuning boxes are mounted inside the wind tower.





In the middle of your busy day...
take a break and install an iQ.



With all that's on your plate, time is precious. Here's a way to get some time back: iQ, the powerful new AoIP console from Axia. So fast and easy, you can unpack it at 11:00 and have audio running by noon. No switch to set up - it's built-in and preconfigured. In fact, everything's built in. Audio. Logic. DSP engine. Power supply. Just plug in power and audio, and you're ready for air. Smart and intuitive, so your jocks will love it. Cost-effective, so your boss will love you. A 16-fader iQ starts at just \$9,985.00; 8-faders are only \$7,990.00.

iQ. It's about time.



axiaaudio.com

Attributes of a Great Radio Client

What Are the Characteristics of Businesses That Become Successful Radio Advertisers?

BY ROD SCHWARTZ

The e-mail arrived out of the blue on a recent Thursday from Steve, whom I'd never met. It contained questions about radio advertising — more precisely, about radio advertisers:

Dear Mr. Schwartz, a thank you from a fledgling radio entrepreneur. I've gotten a lot out of your postings and enjoy your writing style. Your "Darci" find is delightful — what a great voice. Quirky but friendly. I'm assuming that you wrote the copy — good work.

Can I ask a radio sales question? How do you target the best prospects for radio advertising? What are the characteristics or demographics of the businesses that become great radio advertising clients?

I am working on a business plan to purchase a local AM radio station and need to develop some realistic numbers

for our business consultant.

Thanks for all you've shared, Mr. Schwartz. I'm getting quite an education!

I didn't have a ready answer, and that bothered me.

Usually I'm able to address radio advertising/sales questions quickly and confidently, off the top of my head. This was not one of those times. Steve's questions demanded deeper delving into 38 years' worth of accumulated experiences and education, to try to identify the traits common to my best and most successful clients.

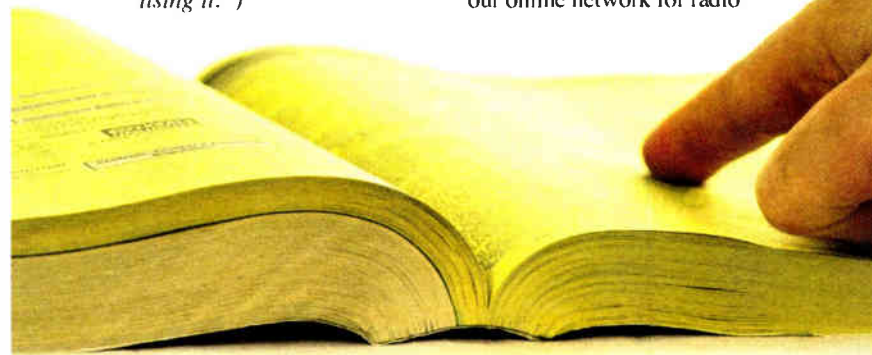
After pondering for several days, I replied late the following Monday night as follows:

Steve, thanks for your kind words — much appreciated. Your questions, while beguilingly simple on the surface, have substantial depth, and I wish I had the time to answer them in as much detail

as they deserve.

Setting aside such obvious considerations as the prospect having both the desire to grow his business and the financial capacity to fund that growth through effective advertising, one looks for a number of things. I'll give you seven, in no particular order:

1 *Someone who runs a good business well, and who has above-average growth potential in the market. (The Wizard, Roy H. Williams, would say, "someone who's great at running his business but who stinks at advertising it.")*



istockphoto/Justin Horrocks

6 *Someone who isn't likely to be moved by petty criticisms, peer pressure or the snipes of your competitors, but who will remain committed to the course come hell or high water;*

7 *Someone who can accept occasional setbacks as part of the learning process, and who is willing to move past them. Great advertising is more of a process than an act. It involves testing messages (not your radio station!) and refining them as time goes on. Beware the prospect who is easily distracted by novelty or who will leave you for someone willing to give him a lower price.*

I also invited Steve to join our online network for radio

LMA/PURCHASE OPPORTUNITY 50KW COMMERCIAL FM IN CORPUS CHRISTI, TEXAS



NOT A RIMSHOT!
CITY GRADES ENTIRE METRO

New signal
Signing on this summer

Serious inquiries only, please
Terms to well qualified buyers
Brokers welcome, but buyer pays commission

E-mail to:
corpusfm@hotmail.com

No phone calls.

So many businesses ... How to tell which ones might become successful clients?

2 *Someone who is genuinely open to new ideas and willing to embrace a calculated risk, looking at the advertising campaign as a long-term investment in the future of his business;*

3 *Someone who recognizes that results take time, and is willing to give a new campaign several months minimum to gain traction before judging its merits. (Williams has written extensively on this; it's the approach of the farmer, as opposed to that of the hunter. Suggest you go to www.wizardacademy-press.com, find the DVD called "The Most Common Mistakes in Advertising" and watch it at least several times. You'll thank me for the suggestion.)*

4 *Someone who has a compelling story and is willing to entrust you with its uncovering and telling, one installment at a time;*

5 *Someone who impresses you to such an extent that you are unwilling to pull your punches or cut corners; rather, you are committed to investing as much time and effort as it takes to get his message and schedule right, and who, in turn, respects your time and talent and is prepared to compensate you fairly for your investment of same in his behalf;*

advertising sales professionals, Radio Sales Café, <http://radiosalescafe.com>, which is free to join and offers information, ideas and experiences that members share on a regular basis.

Steve's reply was waiting in my inbox the following morning:

Wow, wow, WOW.

You know, having only been on the periphery of radio (traffic director, three years; broadcast engineer, six years; never an owner, air staff, salesman, PD, or GM), I am constantly amazed at the kindness being shown to me, by the generous amount of time that strangers, really, are willing to give in order to help someone come into their world.

Thank you very much, Rod.

I hope you can repurpose your extensive reply. It is scary to think that I am moving towards the radio world (as a business, away from what I do now), so I'm moving slowly ... with guidance from sound business minds, and professionals and friends like yourself.

Thanks again. I'll see you at the Radio Sales Café.

Did you smile when you read his observations on the reception he's had from people in the radio industry? This

(continued on page 27)

Growing Personalities Is an Art

Unfortunately, Far Too Few Station Managers Practice It

BY MARK LAPIDUS

Assemble a group of radio vets and inevitably the talk will turn to on-air personalities.

In most cities, large and small, names will surface of local legends who at

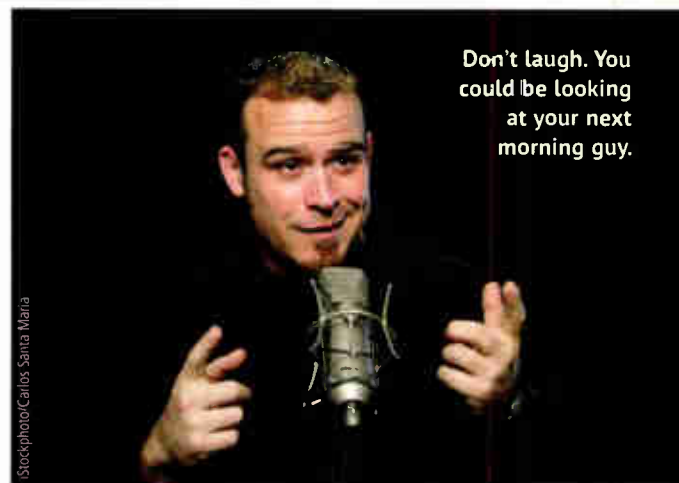
than playing the same 350 songs with a professional generic DJ who doesn't need to remember that his audience ever fell in love with the music he's playing.

It's bad enough that radio and television are being positioned by media writers as "old media." If we don't figure out a path to generate local personalities, in the end we may actually have to accept this insult.

BUILD YOUR OWN ECOSYSTEM

There never has been an easy way to develop on-air talent.

(continued on page 29)



Don't laugh. You could be looking at your next morning guy.

Stockphoto/Carlos Santa Maria

PROMO POWER



Mark Lapidus

one time ruled the airwaves. Localities might have four or five big names, some of whom would span more than a decade of success before moving on to larger markets, syndication or television shows. These personalities were so big that, although they were "faceless" radio stars, people would stop them on the street and ask for autographs.

It's easy to dismiss these memories as little more than quaint longing for the past. A lot people apparently do.

Recently, a new program director at a classic rock station in a top 20 market told me with a straight face that his strategy to win in morning drive was to play more music. Nothing could possibly be more entertaining, he claimed.

CLIENT

(continued from page 26)

is something I observed early in my radio advertising sales career, the open doors and hearts of station owners and managers, willing to help a newbie succeed in the business.

I'd often tell new hires that one of the best things about our industry was that there would always be a job available anywhere in the country for someone who enjoyed radio advertising sales and became good at it. I believed it then, and I believe it today.

Given his attitude, perspicacity and focus, I predict that Steve will succeed in spades when he launches his station. I hope he is able quickly to find good employees and cultivate great client relationships.

And I hope that he, in turn, will pass along to others what he learns in the process.

Rod Schwartz, owner/creative director of Grace Broadcast Sales and a longtime radio sales professional, shares stories, commercials and advertising lessons on his blog. Contact him at rod@gracebroadcast.com.

THE WORLD HAS A BRAND NEW AUTOMATION SYSTEM.

ZETTA®

ADVANCED RADIO AUTOMATION

RELIABLE, INTUITIVE, FLEXIBLE



rcsworks.com

Clear Channel: It's the Content, Stupid

Company Says It Is Reaching 25 Million Each Month Via Web and Mobile Now

BY JAMES CARELESS

Clear Channel EVP of Distribution Development Jeff Littlejohn doesn't actually say it aloud. But if you distill his philosophy for managing Clear Channel's multiple distribution channels, it all comes down to the ITCS principle: It's the Content, Stupid.

"When you really think about what we need to do to prosper, it all comes down to creating compelling content," he says.

"At Clear Channel, we produce great content that we make available on-air, through the Web and on mobile devices. And it's not just music: We offer top music and talk talent, plus exclusive items that you just can't find anywhere else. All of this great content creates brands with which listeners have an emotional connection."

This stance leads to another point about managing multiple platforms: "Our job is to distribute compelling content in as many ways as we can, but it is the listener who decides precisely which distribution channel they will use," he said.

"We don't get twisted up in trying to shape this choice, because it is really out of our control. But what we do try to do is to make finding our brands on all platforms as easy and convenient as possible."

CC ♥ IHEARTRADIO

Clear Channel, perhaps radio's most closely watched group owner, says it remains committed to AM, FM and their HD Radio variants. However, the company has had considerable success with its www.heartradio.com and is putting energy into its portable version, iheartradio on mobile.

"Our iheartradio website connects listeners to over 750 of our on-air and

custom radio stations, plus provides access tens of thousands of photos, songs, music videos, artist interviews, news, contests and exclusive live performances," Littlejohn said.

"Meanwhile, iheartradio on mobile delivers our 750-plus stations to wireless users on iPhone, iPod Touch, Android or BlackBerry smartphones. Like our website, listeners get access to Clear Channel AM and FM stations from

As we support more distribution platforms, we'll end up growing our new audiences without eating into our old ones.

— Jeff Littlejohn

across the country, plus commercial-free channels and artist-programmed channels from Christina Aguilera, Weezer, Megadeth and the Eagles."

Clear Channel streams all of its Web and mobile audio in the high-quality AAC format, to ensure that the audio sounds great. Ironically, this may mean that company-owned AM stations sound better on an iPhone than they do on a radio.

PERFORMANCE

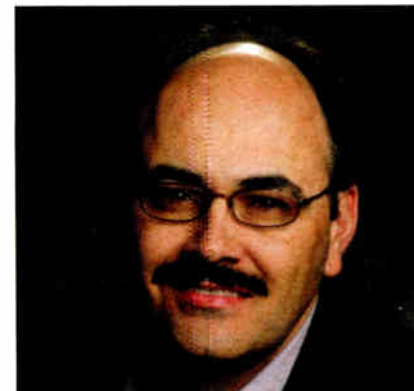
Serving multiple platforms is a priority at Clear Channel. This is why the operation now is overseen by Bob

Pittman, the company's chairman of media and entertainment.

"This position is as high as it gets at Clear Channel," said Littlejohn. "It gives you a sense of just how important multiple platforms are to our company — especially when you consider that Bob Pittman was previously CEO of MTV and AOL Networks." Pittman joined in November.

Apparently its strategy is working for America's largest radio company. Besides its continuing dominance on AM and FM, Clear Channel believes it is reaching 25 million to 30 million people per month via the Web and mobile.

"Our iheartradio on mobile app has crossed past the 12 million downloads threshold," Littlejohn said. "We are the number-one most popular radio app on



Jeff Littlejohn

every single smartphone platform that we're available on. The best part is that we are seeing mobile users access iheartradio.com for an average 160 minutes per week."

One would think that such growth would pose a threat to Clear Channel's broadcasters and their audience share, and thus cut into the company's tradi-

THE HEART IS EVERYWHERE

Clear Channel sought to make a splash — or splashes — at the International CES show:

- Toyota Motor Sales showed its Entune "infotainment" system, which uses a driver's mobile phone. By downloading an Entune mobile app and pairing a Bluetooth phone with the car, customers can access iheartradio. Toyota had announced earlier it would be the first carmaker to include iheartradio in some 2011 model vehicles.
- JVC Mobile Entertainment became the first car aftermarket device maker to integrate the iheartradio mobile app. Downloaded to an iPhone, iheartradio can be accessed on two new JVC navigation units. Users can view song and artist info and album artwork and control iheartradio from the radio's nav screens.
- Dice Electronics showed two iheartradio-capable integration kits, for users who want to keep their factory car radios but add Internet radio. These modules let users running the iheartradio mobile app on a smartphone to connect and control it from the factory radio or steering wheel radio controls.
- Clear Channel said iheartradio is being phased into more in-dash multimedia navigation systems by Rosen Entertainment Systems, a mobile video entertainment manufacturer. Systems will include an iheartradio interface for iPhone, Android and BlackBerry devices, which will link to Rosen units via Bluetooth; iheartradio is then accessible through Rosen's LCD displays.
- iheartradio is being released for the Yahoo Connected TV so users can surf for stations on that platform at home.
- Manufacturer iHome added iheartradio compatibility to its bedside iHome+Sleep app, so iPhone and iPod touch users can wake up to music or talk; iHome showed several app-enhanced clock radios that are compatible with iheartradio.
- A touchscreen portable Internet radio player was introduced by Walnut Media Network. The W408 player with WiFi features iheartradio.



STATION SERVICES

Find us on **FACEBOOK** for a steady stream of SALES TIPS, HOT LEADS, COOL IDEAS and CREATIVE RESOURCES to help YOU sell more advertising (and YOUR ADVERTISERS sell more stuff)!

Sound Ideas for Building BusinessSM

Radio Features You Can Sell.
:30/:60 sec. - FREE DEMOS!



GraceBroadcast.com

Sell Radio? Join the crowd.



RadioSalesCafe.com

ATTENTION PROVIDERS: Promote your services to Radio World's readers. For information on affordable advertising call David at 212-378-0400 ext. 511 or email dcarson@nbmedia.com.

tional advertising revenues. But Littlejohn said that's not the case.

"Our broadcast listening is remaining stable, while our digital listenership is growing," said Littlejohn. "The reason is that people are using iheartradio to tune into us in places where they previously didn't have access to radio. Now they can hear us at their desks, or on the bus or train while commuting. The beauty of this is that, as we support more distribution platforms, we'll end up growing our new audiences without eating into our old ones."

BACK TO THE PRINCIPLE

Clear Channel could be forgiven for being seduced by the success of iheartradio. But Littlejohn and his staff appear to be keeping their egos at bay.

"Remember, not all distribution schemes work as planned," he said. "Take the project we did with Marriott Hotels, where we made our radio stations available to 200,000 guest rooms via their televisions. It turns out that people didn't listen to radio on their hotel TVs, so we abandoned that approach.

"This comes back to our philosophy of not getting obsessed with specific distribution platforms: Some work, some don't. But for those that do, it is still great content that drives listeners to use their platforms to tune into us, not the fact that we happen to be available to them."

In other words, "It's the Content, Stupid" really works?

"You said it, I didn't," Littlejohn replied.

This is one in a series of conversations with radio industry executives about their multiplatform strategies. Radio Disney's Sean Cocchia was featured in the Jan. 1 issue.

PERSONALITY

(continued from page 27)

Certainly a large minor-league system — with small markets growing personalities — helped. Here, at least, there was a numbers game going on, with ambitious women and men working their craft in small towns so they might have a chance to be a star in a larger city. The industry supported this development system with various competitions for personality of the year for format and market size.

But the times they were a-changin', and now voice-tracking, whether local or long distance, has for the most part struck a fatal blow to this ecosystem. Become a superior voice-tracking talent and the reward is more of the same on other stations. This type of talent sure can sound great — nice voice ... no mistakes ... funny quips ... sells liners well — but is about as memorable as flipping a light switch.

I can't pretend to have all the answers to this serious dilemma, but I can offer a few suggestions.

1) Hire program directors who believe that real personalities can boost success.

2) Test people on the air who seem to have potential. Your list of possibilities should include local comedians, journalists, sportscasters, bartenders and callers to your radio station who are aired a lot and are consistently entertaining when they phone in. If necessary, try these people out late at night or put

them on one of your HD channels and let them get repetitions to see if they improve.

3) Advertise tryouts. This is a lot of work and you may have to go through hundreds of people, but these events are terrific stunts and I have seen a number of talented people surface out of nowhere.

4) Don't just put personalities on the air without a development plan of aircheck sessions and at least weekly coaching.

5) Budget, and then really spend, enough money to hire true talent. Save tens of thousands of dollars now and you may be risking hundreds of thousands or even millions later on when your property is devalued due to lack of interest.

Finally, wouldn't it be nice if the big companies would consider rewarding promising on-air college talent with scholarships and/or the opportunity of an entry-level position after graduation?

While perhaps not as visible as they once were, a number of college radio stations still have students who are on fire about radio. I had the pleasure of meeting many of them at a convention just a few years ago — likeable, articulate kids with the right kind of energy. Let's get smarter about talent development before our own arrested development becomes a permanent condition.

The author is president of Lapidus Media. Contact him at marklapidus@verizon.net.

future

radio

antennas

DVB-T

television

ATSC

something has changed

OMB
BROADCAST

broadcast your world

International Division
3100 NW 72nd Ave, Unit 112
MIAMI, Florida 33122 USA
Phone: +1 (305) 477-0973
+1 (305) 477-0974
Fax: +1 (305) 477-0611
www.omb.com
usa@omb.com

Cell Phone Calls Shine Aurally

Telos Hx1 Digital Hybrid Telephone Interface
Brings Digital Technology to Analog Lines

BY LAURA MIR

In a time when more and more companies are introducing IP audio codecs, VoIP codecs and large multiline talk show systems, it is good to know that there is still a

PRODUCT EVALUATION

need for a simple POTS hybrid. The Telos Hx1 hybrid packs sophisticated digital controls into an enhancement designed for POTS lines for broadcast.

Once racked the Telos Hx1 looks polished and sleek. Its simple design and minimalistic display do little to allude to the powerful processing going on inside.

The front-panel meters are an upgrade rarely seen on a telephone hybrid. The tricolor LED meters are bright and easy to read from a distance, displaying levels from -36 to 20 dBu. Included alongside the "SND" and "RCV" meters are low and high EQ meters, which show the amount of gain adjustment that is being applied to the incoming caller's audio in the respective frequency bands.

Rounding out the front are three pushbutton switches and corresponding line status display. The line status displays Telos' proprietary Status Symbol

visual call management icons to show line and caller status. Users familiar with these icons will be right at home.

LOOKS

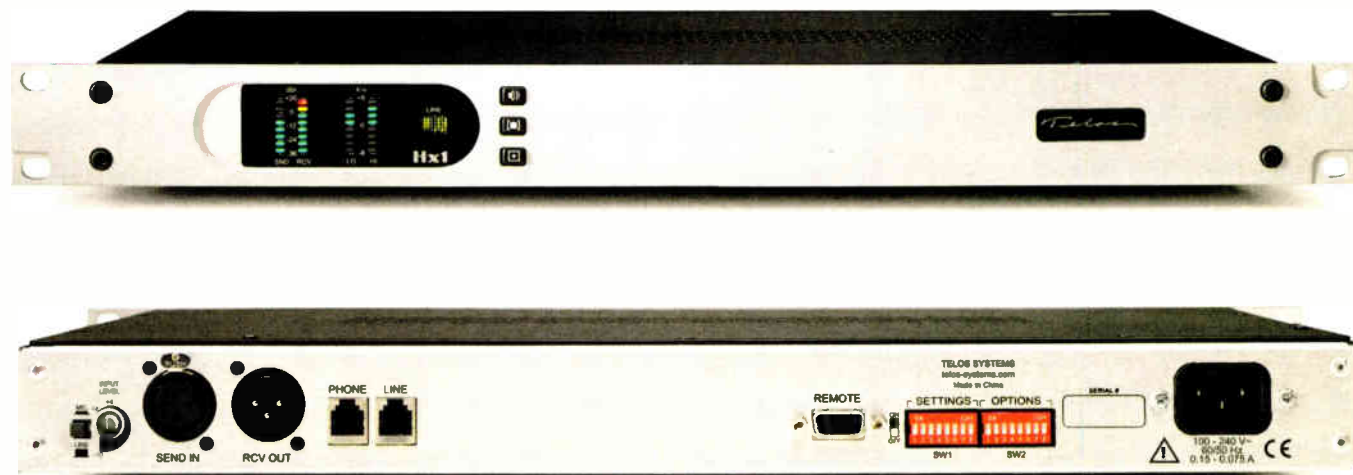
Unfortunately the clarity of the Status Symbol readout wasn't up to par compared to the sleek meters. Users need

play that includes both a Status Symbol and text-based readout on a small LCD screen would have improved the user interface greatly.

The rear panel of the Hx1 is nearly as clean and minimalistic as the front. There is a mic/line pushbutton selector, and input level adjustment knob. "Send In" and "RCV Out" connections are made via XLR connectors and phone and line RJ-11 jacks appear for the POTS connections. There is a nine-pin

There were distinct DSP processing artifacts likely caused by the adaptive EQ coupled with an overly aggressive attack of the automatic gain control function. However, despite the digital artifact distraction, users will appreciate a bright, intelligible audio quality. As compared to existing digital hybrids, this enhancement was immediately noticeable. Likewise, the caller also reported better-than-average return program audio clarity.

The second test scenario set out to correct the default settings to best adapt them for my system. Using the same mobile phone for every test call, the dynamic dig-



to view the recessed Status Symbol screen head-on, as the LED has poor off-axis visibility. To best accommodate all hybrid users, a crossbreed status dis-

D-sub for remote (GPIO) control including "line ringing" and "hybrid in use" indications. "Setting" and "Options" are made using two banks of DIP switches, and a standard power connection.

For testing purposes, the Hx1 was set up in the master control/TOC and connected to the studio via a combination of fiber and Cat-5 connections. The console was digital and included mix-minus capability. All sample recordings were made using a DAW with no additional audio processing or gain. The phone line feeding the hybrid was POTS passed through a Cisco VG248 for extension mobility. Out of the box, only the auto-answer configuration setting was programmed via the DIP switches, since the hybrid was located in the TOC not the studio.

The first testing scenario was to make a series of mobile phone calls. All numbers were U.S.-based, and on various cellular networks. The factory default settings were used except in the case of auto answer. The factory defaults are set to use adaptive EQ, 0 dB EQ adjustments (high and low), -6 dB attenuation ducker processing, phone AGC full, noise gate off, no additional gain to caller, internal mix-minus disabled and AGC disabled.

I was underwhelmed with these initial settings in the cell phone audio calls.

ital equalization (DDEQ) configuration settings were varied according to the DIP switch guide. As recommended by Telos, I utilized a full 6 dB boost in both the "EQ LO" and "EQ HI" configuration settings and then set out to compare varying degrees of DDEQ processing functions.

TESTING

As in the previous test, both the adaptive EQ mode and the adaptive plus fixed EQ settings produced similar and noticeable digital vocal processing artifacts. The effect was similar to vocal pitch shifters combined with heavy compression, as the adaptive EQ struggled to keep up with the higher frequency content of the caller audio. The fixed EQ mode coupled with the +6 dB EQ "HI/LO" produced the best sound. The speech was warm, crisp and completely natural, with no noticeable compression nor frequency shifting artifacts. As the fixed EQ adjustments reduced to zero (+4 dB, +2 dB, 0 dB), the obvious effects of flattened response are noticed, but did not adversely affect the quality of the caller audio.

Further tweaking the setting to adjust for AGC, the fixed EQ +6 dB was tested using no AGC, half engaged and fully engaged. Here the factory default per-

Acoustics First[®]
Materials to Control Sound
and Eliminate Noise[™]

Absorbers, Diffusers, Barriers and Vibration Control Materials

Web Site

www.acousticsfirst.com

Toll Free: 1-888-765-2900

PRODUCT CAPSULE

TELOS Hx1
Hybrid Telephone Interface

Thumbs Up

- + AGC to smooth output levels, reduce gating effects
- + Fixed or adaptive EQ with separate EQ level adjustments
- + Full-color front-panel meters
- + Mobile calls are consistently high-quality audio
- + Good value

Thumbs Down

- Status symbol readout display difficult to read
- Needs network connectable/Web interface

Price: \$795 list

For information, contact Telos Systems in Ohio at (216) 920-1813 or visit www.telos-systems.com.

formed the best on the mobile connection. The half engaged didn't normalize enough and removing AGC produced an even more disparate signal level. The fully engaged AGC appropriately leveled the signals up to the nominal +4 dB level without adding noticeable compression artifacts (AGC appeared to respond differently when the adaptive EQ was disabled). The AGC leveling was smooth, and very adaptive, even when caller audio with high dynamic content was introduced.

Further testing, to include land line phones, produced very favorable results. Having fewer EQ and level issues than the mobile calls, the Hx1 passed the analog phone signals brilliantly. In this instance, the adaptive plus fixed EQ (+6 dB "HI/LO") worked quite nicely, with the AGC at 1/2 full or full. The ducking function (-6 dB attenuation) was smooth and natural, and provided a much appreciated hands-free approach to mixing the broadcaster and caller audio.

Overall the Telos Hx1 hybrid is rich in features. Users will be pleased with the amount of individual control that the Hx1 provides. There was only one feature users might miss having. In a market where a substantial amount of broadcast equipment is networkable and Web-accessible, the Hx1 doesn't have a network-controllable GUI. Although there are far fewer settings to manually configure than the more feature-packed (higher end) codecs, it was still a bit burdensome to flip DIP switches between tests. Once racked, it becomes even more trouble to make these setting changes. With the nature of the varying types of calls (domestic land line and mobile, international land and mobile), there is often a need to tweak EQ, AGC and noise

gate. Here a Web-based GUI would save significant time and hassle. Also monitoring the call connection and levels via remote Web GUI is always a welcome feature for a busy engineer.

On the whole the Hx1 delivers a great-sounding hybrid call with just a bit of tweaking out of the box. The Hx1 is feature rich, and adaptable to likely every studio situation. This product really shines on mobile calls, which until now were just best avoided on POTS hybrids.

Laura Mir, CBNT, has been a radio broadcast engineer for more than 10 years. She is a board member of SBE Chapter 37.



THE ART OF

INTEGRATION

PICTURE THE POSSIBILITIES

The seamless distribution of content produced to inform and entertain audiences around the corner — or across the globe — in any number of formats. This is the art of integration.

Experience the gallery of innovation that is the NAB Show™ and let your next masterpiece take shape. Here you'll find the technologies to reach more consumers: at home, work or play; solutions to redefine how you engage your audience and enhance the listener experience; network tools to expand your community beyond the reach of terrestrial broadcast; and the asset management know-how to build new revenue streams and drive business forward. Learn more and register at www.nabshow.com.



www.nabshow.com

Get a free code reader at getscanlife.com.

Visit the NAB Show online gallery to view the entire collection of Integration-inspired paintings.

NABSHOW™
Where Content Comes to Life™

Conferences April 9-14, 2011 • Exhibits April 11-14
Las Vegas Convention Center • Las Vegas, Nevada U.S.A.

MARKETPLACE

IPADASTUDIO: Audio equipment manufacturer TASCAM has released an Apple iPad app version of its legendary Portastudio portable mixer/cassette recorders. The simple, low-tech and inexpensive Portastudio is often credited with launching a thousand pro audio careers (along with uncounted wannabees ...).



The app features a four-track mixer. Though multitrack input would seem to be an impossibility with the iPad at the moment, it will operate as a four-track playback mixer for mix-downs. And for truly cassette-worthy audio, there's a two-band EQ. The resultant WAV recording is, however, more than cassette quality.

The retro GUI includes VU meters and a tape cassette image along with cassette-style transport controls. With the iPad's touchscreen it will be almost

like a trip back to the 1980s. Price: \$9.99.

Info: <http://tascam.com>

NEW FACE, OLD FACE: For a lot of people the Electro-Voice RE20 is the microphone that radio broadcasters use. Its large size and unique look make it an icon, easily recognized in movies and pictures.

For others the RE20 is an unbeatable drum mic, especially for bass drums. Recognizing that, Electro-Voice has released the RE320, basically an RE20 with a switchable kick drum EQ curve added in.



It will still give that unmistakable loving massage to the voice, however. In that sense it carries the standard RE20 features: cardioid pattern, dynamic element, humbucking coil, internal pop filters and EV's Variable-D proximity-defeating technology. And like so many EV mics, it's built to take a licking.

Info: www.electrovoice.com

FOR SHURE! Shure has introduced a pair of headphones that could fit into the radio kit somewhere.

The SRH550DJ have a "DJ" tag which means they are "fold-able" and/or you can swivel the earcups 90 degrees. It utilizes a 50 mm neodymium magnet driver that specs the 550DJ at 5 Hz–22 kHz. A 6.5-foot oxygen-free cable is attached.

The Shure SRH940 is considered the higher end of the two. The drivers are 40 mm neodymium, with specs of 5 Hz–30 kHz. It ships with two detachable cables (straight and coiled), extra ear pads and a travel case.

Both models have padded headbands in addition to padded earcups. Other features include a 1/8-inch to 1/4-inch adapter.

Price: SRH550DJ - \$99; SRH940 - \$299.

Info: www.shure.com



SkimmerPlus

Skimming, Logging and Air Checks with ease.

SkimmerPlus Features

- Creates high-quality and highly compressed files simultaneously
- Supports multiple professional audio formats, such as PCM MP2, and MP3
- Supports recording from triggers
- Automatically manage hard drive space
- Up to 24 record decks available
- Individually customizable title bars and record features for each deck
- Create and save event logs for fully customizable unattended recording
- Control over record break points for long-term recording
- Central skimming for multiple-station clusters

Web Server Features

- Access mic checks from the Internet with Web Interface
- Emailing of ftp links or audio files from Web Interface
- Supports user account creation
- Easily browse recordings with an intuitive web design
- Listening to last week's records is just a calendar's click away

www.bsiusa.com

For More Information Call: 1-888-BSI-USA-1 ~ Email: sales@bsiusa.com

You've got more than callers on the line.



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.

For control, choose from the Telos Desktop Director, Call Controller, or Console Director, each with exclusive Status Symbols visual call management icons that show line and caller status with just a glance.

The best part? The Nx6 package including Assistant Producer call screening software and one Desktop Director is yours for only \$4,295 MSRP.

Telos Talkshow Systems. Give your listeners a voice. Give your talent a boost. Give your wallet a break.

Telos

AUDIO | NETWORKS
www.telos-systems.com

ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is the best way to hear from everywhere.

BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

STREAMING AUDIO



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

AUDIO LOGGING



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

BROADCAST EQUIPMENT EXCHANGE

Submit your listings to: dcarson@nbmedia.com



**POWER TUBES
REBUILT

1/2 THE COST
OF NEW!**

ECONCO

TEL: 800-532-6626
INTL: +1-530-662-7553
FAX: +1-530-666-7760
www.econco.com
SE HABLA ESPAÑOL



TRANSMITTERS/EXCITERS/TRANSLATORS

TRANSCOM CORPORATION

Serving the Broadcast Industry Since 1978
Transmitters and Broadcast Equipment for Radio & Television

Used FM Transmitters

500	Watt	2007	Crown FM500T, with internal stereo generator and tri-band processor, solid state.
3.5+1.75	KW HD	2007	BE Fm1301, solid state
3.5	KW	2007	Harris ZX3500, solid state
4	KW	2007	BE FM4C, solid state
14+5	KW HD	2005	BE Fm1405 (XPI10 & Idi10), solid state
20	KW	2005	BE FM20S, solid state
20	KW	1993	Harris HT20, solid state IPA
25	KW	1986	Harris FM25K, solid state IPA
35	KW	1998	Continental 816R-5C, solid state IPA

Used AM Transmitters

Please see our web site for a current listing

Exciters & Miscellaneous Equipment

New 30W Synthesized exciters
(2008) BE FM100C exciter, *new, never used!*
BE FX1250 FM & HD exciter with ENGINE card
BE XPI 10, HD Generator
Bird Wattmeter with Elements
Orban Optimods 8200, 8100XT, 8100A
BE FC30, SCA Generator

Please visit our website,
www.fmamtv.com, for additional listings.



CROWN BROADCAST



New TV Transmitters- Analog and Digital
DMB, Pineapple and Technologix
VHF and UHF TV Antennas
(10 W to 10 KW) TV STL

800-441-8454 • 215-938-7304 • FAX: +1-215-938-7361

www.fmamtv.com • E-mail: transcom@fmamtv.com

RETUNING & TESTING AVAILABLE • CALL US FOR A QUOTE!

WANT TO SELL

CCA AM 10,000 D – Call John KQSS 928-595-0263 between 10 & 6 PM Pacific Time.

Fanfare FT-1AP FM monitor & translator rcvr. \$650 incl shpg; (2) Comstream Decoder Audio Broadcast Receivers, \$125/ea incl shpg. mraley@bbnmedia.org.

Harris HT-10 xmtr w/Digit exciter, configured for 3 phase 208V power, in service since 1998, excellent condition, any spare parts including an unused rebuilt final included, \$18500. Buyer arranges pickup or delivery. Jon Yinger, 810-694-4146 x.203.

SPACE IS AVAILABLE!

To advertise, call
212-378-0400
ext. 511

EMPLOYMENT

Are you a small market station needing a good nuts & bolts engineer in the Los Angeles area? I will make your station shine! CET, fully FCC Licensed. Available for Full/Part-time/Contract work. Available immediately. Mitchell Rakoff, 917-324-8466 mitchellrakoff@yahoo.com.

Extremely knowledgeable and articulate racing writer/talk show host Adam Amick is available for shows, correspondent, features, etc. Check out www.bleacherreport.com for samples. Call 214-384-5812 or email: adam@rubbinracingshow.com.

Bilingual. Extensive experience as Mobile DJ/Emcee. Strong digital production skills. Very Audio/Visual and tech savvy abilities. Seeking a challenging position in radio. Mario, 817-210-7087 or djkinggemini@rocketmail.com.

Strong On-Air and Production abilities with good show prep. Very friendly persona. Sharp, attentive, well rounded and versatile. Able to relate to audience. Adrian, 214-641-9722 or adbryant1977@hotmail.com.

TUBES

D & C Electronics

An International Distributor of RF Components

Tubes

NEW & REBUILT

RPU, MOSFETS, VACUUM CAPACITORS, SOCKETS

BEST PRICES



Pro-Tek

FROM OUR STOCK

To Order: 1-800-881-2374 • Outside U.S. (352) 592-7800 • Se Habla Español

RF PARTS™ CO.

Se Habla Español We Export

EIMAC • TAYLOR • SVETLANA

New & Rebuilt Tubes - Same Day Shipping

Motorola • Toshiba • SGS • Thomson & Mitsubishi Semiconductors

800-737-2787 760-744-0700

rfp@rfparts.com www.rfparts.com

FOR THE BEST PRICE
& 24 Hr service on transmitting tubes & sockets/parts, new & rebuilt call Goodrich Ent. at **402-493-1886** day or night, www.goodrichenterprises.com.

RADIOWORLD

Equipment Exchange

**WIRE AND CABLE,
AUDIO – RF**

WANT TO BUY
Used 900-1000 ft, no spliced 1-5/8" J7 or equal air Helix. Contact Metro Broadcasters, 214-533-2610.



CONSULTANTS

OWL ENGINEERING, INC.

Consulting Communications Engineers
5844 Hamline Ave. N., Shoreview, MN 55126

651-784-7445

- AM/FM/NCE Applications
- Allocation and Upgrade Studies
- Pre-Purchase Inspections
- ANSI and NRSC Measurements
- AM Directional Array, Design, Tuning and Proof using Method of Moments
- Tower Detuning
- Intermodulation Studies
- Radiation Hazard Evaluation and Measurements

Fax (651) 784-7541 E-mail: info@owleng.com "Member AFCC"

GRAHAM BROCK, INC.

BROADCAST TECHNICAL CONSULTANTS
Full Service From Allocation to Operation AM/FM/TV/ATX Services.
Field Work, Antenna and Facilities Design

Over 45 years engineering and consulting experience

912-638-8028
202-393-5133
www.grahambrock.com

Mullancy Engineering, Inc.

Serving Broadcasters Since 1948

9049 Shady Grove Court
Gaithersburg, MD 20877
(301) 921-0115
Fax (301) 590-9757
mullancy@mullancy.com
Member AFCC

Doug Vernier

Telecommunication Consultants

Broadcast Engineering Consulting
AM/FM/TV/LPTV/DTV
Custom mapping service
Frequency searches
Propagation prediction
FCC application preparation

V Soft
Software for your PC

(800) 743-3684
www.v-soft.com

- AM, FM and TV coverage predictions and upgrade studies
- Broadcast transmission facility design
- FCC applications preparation
- Contact *Clarence M. Beverage* or *Laura M. Mizrahi* for additional information

Communications Technologies, Inc.
Radio Propagation/Installation Engineering Consultants

P.O. Box 1130, Marlton, NJ 08053
Tel (856) 985-0077 • Fax (856) 985-8121
www.computechrf.com

You've got more than callers on the line.



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.

For control, choose from the Telos Desktop Director, Call Controller, or Console Director, each with exclusive Status Symbols visual call management icons that show line and caller status with just a glance.

The best part? The Nx6 package including Assistant Producer call screening software and one Desktop Director is yours for only \$4,295 MSRP.

Telos Talkshow Systems. Give your listeners a voice. Give your talent a boost. Give your wallet a break.

AUDIO | NETWORKS
www.telos-systems.com

© 2011 TLS Corp

ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is the best way to hear from everywhere.

BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

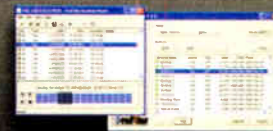
World Radio History

STREAMING AUDIO



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

AUDIO LOGGING



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

The Zoom Q3 Puts Faces to Voices

Ty Ford Takes Camcorder for a Spin and Likes What He Sees

BY TY FORD

Radio station websites are not just about banner ads and streaming program audio. They are the new programming and distribution frontier and I'm already seeing the glow on the horizon.

VIDEO FOR RADIO

Radio stations need to get their video production and post-production chops up now to help their revenue streams.

You probably have local retail that can't afford a spot schedule. Why not sell them a station-produced "TV spot" that runs only on your website for a price they can afford?

To make that work, your site needs content worth clicking on. That means content production. You can start small, but start today.

Got an in-studio interview with a music act, sports or talk show celebrity? You'll probably want to get their permission first, but shoot video, post-produce it and put it on your website.

Then promote it. "Miss the interview with XYZ yesterday morning? Catch it all on our website right now and see and hear what you missed." Sell your new "online video series" to one of your regular sponsors or to close that prospect who's been waiting for something special.

TEST DRIVE

Your production department will need a few new toys. First, a camera, maybe two or three. I took the Zoom Q3 Handy Video Recorder (\$199 and soon available in HD) for a test drive with just that in mind.

The Zoom Q3 is a standard-definition (SD) camcorder that shoots Apple MP4 Quicktime movies at 30 fps.

It's about as easy to run as it gets. Turn it on, hit record, look at the viewer to frame the shot, adjust the volume by observing the hugely obvious on-screen meters. Hit record again when you're done, flop out the cleverly hidden USB connector, plug in to your computer, download the clips. Tweak them and either upload them to your server, or use another online service like YouTube or Vimeo, grab the embed code and paste it into your site. Done!

There's a simple trimming editor that comes with the Q3, but it's "cuts only" and you will probably need a more advanced editing program. Video editors like iMovie work on this Apple MP4 codec file format, but the most recent version of Apple's Final Cut Pro



(FCP) brought the video in at 10 frames per second instead of 30. In order to import it into FCP, I first had to convert the clips in StreamClip, a free app, although I did have to pay \$20 for the widget to reconvert the finished product into importable Quicktime movies.

With more than one Q3, you can set up different angles, hit record and collect them later to harvest the audio and video. In my studio experiment at WLOY(AM) in Baltimore, I only had one Q3 and there was no good place to put it. Karyn Oliver, the interviewer, spoke with Catherine Miles and Jay Mafale of The YaYas. Catherine sang and Jay played acoustic guitar and sang harmonies.

The Q3 has a pair of onboard X-Y stereo mics but no external audio input. Because the mics are built in, you have to be careful about handling noise. I found a suspension mount for a mic helped some, but there was still some handling noise during playback. Don't count on zooming in or out either if you want a quiet recording. The zoom buttons also make noise.

To capture the action, I moved the Q3 like a Steadicam following the action in the studio. Not knowing how loud anyone would be, I chose the "low" audio sensitivity. A minute or so into the interview, I realized the level was

too low. I clicked it up to "mid." Because I had chosen 24-bit/48 kHz audio, I was able to normalize the audio in FCP with only a slight amount of hiss.

I moved the camera in to cover Catherine the vocalist during the verses and then pulled back to capture both as they sang together. I had to back up a bit when they sang the choruses because their volume increased and I had no way to adjust the volume. The Q3 has an AutoGain feature, but I didn't want to risk it.

The result can be seen at www.vimeo.com/16900922.

LIGHTING LESSONS

If you've spent your career in radio you may never have really thought about lighting for video. But one poorly-lit shoot can make you painfully aware of lighting concerns.

There's an art and a craft to good lighting. Dark rooms with only overhead lighting cast shadows that make for muddy video. At the WLOY air studio, the south wall has a huge window that

Shoot video, post-produce it and put it on your website.

lets in a lot of light. The sunlight cast an expectedly coolish blue light on Catherine and Jay due to the way that the camera's chip perceives different types of lighting. A big challenge was how to keep it from backlighting Karyn and throwing her face into darkness. I kept her face right on the edge of the frame and moved in close so the light from the window was mostly blocked by her head.

Think about adding some light fixtures above head level with white diffusive covers to bathe your subjects in soft, diffused white light. Swap out the standard fluorescent overhead tubes, which can cast a yellow-green tinge, for full spectrum lights and also gel them with a diffusive material if they cast shadows.



Ty Ford's carefully composed shot. Notice how the boom arms frame a guest in the background while the subject in the foreground is clear and looks across the frame. Radio can be pretty.

At WLOY mic support arms were a problem for sightlines. I went high over the arms with the camera and twisted it a little, putting Catherine and Jay in opposite corners of the shot. After half an hour or so, despite the light weight of the Q3, my arms got tired of those overhead angles and the fatigue caused some camera shake, but I think moving the camera around helps make the video more compelling. With two or three cameras positioned properly, you could probably cut together a nice multicam interview.

For the less adventurous or host/operator shows, the Q3 can be set upright unattended or mounted on a small tripod.

If you want more direct audio, you can always record the console feed to a stereo WAV file, import that to the video editor and then slip the video clips into sync on the video editing time line. The Dual Eyes or Plural Eyes programs from Singular Software can sync them automatically, saving the time and effort to match the footage with the audio.

If you're on batteries, start every interview with a fresh pair. I didn't and had to swap out a fresh pair about 20 minutes into the interview. I covered the loss of video with an edit in post. Battery life for the two AAs that power the Q3 is good for at least an hour of recording, but Q3 also has an optional AC power supply. That may not work so well if you're moving the camera around a lot.

Using the included 2 GB card, I was able to get about 40 minutes of footage with 24-bit/48 kHz audio. An optional 32 GB card will give you just over 11 hours. The Q3 can be used as an audio-only recorder providing 128 kbps, 320 kbps MP3 or 16-bit or 24-bit WAV files. Fifteen minutes of 24-bit/96 kHz on the 2 GB card and over 15 hours at those rates for the 32 GB card.

The takeaway is that for a cheap and easy way to provide video content to your website, the Q3 is a great way to get started.

For information, visit www.zoom.co.jp/english/products/q3/.

Find Ty Ford at www.tyford.com.

BAY COUNTRY BROADCAST EQUIPMENT

BUY - SELL - TRADE

Your #1 Source

For Quality Used Radio Broadcast Equipment

View The Latest List Online at: <http://www.baycountry.com>
Or call and we will fax it to you.

7117 Olivia Rd., Baltimore MD 21220

Toll Free: 877-722-1031 • FAX 443-596-0212 • E-mail: sales@baycountry.com

ACOUSTICS

Acoustics First
-SOUND AND NOISE CONTROL MATERIALS-
Toll-Free Number: **888-765-2900**
www.AcousticsFirst.com

ANTENNAS/ TOWERS/CABLES

FCC COMPLIANCE
TOWER SIGNS
AM & FM Tower Signs
Tower Registration Signs
Standard & Custom Designs
Guy Wire Protectors - Antenna Tags
ANTENNA ID PRODUCTS
antennaid@msn.com
Ask for free catalog
610-458-8418
www.antennaid.com

WANT TO BUY

Need used 200' guyed tower.
Kent Smith, 989-350-8420 or
kent@radioeagle.com.

AUDIO PROCESSING (INCLUDES ON-AIR)

WANT TO BUY

Teletronix LA-2A's, UREI
LA-3A's & LA-4's, Fairchild 660's
& 670's, any Pultec EQ's & any
other old tube compressor/
limiters, call after 3PM CST -
214 738-7873 or sixtiesradio@yahoo.com.

AUTOMATION EQUIPMENT

WANT TO SELL

It's free and it has been
expanded. The only cost is
to keep us informed as to
how the system is perform-
ing and let us know how
you are using it. DIY-DJ, is a
Linux based radio automation
system and now sports a record
scheduler (DIY-DJ-RECORDER)
which allows you to schedule
the recording of a network or
any other program for replay
later as well as a basic logging
system. Beside these additions
the system schedules music,
does voice tracking (ALWAYS
hit the vocal), create a shell,

live assist, exact time events,
join satellite feeds, automated
temperature announce, do unat-
tended remote events and more.
Call (406) 679-0527 or email
krws@digitaldevelopment.net
for a copy today.

WANT TO BUY

Wanted: old analog automa-
tion equip, filters and EQ, tube
amps, reel to reel, cart machines
and parts. Pacific NW area. 503-
493-2983.

CONSOLES/ MIXERS/ROUTERS

WANT TO BUY

ADM (Audio Designs & Manu-
facturing) 70's era consoles
and parts. agrunwel@twcny.rr.com
or www.FLREC.com.

MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS

WANT TO BUY

RCA 77-DX's & 44-BX's, any
other RCA ribbon mics, on-air
lights, call after 3PM CST, 214
738-7873 or sixtiesradio@yahoo.com.

MISCELLANEOUS

WANT TO SELL

**ROTRON BLOWERS AND PLATE
BLOCKERS**, new & rebuilt for Elcom,
Harris, CCA, CSI, McMartin, Goodrich
Ent. 11435 Manderson St. Omaha,
NE 68164 402-493-1886 Email:
CGoodrich@tconl.com

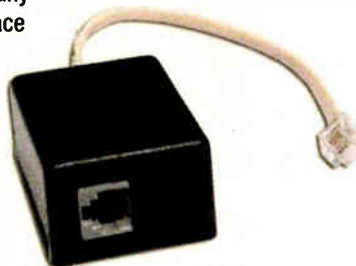
(8) RDL RP-BUC2 BAL to
UNBAL converter, \$10/ea incl
shpg; Symetrics A220 stereo
amp, \$30 incl shpg; (2) Sony
MDS JE470 NIB, \$60/ea incl
shpg; Wheatstone PS-A50A, \$60
incl shpg; Denon DNM1050R,
\$160 incl shpg; Behringer
Composer Pro MDX2200, \$75
incl shpg; Matchbox II Interface
amp, \$30 incl shpg. mraley@bbnmedia.org.

Radio broadcasts of Major
League Baseball, NFL, and
some college football games
that are on cassette tapes,
approx 100 to 125 games, time
period of the entire collection

STOP AM RADIO INTERFERENCE

with a plug-in modem/telephone RF filter from:

K-Y Filter Company
3010 Grinnel Place
Davis, CA 95618
(530) 757-6873



www.ky-filters.com

Model AM-1 is for AM Broadcast Band radio interference.
Model RF-1 is for Short Wave, Ham Radio, CB etc.

is from the 1950's-70's, ask-
ing price of \$1500/BO. Must
purchase entire collection. Ron,
925-284-5428 or ronwtamm@yahoo.com.

Set of 6 radomes for ERI
SHPX-6AC including stainless
hardware, never installed, like
new, antenna was shipped to
Haiti and the radomes left here
to save shipping costs, no ice
in Haiti, make offer and U pay
shpg from Omaha, NE. May also
be picked up at Omaha. Contact
John, wb0cmr@cox.net or 402-
932-3443 and leave message.

WANT TO BUY

Collector wants to buy: old
vintage pro gears, compres-
sor/limiter, microphone,
mixing consoles, ampli-
fiers, mic preamps, speak-
ers, turntables, EQ working
or not, working transform-
ers (UTC Western Electric),
Fairchild, Western Electric,
Langevin, RCA, Gates,
Urei, Altec, Pultec, Collins.
Cash - pick up 773-339-9035

2" plastic "spot" reels 6.5
or 8" diameter, as used for
quad video. Wayne, Audio
Village, 760-320-0728 or
audiovlg@gte.net.

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

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

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

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

Looking for KTIM FM radio
shows from 1981-1984 if
possible unscoped. R Tamm,
925-284-5428 or ronwtamm@yahoo.com.

RECORDING & PLAYBACK HARDWARE

WANT TO BUY

Large or small collections of
16" transcriptions or 12" tran-
scriptions, not commercial LPs.
Bill Cook, 719-687-6357.

Schnader telecriptions 16
mm musical films produced in

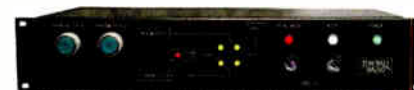
DISTRIBUTOR DIRECTORY

The following distributors serving the broadcast industry
would be glad to help you with any of your requirements.

CORNELL-DUBILIER
MICA CAPACITORS
FROM STOCK
JENNINGS VACUUM
CAPACITORS
FROM STOCK
HIGH ENERGY CERAMIC
CAPACITORS
SURCOM ASSOCIATES
5674 El Camino Real, Suite K
Carlsbad, California 92008
(760) 438-4420 Fax: (760) 438-4759
e-mail: link@surcom.com web: www.surcom.com

TUNWALL RADIO

SWITCH AND TRANSMITTER CONTROLLERS



AM/FM/MULTI-SWITCH AND CUSTOM DESIGNS

330.995.9642

www.tunwallradio.com

the early 50 s. Bill Cook, 719-
687-6357.

Standard Short-tune series.
Bill Cook, 719-687-6357.

STATIONS

WANT TO SELL

AM in Rome/Utica market.
Xtators in KY, IL, and NC cheap.
mraley@bbnmedia.org.

Buying Or Selling
Used Equipment?
You're in
the right place!
RADIOWORLD
Broadcast Equipment Exchange

TAX DEDUCTIBLE EQUIPMENT

Donations Needed: All
Volunteer, Non-profit Low
Power community radios sta-
tions need Equipment. Will
offer tax deduction letter, You
determine donation value, We
will pay shipping. Equipment
shared between three Wisconsin
stations. Looking for Mics,
Mixers, field equipment, etc.
You name it. Email: Dan@WIECradio.org.

Calvary Chapel of Idaho Falls
needs your help, we need your
tax deductible donation of FM
broadcast equipment which
will allow us to reach hundreds
of thousands of people in the
southeast portion of Idaho with
God's word, please contact Bob
Reinisch at 208-524-4747 or
breinisch@calvaryif.org.

RENTAL EQUIPMENT

\$ OFF THE AIR? NEED TO RENT? CALL US! \$

Test Equipment Field Strength Meters,
Codecs, STL (IP and 950), FM Transmitters,
Processors, Remote gear and more!

1-800-438-6040

SCMS INC.
www.scmsinc.com



POWER TUBES
REBUILT

1/2 THE COST
OF NEW!

ECONCO

TEL: 800-532-6626
INTL: +1-530-662-7553
FAX: +1-530-666-7760
www.econco.com
SE HABLA ESPAÑOL



TRANSMITTERS/EXCITERS/TRANSLATORS

TRANSCOM CORPORATION

Serving the Broadcast Industry Since 1978
Transmitters and Broadcast Equipment for Radio & Television

Used FM Transmitters

500	Watt	2007	Crown FM500T, with internal stereo generator and tri-band processor, solid state.
3.5+1.75	KW HD	2007	BE FMI301, solid state
3.5	KW	2007	Harris ZX3500, solid state
4	KW	2007	BE FM4C, solid state
14+5	KW HD	2005	BE Fmi1405 (XPi10 & ldi10), solid state
20	KW	2005	BE FM20S, solid state
20	KW	1993	Harris HT20, solid state IPA
25	KW	1986	Harris FM25K, solid state IPA
35	KW	1998	Continental 816R-5C, solid state IPA

Used AM Transmitters

Please see our web site for a current listing

Exciters & Miscellaneous Equipment

New 30W Synthesized exciters (2008) BE FM100C exciter, *new, never used!*
BE FXI250 FM & HD exciter with ENGINE card
BE XPi 10, HD Generator
Bird Wattmeter with Elements
Orban Optimods 8200, 8100XT, 8100A
BE FC30, SCA Generator

800-441-8454 • 215-938-7304 • FAX: +1-215-938-7361
www.fmamtv.com • E-mail: transcom@fmamtv.com
RETUNING & TESTING AVAILABLE • CALL US FOR A QUOTE!

WANT TO SELL
CCA AM 10,000 D – Call John KQSS 928-595-0263 between 10 & 6 PM Pacific Time.

Fanfare FT-1AP FM monitor & translator rcvr, \$650 incl shpg; (2) Comstream Decoder Audio Broadcast Receivers, \$125/ea incl shpg. mraley@bbnmedia.org.

Harris HT-10 xmtr w/Digit exciter, configured for 3 phase 208V power, in service since 1998, excellent condition, any spare parts including an unused rebuilt final included, \$18500. Buyer arranges pickup or delivery. Jon Yinger, 810-694-4146 x.203.

SPACE IS AVAILABLE!

To advertise, call **212-378-0400** ext. 511

EMPLOYMENT

Are you a small market station needing a good nuts & bolts engineer in the Los Angeles area? I will make your station shine! CET, fully FCC Licensed. Available for Full/Part-time/Contract work. Available immediately. Mitchell Rakoff, 917-324-8466 mitchellrakoff@yahoo.com.

Extremely knowledgeable and articulate racing writer/talk show host Adam Amick is available for shows, correspondent, features, etc. Check out www.bleacherreport.com for samples. Call 214-384-5812 or email: adam@rubbinsracingshow.com.

Bilingual. Extensive experience as Mobile DJ/Emcee. Strong digital production skills. Very Audio/Visual and tech savvy abilities. Seeking a challenging position in radio. Mario, 817-210-7087 or djkinggemini@rocketmail.com.

Strong On-Air and Production abilities with good show prep. Very friendly persona. Sharp, attentive, well rounded and versatile. Able to relate to audience. Adrian, 214-641-9722 or adbryant1977@hotmail.com.

TUBES

D And C Electronics
An International Distributor of RF Components

Tubes
NEW & REBUILT
RPU, MOSFETS, VACUUM CAPACITORS, SOCKETS

BEST PRICES FROM OUR STOCK
Pro-Tek

To Order: 1-800-881-2374 • Outside U.S. (352) 592-7800 • Se Habla Español

RF PARTS™ CO.

Se Habla Español We Export

EIMAC • TAYLOR • SVETLANA

New & Rebuilt Tubes - Same Day Shipping

Motorola • Toshiba • SGS • Thomson & Mitsubishi Semiconductors

800-737-2787 760-744-0700

rfp@rfparts.com www.rfparts.com

FOR THE BEST PRICE
& 24 Hr service on transmitting tubes & sockets/parts, new & rebuilt call Goodrich Ent. at 402-493-1886 day or night, www.goodrichenterprises.com.

RADIOWORLD

Equipment Exchange

WIRE AND CABLE,
AUDIO – RF

WANT TO BUY

Used 900-1000 ft, no spliced 1-5/8" J7 or equal air Heliax. Contact Metro Broadcasters, 214-533-2610.

Buying or selling used equipment? You're in the right place!

RADIOWORLD

Broadcast Equipment Exchange

CONSULTANTS

OWL ENGINEERING, INC.
Consulting Communications Engineers
5844 Hamline Ave. N., Shoreview, MN 55126

651-784-7445

- AM/FM/NCE Applications
- Allocation and Upgrade Studies
- Pre-Purchase Inspections
- ANSI and NRSC Measurements
- AM Directional Array, Design, Tuning and Proof using Method of Moments
- Tower Detuning
- Intermodulation Studies
- Radiation Hazard Evaluation and Measurements

Fax (651) 784-7541 E-mail: info@owleng.com *Member AFCC*

GRAHAM BROCK, INC.

BROADCAST TECHNICAL CONSULTANTS
Full Service From Allocation to Operation AM/FM/TV/ATX Services:
Field Work, Antenna and Facilities Design

Over 45 years engineering and consulting experience

912-638-8028
202-393-5133

www.grahambrock.com

Serving Broadcasters Since 1948

9049 Shady Grove Court
Garthersburg, MD 20877
(301) 921-0115
Fax (301) 590-9757
mullaney@mulleng.com

Member AFCC

Doug Vernier

Telecommunication Consultants

Broadcast Engineering Consulting
AM/FM/TV/LPTV/DTV
Custom mapping service
Frequency searches
Propagation prediction
FCC application preparation

V Soft

Software for your PC

(800) 743-3684

www.v-soft.com

- AM, FM and TV coverage predictions and upgrade studies
- Broadcast transmission facility design
- FCC applications preparation
- Contact *Clarence M. Beverage* or *Laura M. Mizrabl* for additional information

A Communications Technologies, Inc.
Radio Frequency/Signal Engineering Consultants

P.O. Box 1130, Marlton, NJ 08053
Tel: (856) 985-0077 • Fax: (856) 985-8123
www.commtchr.com

Radio World Talkback

Comments shown were posted by readers to stories that appear at radioworld.com.



The ITC cart machine, reels and bulk erasers were very good products in the radio stations I engineered. John was a giant in the radio industry. <RIP> The products you developed made a marked improvement in the sound of radio and the reliability helped every engineer do their jobs better. I can be proud to say that I was in the ITC era and I am a better engineer because of it.

— On “John Fesler Dies; Was ITC Engineer,” see www.radioworld.com/article/112414

I am from India and now a ripe 40 years of age. As an avid listener, or rather a fan, of BBC World (on shortwave) until not long ago, this article has great nostalgic value for me and people of my generation. BBC used to broadcast in some Indian languages too, besides the international English edition. I remember fondly my shortwave radio listening times much of my adolescence and youth, when the Internet and satellite TV were not heard of. BBC World and Radio Netherlands (never before knew Dutch spoke such good English!), were so much part of my life. The struggle to set the stations finely for clear listening was an everyday pleasure.

— on “Whatever Happened to Shortwave Radio?” see www.radioworld.com/article/95976

Virtually every would-be LPFM applicant will place their applications squarely on the existing translator applications. This is easy because the translator applicants have already done the pathfinding work. ... There will be 10,000 LPFM applications sitting atop the remaining 7,000 translator applications. This will lead to endless rounds of the FCC slowly trying to process this mess, followed by years'-long lawsuits by those who feel cheated by the process. And those lawsuits will have merit! We'll see these applications finally resolved around 2025 if we use the super window approach.

— on “Schellhardt, Leggett Call for ‘Super Window.’” see www.radioworld.com/article/112710

The Ma & Pa local owners with a daytimer AM should get the first opening, then local requests for LPFM; if it's a local church, fine, I'm all for local operation of a LPFM, but not the wholesale blanketing of the region with a duplicate signal on five translators, one FM and one AM.



Share your side at radioworld.com

ADVERTISER INDEX

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

PAGE	ADVERTISER	WEB SITE/URI
30	Acoustics First Corp	www.acousticsfirst.com
22	AM Ground Systems Co.	www.amgroundsystems.com
13, 25	Axia - A Telos Company	www.axiaaudio.com
11, 32	BSI	www.bsiusa.com
3	BSW	www.bswusa.com
7	Comrex Corporation	www.comrex.com
10	Digital Alert Systems	www.digitalalertsystems.com
4	ERI	www.eriinc.com
28	Grace Broadcast Sales	www.gracebroadcast.com
5	Henry Engineering	www.henryeng.com
16	Inovonics Inc	www.inovon.com
17	Moseley Associates	www.moseleysb.com
29	OMB America	www.omb.com
9, 19	Omnia - A Telos Company	www.omniaaudio.com
27	RCS	www.rcsworks.com
23	Sage Alerting Systems	www.sagealertingsystems.com
15, 33	Telos Systems - TLS Corp.	www.telos-systems.com
1	Tieline Technology	www.tieline.com
2, 20, 21, 40	Wheatstone Corporation	www.wheatstone.com
26	Withers Family Texas Holdings	

RADIOWORLD
The News Source for Radio Managers and Engineers

Our readers have something to say

“Radio World is my trustworthy source for all things relating to the industry I love. It’s a daily part of my life.”

Rick Brancadora
President/CEO/GM
LifeRadio 1020 WIBG
WIBBAGE FM @ 94.3
Ocean City, N.J.

Shown: Heil PR 40
from Custom Shop

www.heilsound.com

EDITORIAL STAFFEDITOR IN CHIEF, U.S. Paul J. McLane
NEWS EDITOR/WASH. BUREAU CHIEF Leslie Stimson
GEAR & TECHNOLOGY EDITOR Brett Moss
TECHNICAL ADVISER Thomas R. McGinley
TECHNICAL EDITOR, RWEE Michael LeClair
PRODUCTION EDITOR, RWEE Karen Lee
CONTRIBUTING EDITOR John Bisset
INTERNATIONAL EDITOR IN CHIEF T. Carter Ross
LATIN AMERICA EDITOR IN CHIEF Rogelio Ocampo
LATIN AMERICA EDITOR Karina Gerardi
MANAGING EDITOR, WEB Brian Smith**EDITORIAL CONTRIBUTORS**

W.C. Alexander, Barry Blessner, James Careless, Harry Cole, Ken Deutsch, Mark Durenberger, Charles Fitch, Ty Ford, Harold Hallikainen, Craig Johnston, Paul Kaminski, Peter King, Mark Lapidus, Daniel Mansergh, Mark Persons, Sharon Rae Pettigrew, Stephen M. Poole, Carl Lindemann, Ted Nahil, James O'Neal, Tom Osenkowsky, Rich Rarey, Tom Ray, John Schneider, Randy Stine, Richard Strickland, James G. Withers, Tom Vernon

ADMINISTRATION & PRODUCTIONPUBLISHER John Casey
EDITORIAL DIRECTOR T. Carter Ross
PRODUCTION DIRECTOR Davis White
PRODUCTION PUBLICATION COORDINATOR Karen Lee
ADVERTISING COORDINATOR Caroline Freeland**CIRCULATION**ASSOCIATE CIRCULATION DIRECTOR,
AUDIENCE DEVELOPMENT Tracey Dwyer
CIRCULATION MANAGER Kwentin Keenan
CIRCULATION COORDINATOR Michele Fonville**SUBSCRIPTIONS**Radio World, P.O. Box 282, Lowell, MA 01853
TELEPHONE: 888-266-5828 (USA only 8:30 a.m.–5 p.m. EST)
978-667-0352 (Outside the US) FAX: 978-671-0460
WEB SITE: www.myRWNews.com
E-MAIL: newbay@computerfulfillment.com**CORPORATE**NewBay Media LLC
PRESIDENT AND CEO Steve Palm
CHIEF FINANCIAL OFFICER Paul Mastronardi
CONTROLLER Jack Jedke
GROUP CIRCULATION DIRECTOR Denise Robbins
VICE PRESIDENT OF WEB DEVELOPMENT Joe Ferrick**VIDEO/BROADCAST GROUP**EXECUTIVE VICE PRESIDENT Carmel King
VICE PRESIDENT / SALES DIRECTOR Eric Trabb**ADVERTISING SALES REPRESENTATIVES**US EAST & LATIN AMERICA: John Casey, jcasey@nbmedia.com
T: 212-378-0400, ext. 512 | F: 330-247-1288
US WEST & CANADA: David Carson, dcarson@nbmedia.com
T: 212-378-0400, ext. 511 | F: 866-572-6156
SOUTHERN EUROPE, AFRICA, MIDDLE EAST:
Raffaella Calabrese, rcalabrese@broadcast.it
T: +39-02-7030-0310 | F: +39-02-7030-0211
UK & IRELAND, CENTRAL & NORTHERN EUROPE:
Graham Kirk, g.kirk@audiomedia.com
T: +44-1480-461555 | F: +44-1480-461550
JAPAN: Eiji Yoshikawa, callems@world.odn.ne.jp
T: +81-3-3327-5759 | F: +81-3-3327-7933
ASIA-PACIFIC: Wengong Wang, wwg@imaschina.com
T: +86-755-83862930/40/50 | F: +86-755-83862920
CLASSIFIEDS: David Carson, dcarson@nbmedia.com
T: 212-378-0400, ext. 511 | F: 866-572-6156

Radio World Founded by Stevan B. Dana

Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by NewBay Media, LLC, 28 East 28th Street, New York, NY 10016. Phone: (703) 852-4600, Fax: (703) 852-4582. Periodicals postage rates are paid at New York, NY 10079 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 282, Lowell, MA 01853.

REPRINTS: Call or write Caroline Freeland, 5285 Shawnee Rd., Ste. 100, Alexandria, VA 22312-2334; (703) 852-4600; Fax: (703) 852-4583

Globe graphic ©iStockphoto.com / Edward Grajeda

Copyright 2011 by NewBay Media, LLC.
All rights reserved.
Printed in the USA

College Media Meet at the Marriott

CBI Is Organizing 32 Sessions at the Spring National College Media Convention

COMMENTARY

BY CANDACE L.T. WALTON*The author is acting president of College Broadcasters Inc.*

I have been involved with College Broadcasters Inc. since 2004. During that time, I've had the opportunity to work with many college radio stations in a volunteer capacity. Last year I was elected as vice president of CBI. It was a wonderful opportunity to help lead college broadcast media on the national level.

At the CBI fall convention in Louisville, I was excited to meet the newly elected CBI president and thought he would make a fine leader and bring new talent to the organization. He spent hours with our outgoing president and executive director. I was able to sit in on some of those briefings and was pleased with the willingness to share knowledge and the level of open communication between CBI's past and present leadership. CBI certainly has done a lot and enjoys good institutional memory.

I always knew the CBI president had a lot to do and never envied anyone in that position. CBI's president coordinates so much for the organization, from answering basic questions concerning topics like EEO reports, automation systems and FCC rules, to representing the membership in important areas such as webcasting legal issues — all of this within a complicated and sometimes mysterious landscape called higher education.

I returned from the convention, having learned a lot — not just from the briefings, but from the great sessions CBI put together for the convention. Then the CBI board was shocked to learn that the newly elected president had been lured away from student media by a lucrative offer in a related field.

As newly elected vice president, it was my responsibility to step into the position of president on an interim basis. I accepted the role because I was confident that CBI had board members and station members who are knowledgeable and would support my efforts to lead the organization until a new president takes office. I was not mistaken in my faith in CBI.

SPRING CONVENTION

My immediate concern was the Spring National College Media Convention, because the timeline between our fall and spring conventions is so short and

there is a lot of work to be done. Our workload was even heavier this year.

For more than a decade, CBI has programmed the broadcast portion of this convention. This event is primarily organized by College Media Advisers and held in New York City. Two years ago, CBI was allocated about a dozen sessions; last year we grew the number of sessions to 18.

CMA was impressed with our programming of broadcast-related sessions, which featured people working in New York and high-quality sessions addressing the most pressing issues facing college stations. For the 2011 event, its new convention director decided to make a number of changes including branding a set of rooms "CBI Central" and allocating CBI 32 sessions.

Scheduled speakers for this three-day event at the Marriott Marquis in Times Square include people from WNYC and Public Radio International, WFAN(AM), News 12 Brooklyn, DEI, SoundExchange, WNBC(TV), Bloomberg, the NFL, WFUV(FM), ABC News, WCBS(AM), WINS(AM), WABC(TV), Metro Networks, New York Public Radio and more. CBI Executive Director Will Robedee programmed all 32 sessions and still had to turn away proposals.

In addition to the wonderful sessions, those attending are able to tour local media facilities. Tours include ABC News, Bloomberg, CNN and "Good Morning America."

CBI also has programmed sessions that are intended to address immediate concerns of current and future members. With the sales of KUSF(FM) and KTRU(FM), and the potential sale of WRVU(FM), conversations at the station managers' roundtable likely will be interesting.

Of course, CBI continues to actively pursue webcasting issues on behalf of its members. In addition to serving as the executive director, Will Robedee from Rice University has been our leader in webcasting issues, representing student stations before the Copyright Royalty Board and the U.S. Congress. He and Travis Ploeger from SoundExchange will conduct a session designed to help student stations understand the issues and make appropriate choices.

The Spring National College Media Convention is slated for March 13–15. To register see www.askcbi.org.

Of special interest to those who want



to make sure their FCC-licensed stations are at least covering the basics is a pre-convention workshop conducted by CBI veterans Warren Kozireski, Will Robedee and newly elected board member WSOU(FM) veteran Mark Maben. For information, call (877) 275-2241, e-mail exdir@askcbi.org or visit www.askcbi.org.

For those who may be in New York for another broadcast conference, we've arranged a free pass for the first day of our convention. There is a limited small number of free passes so we don't overload our sessions. Those interested should e-mail nyc11@askcbi.org for details.

ALWAYS BUSY

CBI always tries to look ahead in order to be able to help the membership deal with issues that are coming down the road and we also want to reward them for their work.

Along these lines, both conventions this year, including our October event in Orlando, will focus on issues including license renewal, EAS, HD Radio and social media integration. We have had a good working relationship with the Society of Broadcast Engineers and its local chapters; we hope to continue to develop that relationship.

In our January newsletter, CBI announced its call to entry for our production awards. Last year we received more than 440 entries and expect even more this year. Information on the call is available at www.askcbi.org.

In summary, College Broadcasters Inc. is eager to continue to serve our members and, by extension, the broadcast profession. Our volunteer board of directors, members and professionals are driven by our commitment to continued excellence in college broadcasting and quality education for our young broadcasters. If you would like to know more or get involved with or help support our organization, please let us know.

Candace L.T. Walton, Ph.D., is adviser to KAOR(FM) and an assistant professor at the University of South Dakota.

HOW TO

SEND A LETTER TO THE EDITOR:

E-mail radioworld@nbmedia.com with "Letter to the Editor" in the subject field. Please include issue date.



THE POWER **TO REACH** YOUR GOALS

NewBay Media is the video production/broadcast expert, with a full complement of publications, websites, and events that cover creation through distribution. No other publisher has the reach that NewBay offers in print, through such brands as *TV Technology*, *Broadcasting & Cable*, *Multichannel News*, *Government Video*, and *Radio World*; online through our numerous websites, webinars, and electronic newsletters; and in person through events such as **Digital Video Expo** and **Government Video Expo**.

ONE COMPANY. ONE GOAL. YOURS.

We are here to help you succeed in any way we can – whether it is through our unique online and print media or our award-winning events and custom publications.

Learn more at www.nbmedia.com or contact
Carmel King, Executive Vice President,
Video Broadcast Division
703-852-4602 or cking@nbmedia.com



IN PRINT | ONLINE | IN PERSON

BROADCAST/VIDEO

TV TECHNOLOGY
BROADCASTING & CABLE
MULTICHANNEL NEWS
RADIO WORLD
VIDEOGRAPHY
DV
GOVERNMENT VIDEO
RADIO
CREATIVE PLANET

AUDIO

PRO SOUND NEWS
PRO AUDIO REVIEW
AUDIO MEDIA
CENTER CHANNEL
MUSIC PRODUCTION
TOOLBOX
MIX

MUSIC PLAYER

GUITAR PLAYER
BASS PLAYER
KEYBOARD
EQ
MUSIC PLAYER NETWORK
ELECTRONIC MUSICIAN

SYSTEMS INTEGRATION

SYSTEMS CONTRACTOR NEWS
AV TECHNOLOGY
TWICE
RESIDENTIAL SYSTEMS
RENTAL & STAGING SYSTEMS
DIGITAL SIGNAGE
SOUND & VIDEO CONTRACTOR

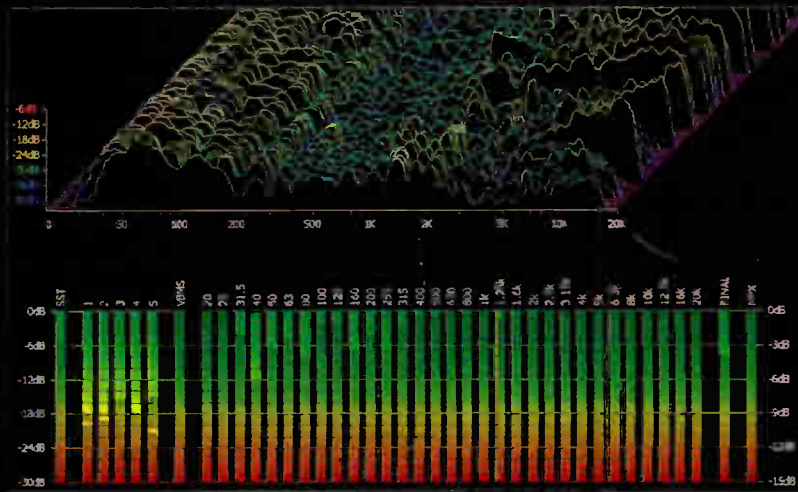
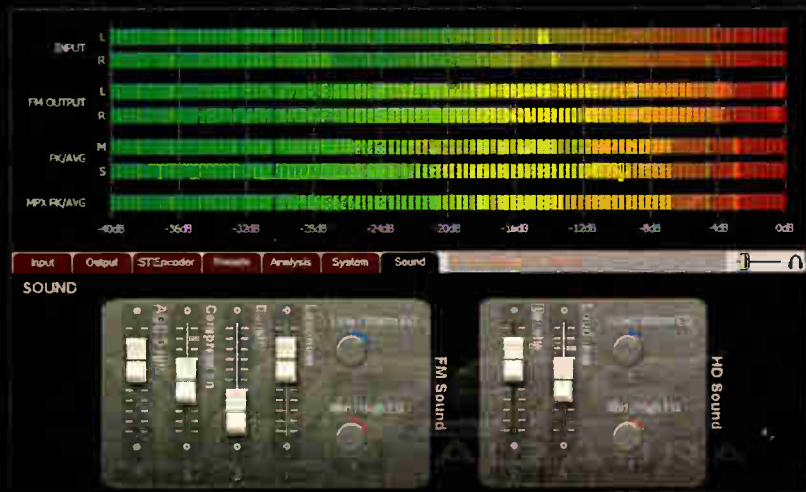
K-12 EDUCATION

TECHNOLOGY &
LEARNING
SCHOOL CIO QUARTERLY
SCHOOLCIO.COM
TECH FORUM

For more information on these brands and many others offered from NewBay Media,
as well as subscription information for all of NewBay's print and electronic products, visit www.nbmedia.com.

World Radio History

VORSIS AIRAURA DIGITAL SPECTRAL PROCESSOR



"I am giving the Vorsis development team a BIG thumbs up as this product stands out as a very SUPERIOR audio processor design."

"This processor is amazing!"

"I have the HD output feeding our web stream encoder, and two national program hosts at remote locations in the US have told us 'your audio stream sounds incredible!'"

"I can say that the Vorsis processor does NOT sound like the "O"ther guys! It sounds far better and has a very unique 'signature'. I really, really like how this processor sounds! Every other station in the market sounds like crunched up FM radio while our station is loud now and yet it still has "life" with CD quality dynamics and punch."

"I've listened to the station since the first few days after the format flip (which was a month ago yesterday), and the one thing I notice most is that the new Vorsis processor's audio quality is always terrific, regardless of the source material."

"If the Vorsis that I heard while you were testing processors last night is your final air chain (it was) it might just be the cleanest and best sounding FM I've heard since...well, forever. Great work!"

"Thanks for a great sounding box that makes us sound bigger than the so called big stations!"

"Your Sweet Spot Technology AGC has the most invisible gain correction that I have EVER heard in ANY on air processor. Listeners have been calling to compliment us on the improvement in our on air sound."

"We've used your product close to a year now and it's just out of this world. When we put the Vorsis box online our audience noticed the difference instantly and started calling asking questions like 'What's going on? What did you all do? Your sound is clear, crisp, and bright and the audio sound level is great now!!!"

"The music sounds great, and this box can be tweaked to anyone's preference. There is a lot to discover in this machine.....but our single biggest achievement has been achieving the clearest, cleanest 'voice' I have ever heard come from an FM processor."

"I am extremely impressed with the unit's capabilities and how well it performs with our NPR talk/Classical format."

Real Comments From Real Users About Vorsis

Just wait until they get their hands on AirAura™



phone 1.252.638-7000
www.vorsis.com | sales@wheatstone.com

IT'S TIME YOU WON THE RATINGS WAR

"What an amazing difference in sound quality!!! This is a brand new FM station and comparing it to the other new station in town using the Other brand of processor our client is louder, cleaner, and even legal. Wheatstone definitely has a winner here with Vorsis."

"This is a great sound and we are so, so pleased with our new Vorsis on-air processor. You just threw down the gauntlet to the processing industry with this new unit! Nobody can match a sound this loud, this clean, and this unique! Now everybody gets to chase after us for a while. Thanks Vorsis!!"

"Our signal used to virtually disappear in downtown New York when we went on night pattern because of the extremely high level of man-made noise. Now when we're on night pattern our coverage in downtown is actually better than when we are on day pattern, the other brand of audio processor and a 10X higher powered transmitter! We're buying a second one to put on our daytime transmitter!"

"You have to be kidding! I have NEVER heard FM audio sound this good, this detailed, this smooth, this clean, and this loud (how did you do it???) Very nice work!"

"Love the box!!! Overall the sound of the station is vastly improved. It's loud, wide and clear."

"I guess the only word for Vorsis is 'WOW.' It's got some great bottom end, and it's more transparent than any processor I've heard."

"The AGC/Compressor/SST combination is simply amazing. We play classical CDs. Older classical CDs were mastered at a much lower level than current ones. Announcers don't compensate and never will. Your processor is able deal with what amounts to probably 40-45dB (or more) "average" level variations and hold them perfectly in the sweet spot with virtually no squashing, pumping, sucking, or other usually audible artifacts of such wide range level control. In short it does its job perfectly every time."

"This box sounds much better than any other processor I have ever tried. Ever!"

"I love classic rock and it's the program format on the station that I own. No other processor that I've tried (and I think I've tried them all!) sounds as good on this format. We're nice and loud and still cleaner than the other stations in the market. We were surprised to hear the intentional dynamics of songs actually get on the air - other processors just flatten them out or turn them into a sea of mush. For the first time ever we're also hearing subtle nuances in songs that we used to think we knew every single note of. What an amazing air sound! No.... What an amazing processor!!"

"The SST algorithm is the least audible of ANY processor I have ever had experience with. I'm not sure how you did it or exactly how it works but its automatic "leveling" is excellent - no pre-processing whatsoever is necessary with SST."

"The high end of this processor is very open sounding - there is no fake "sparkle" with the HF EQ either. Perfectly clean and natural sound. And did I mention LOUD?"

"Your equalizers are actually useful and unlike other processors do not grunge-up the sound merely by enabling them."

"Finally! A processor that deals effectively and transparently with overly-sibilant announcers and audio levels that usually go all over the place! (I especially love the tweak-able multi-band thresholds!)"

"Why haven't the other audio processor companies been able to make an AM box that sounds this good? I can't think of a positive superlative that is big enough to describe how pleased I am with our AM sound now. Our coverage seems to have increased by quite a bit too!"

"Our multipath is Gone! GONE! As an engineer I have difficulty believing a processor can make this much difference in apparent coverage area but the listening is the proof. We've had several listeners call and comment that their reception has greatly improved and even I've noticed vast improvements when driving through what were previously horribly multi-path prone areas. I'm not sure why but it sure does work!!"

"This box has great metering and excellent analytical tools - you get good visual indication of everything that is happening inside."

"The unit's stability has been flawless, not even a tiny glitch. We have it set up to time-sync and it works great. The scheduler-based (and SILENT!) preset switching is perfect! Unit sounds very accurate sonically and is very easy to set-up."

"We are now VERY unique in our audio. Compared to other stations in the market, we are as loud yet maintain legal modulation (at least 4 stations in our market run with 130%+ modulation). We're not "squashed" sounding at all and if you compare us with the other stations (all formats) we're clearly a dynamic and clean stand-out signal on the dial now."

NOTE: We aren't naming names because everyone who is reaping the rewards of sounding better appreciates their anonymity (with respect to the competition). We won't blow your cover, either.