BUILD A 'TRICK' HEAT SINK — Page 10

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NEWS & ENGINEERING

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ABA Takes Steps to Develop Engineers

State Broadcast Association Helps Underwrite A Training Program for Would-Be Techies

Chief Engineer Frank Giardina of Cumulus Broadcasting shows a Harris DX50 transmitter to participants.

BY PAUL McLANE

"Where will the next generation of broadcast engineers come from?"

The Alabama Broadcasters Association isn't merely asking; it's trying to answer the question through a program to attract and train prospective engineers in the Southeast.

FROM THE EDITOR

This is a refreshing instance of broadcast ownership acting in its own interest by taking responsibility for maintaining the technical talent pool.

The first class, "Introduction to Broadcast Engineering," was held this month over three days; it attracted 19 people from Alabama, Mississippi and

(continued on page 4)

Final Steps Underway For CAP Use

Compliance Situation Unclear as Radio Approaches June 30 Deadline

BY RANDY J. STINE

WASHINGTON — Broadcasters are supposed to have Common Alerting Protocol-compliant EAS equipment in place June 30. Though some stations will still be waiting on backordered equipment at that time, no one was predicting a third deadline extension from the FCC.

Industry participants say Emergency Alert System "stakeholders" in general appear to be ready for CAP. To be sure, there are still doubters. Questions remain about how legacy EAS and CAP-compliant gear will meld, and how stable and efficient the new system will be. But most observers contacted for this story expect limited surprises at deadline.

This rollout is but one part of a broader digital emergency alert blueprint dubbed the Integrated Public Alert and Warning System, created by the Federal Emergency Management Agency. Proponents of the architecture are trying to create a system that can operate across electronic communications media including radio and TV, cable, the Internet and many

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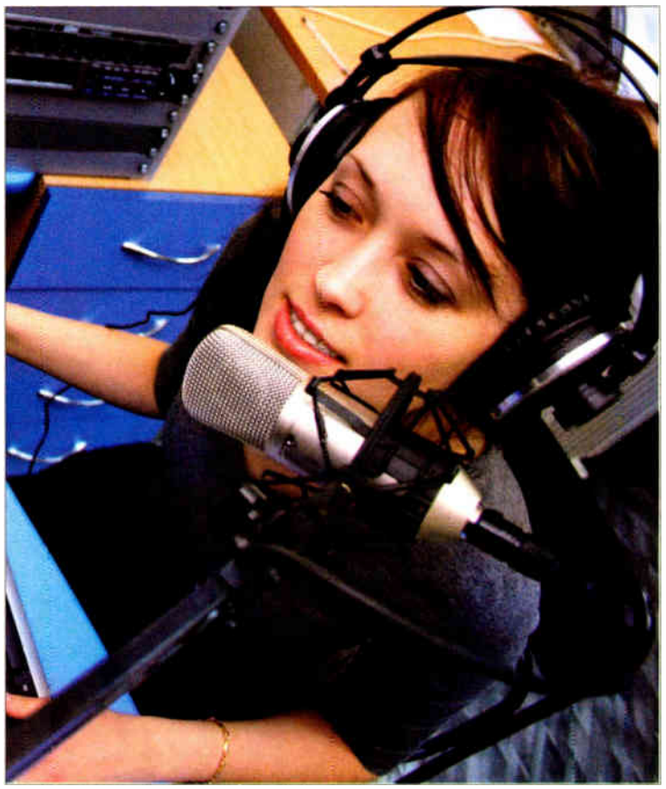

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CAP

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wireless devices.

CAP data can include audio, video and text messages sent to TV, radio, cell phones and other wireless devices. It is compatible with existing alert formats like EAS as well as the Specific-Area Message Encoding (SAME) system used in Weather Radio plus new systems like the Commercial Mobile Alert System (CMAS) via which wireless providers transmit alerts as text messages. CAP also supports features like multiple languages, geo-targeting and the capability to add digital images. As Radio World has reported, FEMA is working with third-party developers such as Pandora, Google and AOL to distribute IPAWS alerts.

Most public warning experts agree that improvements in emergency message delivery by broadcasters will be gradual.

"The June 30 deadline will likely not be detectable by listeners, right away, as this change is, basically, the connection of a bigger and more capable pipe to equipment installed at broadcast stations that send these messages to the public," said Clay Freinwald, chair of the Washington State Emergency Communications Committee.

A CAP message converted from text to speech might be the biggest noticeable change for radio listeners, because it will have the benefit of more information delivered intelligibly.

Richard Rudman, vice chair of the California SECC, said, "TV audiences will probably first start to notice a difference when local AMBER coordinators attach pictures to CAP messages, and EAS TV crawls will not be limited to the 'canned' SAME child abduction message. I am not sure if any states are doing this yet." But, he said, "classic SAME messages" will continue for radio.

FEMA maintains a list of "alert originators" with authorization to send CAP messages; these include the National Weather Service and some local and state emergency managers, according to a person familiar with the system. (FEMA declined to provide the list for this article.)

The National Weather Service began pushing warnings, watches and advisories to IPAWS in the CAP version 1.2 format in late May. It expected to enable weather warnings to pass through to the wireless industry CMAS in mid-June and to the broadcast industry's EAS in late summer, according to Mike Gerber, program lead for the NWS emerging dissemination technologies division. Some broadcasters have already been receiving CAP messages from FEMA during closed circuit weekly tests since early spring.

BACKLOGGED ORDERS

The FCC adopted new rules in Part 11 governing how broadcasters are to receive CAP messages. The commission's Fifth Report and Order was released in January. The commission is responsible for implementing and enforcing the new standards, according to an agency spokeswoman.

By June 30, broadcasters must have operational equipment capable of converting CAP messages into EAS messages and then processing them like EAS messages, said Harold Price of manufacturer Sage Alerting Systems. "Being able to show that you have CAP equipment, and that it is hooked up to a CAP source and is operational — meaning that it is turned on, configured and connected to your air chain — should be sufficient to show that you have met the requirements of the revised Part 11."

Officially, compliance will be expected at the deadline; stations not equipped would be subject to enforcement actions. The FCC in its order stated clearly that temporary waivers would be warranted only for stations in areas that lack broadband Internet access. Any such extension would be for a maximum of six months, according to the R&O. As of early May FCC officials had received no waiver requests from broadcasters.

(continued on page 6)

Photo by Jim Peck

By June 30 broadcasters must have equipment in place capable of converting CAP messages into EAS messages and then processing them like EAS messages, said Harold Price, center, of manufacturer Sage Alerting Systems, shown here at the spring NAB Show. Colleague Gerry LeBow is behind him at left.

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ACADEMY

(continued from page 1)

South Carolina. The program featured classes at ABA headquarters plus tours of area stations.

Larry Wilkins, CPBE, is director of the ABA Engineering Academy. He told me the concept came about because several TV stations couldn't find people to fill open engineering positions.

Wilkins credits Sharon Tinsley, president of ABA, with the idea of creating its own educational program; perhaps somewhere out there in radio- or TV-land was a master control operator, intern or other person interested in advancing his or her career through engineering.

ABA fixed up part of its Birmingham office as a classroom with tables and projectors. Wilkins, a retired Cumulus engineer, created the content for the first class. The association then publicized the program through SBE chapters, Wilkins' listserv and Tinsley's emails to Alabama's broadcast general managers and associations in surrounding states.

Students paid nothing to register, and ABA was able to get them a good deal on hotel rooms. The association provided the classroom space and refreshments. Wilkins volunteered his time. So did Bob Mayben of SCMS, a former teacher of broadcast history who spoke to the students about Marconi and the roots of the industry; so did local engineers Frank Giardina and Scott Sarkisian, who led tours of their employers' stations.

The first class offered a broad overview of engineering and a "block diagram" approach to station design. In July, ABA will sponsor two week-long classes that go into more depth, one for radio and one for TV; those students will have the opportunity to take the SBE Certified Broadcast Technologist exam. ABA hopes to offer another basics class in the fall, and may offer one that will prepare students to take operator's exams, of particular interest in TV.

WIAT(TV) volunteered time and space for tours. The chief engineer is Scott Sarkisian.

Wilkins is a key part of all this, obviously. In addition to his years of work experience, he performs Alternative Broadcast Inspections in the state, which gives him useful insights. "I pick up a lot of stuff at stations on what they're doing right and what they're doing wrong. I incorporated those ideas in the class."

The Internet helped him develop good visual materials to illustrate concepts like frequency vs. wavelength and the nature of the color spectrum (he ended up with 112 slides in his PowerPoint). When he needs help developing a topic, he reaches out to someone within his considerable network of industry contacts.

LET'S SEE MORE

This is talent development "on the cheap," which is a good thing. While the Society of Broadcast Engineers offers a growing number of training resources, and there are full-time technical schools out there with broadcast offerings, this type of program — encouraged and supported by management, though with plenty of support from the engineers — strikes me as a welcome, accessible "field-level" effort.

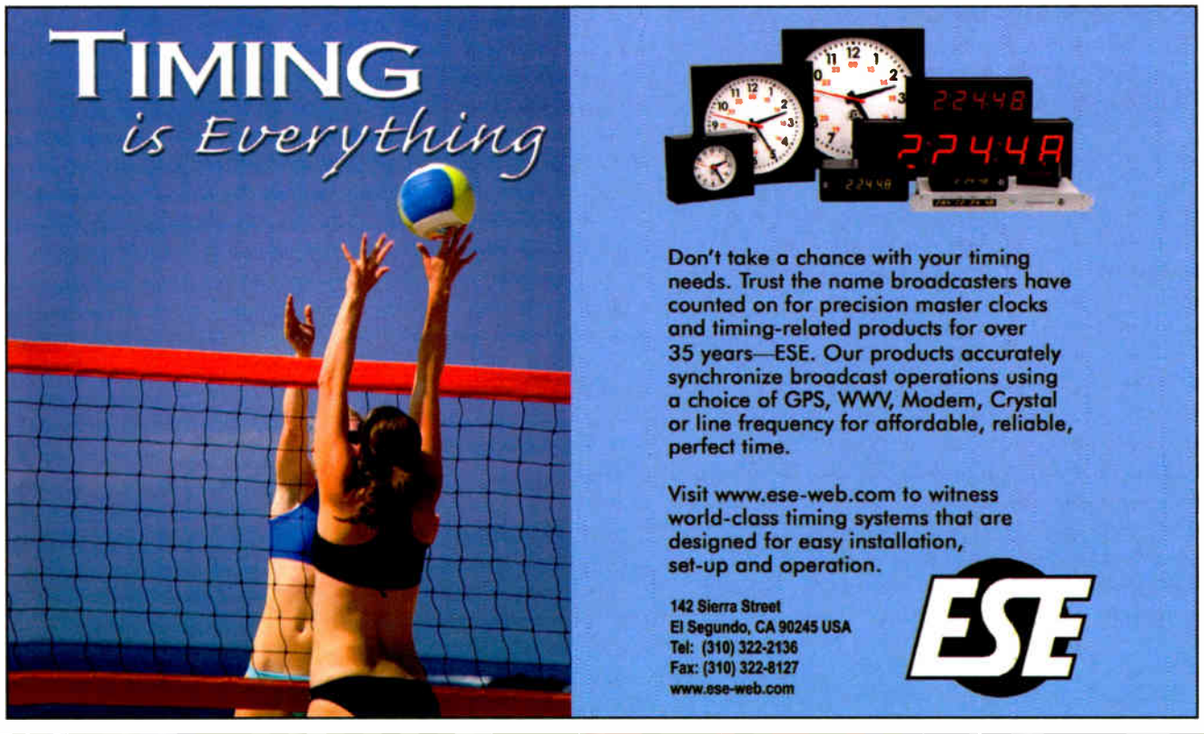
The program, Wilkins said, "really caught on more than I thought it would catch on." He is active in SBE certification and has kept the society informed about the effort; SBE leaders, he said, enthusiastically support the idea. And ABA has received queries about the program from other states.

Frank Giardina discusses FM combiner operation at a multi-station transmitter plant.

We won't know anytime soon if this program has lasting benefits in developing more engineers. But the lesson is clear: Broadcast executives who lament the lack of good engineers can act in their own interest to help develop future talent. This need not cost a lot of money. It does require a little planning and the wholehearted involvement of talented volunteers willing to share their knowledge; my experience is that broadcasting has plenty of those.

So how about it, state associations? Your state has smart, veteran broadcast engineers like Larry who are interested in helping assure the future of their profession. Let's see more of this.

If you launch such a program, Radio World will share the news with the industry. Write to *radioworld@nbmedia.com*.



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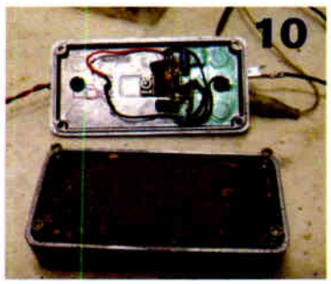

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NEWSROUNDUP

ROYALTY DEAL: Clear Channel struck a royalty deal with Big Machine Label Group that calls for artists to be paid when songs are played on digital — and for the first time, broadcast — stations. Under the agreement, Clear Channel will make payments to the label instead of using industry middleman SoundExchange; the label will share the royalties with the artists. The companies said the deal makes sense and will help digital radio grow.

SATELLITE RADIO: Liberty Media intends to gain more shares of SiriusXM in order to gain control of the company, telling the Securities & Exchange Commission it plans to nominate more people for election to the SiriusXM board so that Liberty would have a majority; it now has five of 13 board members. SiriusXM told the SEC it's in talks with Liberty "to explore possible transactions" regarding the latter's ownership stake.

THE ONE: Ludwig Enterprises is moving forward with plans to build a national radio network for its new "The One" receiver. The Pompano Beach, Fla.-based company says it now has a patent for its technology that employs unused digital TV channels, breaking one channel into 50 audio channels. "The One" receiver would use an available data portion of the data stream of the ATSC digital television signals. The company has not set a launch date.

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CAP

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"The FCC has completed all necessary work in advance of the June 30 deadline," said Tom Beers, chief of the policy division for the FCC's Public Safety and Homeland Security Bureau.

Beers said broadcasters can't pretend that they are just getting notice of the CAP transition now. "Nearly five years ago, in 2007, it became widely known that the FCC adopted the requirement that EAS participants have the capability to receive CAP-formatted EAS alerts."

Unofficially, industry insiders expect the FCC probably will not start inspecting immediately, though there's no assurance of this, and any grace period is likely to be short.

Bob Cauthen of dealer SCMS reported backorders in June for equipment from Sage and Digital Alerting Systems; he expected to fill those by mid-July. His company is offering each customer an acknowledgement showing order date and estimated delivery date for their records.

Harold Price said Sage recommended that broadcasters who face a backlog make notations on their EAS test logs that "they have equipment on order but that it just hasn't been received yet and to be able to show verification of such."

Estimates of compliance varied.

Darryl Parker, senior vice president of EAS equipment manufacturer TFT Inc., said approximately 35 percent of all EAS participants, including radio, cable and TV, were CAP-compliant as of June 1. He ballparks radio at 75 percent. He based his estimate on recent activity in the marketplace and his conversations with broadcasters.

Cauthen too, thought perhaps 75 percent of radio stations were compliant, though he added, "It is very hard for any of us to estimate this, as one unit is not required for each station and we have no way of knowing how many are collocated, etc."

Dealer BSW reported "very brisk" ordering activity in recent weeks. "Our most popular unit is the Sage Digital Endec and right now the factory is in a backorder situation with units not expected to arrive prior to the June 30th deadline," President/CEO Tim Schwieger said in early June.

"BSW has made an effort over the last year asking our customers to order early and many did just that; unfortunately there are also many stations that were not in a favorable financial situation that allowed early ordering and now are without a unit."

Clear Channel Media and Entertainment is the largest station owner. Steve Davis, senior vice president of engineering, facilities and capital management, said all of its approximately 850 stations are CAP-compliant. "We intend to do an internal test this month before the deadline to confirm and address any problems we uncover," he told RW in early June.

CONVERTERS

Sage Endec users must install a software update to begin polling the IPAWS server. The update was released

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'A MORE RESILIENT EAS'

Officials at the Federal Emergency Management Agency look at the CAP deadline of June 30, 2012, as a major milestone in EAS and public warning. "Another step in the process toward a more resilient EAS" is how Manny Centeno, program manager for the Integrated Public Alert and Warning System at FEMA, described it.

IPAWS is the Internet infrastructure by which new and existing public alert and warning systems will integrate information based on the Common Alerting Protocol standard. Centeno has been intimately involved in testing IPAWS and CAP.

"The FEMA gateway, or the IPAWS aggregator, has been operating and is ready for all EAS participants to connect to," he said. "For the past several months we have been sending out the weekly CAP tests to leverage and test the equipment. We are getting positive feedback."

In June, FEMA began sending daily CAP tests.

Centeno said FEMA has learned the value of tests and exercises to improve EAS systems in general. Among recent trials were EAN tests in Alaska in 2010 and 2011; tests in Nevada and Puerto Rico in 2011 using required monthly tests; and least five regional or state tests, all in addition to the national event in November 2011. The tests are designed to mitigate issues such as poor quality and low amplitude audio, Centeno said.

Audio quality should improve once FEMA's satellite delivery network is completed. The system will send audio from FEMA headquarters to the current 63 Primary Entry Point stations nationwide. FEMA hoped to test the uplink in June. "Thirty-two of the PEP stations are already equipped with the satellite equipment," Centeno said in May.

Centeno said the FCC is updating EAS monitoring assignments and is urging states to begin work on new EAS state plans if they have not yet done so.

We reported in the May 23 issue that FEMA IPAWS Division Director Antwane Johnson expects a second national EAS test but not until regulators receive all the results from the 2011 event and address any technical issues.

The FCC remains concerned because some 40 percent of all EAS participants — radio, TV and cable — have apparently not filed their test results from the first national event. There was no verification function in the commission's electronic reporting system for the national EAS test; now some stations are confused about whether the FCC received their test results. Beers recommended stations e-mail *timothy.may@fcc.gov* to verify the agency actually has their results.

Though the electronic filing option is closed, the agency is still accepting results filed on paper.

"The commission continues to consider its options, and we continue to strongly encourage EAS participants that have not yet filed the required EAS test reports to do so," Beers told Radio World in May.

The deadline for broadcasters to report data was Dec. 27, 2011. The agency has said it's too early to draw any conclusions from the data staff has examined.

Meanwhile, FEMA continues to urge broadcasters to speak with station ownership and managers to become more active in EAS. Management and owner "involvement is crucial because many of the decisions made at the participant level are going to be made by those people," said Centeno. "Everyone should continue to be motivated. We give our thanks to broadcasters for their patience and support."

— *Randy Stine*

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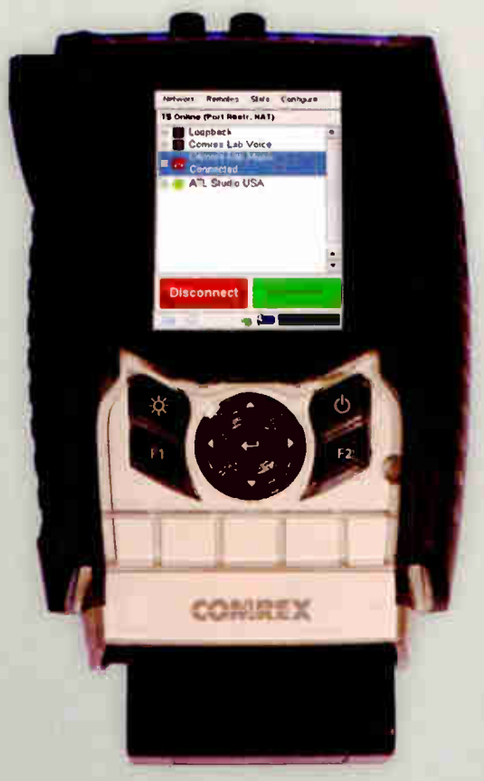

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CAP

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in June.

"We've developed a simpler installation procedure so that engineers only need to install the firmware, they won't need to also update their settings," Price said. "This will save a lot of time, especially for engineers with multiple stations to support."

Another angle of ongoing interest is the use of CAP converters. Stations that settled on these intermediary EAS devices — as a less expensive alternative to outright replacement of legacy EAS gear — may have only a few years to use them.

An intermediary device or "converter" is a standalone box that monitors, receives and decodes CAP-formatted messages to convert and load them into a separate legacy EAS device. In the Fifth Report and Order, the FCC mandates that intermediary devices must be capable of using the enhanced text of a CAP message to provide a visual display by June 30, 2015. Communications attorney David Oxenford wrote that not all intermediary devices are capable of using enhanced CAP text. "Therefore these devices may only be a short-term solution." (Formerly with Davis Wright Tremaine, Oxenford has since joined Wilkinson Barker Knauer.)

Bill Croghan, chief engineer for Lotus Broadcasting in Las Vegas and co-vice chair of the Nevada State Emergency Communications Committee, questions the "false economy" of an intermediary device. "In my opinion, the money spent on intermediary devices would have been better invested in new gear that would last a while." Lotus Broadcasting purchased Sage encoders/decoders for its radio stations in Las Vegas, replacing older TFT and Burk units.

However, Jim Gorman, president of EAS equipment manufacturer Gorman-Redlich, said concerns that intermediary devices will become obsolete are overstated.

"The enhanced text referenced is constructed from various text fields within the CAP message. The Gorman-Redlich CAP-DEC 1 already generates this enhanced text and displays it on the user interface. Additionally, the unit is capable of sending this text to certain signboards and character generators," Gorman said.

"We see no reason why, once requirements are finalized, the CAP-DEC1 would have any problem complying well in advance of such a deadline."

On another technical note, the FCC in April cleared up an ambiguity when it released an Order for Reconsideration on the "text-to-speech" issue. In the revision, the FCC said it will allow the use of TTS to convert emergency alerts from text to speech. A number of groups had pushed the commission to reconsider an earlier prohibition.

TRANSITION PROCESS

Beyond these questions, the transition from legacy EAS will, in the opinion of another participant, bring some bumps.

"From what I've seen, the new CAP EAS technology lives up to the hype, but I don't think there will be a smooth transition from the old system to the new one because right now there are too many gaps in the transition process," said Adrienne Abbott, Nevada SECC chair and a member of the Broadcast Warning Working Group.

Abbott said she fears there will be inconsistencies in what the "public sees and hears during times of emergencies."

People don't get all the facts the first time they hear a warning so consistency across all platforms is crucial to saving lives, she said. "With CAP, emergency officials will be able to put out a detailed text message that broadcasters can use as it comes with the EAS activation, but only if the broadcaster has equipment that has full CAP capabilities."

Other EAS proponents worry that some states haven't done enough to embrace the new CAP-EAS to bring a new enhanced and improved warning system to bear. Only about half of the states have added some form of CAP messaging technology; that means 25 states or more are still depending on last-century methods for public warning, according to Suzanne Boucher, state EAS chair for Maine.

"It would be a shame to think that broadcasters and other EAS participants invested millions of dollars in equipment and technology that can truly enhance our alerting capability, only to have state and local alert issuing authorities continue to shun EAS out of fear or ignorance," Boucher said.

Selected content from Radio World's "The Leslie Report" by News Editor/ Washington Bureau Chief Leslie Stimson.

WOR QUANTIFIES MDCL SAVINGS

New York City's WOR(AM) has quantified how much money it is saving using a power-economizing modulation-dependent carrier level algorithm. Company executives are now talking about possibly adding the technology to at least one other AM in the Buckley portfolio.

The Buckley Broadcasting facility at 710 kHz is 50 kW day/night and uses a pair of Harris 3DX-50 transmitters feeding a three-tower directional array.

WOR has tried other MDCL algorithms, but has had the most success with the Harris algorithm for Amplitude Modulation Companding with a carrier reduction level of 3 dB at peak modulation. It has been using AMC on both transmitters since October 2011. AMC reduces the carrier level during segments when modulation levels are high. Last fall, Buckley Broadcasting/WOR Director of Engineering Tom Ray estimated the company would see a power savings of 25 to 30 percent.

Ray says normally, the power bill for the Rutherford, N.J. transmission site is around $8,000 at this time of year, before the summer rates kick in. Summer rates typically bring the bill to $10,000. Now Ray has several real bills from Public Service Gas & Electric, and they're consistently around $6,000. He notes that, in addition to transmission costs, power for the site includes air conditioning, security lights, tower lights as well as peripheral gear in the racks.

He and Harris Broadcast Vice President of Transmission Research & Technology Geoff Mendenhall tested power consumption, which Ray said is down 25 percent.

Since transmitting using MDCL, WOR has had no effects on its AM or HD coverage nor has it had interference complaints. MDCL also has not affected the station's encoding/decoding for its Arbitron Portable People meter.

The station has a waiver from the FCC to the agency's rule that a station must maintain authorized power levels.

Buckley is now thinking of adding MDCL to its existing Harris transmitter at its Bakersfield, Calif., AM, which is 25 kW day/10 kW night, said Ray.

The National Radio Systems Committee has formed a task group to review MDCL algorithms and their compatibility with HD Radio. Nautel Head of Engineering Tim Hardy heads the group. There are about 10 AMs in the U.S. on the air now with MDCL technology from Nautel and about 17 from Harris, according to the respective companies.

Tell RW about your experience with MDCL. Email to Lstimson@nbmedia.com.

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Build a Mineral Oil Heat Sink

Frank Hertel Solves a Problem of Heat Dissipation in a DIY Project

Frank Hertel of Newman-Kees RF Measurements and Engineering likes to save money — or as he puts it, "I'm cheap!"

WORKBENCH
by John Bisset

Read more Workbench articles online at radioworld.com

In one case Frank needed a 5 VDC power supply for the 8 W, 808 nM burning laser he was adding to a homemade CNC machine. Not wanting to spend money and because he already had the parts, Frank repurposed a laptop power supply, regulating it down to 5 VDC.

Frank chose an LM338, an adjustable 5 A regulator. About 1.3 A at 5 VDC is required for Frank's laser; doing some quick calculations, he proved the required dissipation would seriously stress the LM338.

Frank turned to an old-fashioned trick: a mineral oil heat sink.

As seen in the accompanying photos, he started with a seamless cast aluminum box. This would hold the mineral oil/sand mixture. The only issue is keeping the box upright. Even with the top screwed in place, some wicking of mineral oil is bound to occur. (I do wonder if sealing the top with an epoxy or sealing compound would solve that. Let us know.)

Frank's trick works. He included an "add on" involving four power rectifiers in series, inserted between the 18 VDC supply and LM338 regulator. Using the optional series of rectifiers will lower the LM338 dissipation to approximately 8.3 watts of heat. Keep in mind, however, that each of the power rectifiers will need to dissipate the balance of the power, meaning that *each diode* will dissipate ~3.32 watts of heat. (Note: The voltage drop across each of the power rectifiers will be ~2 volts.)

The captions explain each step. You might also consider this process to build a small test dummy load out of inexpensive carbon or metal film resistors, and

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Evaluation units available, call 1-800-733-0552 **Learn more at www.inovonicsbroadcast.com**

Available at:

World Radio History

Greenville SW Site Is Rededicated

Facility Was Target of Closure Effort

BY RANDY STINE

Edward R. Murrow, the iconic former CBS News correspondent and longtime champion of the free press, again has his name associated with this country's largest radio transmission plant following a rededication event this spring in Greenville, N.C.

The Voice of America shortwave transmitter station, known as Site B, was named after Murrow following his death in 1965. Murrow's name was later dropped because of security reasons following 9/11.

BBG in general has been deemphasizing shortwave, cutting back on use of the medium. The board earlier had proposed closing Greenville, the last U.S.-based shortwave broadcasting center, at an estimated cost savings of $3 million per year.

Murrow, the so-called "Father of Broadcast Journalism," served as director of the United States Broadcasting Agency from 1961–1964. The agency provided broadcasts of the official views of the United States government to citizens of foreign countries.

Casey Murrow, the broadcasting legend's son, said at the rededication that his father would agree that the facility is as important today as it was in the 1960s.

"It does reach people who simply have no other access, whether it is Cuba or South America. It's important to keep at least one [shortwave] facility in place here in the United States," said Murrow.

The rededication also included remarks from International Broadcasting Bureau Director Richard M. Lobo and Governor Victor Ashe of the Broadcasting Board of Governors. Ashe reportedly played a key role in pushing to keep the facility open.

Lobo said Murrow had addressed a crowd nearly 50 years ago at the dedication of the shortwave broadcasting center. Murrow, he said, was worried at the time about the world's dictators and their efforts to stifle open communication. "For many supporters of this country's international broadcasting efforts, the same concern holds true today," Lobo said.

At the rededication, from left: U.S. Rep. Walter Jones; BBG Governor Victor Ashe; Casey Murrow, son of the broadcasting icon Edward R. Murrow; and André Mendes, BBG director of the Office of Technology, Services and Innovation.

A WIN FOR SW

Supporters of shortwave broadcasting efforts by VOA and other U.S. international broadcast agencies were pleased with the event.

"The rededication of the VOA Greenville, N.C., transmitting facility in honor of pioneering radio and television journalist Edward R. Murrow would seem to affirm the commitment of the Broadcasting Board of Governors to continue shortwave radio broadcasting," said Tim Shamble, president of the American Federation of Government Employees Local 1812.

"Until the Internet and other social media become totally free from interference and censorship by hostile governments, shortwave should remain the backbone of U.S. international broadcasting."

AFGE Local 1812 represents employees at the VOA's broadcast transmission facility.

The Edward R. Murrow Transmitting Station, which includes eight high-power shortwave transmitters, broadcasts some 2,200 hours of programming produced in studios in Washington. Approximately 85 percent of the shortwave broadcasts from the relay station are Radio Martí Spanish-language broadcasts to Cuba.

Supporters have said the U.S. should have such facilities on its own soil, free of foreign intervention and capable of reaching other key countries like China.

MORE ONLINE

Read Radio World's 2011 profile of the site. Find the link at **http://radioworld.com/June-20-2012.**

WORKBENCH

(continued from page 10)

using the "sand/mineral oil" heat sink method *or* just a mineral oil bath for cooling your resistors.

Reach Frank Hertel at *nkeng@insightbb.com*.

Fandor.com Director of IT and Operations Tim Pozar has experience in starting community radio stations and working as a chief engineer. A community broadband activist, he now is working on the design and deployment of a nonprofit fiber network for the City of San Francisco.

Tim saw our April 25 entry about using duct tape at remotes and had to comment. This tape may be great for holding together a number of things, including making wallets; but it can be costly for laying down wires at temporary locations like remotes, Tim says. Duct tape has a rather strong and sticky adhesive that can leave residue and even damage paint and finish. Hotels will deduct any damage from the event organizer's deposit.

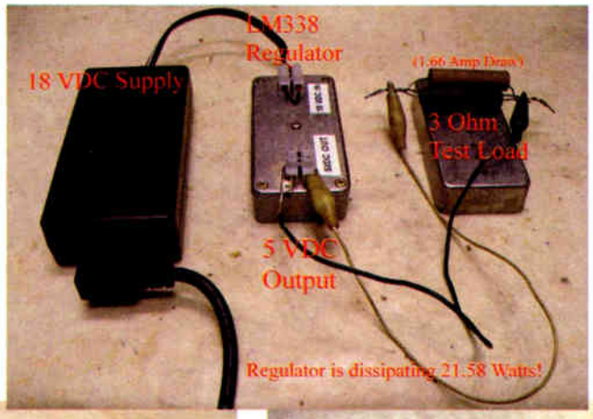
Although more expensive, Tim suggests gaffer's tape, made by companies like Shurtape. During strike you will have much less chance of damaging the event site when you rip up gaffer's; it also doesn't leave adhesive residue on the cable. Gaffer's tape comes in multiple colors besides basic dull black.

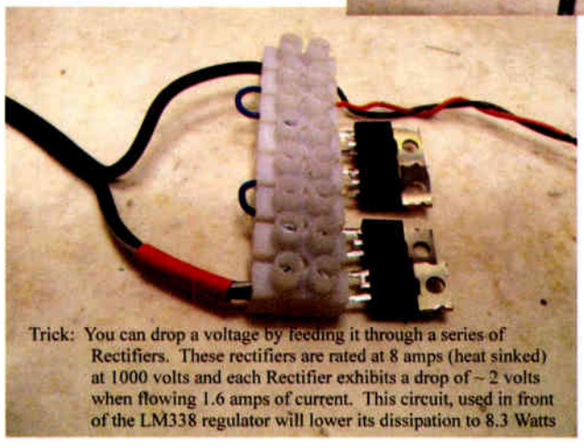
(Shurtape also offers a website section for HVAC and plumbing applications. It's interesting to see all of the company's offerings for securing ductwork and insulating pipes — much more than just "duct" tape.)

Tim Pozar can be reached at *pozar@ins.com*.

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

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

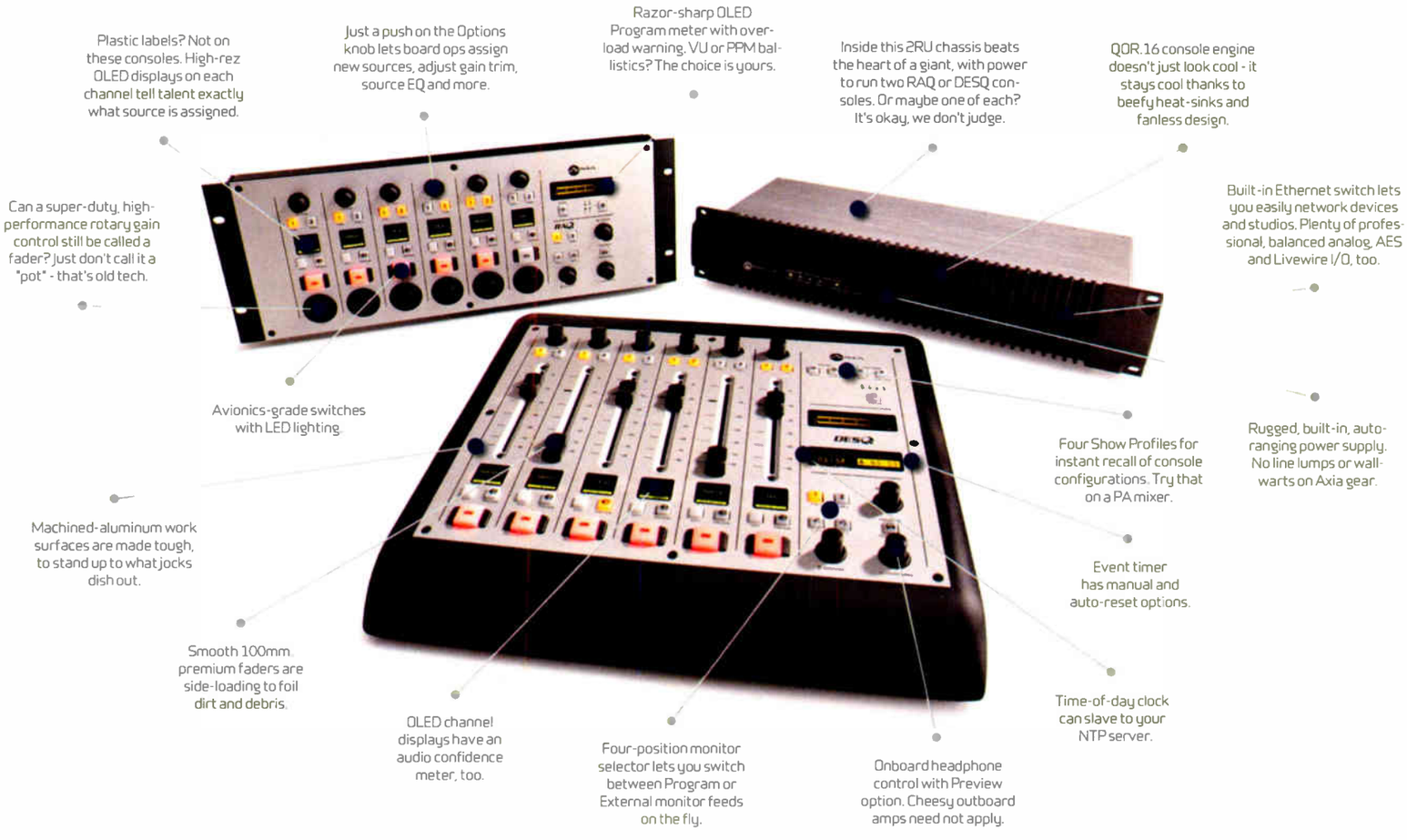




World Radio History

MEET AXIA'S NEW, SMALLER IP CONSOLES.

THEY'RE BIG WHERE IT COUNTS.



The more you saw, the more convinced you were that IP consoles made sense for your station. Problem was, you had small spaces to work in. Some behemoth board that looks like a '78 Oldsmobile just wouldn't fit. But there was no way you'd settle for some cheap plastic PA mixer that looked like a refugee from the church basement. "Wouldn't it be great," you thought, "if someone made an IP console that didn't take up a whole room?"

Then you saw the new RAQ and DESQ consoles from Axia, and your problems were solved. With the power and features of a big console, but minus the ginormous space requirements. RAQ will drop right into those turrets in your news station's bullpen – the reporters can send their finished stories right to the studio. And DESQ is perfect for the auxiliary production rooms.

But what sealed the deal was finding out you could run two RAQ or DESQ consoles with just one Axia QOR.16 mixing engine — you know, the one with all of the audio I/O, the power supply and the Ethernet switch built in. That brought the cost down so low that when you told your GM the price, he actually didn't swear at you (for once). Make another decision like this, and you might just be changing the sign on your door from "Chief Engineer" to "Genius."

AxiaAudio.com/RAQ | AxiaAudio.com/DESQ

Available in the U.S. from BGS: (352) 622-7700

Axia Audio, a member of The Telos Alliance TLS Corp ©2012

World Radio History

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

NAUTEL ROLLS OUT FOUR-YEAR WARRANTY

Photo by Jim Peck

Nautel announced the implementation of a four-year warranty on VS, NV, NX and the new NV^{LT} series of broadcast transmitters. Nautel, which earned a Radio World "Cool Stuff" Award for the NV^{LT} Series, also recently expanded its support team, adding an expert on Middle East installations and launching support services in the Denver area. And it promoted Wendell Lonergan, shown at right, to head of broadcast sales.

NPR Labs and Nautel teamed to help stations looking to increase coverage and quality of HD Radio broadcasts. NPR Labs' Web-based IBOC calculator allows FM stations to determine whether they are eligible to increase HD Radio power above the –14 dBc limit; it is available free at Nautel's website.

Nautel also has the new LVDS Exciter Adapter, used by iBiquity to interface second-generation IBOC signal generators to direct-to-digital exciters. The solid-state adapter eliminates the need for a Gen2 IBOC signal generator so that a modern Exporter can interface with the transmitter's exciter. It takes E2X data over an Ethernet connection and the internal exgine modulator produces a modulated IBOC signal via LVDS.

And ENCO and Nautel are working together to bring more capabilities to the Push Radio system, a program distribution model in which content is stored in the transmitter with playlists executed at the same point. The ENCO Push Radio interface provides audio delivery via the ENCO DAD Automation platform.

Info: www.nautel.com

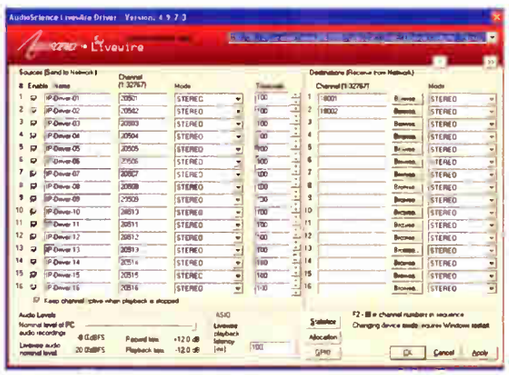
PTEK GAMMA IS EFFICIENT

PTEK says its solid-state Gamma Series — available in power levels of 1.5 to 10 kW — achieves up to 85 percent efficiency with LDMOS based amplifiers, resulting in a lower cost of ownership. Additional cost savings result from lower heat generation of these amplifiers. "Less power being lost to generated heat requires reduced power requirement by HVAC systems to cool the transmitter building." The power bill savings in the Gamma design, PTEK says, is significant.

Features include DDS-based exciters, power-amplifier modules of 1,000 watts, digital front-panel metering, hot-pluggable power supplies and a small footprint.

Info: www.ptekpower.com

ASI: LIVEWIRE WITH TSX TIME-SCALING



AudioScience Inc. is out with its first software-only product, a 64-channel Livewire driver.

Based on licensed technology from Axia Audio/TLS Corp., the driver supports 32 stereo streams using the Wave/DirectSound/WDM API and up to 64 channels using ASIO. Available in 32- and 64-bit versions, the driver runs under Windows XP, Windows 7 and Server 2008. The configuration panel is shown.

Time scaling (called TSX) of audio during playback based on proprietary algorithms licensed from 25-Seven Systems also is supported. This is the time-scaling algorithm available on AudioScience hardware and can be used independently on any or all audio playback streams to expand or compress audio in real time by up to 20 percent, while preserving pitch and clarity.

TSX can be used in conjunction with any of the compression formats supported by the driver.

The driver combines an audio time-scaling algorithm with the Livewire audio-over-IP protocol.

Info: www.audioscience.com

Re-New your DaySequerra M4

Next-Generation AM/FM HD Radio Receiver

The new and improved M4.2S Digital Radio Receiver is a vast improvement over the M4.0X & M4.2R it replaces.

- Robust 24/7 performance - stays locked to selected stream during power or I2E interruptions *No More Lockups!*
- Front panel display of RBDS and PAD data, digital audio quality, network, and alarm conditions
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$550 Factory Direct

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World Radio History

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.

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www.telos-systems.com

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ZEPHYR IP & ISDN CODECS

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

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.

World Radio History

WHEATSTONE MADI BLADE IS 'MISSING LINK'

Wheatstone Corp. added the MADI Blade to its WheatNet-IP line, saying this "bridges the gap, literally, between any MADI-capable audio gear/network and the WheatNet-IP Intelligent Network."

"The MADI Blade will make it possible for WheatNet-TDM Bridge users to add WheatNet-IP control surfaces and Blades to their existing networks," it stated. Any system that utilizes MADI can now install WheatNet-IP gear and have the functionality that MADI permits.

Also new, the Vorsis AirAura is now in version 2.0, a "major upgrade" to its flagship box. "AirAura's 2.0 upgrade features the latest Vorsis Bass Management System (VBMS) with new Bass Tools for adding 'floor' feel to the bottom end," the company stated. "It creates a virtual subwoofer in the 40 Hz–90 Hz range to give listeners bass they can feel." It benefits CHR and urban stations in particular.

Added to the processor is Speech Smart technology, a way to manage the multiband AGC and compressor to keep speech sounding clean and natural without a "scooped out," missing presence sound. New tweakable presets are included too.

The Aura8-IP is intended to make Vorsis processing available for multiple applications. It provides eight stereo channels of multi-band processing and can operate as a standalone multi-channel processor with analog and digital I/O or as a Blade on the WheatNet-IP Intelligent Network.

Audioarts Engineering has a new member of its Air radio console series. The Air-4 adds more mic preamps, for a total of four. Meanwhile, USB functionality now is part of the Audioarts Air-1, an eight-channel compact console. The company added a USB audio I/O port.

And Wheatstone's LX-24 Modular Audio Console took a Radio World "Cool Stuff" Award; see the June 6 issue.

Info: wheatstone.com; audioartsengineering.com; vorsis.com

COMREX SHOWS VIP QC APP

Comrex Corp. has a new iPhone and Android app, VIP QC, a simple wideband voice app for guests using smartphones to call into a station.

The QC stands for "Quick Connect." VIP QC app costs $20 and can be downloaded and installed on an iPhone and Android smartphone, then used to call a Comrex STAC VIP VoIP Call Management System using the phone's available data connection. A list of stations available for connection is presented to the user. Once a station is selected, the app locks to it, displaying logo information whenever the app is restarted. The app can also be configured to call Comrex Access and BRIC-Link codecs.

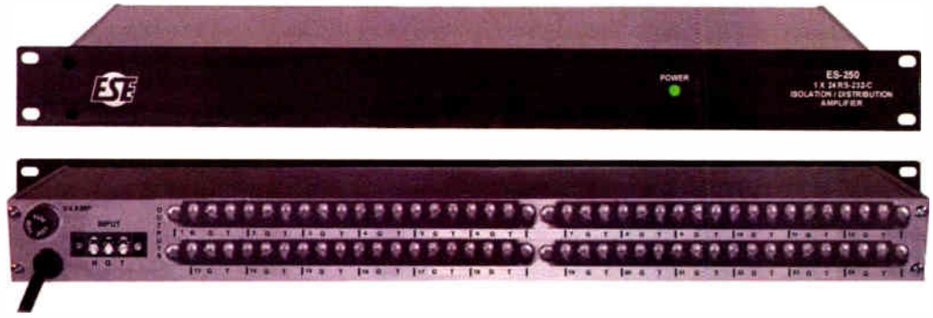
The app will be available on the Apple App Store and Google's Play Store, which used to be called the Android Market.

Info: www.comrex.com

ESE ROLLS OUT DAS FOR RW-232C

New from ESE are distribution amps for RS-232C format signals.

The ES-250 and ES-251 are 1x24 distribution units. The ES-250, shown, provides 24 terminal blocks for the outputs while the ES-251 uses 24 nine-pin D-sub connectors for distribution. The outputs are gathered into three eight-output amplifier groups. The units buffer the signal so that each of the 24 outputs can drive a single "user" at a distance of up to 50 feet per output.



Also new, the ESE ES-210 is a 1 RU four-bank frequency distribution amplifier with six-channel output per bank. Banks may have their own frequency. Frequency outputs are 1 MHz, 5 MHz and 10 MHz. Each output is isolated with BNC connectors for all connections. There is a loop-thru. Each input channel has a gain control. Options include 220–240 VAC and a U.L.-listed power supply.

Info: www.ese-web.com

GR
Gorman Redlich Mfg. Co.
Is CAP-able

The CAP-DEC1, Gorman-Redlich is a stand-alone CAP-to-EAS converter for use with your existing emergency alerting equipment. This cost-effective device allows broadcasters to easily meet Common Alerting Protocol (CAP) compliance requirements mandated by the FCC without requiring the purchase of an additional encoder/decoder system or other costly equipment. The CAP-DEC1 is CAP 1.2 compliant and requires only one unit of rack space. Trust the experts with over 35+ years experience in the emergency alerting industry to help you meet your broadcasting needs. Visit our website or contact us today for more information about the Gorman-Redlich CAP-DEC1. We continue to support equipment we made 35 years ago.

PRICE $1350

- Compatible with any existing EAS encoder/decoder made by any manufacturer
- Powerful 1.6GHz dual core processor and 1GB of memory
- Built-in text-to-speech conversion functionality
- FAST Gigabit network capability with built in firewall for security
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- Nearly limitless storage capacity for logs and audio messages
- Five (5) USB ports for peripherals
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- Software can be updated via LAN or USB
- Print alert reports to USB or network printer
- Polling 3 URL's currently with room for future expansion
- FEMA independent lab affirms CAP 1.2 compliance
- Built-in email server to send log information

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Flexiva is designed for low- and high-power requirements, up to 40 kW, while utilizing the most compact design on the market today. Flexiva continues the legacy of the highly successful line of Harris FM transmitters and combines innovative, new Quad-mode RF amplification and software-defined exciter technology to take FM transmission to the next level.

Featuring Harris PowerSmart® technology in its transmitter architecture, the Flexiva line offers unmatched efficiency that makes it ideal for all FM applications and delivers a dramatic increase in power density, lower operating costs, servicability and reduced cost of ownership over the life of the transmitter.

Learn more at broadcast.harris.com or (800) 622-0022.

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World Radio History

TELOS/OMNIA/AXIA EXPAND OFFERINGS

Telos Systems has grown its Telos VX VoIP talkshow system line. It added two phone devices, Vset6 and VSet1, shown, to give stations more flexibility in working with calls. Also new is ProStream, a hardware-based Internet streaming solution for radio that combines multi-band audio processing, MPEG encoding and delivery to stream replication services in one hardware appliance.

Sibling Omnia Audio expanded offerings of the Omnia.9 and Omnia.11 processors. The Omnia.9 FM+HD is similar to the Omnia.9 FM+3HD but aimed at those who wish to only process and stream one program source for analog and HD. According to Omnia it retains the features of the original such as "undo" distortion management, composite embedder and streaming/encoding capability. The Omnia.11 FM is identical to Omnia.11 FMHD without an HD/DRM stage.

Omnia says both new models are upgradable to full HD versions. Both offer Single Sideband Suppressed Carrier FM transmission technology.

Axia Audio offers the RAQ, a rackmount six-channel IP mixer suitable for newscasts or news assembly or any application requiring a rack- or turret-mounted mixer. The operator can pair RAQ with the fanless Axia QOR.16 console engine — for standalone operation or can connect to Axia Livewire networks to share audio with other studios. QOR.16 is an "integrated console engine" that contains analog, AES/EBU and Livewire I/O, GPIO logic ports, console power supply and CPU and a "zero-configuration" network switch. It is possible to use one QOR.16 engine with two Axia RAQ consoles (or with Axia's new DESQ desktop mixer), creating what the company calls a cost-effective solution for multi-console installations.

The company also has a new line of nodes, the xNode line, featuring fanless design and redundant power; they earned the Radio World "Cool Stuff" Award.

Info: axiaaudio.com; omniaaudio.com; telos-systems.com

MYAT DEBUTS ALUMINUM ELBOWS & LINE, COAXIAL SWITCHES

Myat has introduced aluminum elbows intended for indoor use. Available sizes are 1-5/8 and 3-1/8 inch. The model 211-026 features integrated coupling sleeve and male connectors for interconnection, the model 211-025 is standard, non-slip sleeve. These elbows are intended to offer a lower-cost option to copper models.

The company also debuted two 50-ohm coaxial transfer switches. The 580-180-X series is a four-port model with 7-16 DIN connectors. The 101-180-X series is a four-port model with 7/8-inch EIA connectors. Each switch offers high power-handling capacity and has a specification of at least –70 dB port isolation and maximum VSWR of 1.03:1 from 54 through 1000 MHz. Switching time is less than two seconds. In the case of power loss, the switch will remain in position when power is restored. Manual override can be performed when AC power is disconnected. Both switches have four choices are available for 115/230 VAC drive power with 12 or 24 VDC control voltage.

Info: www.myat.com

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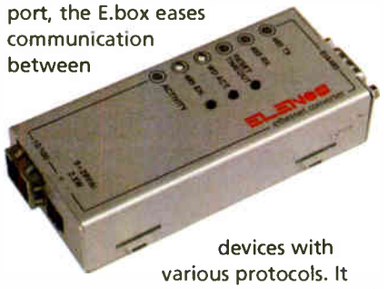
ELENOS THINKS INSIDE THE E.BOX

Elenos is promoting the E.Box link, suitable for remote communication with your FM transmitter.

Connecting devices with an Ethernet or RS-485 serial port, the E.box eases communication between



devices with various protocols. It also monitors parameters of the slave device and, if enabled, sends alarms (SNMP traps) toward stored destination addresses. E.Box, which will soon feature data logging and processing, stores data retrieved from the slave device and processes this information onsite.

The company took a Radio World "Cool Stuff" Award for its Indium Series transmitters. It also is expanding its North American presence with the recent hires of Mary Ann Seidler, John Bisset, Fab Sanabria and Edgar Higueros.

Info: www.elenos.com

A-T HAS USB/XLR MIC

Audio-Technica is featuring the AT2005USB Cardioid Dynamic USB/XLR Microphone. This $149 handheld dynamic has USB and XLR connections, enabling use with a computer or PA system. It is suitable for voiceover, field recording, podcasting, home studio recording and live performance applications. The company says metal construction provides long-lasting performance. Compatible with Windows and Mac. Tripod desk stand with folding legs allows portable tabletop use.

Info: www.audio-technica.com

INOVONICS OFFERS 'SENSIBLE SOLUTION'

The Inovonics 719 "David IV" Digital FM/HD Airchain Audio Processor is shipping. The company calls it "a sensible solution to the FM and FM/HD processing dilemma."

The all-digital, DSP-based processor includes five bands of dynamic range compression and EQ, gain-riding AGC, stereo field enhancements, sub-bass augmentation and the company's PIPP limiter. Included are 25 presents for popular formats as well as 20 customizable user presets.

Also new, the INOmini 632 FM-FM/HD Confidence Monitor Receiver earned a Radio World "Cool Stuff" Award.

Info: www.inovonicsbroadcast.com

World Radio History

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

Greg Landgraf, Senior Engineering Manager, Corus Radio Western Canada

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

Benjamin Brinitzer, Regional VP Engineering Clear Channel Media & Entertainment

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

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

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

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

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

Phillip Vaughan, Chief Engineer KFROG, CBS Radio

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

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

WHEATNET-IP

THE INTELLIGENT NETWORK

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World Radio History

"gotta have it!"

"Wow, Wow!"

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

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

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

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

Norman Philips, Vice President of Engineering, Townsquare Media

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

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

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

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

LX-24

ADVANCED MODULAR NETWORKABLE CONSOLE

Wheatstone

World Radio History

ELENOS

The transmitter everyone is talking about

Who says size doesn't matter?

Our transmitters' compact size will save you big time on energy costs and rack space

...and our unparalleled reliability will definitely keep you on the air

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ussales@elenos.com

GORMAN-REDLICH HIGHLIGHTS CAP-TO-EAS DECODER SYSTEM

The CAP-DEC-1 is a converter to integrate with present EAS encoder/decoders, translating CAP alerts into EAS headers and audio and making the station compliant with new FCC EAS rules. It has passed the IPAWS Conformity Assessment Program and is listed in the FEMA RKB.

Features include the capability to monitor up to three CAP alert server URLs, text-to-speech functionality and codecs for relaying attached alert audio, email server for alert reports up to six addresses, on-board storage for log files of message and audio archives and ability to print alert reports to USB or network printer.

The CAP-DEC-1 may be configured via keyboard, monitor and mouse or optional KVM switch. The clock is automatically updated and synchronized using preconfigured NTP servers. Features include up to five USB ports, 10/100/1000 GB RJ45 LAN connection, firewall and 1.66 GHz dual core Intel Atom processor. Software may be updated over the Internet. The CAP-DEC-1 is VNC compatible through the network. There is also an enhanced text output for an LED sign board or external character generator.

Info: www.gorman-redlich.com

HARRIS LAUNCHES NEW LINK

The Intraplex IP Link 100 is the first in a new range of "low-cost, high-performance audio codecs" from Harris.

The company says the IP Link 100 features "Dynamic Stream Splicing, a redundant delivery platform that merges two audio streams over the same or separate networks — ensuring seamless, intact delivery of program audio."

It also has multicoding, which Harris describes as simultaneous delivery of audio in two different formats: uncompressed audio for best quality, and compressed audio formats for lower-bandwidth backup links. There's an automatic switchover function via USB or other local audio source.

Harris separately has expanded its Flexiva line of solid-state FM transmitters, with 30 kW and 40 kW models being introduced to join the existing offerings of 10 and 20 kW. The air-cooled Flexivas use LDMOS-FET power amplifiers and offer a Web-based remote control option. Besides FM, Flexiva transmitters handle HD Radio and DRM+.

Also new in the Flexiva line is a digital FM exciter for an easy upgrade path to HD Radio and DRM+ digital broadcasts. The exciter can be remotely controlled via the Web.

Info: www.broadcast.harris.com

Got Gear?

Look for more Summer of Products coverage in the upcoming issues of Radio World. Manufacturers, send news and images to radioworld@nbmedia.com.

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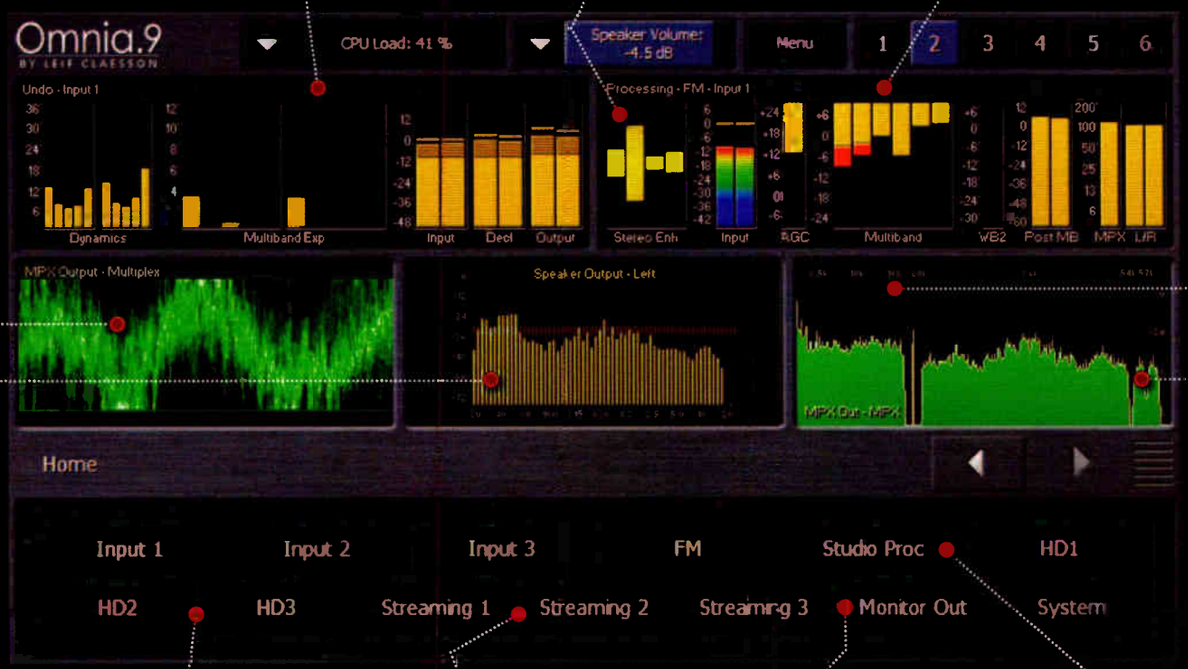

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HENRY TALENT POD SOLVES REMOTE PROBLEMS

Henry Engineering's Talent Pod solves headphone-audio problems often encountered on sports remotes and other location work.

Talent Pod allows an announcer to turn his or her mic on and off and create a mix of Local and Return (IFB) audio in the headphones. There are two Headphone

Volume controls, one for Local audio (from the remote site mixer) and another for Return audio. The Return/IFB audio is normally sent to the remote site from the main studio. To prevent confusion between the Local and Return audio, Talent Pod has two PAN switches, so the announcer can position the Local and Return audio in the center, left or right channel of the headphones.

For broadcasts with multiple announcers, several Talent Pods can be used so that announcers can control their own mics, headphone volume and Local/Return audio mixes. The units link using Cat-5 cables.

Info: www.henryeng.com

TIELINE PARTNERS WITH WHEATSTONE

Tieline is partnering with Wheatstone on integration of Tieline IP audio codecs into the WheatNet IP environment. "This will allow Tieline's new Genie IP audio distribution codecs to broadcast pristine high-quality IP audio between remotely located WheatNet IP studios over a range of managed or unmanaged IP networks like the Internet," they said in a statement.

The Genie codec, shown, is an IP audio codec suitable for distribution use; it can distribute four channels of WheatNet IP audio via Tieline's WheatNet IP audio card.

Tieline also released the Report-IT Enterprise application for Android. Its broadcast codec application can turn an Android smartphone into a pocket-sized, HD-quality 15 kHz live audio codec and portable 20 kHz recorder.

The company also has unveiled the Merlin IP audio codec. It is designed to deliver high-quality bidirectional stereo and full-duplex communications for point-to-point and remote broadcast connections over the range of wired and wireless IP networks.

Info: www.tieline.com

MOSELEY TRANSPORTS WITH RINCON

Moseley says the Rincon is the first audio transport device of its kind to offer multi-channel audio over different types of transport networks simultaneously.

That means you can send one to four programs over a mixture of T1 networks, IP connections of various bandwidths or radio links.

Rincon works in a number of station topologies, point-to-point unidirectional, point-to-point bidirectional and point-to-multipoint Multicast.

Choices of audio formats include Linear Uncompressed, MPEG Layer 2, and MP3, AAC LC & LD, G.711, G.722.

Rincon may be controlled by browser or on a smartphone. It is housed in a 1RU chassis with standard 19-inch rackmount.

Info: www.moseleybroadcast.com

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AUDEMAT IMPROVES TRANSMITTER PERFORMANCE

The Audemat FM Modulation Analyzer adds an RF generator to ease the task of commissioning and testing of FM transmission systems. It enables engineers to simulate any FM signal and feed it into the system's test suite. The analyzer features a digital FM demodulator, RF spectrum analyzer, oscilloscope, dual-channel audio generator and distortion meter as well as MPX and RDS analyzers.

Also new is MasterView Web for the company's ScriptEasy system, used in Audemat remote control devices. It lets a user access the Masterview application via an Internet-enabled device to see status and performance parameters, to do periodic checks, respond to alarm notifications, diagnose faults and trigger changes.

WorldCast also said that SureStream technology now is available with the APT WorldNet Oslo multi-channel platform and Horizon NextGen stereo codec, and in its one-port version on the standard package of Stream-In/Stream-Out Silver encoder/decoder.

And sibling Ecreso announced new power levels within the recently launched Helios FM transmitter range. Helios FM promises up to 74 percent efficiency. The line spans 20 W to 1.5 kW power levels, including 350 W, 750W, 1 kW and 1.5 kW systems as well as a 1+1 system.

Info: www.worldcastsystems.com

DIGITAL ALERT SYSTEMS INTRODUCES INTEGRATED EAS SOLUTION

The DASEOC is an integrated CAP+EAS+IPAWS alert origination system. The DASEOC allows authorized users to send and receive emergency alerts, AMBER alerts and EAS events in CAP format. CAP messages can be sent to the IPAWS aggregator for dissemination to broadcast stations, cable systems and mobile phones via the Commercial Mobile Alert System (CMAS).

The DASEOC is FEMA IPAWS conformant and Common Alerting Protocol (CAP) v1.2 compliant. It is capable of sending alerts to both IPAWS and state/local CAP feeds as well as simultaneous alerts to EAS. The DASEOC can monitor NOAA Weather Radio and legacy EAS such as PEP, LP1 and LP2 sources as well as any number of federal, state and local CAP alert sources. It has a Web-based system interfaces and monitoring and integrates into satellite and data broadcasting systems. A browser user interface with tiered security requires no special software, hardware or IT support.

Info: www.digitalalertsystems.com

DAYSEQUERRA FEATURES DIGITAL RADIO PROCESSOR

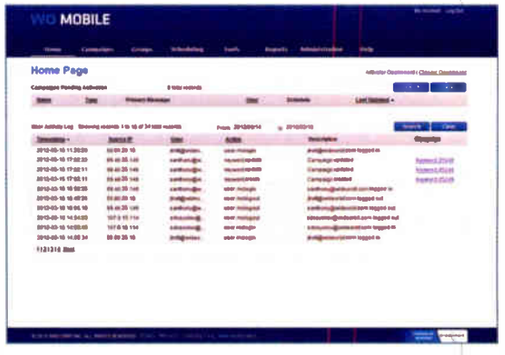
The DaySequerra LBR4 Digital Radio Processor is a four-stream AES stereo audio processor designed for HD Radio and the HE-AAC v2 codec used in DAB and DRM digital radio. It features four independent, low-IMD audio processing chains and

a proprietary perceptual loudness model developed by DTS. Each chain contains four separate codec pre-processing algorithms optimized for 24 kbps, 32 kbps, 48 kbps, 64 kbps and 96 kbps rates tuned to reduce artifacts.

The company has also introduced the DDA-416/WC106, a four 1x4 AES/EBU Digital Audio Distribution Amplifier with 1x6 Clock Distribution Amplifier. And its M4FM is available, replacing the M4.2R. Use it to remotely monitor audio and data for analog FM and FM HD Radio broadcasts including FM multicast channels HD2 through HD8.

Info: www.daysequerra.com

WIDEORBIT GOES MOBILE



WO Mobile is a mobile platform from WideOrbit that allows stations to launch targeted mobile programs and campaigns. The stated goal: engaging consumers, increasing commercial value of ad inventory and driving revenue.

The offering supports SMS alerts, MMS videos, sweepstakes and mobile coupons. It integrates with WO Traffic for billing, invoicing and reporting.

"WO Mobile includes numerous texting campaign types to ensure maximum flexibility for meeting all texting needs and scenarios, including the very popular Text Alerts from standard RSS feeds," the company states. "All campaign types can be tied to Orders within the WO Traffic system for invoicing and reporting."

Info: wideorbit.com

World Radio History

KLTT Gets a New AM Transmitter

Crawford Engineer Shares Her Impressions of the Nautel NX50

FIRSTPERSON

BY AMANDA ALEXANDER

My first thought when I heard we were going to replace our 16-year-old Nautel ND50 transmitter with a Nautel NX50 was, "Where are we going to put it?"

Our site at AM 670 KLTT was out of room. We had a door next to the Nautel ND2.5 auxiliary/night transmitter and then maybe two feet of wall after that. There was no way another 50 kW transmitter was going to fit in to that space. But I soon found that newer transmitters are getting smaller … a lot smaller.

We decided to keep the ND50 for use as a full-power auxiliary. We would thus remove the ND2.5 and put the new NX50 in its place.

Installing the power transformer.

Delivery day. Contractor Mike Kilgore unloads main crate with NX-50 inside.

There was a bit of a size difference between the old 2.5 kW and new 50 kW transmitters, about eight inches in width, so we had our contractor come out first and enlarge the opening in the wall. We also had an electrician install a new 125-amp, 480-volt fused disconnect for the new transmitter and get the wiring in place for us to connect the transmitter quickly.

Installation turned out to be easy. Nautel provided detailed site prep instructions as well as standard installation instructions. We followed the steps and before we knew it, the rig was in place and running. Installation, including remote control wiring, took less than two days.

We noted two oversights. Nautel's otherwise excellent instructions failed to mention that a safety power interlock switch must be installed in series with the 480V power feed to the transmitter. We discovered it only after our electrician had finished up when we ran across the interlock switch in the bottom of one of the crates.

The other item was an adaptor plate supplied by Nautel to accommodate the 3-1/8-inch EIA flange connector on the output. This was not mentioned in the instructions; again we discovered this adaptor plate in the peanuts in the bottom of a crate after the transmitter was on the air. We had, as it turned out, needlessly drilled additional holes in the top plate of the transmitter to accommodate the six bolts for the EIA flange.

We alerted Nautel; they apologized and promised to correct these issues in future documentation.

ON-AIR

Once the transmitter was up and running, I began messing around with some of its features and options.

We wanted to have modulation-dependent carrier level (MDCL) control activated to take advantage of its power savings. We did what we thought we were supposed to and noticed that there were two audio sources on-air. They were both our station audio, but they were out of time alignment by several seconds, so it sounded like a real train wreck. This was during the holiday for Nautel. A call to the emergency help number got us in touch with a knowledgeable technician who worked with us by phone. I was able

(continued on page 28)

PRODUCT CAPSULE

NAUTEL NX50
AM Transmitter

Thumbs Up
+ Easy access to various charts, presets, statuses and meters
+ Spectrum display
+ Real-time load analysis
+ Configurable metering
+ Configurable remote I/O
+ Easy view of meters at home screen when first logged on

Thumbs Down
– AUI freezes occasionally
– No real access to add configurations from Web interface
– Oversights in pre-installation/installation instructions

For information contact Chuck Kelly at Nautel in Nova Scotia at (902) 823-2233 or visit *www.nautel.com*.

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Why does Axia outsell every other IP console? We've got connections.

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With this huge installed base of broadcast studios around the world, we've attracted dozens of partner companies, all offering Livewire™-compatible products. A device with a Livewire port is instantly available to any other device on the network. So, if you're shopping for IP consoles, be sure you ask: "How many partners do you have?" Because a network that only plays with itself isn't very well-connected... is it?

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World Radio History

NAUTEL

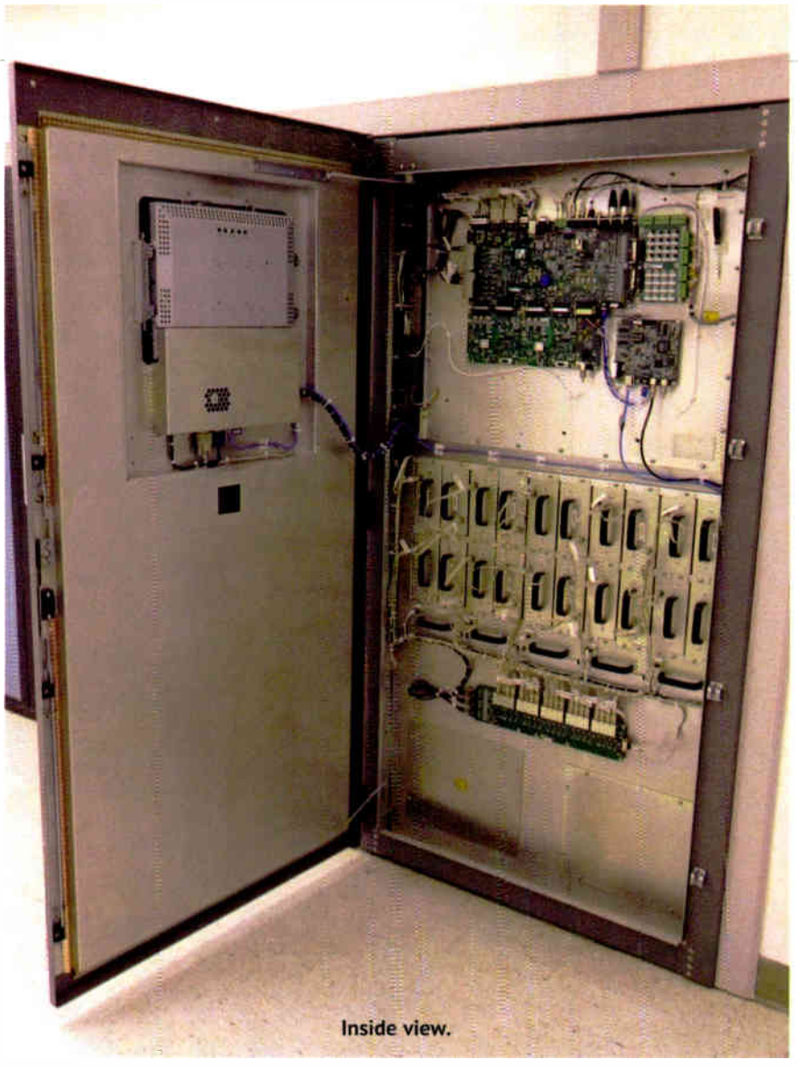
(continued from page 26)

to get him remote access to the transmitter. After several hours, we finally found that if we just lowered the gain in the exgine to zero, we would get rid of the second audio. With that done, we had the transmitter working in the IBOC+AM (hybrid) mode with MDCL.

The author with KLTT's new NX50.

I enjoy the network interface of the NX50. If there is a problem, we don't have to rely on the functions we have set up on the remote control system. I can log in to the network interface, which Nautel calls the Advanced User Interface, and have everything at my fingertips as if I were standing in front of the transmitter. As soon as I log in I am greeted by a screen that shows power, spectrum display, Smith chart display, modulation levels, audio input levels, what exciter is on and whatever meters I have set up.

The spectrum display is noteworthy. I still have to go out and do the FCC-required annual occupied bandwidth measurements every 14 months, but with a glance at the transmitter screen I can see if everything looks okay on a daily basis. If it doesn't, I will know a lot sooner than the 14 months' interval between FCC-required measurements. I can enlarge the display and see clearly that our sidebands and digital carriers look good; I can set markers to make specific measurements of various points.



Inside view.

Having the option to view any meter of any parameter is a plus. I click "Meters" and can choose the desired meters from the controller, Exciter A or B and (power amplifier) Rack 1, which then gives me the option of seeing any of the individual power amplifier "cubes." I am able to go into the configuration and set up notifications to alert me to a failure.

I can see if any of the controllers from the racks aren't working, if an exciter has failed and switched over, if a cube has failed and more. With our Burk ARC-16 remote control, we get 16 channels; with two directional patterns for the site, those are full. Being able to see more than just the 16 channels has been a big help. I feel confident that if something else goes wrong but doesn't take us off the air, I will know about it soon.

Another thing that is new to me that may be helpful is the scheduler; should our ARC-16 ever fail, we can have a backup way to make sure power/pattern changes occur as they should. I have not had the chance to go in depth with it, but at a quick glance, it looks straightforward.

The preset function has proven to be a big help. We have set up our day power, night power and what we call "lightning power" for storm season.

Creating presets allows us to do more than change power. We can decide what mode we want: "IBOC+AM," "Analog AM," "IBOC," "DRM+AM" and "DRM." For this particular NX50, we keep at the mode set to "IBOC+AM" in all our presets. We can also choose our analog AM source: "Analog AES," "Balanced Analog" or "Digital AES." From there we can decide what audio format we want: "AM Carrier," "Mono L+R," "Mono L," "Mono R" or even "Stereo C-Quam." There are options for Pre-emphasis, Dynamic Carrier Control (DCC), AMSS (whatever that is!), DRM and IBOC. There are hundreds of presets that can be set up.

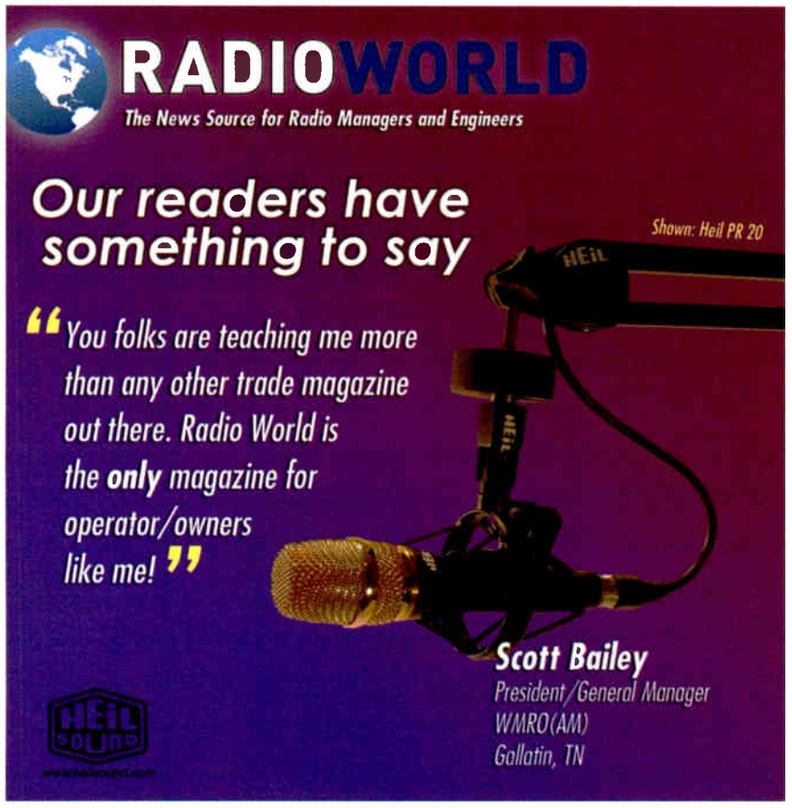
CONFIGURATIONS

Another feature is the ability to configure remote inputs and outputs. Any input function can be assigned to any of the 16 remote inputs, and any output function can be mapped to any of the 16 remote outputs. You can, if you wish, use an output to trigger an input.

For example, we use an output mapped to the VSWR cutback to trigger a switch to a reduced power preset (what we call "lightning power," a mechanism for reducing transmitter power to 10 kW when there is lightning in the area to prevent damage to transmission lines).

The beauty of this I/O "mappability"

(continued on page 30)



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

1876: Alexander Graham Bell's commercially viable telephone.

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

1920: Every home is working toward having a telephone!

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

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

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

2004: IP Telephones begin to become the staple of modern business.

2007: Smartphones are complete communications centers. AND they can sound great!

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World Radio History

Keep That Transmitter Building Cool

Ideas for Ventilating Your Non-Air Conditioned Facility

BY MARK PERSONS

Experienced engineers know: Inadequate cooling will induce transmitter failures.

TECHTIPS

As Ben Franklin once said, "An ounce of prevention is worth a pound of cure." There are many ways to design cooling systems for transmitter buildings. The task is not to be taken lightly. Just like adequate grounding, it should be high on the list of getting a facility built right to minimize problems later.

Today let's talk about non-air conditioned buildings, which are the norm in northern Minnesota where I am from.

Roof vents of any sort, including the turbine type, are a bad idea. There will be weather conditions that force rain or snow down through them and onto a transmitter below. I've witnessed this and seen the disastrous results.

MULTIPLE FANS

The best system I have seen has an 8- or 9-foot flat ceiling inside a transmitter building with a gabled roof. Holes measuring 2 x 2 feet were cut in the ceiling directly over the transmitter exhaust ports. Hot air goes up and into the attic area. In essence, the attic is a huge plenum where hot air collects. Fans on the gabled ends of the roof then draw hot air to the outside as necessary to keep the transmitter room at the right temperature.

Fig. 1

When using outside air to cool, you will find that inside air is 5 to 10 degrees Fahrenheit warmer than outside air. That is about as good as you can do. The system isn't right if the inside temperature is more than 10 degrees warmer than incoming air. Yes, that means that a 90-degree summer day could have a transmitter running in 100-degree room air. Fortunately that doesn't happen often in northern states.

Plan for two or more fans in the highest end parts of a gabled roof. Never use just one. A breakdown could overheat the transmitter building in short order. Each fan should be on its own thermostat and circuit breaker. Failure of one will not trip a breaker to take the other fan or fans down at the same time.

For economy's sake, I like barn fans with screens to keep mosquitoes and other critters out. These fans permanently mount in a building wall. Their gravity louvers usually work well. Motor-driven louvers often suffer mechanical failures as they age, sometimes in just a few years. Inexpensive squirrel cage fans are for sites with small transmitters. Best to put 1/4-inch hardware cloth over openings to prevent accidental injury (Fig. 1).

Fig. 2

INCOMING

Don't forget the incoming air. (See Fig. 2.) Plan for about twice the square foot area that the fans have. Air filters clog with dirt and therefore the effective area of the air opening is decreased. Also they offer resistance to airflow even when new.

One remedy is to use pleated air filters. They cost a bit more but increase the area through which air moves; and they last longer. When air volume is high I like air filters that are 2 inches rather than 1 inch deep. It all depends on the situation and the amount of air necessary to get the job done. But you can never overdo it.

Even commercially installed filters may leak dirty air into the building like the one Fig. 3. Shoddy work on this one! Rarely have I seen one that adequately keeps dirt from getting around filter sides.

(continued on page 32)

Fig. 3

NAUTEL

(continued from page 28)

is that if we decide at some point that we would rather have the ability to remotely switch exciters than switch to a third power level, for example, we can simply map that function. No need to get out the crimp tool. The only work that needs to be done besides reconfiguring it in the AUI is to go to our remote control and relabel it to avoid confusion.

As I mentioned, the main AUI screen shows several graphical indicators. The defaults can be replaced with other available graphical indicators. They include an EQ frequency response, EQ impulse response, EQ filter delay, AM-AM correction, AM-PM correction, signal constellation, Lissajous Plot and a waterfall graph.

When most people think of a transmitter, they think of something that is complicated. The NX50 is anything but, at least from a user perspective. I think any engineer will feel at home with this rig.

While the NX50 is a great transmitter, it has some flaws.

Foremost, there is still no refrigerator installed with a tap for a keg! We have requested this from Nautel so we could have a nice cold beer after a hard day at a transmitter site, but they have not budged.

On a more serious note, one irritating issue we have encountered — three times so far — is the AUI touchscreen freezing. This does not affect the operation of the transmitter, which stays on the air and keeps playing the hits. The transmitter has a panel inside the front door with a programmable matrix of pushbuttons that can control whatever transmitter functions are desired; so even without the AUI you can operate the transmitter. The remote AUI also continues to work when the local AUI freezes up.

But so far, the only way we have found to recover from the "frozen screen syndrome" is to switch to our auxiliary transmitter and power down the NX50 and power it back up (i.e., reboot). I have submitted a trouble ticket and Nautel responded with a reset technique that should work without down time; they also are working on a fix for the occasional freeze-up.

A minor issue is the local/remote control. I often go into the menus to change a configuration somewhere. These menus and buttons are responsive as I am making the changes, but when I hit save, nothing happens. I finally realized this is because the transmitter is still in the remote mode. I understand this and am glad it is there, but a small dialog box that says "Remote" would be a nice reminder.

Another other minor issue is that the transmitter does not automatically switch over to daylight savings time, which, if using the scheduler, could prove to be a very bad thing.

When we decided to replace our ND50, it wasn't for any reason other than age; the longer something runs, the more wear and tear and thus the greater likelihood it will quit at an inopportune time. We didn't think there was much to improve on in relation to the sound quality or signal strength. Yet since installing the transmitter we have received a couple of calls from listeners happy with how much better the signal is.

Nautel has continued to make me a believer in their products with the NX50. Happily, we are also now saving money. We saved about 37 percent in power usage in February compared to a year earlier. That adds up to a little over $1,000. That's a big deal.

The author is chief engineer of Crawford Broadcasting Co., Denver.

World Radio History

Which is better for streaming: hardware or software?

Telos ProSTREAM:
Internet streaming in a box.

Everyone knows the answer is *hardware* — like a Zephyr! Introducing Telos ProSTREAM, the professional netcoder for Internet streaming, with Omnia multi-band processing built right in.

ProSTREAM makes sending programming to the Net easier than ever. Simple and bulletproof: analog or digital audio goes in, compressed audio streams out. Just hook up your input, select a bit rate and Omnia processing preset, send the output to your Shoutcast or Wowza server, and *Shazam!* Streaming audio, simple as 1, 2, 3.

And such audio…amazing. Thanks to our partnership with Fraunhofer (FhG), we were able to build a processing architecture that's specially optimized for MP3 and MPEG-AAC encoding algorithms. The result: detailed, commanding, blow-you-out-of-your-office-chair streaming audio, even at aggressive bit rates.

Telos

Telos-Systems.com/ProStream/

Omnia A/XE:
Internet streaming in a server.

Obviously, the correct answer is *software*, with the power to stream multiple channels from a single PC. Meet Omnia A/XE, the professional all-in-one software solution for Internet streaming.

Omnia A/XE can turn a couple of lonely servers into a supercharged streaming network. It runs in the background as a Windows service and can process and encode multiple streams in various formats simultaneously. Just hook up your audio, choose a bit rate and processing preset, select your Shoutcast or Wowza server, and *Voila!* Streaming audio, simple as A, B, C.

And that audio packs the clean, clear competition-crushing punch Omnia is famous for. Each stream is sweetened with its own adjustable wide-band AGC with three-band compressor/limiter, EQ and low-pass filter, and precision look-ahead final limiter. The result: clean, clear streams with more presence and character than you ever thought possible.

Omnia

OmniaAudio.com/AXE/

World Radio History

COOL

(continued from page 30)

The best solution to the problem, in my opinion, is to make your own air filter frame. (See Fig. 4.) I use 3/4-inch plywood as an outer frame where an air filter might fit against a wall and then another piece of plywood with smaller opening to hold the filter in and prevent air leakage. (See Fig. 5.)

Fig. 4

Fig. 5

Save the plywood that you cut from the air filter frame and use it in place of an air filter during winter months. Do that on the sides of the building facing the prevalent winds. In my area it is on the north and west. Leave at least one air filter in place to provide some incoming air.

There are interesting fasteners available at well-stocked hardware stores. Look for a screw that has thread for wood on one end and a machine screw thread on the other. (See Fig. 6.) Use an acorn nut on the machine thread side to screw fasteners into a wood frame. Then remove the nut and use wing nuts to hold the second piece of plywood in place. Replacement of the air filter is easy; just remove the wing nuts. Four should work in most instances. No special tools are required.

Fig. 6

The first example is for a filter that fits over a single concrete building block hole. For larger openings, say 2 x 2 feet, just scale up. Add burglar protection by having a welder create a frame with steel rods, as shown in Fig. 7. In that case, the frame could be made large enough to accommodate the filter (Fig. 8). All you add is the plywood cover with a hole large enough to hold the filter in but not restrict air flow. With a filter of that size, I recommend 2-inch-deep pleated filters. They will handle a lot of air.

Fig. 7

Fig. 8

You should have some kind of primary air filtering such as 1/4-inch hardware cloth, also available from a well-stocked hardware store. Think of it as galvanized window screen that has quarter-inch-square holes. This will keep mice out. If you have a rodent problem on an existing system, you could use 1/4-inch hardware cloth over the outside of the hood. (See Fig. 9.) Put it on with screws so removal for cleaning is possible.

Fig. 9

For a transmitter building with a 20 kW FM transmitter, I like to have two 20-inch exhaust fans and four 2-by-2-foot pleated air filters about 3 feet above the floor distributed equally around the building perimeter.

COMFORTABLE ENVIRONMENT

I remember a poorly designed system that had an air duct pipe connected directly to the top of the transmitter. The transmitter would quit and then start again when someone opened the building door to investigate. The transmitter's air pressure switch saved the transmitter from burning up in that instance.

There were two problems. The building had no incoming air vents; and there should never be an air duct attached directly to the top of a transmitter. Manufacturers of transmitters recommend against that practice, telling customers to leave 10 inches or more of space above the transmitter so it can do its own airflow work unimpeded by outside influences.

Put electric baseboard heat in transmitter buildings to keep the temperature near normal when there is a transmitter failure during the winter months. I like to keep temperature in transmitter buildings above 50 degrees just to make sure the equipment doesn't quit working. Maybe you have seen that too.

The building will be a comfortable working environment when you get it right. This is a good reason to plan ahead or to modify an existing system for the better.

Mark Persons, WØMH, is certified by the Society of Broadcast Engineers as a Professional Broadcast Engineer with more than 30 years' experience. His website is www.mwpersons.com. *Find past Tech Tips under the Resources tab of* radioworld.com.

WHO'S BUYING WHAT

An NNBY Satellite Site

The **Broadcasting Board of Governors** launched an FM radio transmitter in Tripoli, Libya, that covers the Libyan capital and its suburbs. The new **Harris** ZX2500MX 2.5 kW transmitter broadcasts a 24 hours a day, seven days a week from Radio Sawa. ...

Native North Broadcasting Yukon is a nonprofit TV and radio broadcaster serving Canada's northwest. To serve its far-flung stations (about 20 translators including one above the Arctic Circle), NNBY deployed some two dozen **Digigram** Iqoya Link or Link/LE IP codecs to work with the NNBY satellite distribution network. They were sold through **Point Source Audio**. ...

Univision Radio committed to using the **Marketron** Mediascape traffic platform, integrating it at its 69 stations in the United States, the supplier stated. Separately, **Buckley Radio** said it would use the platform at its 18 stations including WOR(AM) in New York.

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If Morale Is Suffering … Fix It!

You Can Change Staff Spirit If You Have the Courage to Lead

BY MARK LAPIDUS

Let's review, managers: Morale is the spirit of a group wherein its members want the group to succeed. When morale is high, so is productivity. The staff looks forward to coming to work, better applicants apply for openings and people are much more likely to go the extra mile for co-workers, not to mention their boss.

If you're beginning to sense a drop in morale at your radio station or cluster, you should do something to improve the situation. And quick.

iStockphoto/Phil Cardamone

Increase Face-to-Face Time With Leaders — A general manager sets the tone by being openly available. If the GM wants a happy, admiring following, he or she must actually interact with staff members individually.

While this may seem simplistic, you'd be astounded by how many GMs or market managers don't even greet members of their staff on a regular basis.

Type "A" personalities typically are extremely busy with conference calls and meetings, so walking the floor a few times a day doesn't make it onto their agenda. That's a mistake.

Make a point to say hello to staffers, know their names, ask about their families and give specific props for things well done.

Keep your office door open. Earn bonus points for taking staffers out for coffee or lunch a few times per month.

Over-communicate! — People who are "in the loop" feel much more positively connected to their workplace. In places where everything is a big secret, staff gossip and innuendo increase to compensate for the lack of real information.

While email is good for short pieces of information, there is no substitute for meetings, though keep them quick and to the point. After all, nobody enjoys attending a drawn-out affair with no clear agenda, so preparation is key.

Each department should be having weekly meetings in which people can hear the latest from their manager and during which they are asked for feedback. A full staff meeting once a month is a must. Ideally, coordinate the meetings with something fun, even if it's just interesting snack food or treats like ice cream cones.

Ask for input on upcoming decisions and then actually use some of the ideas. Example: While it may seem dumb to ask the staff what color they want the walls when you have to repaint them, this decision does affect their environment.

Share ratings and sales information openly, even if this means offering percentages. I continued to be amazed that stations don't share ratings with staff even when they are published in the local paper or online. Tell your staff how you're marketing your product either through outside advertising, events or within your own cluster.

Recognize Achievements & Milestones — When you turn your staff into a large family, all boats rise. It won't cost you a thing to showcase staffers' exemplary work. Everyone enjoys hearing good news about promotions, engagements and births.

Create an "employee of the month program" that comes with benefits (which you can trade out), like better or free parking, concert or game tickets, or lunch with (and courtesy of) the GM.

Go overboard by giving someone an extra day's vacation for a job well done and you will never be forgotten.

One caveat: It is unquestionably a management challenge to see the good in others and invest extra effort into helping them succeed. The office can be like mini-high school popularity contest, so you must work at making everyone part of your morale plan. Spread your attention and recognition efforts around the staff evenly.

Plan Quarterly Group Activities — Each department should do something fun together four times a year *outside the office*. Just watch the walls between people crumble when they bowl together or go see a baseball game.

Make sure these events happen during normal business hours so that you are not taking away from personal or family time. Score more points by inviting spouses or significant others during one of these outings.

There's a lot to complain about in any industry, and the changes that have rocked radio over the last 10 years are not easy to overcome. However, things will get better if you engage locally with the people who should matter the most to you. You can change morale for the better if you have the courage to lead.

Mark Lapidus is president of Lapidus Media.

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PEOPLENEWS

Communications attorney David Oxenford joined Washington-based **Wilkinson Barker Knauer** as a partner. He had been with Davis Wright Tremaine.

Attorney **Lauren Adams Colby** died recently. He was 81. After graduating with his law degree in 1955, Colby worked at the FCC for two years, according to an obituary in the Frederick, Md. News-Post. He worked at Fly, Shuebruk, Blume & Gaguine in Washington until 1961 when he opened his own office. He purchased WTHU(AM), Thurmont, Md. in 1971. He moved to Frederick, Md. and practiced law there until a month before his death, according to the account.

Bob Demuth

Cumulus Media Networks recently named **Tamiko Fletcher** VP of network operations. She oversees operational aspects of new program and service launches while assisting Senior Vice President of Affiliate Sales Dennis Green in management operations for the Dallas office.

Jim Ryan, VP adult contemporary programming and program director for WWFS(FM), added another CBS Radio duty, that of PD for **WCBS(FM)**. Brian Thomas, who had occupied the post, is moving to Tampa to become that market's VP for programming.

Broadcast Electronics named **Bob Demuth** sales manager for Europe, Middle East and Africa. Demuth was an executive with Beasley and worked in radio network technical operations for Westwood One. He also has done engineering consulting work. Demuth has done major installations and project management for BE in the territory. Demuth will report to Tom Beck, BE's director, sales and RF product management.

Chuck Johnston

SCMS announced staff developments. **Jim Thomason** joins as a field sales engineer based in Ocala, Fla. His primary area of responsibility will be the southeastern and southwestern states. He was an RF sales engineer for Broadcast Electronics and has worked for Harris Corp. **Chuck Johnston** was hired as an inside sales engineer at the corporate office in North Carolina. His sales experience includes working at the former Broadcast Center at Harris. **Vernon Thomas** came on board as warehouse manager. He most recently worked at an air freight and logistics warehouse facility.

FM transmitter maker **Elenos** added **Frank Massa** as Asia Pacific sales manager, a newly created position. He'll be based in Chonburi, Thailand. He is former APAC regional sales manager with Broadcast Electronics for AM/FM radio transmitter and studio systems.

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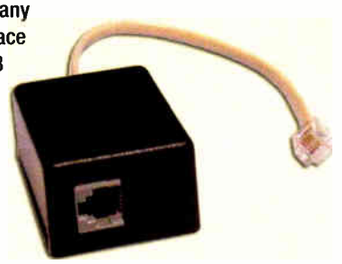

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World Radio History

Time to Debunk an Early Radio Myth

About Aimee Semple McPherson's 'Minions of Satan' Telegram to Hoover

COMMENTARY

BY JIM HILLIKER

In radio's infancy, legend has it, evangelist Aimee Semple McPherson sent an angry telegram to Secretary of Commerce Herbert Hoover about her station, KFSG.

Hoover was sometimes called the "radio czar" because he was in charge of broadcasting between 1920 and 1926. The supposed 1920s telegram reportedly contained the phrase "please order your minions of Satan to leave my radio station alone."

For many years, I believed that this story was true. But now, after examining the facts closely, I believe this is another myth from radio's earliest years, not unlike the commonly heard statement that KDKA was the first radio station in the world.

Such a telegram likely was never sent by McPherson. Hoover's telling of the story is full of gaps.

My research has found no mention of this incident in any newspapers or popular radio magazines of the 1920s. Neither Hoover nor McPherson ever spoke or wrote about such an incident at the time. Hoover first told the story in a 1945 radio speech. He later wrote about it in Volume II of his memoirs in 1951. Hoover claimed that McPherson sent the alleged telegram after the Department of Commerce had warned her about her station. Hoover said that KFSG had "wandered all over the wave band" causing interference to other Los Angeles stations. Hoover added that warnings about KFSG sticking to its own frequency did no good, so the radio inspector sealed up her station, taking it off the air.

Hoover never gave an exact date or year that this alleged incident took place. There are no reports of KFSG being taken off the air in the records of the Radio Service Bulletins published by the Department of Commerce at the time.

Noted radio historian Erik Barnouw accepted Hoover's telegram story as fact in his 1966 book "A Tower in Babel—A History of Broadcasting in the United States to 1933." Since then, more than 50 books on radio history have repeated the McPherson-Hoover telegram story, quoting Hoover's memoirs or Barnouw's book. Most claim the alleged incident took place in 1924 or 1925, but none give an exact date for the telegram.

Int'l Church of the Foursquare Gospel Archive

Aimee Semple McPherson, seated, and Kenneth G. Ormiston, 1924.

As far as KFSG causing interference to other stations, there is only one piece of evidence that shows that this part of the story is true. The district radio inspector for California, Col. J.F. Dillon, sent two letters to Mrs. McPherson within two weeks of KFSG's first broadcast in February of 1924. Dillon said his office was receiving complaints about interference to reception of KHJ and KFI. Dillon believed the problem was not caused deliberately by KFSG's equipment but the inferior, less selective radios made in 1924, such as crystal sets, in proximity to KFSG's transmitter.

But KFSG was never closed down and taken off the air, as Hoover claimed. And KFSG's excellent engineer, Kenneth G. Ormiston, worked hard to help Los Angeles-area radio fans who had interference problems. He also helped those who wanted to get better reception. Ormiston was technical editor of "Radio Doings" magazine and answered reader's questions about radio on KFWB each week in 1925. Ormiston helped get KFWB on the air in 1925, and in 1934 was in charge of boosting the power of KNX to 50,000 watts.

Notably, McPherson's son, Dr. Rolf K. McPherson, shed further doubt in a 1994 letter to me before his death:

"This is one of the many rumors which have persisted through the years. Mother never attempted to defy the law, but always endeavored to comply with the rules. The statements you mention certainly were not typical of her way of doing things. I might explain that the equipment in those days was not always adequate, but the situations were cleared as quickly as they could be."

It is difficult to prove a negative. But I believe interference was a common problem in early radio; I believe there are several gaps in Hoover's story about the alleged telegram. I believe my research suggests that the incident never took place and that it is time to bury this story, or at least demand more evidence of its veracity.

But decide for yourself. I have posted my detailed essay about the myth on Jeff Miller's History of American Broadcasting website at *http://jeff560.tripod.com/kfsg2.html*.

Since I started researching and writing about early Los Angeles radio history, I've found there is little reliable information available, but plenty that is inaccurate or false. I try to set history straight in my articles on early radio.

Jim Hilliker is a self-taught historian and former radio broadcaster of 25 years with a particular interest in the early history of Los Angeles radio. Comment on this or any story. Email radioworld@nbmedia.com.

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CHENNAI, INDIA

right:
In India presenters are known as RJs which stands for Radio Jockeys.
below:
Malar Publications, in their daily newspaper, proudly announce their new station.
below left:
Many Indian radio studios are made as colorfully as the local saris.

RADIO SYSTEMS CONSOLES IN USE WORLD WIDE

Radio Systems' studio equipment is very user-friendly. This is the response we get from our RJ's. They find the console easy to handle and make full use of for their programs. When it comes to operating the console—it creates an error free operation. Vijayan M., Controller–Administration and HR, Hello FM, Chennai India

Since their 1999 "Privatization of FM" policy was adopted, the government of India has embarked on an ambitious program to license new broadcasters throughout all 28 States of India. Now in "Phase-III" of implementation, over 700 new FM stations will be authorized and built in cities and towns across India.

Team Radio Systems is proud to be playing a part supplying and building these stations with our New Delhi-based partner, Technomedia Solutions.

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below, from left to right:

Gerrett Conover
Vice President

Daniel Braverman
President

Michael Sirkis
Chief Engineer

Dennis Greben
Manufacturing Manager

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