



RADIO WORLD

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New FAA Rules Take Effect

Impact May Be Minor, But Issue of Interference From FM To Aviation Remains

BY RANDY J. STINE

WASHINGTON — New Federal Aviation Administration tower rules take effect in January. While the immediate impact on radio and television owners with towers will be limited, experts also say the door has been left open for tougher FAA scrutiny of electromagnetic interference from the FM radio band to aviation communications.

After the FAA proposed rule changes in 2006, broadcasters and tower owners had feared more involvement from the FAA and the Department of Transportation for future tower projects or modifications, according to industry watchers. However, the FAA

(continued on page 8)

Abbott: We Need More Information

Nevada SECC Chair Talks About EAS & CAP, Including Governor's Activation & Other Concerns

A lack of information is one of the consistent concerns expressed by industry leaders to Radio World about the implications of the Common Alerting Protocol and pending changes in EAS.

Among people most affected are those involved in state-level planning. Radio World U.S. Editor in Chief Paul McLane asked Adrienne Abbott how the changes in alerting are playing out right now in Nevada.

In this interview, she says that federal officials appear to be leaving the education process "up to EAS chairs and a few broadcasters." She



worries that the process to date has made it difficult to build "the kind of seamless, integrated public warning system envisioned by the authors of the Second Report and Order on EAS." And she lists numerous questions raised by the concept of governor's activation, especially in cases of cross-border coverage.

RW: Describe your job/role in EAS.

Abbott: I am the FCC-appointed chair of the State Emergency Communications (continued on page 4)

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RDS: Injection & Pilot Synchronization

Both Modulation Parameters Are Key to Good RDS Receiver Displays

BY ALAN JURISON

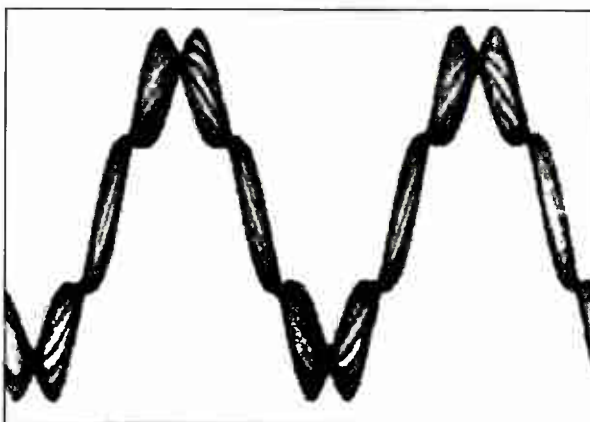
In this installment of our RDS series, I'm going to focus on RDS injection rate and pilot synchronization. In the Oct. 20 issue, we went

RADIODATA

in depth with Program Service name scrolling on your stations.

RDS runs as a small 57 kHz digital data subcarrier on your FM station. When installing your RDS encoder, you have options to control its overall output level.

This level, often compared in percentage to the overall modulation of the FM carrier, is called the RDS injection level. The National Radio Systems Committee and European RBDS/RDS standards don't actually specify a recommended level.



An example from the Inovonics 730 user manual of a properly synchronized RDS subcarrier with the pilot, as shown from an oscilloscope. This step can get overlooked when you're installing an encoder.

RDS performance. At this point I would recommend 6 percent. This is a good benchmark to aim for, in my opinion.

Zune and Apple's Nano can do with 5 to 6 percent.

I noticed that stations with injection below 5 percent typically don't even show on the Zune HD. I performed these tests with multiple Zune HD models, with the factory-installed software and even upgraded to the latest versions.

I presented these observations to Microsoft in the fall of 2009; they acknowledged the issue, but so far they have not dedicated resources towards changing this. While it appears 7 to 8 percent is best for the Zune HD, I personally feel that this injection rate is far more than what should be necessary, seeing how every other radio I've worked with does well in the 4 to 6 percent range.

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The standards documents show a nominal value of 3 percent to 11 percent injection but they shy from coming up with a "recommended" value. I have looked at the injection levels used by many different stations across the country, and I've seen many values; I've seen them below 3 percent and above 11 percent. I would say that the typical value has been 4 to 5 percent; and in the past I set my own encoders in this range.

However, with the newer, portable radios, it has been my experience that 4 to 5 percent just isn't enough for solid

OPTIMAL PERFORMANCE

The iPod Nano's 5th and 6th generations as well as Insignia NS-HD01 and NS-HD02 receivers perform nicely with 6 percent injection. Anything lower than 6 percent on the portable units results in performance that is less than optimal. As an added benefit, 6 percent really makes RDS reception solid in mobile environments, even in multipath; and I've noticed RDS performs much better on the edge of your coverage area at 6 percent injection rather than at 4 or 5 percent.

In my testing with Microsoft's Zune HD, I found that the analog portion of the FM tuner has issues with injection rates below 5 percent, even in optimal reception conditions. Often, I had to increase the RDS injection rate to 7 to 8 percent to get the same RDS performance as the legacy

Also note, this issue with the Zune HD isn't relevant if your station is running HD, as the HD PAD data will be used instead of analog RDS. But with only about 1,600 FMs authorized by the FCC for HD operation, that leaves this problem applicable to approximately 8,150 analog FMs should they elect to encode for RDS. (The figures are as of Sept. 30, 2010, the latest available from the commission.)

When setting your injection level, I feel that it's best done with a modulation monitor that supports RDS injection rates. Often, I've run across stations that didn't have the right measurement equipment when setting this up, and they have no idea what their injection rate actually is.

I've seen RDS injection rates below 3 percent, where it fails to register on most receivers. I've also seen it well over 10 percent, which is unnecessary and, assuming that you're keeping your

(continued on page 12)

GET THE MOST OUT OF RDS

This is the fourth in a series of articles. Read past stories at www.rwonline.com/article/99554.

Past topics:

- What You Need to Know
- RadioText Send Rate
- PS Scroll



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ABBOTT

(continued from page 1)

Committee for the state of Nevada. I work with other members of the SECC to make sure the Emergency Alert System functions as designed.

We are all volunteers and receive no reimbursement for our work. However, we do have the support of the Nevada Broadcasters Association, which has provided the funding for some of our expenses such as the printing of the state and local plans and custom binders for the plans.

Nevada is a large state and there are no broadcast signals that cover the entire state. The FCC divided Nevada into three operational areas, and we wrote plans for each area. In addition, we wrote several versions of each area's plan, one for the Local Primary stations, one for the participating stations, one for the National Weather Service and one for emergency officials. We have training programs that correspond to each plan.

When I asked the Broadcasters Association in 1994 if I could be the state chair for the new EAS, the station managers said that they would support me as long as I made clear what they had to do. Over the years, that support has never wavered and is as strong now as it was back then.

One of things that I do as part of my commitment to the station managers is to send out reports every week on EAS activities in each operational area. That means the chief operators at each station know what tests and activations have been sent and whether there have been any problems in the past week. This helps them maintain accurate logs and avoids a lot of confusion.

The weekly newsletters also give me a way to keep the engineers, master control operators, program directors and others informed of what's going on with EAS, including the developments with CAP.

RW: What's going on in your operational areas as a result of the recent federal standards announcements and implementation clock?

Abbott: Right now, some stations are buying the new EAS equipment that's on the market, some stations have had the new EAS equipment for several years and other stations are putting off their purchases until more is known about the products and which ones have passed the FEMA conformance lab tests.

Some stations are on very tight budgets and they aren't buying anything right now and are holding off until we all know more about the new equipment.

RW: You told me that as a state chair, you have more questions than answers yourself. What specific questions are you looking for answers to, and what questions are you hearing from others in Nevada EAS?

Abbott: I feel that there isn't enough information available to both broadcasters and emergency officials about what's going on with the new EAS and why the changes are happening.

Many of the people who are making decisions about the new equipment don't understand how CAP works and why it's better than what we have now. Both the



Operational areas for which the state of Nevada SECC is responsible reach into eastern California and northern Arizona. 'We also have coverage from stations in Utah and Idaho reaching into Nevada and stations here that reach Utah and Idaho,' Abbott said.

FROM THE EDITOR

Paul McLane



FCC and FEMA appear to be leaving this education process up to the EAS chairs and a few broadcasters.

There's a certain "because we said so" attitude from the FCC that's being felt by broadcasters who are randomly buying whatever equipment appeals to them or their corporate engineers. That's making it difficult to build the kind of seamless, integrated public warning system envisioned by the authors of the Second Report and Order on EAS.

Our broadcasters want to know more about the role of the Internet in the new EAS and what kind of security there is for the system. Also, there are a number of stations in this state who are so isolated that they don't receive any other broadcast signals, and if they have Internet service, it is unreliable and often fails in bad weather conditions. These broadcasters want to know if they still have to buy the new equipment and if so, why.

Other broadcasters want to know why they have to buy the new equipment when the state and local emergency officials aren't going to be CAP-compliant and will continue to use EAS the same way they always have by issuing messages through the Local Primary station. And my state and local emergency officials don't like CAP because it will send their warning messages to a server at FEMA before sending them to the broadcasters and the public. They aren't concerned so much with possible delays that might occur in the transmission to the FEMA Aggregator as they are concerned that they are losing control of their message in the process. In addition, there are a few emergency officials who don't understand why they need CAP when they have HazCollect [the All-Hazards Emergency Message Collection System, run by the National Weather Service to centralize collection and distribution of Non-Weather Emergency Messages].

There is also concern here because Nevada has just one Primary Entry Point station, which covers only the northwestern part of the state. There is no PEP station and no coverage for the Las Vegas area; and while the



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plans for a new PEP station have fallen through, no one is telling the station that volunteered for the role or the SECC or the Nevada Broadcasters Association anything about what's happened and why. As a result, there is concern in southern Nevada about how broadcasters will participate in the upcoming national EAS tests.

RW: What is "governor's must carry" and why is it a matter of discussion?

Abbott: All local EAS activations are voluntary. Radio and TV stations and cable operators are not required to broadcast local activations.

The so-called "governor's activation" was proposed in the Second Report and Order as a way that state and local officials could issue a warning that would

Our broadcasters want to know more about the role of the Internet in the new EAS and what kind of security there is for the system.

— Adrienne Abbott

come with the same kind of mandate for rebroadcast as a national activation and would have to be carried by all stations and cable operators in the operational area. This proposal was a response to some of the past incidents where stations refused to carry warnings that local officials felt were vital and to give those officials a reason to "buy in" to the new system.

Fortunately for Nevada, the standards for a governor's activation don't limit its use to a statewide emergency because our state is so big and so geographically varied we just don't get disasters that cover the entire state or require a warning for the entire state. Our disasters are regional and our biggest disasters historically have been wildland fires, floods and flash floods, and earthquakes. Generally, these have been confined to areas that also conform to our FCC-designating EAS operating areas, which were based on the NOAA Weather Radio coverage areas.

Time for a geography lesson: Unfortunately, broadcast signals, even those from NOAA, are no respecters of geo-political boundaries. As you can see on the map, the operational areas reach into eastern California and extreme northern Arizona. We also have coverage from stations in Utah and Idaho

NEWS

reaching into Nevada and stations here that reach Utah and Idaho.

Disasters in western Nevada often extend into eastern California and problems in southern Nevada reach into northern Arizona; and it goes like that all the way around the map. So in order for a mandatory governor's activation for something like an evacuation order for a wildland fire to get to the areas where the people who are affected would receive it, the activation would have to go through the Local Primary station in Reno as well as the participating stations in northwestern Nevada.

The problem then becomes: Which

governor is going to issue the warning and which stations are going to carry it? Do the Nevada stations in the western Nevada/eastern California operational area have to carry a governor's activation issued by the California governor?

What about stations that are licensed for communities in California yet have their main studio in Nevada? Are governor's activations issued by the California governor mandatory for them and them only? What about a similar situation involving stations in the Eastern Sierra that are part of the western Nevada/eastern California op area? Are governor's

(continued on page 6)

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ABBOTT*(continued from page 5)*

activations from Nevada mandatory for them?

I believe the answer would be for the SECC to set up MOUs [memoranda of understanding] for cross-border coverage; but because there's been no guidance from FEMA, what authority does the SECC have to set up these MOUs and what authority does the SECC have to carry them out? What if one emergency official likes the proposal and the other does not?

And then there's the question that many broadcast engineers have raised: Will there be a new "originator code" for the governor's activation that will provide a means for the new equipment to automatically interrupt programming and broadcast the alert? How will that be incorporated into the current Part 11 rules and the state plans? How long will it take to implement that code and will it mean the new equipment will have to be upgraded at an additional cost to broadcasters?

What provisions are there in CAP systems that allow for a governor's activation issued in California to reach the appropriate stations in Nevada? Would the originator code work for more than one state? Would the message from whatever system California is using be able to reach across the Internet to Nevada stations intact and in a format that provides for a proper activation here? Will CAP be able to resolve the time differences between states like Nevada and Utah? And will there be some way to test these regional activations on a regular basis?

Finally, one of the biggest and as yet unsolved issues revolves around *time*.

Idaho and Utah are on Mountain Time and Arizona

does not observe Pacific Daylight Time; so six months out of the year, an AMBER Alert issued from Southern Nevada authorities comes into the stations in Bull Head City as expired because the message is already an hour old; but a kidnapping suspect leaving Las Vegas can be in Bull Head City within that hour. How do we handle governor's activations from states like Arizona, Utah and Idaho that are in different time zones?

These are just a few of the questions that have developed around the governor's activation; and they will have to be resolved or the proposal will never be implemented. At this point, it seems like that resolution won't come in time for the CAP deadline but will probably be worked out in a rewrite of the Part 11 rules and possibly require an update of CAP equipment to function properly.

RW: *When can stations expect to know the answers to their own questions, such as what they'll need to do when they receive CAP messages, what sources to monitor, how messages will be logged and so forth?*

Abbott: We're supposed to know the answers to these questions *now* because the clock is ticking; but we still don't even have a list from FEMA of the manufacturers whose equipment has been found compliant in their conformance lab. At this point, stations that have already purchased CAP EAS equipment are gambling with their budgets that the manufacturer will be able to provide them a simple download if the FEMA conformance tests indicate some changes are needed.

We've been told that the Local Primary stations will continue in their traditional roles "for the foreseeable future" and that the Internet connection is another monitoring source. The new equipment on the market

EAS IRONY

Reports from the field regarding confusion over existing EAS procedures are not unusual.

As this issue went to press, Radio World fact-checked the accompanying text with Adrienne Abbott. In her response, she e-mailed: "Ironically, we had a non-weather EAS activation today. A bad case of 'backhoe fade' took out all phone service in parts of at least three Nevada counties and one California county. This was complicated by confusion resulting from officials who don't use EAS often enough to know what to do, had no communication with each other and no knowledge of the cause of the outage, no estimate on when it would be repaired and what areas were affected.

"At 6 p.m. I was still dealing with e-mails from broadcasters who don't understand why they didn't have the text of the audio message during the activation, why their EAS equipment said 'Civil Emergency,' why the audio in the first message was so garbled it might as well have been in Uzbek (state emergency officials asked me to re-issue the activation), why there were no e-mails sent out, why the websites of the counties involved had no information, apparently forgetting that when the phones go out, the Internet goes with them, etc.

"Nevada is a case of 'EAS by hand,' but we still make it work because our broadcasters care."

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now provides for computer logging and gives engineers, program directors and chief operators the ability to check the status of their EAS equipment over the Internet. There have been hints the Required Weekly Tests will no longer be required, but again, that change could come with the Part 11 rewrite, rather than with the installation of CAP equipment.

There isn't enough information available to both broadcasters and emergency officials about what's going on with the new EAS and why the changes are happening.

– Adrienne Abbott

And because there are so many things that haven't been decided yet, we're still betting the budget on the manufacturer's ability to easily make any needed future changes in the equipment we're buying today.

Nevada is an odds-state, but I don't know if I want to take those odds downtown.

In addition, some manufacturers are offering an inexpensive "converter box" that buttons onto legacy EAS equipment and translates a CAP message into

something acceptable and understandable to the older unit. My concern is that the stations who buy them because they are less expensive, will find out when Part 11 is finally re-written that the converter box isn't enough to make them CAP-compliant. All they've done is postpone an expensive purchase and now they've lost the little money they put into the converter box.

RW: Much has been made about federal decisions from FEMA and the FCC. But although EAS is designed as a national system, in practice it historically has been used only on the state and local levels. How will state plans have to change in Nevada and elsewhere to accommodate what has happened in recent weeks?

Abbott: Even FEMA tells you in their training programs that "all emergencies are local." Very few events start out as full-scale national disasters, so local warnings are important; and most of the initial warnings about a major disaster are made when the event begins by local first responders. By the time the event becomes a "major disaster," incident commanders have brought in experienced public information officers who get critical information to the media and the public and we are way past the time where EAS activations are being made. I don't expect that to change.

Yes, Nevada's EAS plans will have to be rewritten. But we *don't have enough information* yet to do that. We don't know whether state officials will chose to be involved with CAP; we have a new governor taking office in January, and some policies and personnel will change. We don't know if those changes will affect what happens with EAS. And we don't know what changes the FCC will make to Part 11 to guide us through the rewrite.

RADIO WORLD'S EAS CAP PAGE

This is one in a series of Q&As with industry leaders regarding the implications of CAP and changes in EAS. For past interviews and other resources, see the Radio World EAS CAP page at www.radioworld.com/article/108516, or type "EAS CAP" into the search field at radioworld.com.



We can begin the rewrite process now, but in this economy we have to question whether it's worth the cost of printing, distributing and training for new plans when we will make more changes once Part 11 is rewritten.

RW: What else do radio engineers and managers need to know right now?

Abbott: At this point I am recommending that our engineers and managers *not* buy new EAS equipment unless they have something that needs replacing or they are overruled by their corporate offices. We don't know what equipment has passed FEMA's conformance tests, we don't know what our state is going to do; and when these questions are answered, there's the possibility that we can get everyone to agree on a specific product, and then the Nevada Broadcasters Association can seek a group discount from the manufacturer of that product.

It's too soon and too little is known for our stations to be able to make a decision right now.

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LIVE & LOCAL

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FAA RULES

(continued from page 1)

appears to have backed off much of its initial effort to bring a wide range of broadcast applications under its control.

The original proposal would have meant increased notification requirements for stations, expanded to include construction of new facilities that operate in specified frequency bands, addition of newer frequencies, increases in effective radiated power or antenna height above certain thresholds and changes in authorized frequency.

The FAA said it wanted to simplify and modernize its rules.

At the time, broadcast advocates considered the rulemaking request to be particularly onerous for stations. However, the final Report and Order published in the Federal Register (FAA Docket 25002) earlier this year is far less restricting, observers said.

Existing rules state that any tower taller than 200 feet above ground level or that may interfere with the flight path of a nearby airport requires FAA notification and FCC registration on the FCC's Antenna Structure Registration (ASR) system.

The FAA's "Safe, Efficient Use and Preservation of the Navigable Airspace," released in 2010, outlines minor updates to federal rules for broadcasters with towers near airports who want to modify their existing towers or plan new construction.

However, the new rules, which take effect Jan. 18, 2011, leave open future deliberations over electromagnetic interference between FM broadcasts and navigation signals.

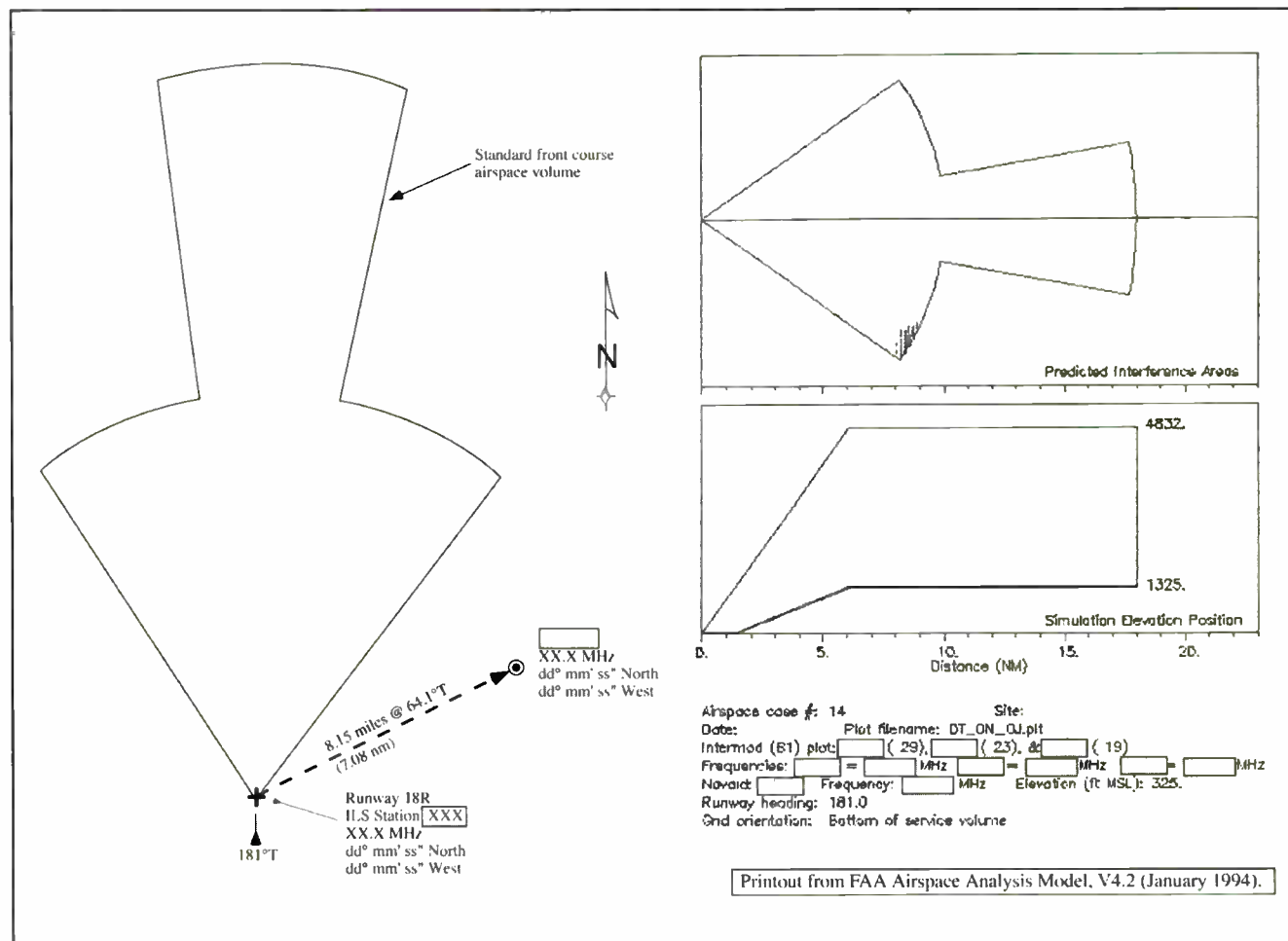
"Therefore, the threat of further intrusion by the FAA into RF matters still exists," one legal observer said.

FAA EMI CONCERNS

The FAA has expressed growing concern with the impact of electromagnetic interference (EMI) on aeronautical operations from broadcast services operating in the 88–107.9 MHz FM frequency band. It has said FM frequencies "pose the greatest concern to FAA navigation signals." The FM band is adjacent to the navigation communications band (108–136.5 MHz).

In its report, the FAA said it will work with the FCC, which historically has had final say over spectrum management issues, and the National Telecommunications and Information Administration on the best way to address electromagnetic interference issues.

Broadcasters can expect the FCC and FAA to reach a collaborative decision on proposed frequency notice requirements and proposed EMI obstruction standards, according to the FAA's rule-



Determining whether a station is not a hazard to aviation can be costly. These graphics are from work by Hammett & Edison in 1994 for a Class A FM that had received an FAA 'hazard' determination on EMI grounds. The station was directional. H&E was able to show that the Airspace Analysis Model software that the FAA was using neglected to square the relative field value of the azimuth pattern. Once this was done, H&E said, the predicted interference disappeared and the FAA withdrew its objection; but the process cost the station several thousand dollars in engineering fees.

making.

"The major potential problems the FAA's initial proposal raised for broadcasters have been eliminated, or at least tabled for the time being," said Harry Cole, a communications attorney with Fletcher, Heald & Hildreth and a Radio World columnist. "The FAA is currently negotiating the FM matter with the FCC."

Meanwhile, the commission wants to modernize its own Part 17 tower lighting and obstruction rules. An agency spokesman said the commission is "still working" on the Notice of Proposed Rulemaking (Docket WT 10-88) released in 2010. The reply comment period closed in August.

"I imagine the FCC will move forward reasonably quickly to clear up a number of inconsistent and outdated rules. There did not appear to be any major changes from the NPRM," Cole said.

Of the FAA rule modifications governing broadcast towers, the most significant, according to experts, involves the FAA's Determinations of Hazard or No Hazard.

A Determination of No Hazard from the FAA indicates that a broadcast tower

will not interfere with planes or radio navigation aids. The FCC requires tower owners to obtain a valid "no hazard" determination from the FAA before registering with the commission.

Under the new rule, an FAA Determination of Hazard or Determination of No Hazard is effective 40 days after it

construction or alteration is abandoned.

Previously, the rules allowed indefinite extension of a "no hazard" determination under certain circumstances. As a result, if an FCC application took years to resolve, the FAA had to keep protecting airspace for a tower that might never be built.

They were asking to have their hand on just about anything you did on a broadcast tower.

— Erik Swanson, Hatfield & Dawson

is issued; previously, the effective date was the day it was issued.

Several experts said this change conceivably could slow a tower project. However, they added that the new rules likely would prove inconsequential to most broadcasters who plan projects correctly.

The final rule also stipulates that a Determination of No Hazard to air navigation will expire 18 months after it takes effect, or when the proposed

The new rules allow extensions but they won't be automatic. An applicant will have to request extensions and make its case each time. That's a concern for tower owners, because once a "no hazard" determination expires, there is no guarantee of reinstatement, especially if circumstances have changed. This also creates an additional regulatory burden on the broadcaster or tower owner, who must remember to file a

(continued on page 10)

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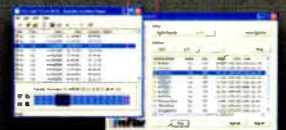
World Radio History

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FAA RULES

(continued from page 8)

timely extension application for the expiring "no hazard" determination.

The new rule also further expands the requirements for notice to be sent to the FAA for proposed construction or alteration of structures on or near private use airports that have an Instrument Approach Procedure (IAP).

"That is a potential 'gotcha' for broadcasters," said Dane Ericksen, consulting broadcast engineer with Hammett & Edison. "IAPs at private use airports are not currently listed in any aeronautical publication, which means the FCC TOWAIR program is unlikely to detect a private use airport with an IAP." Ericksen recommends that those who want to build new towers check the FAA website for compliance.

UNWANTED 'POSTER CHILD'

Several broadcasters and engineering consultants wrote in during the 2006 NPRM comment period, arguing that the modifications would overlap with rules the FCC already had in place regulating the same area.

"Indeed, the FAA's proposal is a virtual 'poster child' of federal rules which may duplicate, overlap or conflict with FCC rules," wrote the Society of Broadcast Engineers in its comments.

In joint comments, Entercom Communications, Beasley Broadcast Group and CBS Radio spoke of unnecessary additional burdens that would be placed on broadcasters if the FAA adopted the proposals, and they asked the FAA to follow its statutory obligation to

coordinate with the FCC prior to the implementation of new notice requirements.

FM STILL ON FAA'S RADAR

The FAA's original proposal would have affected radio frequency transmissions operating on the following frequencies:

- (i) 54-108 MHz
- (ii) 150-216 MHz
- (iii) 406-430 MHz
- (iv) 931-940 MHz
- (v) 952-960 MHz
- (vi) 1390-1400 MHz
- (vii) 2500-2700 MHz
- (viii) 3700-4200 MHz
- (ix) 5000-5650 MHz
- (x) 5925-6525 MHz
- (xi) 7450-8550 MHz
- (xii) 14.2-14.4 GHz
- (xiii) 21.2-23.6 GHz

The FAA has now concluded that its original proposal was too broad.

But it says FM transmissions in the 88.0-107.9 MHz frequency band pose the greatest concern to FAA navigation signals. The FAA, FCC and NTIA are collaborating on the best way to address this issue. Therefore, proposals on FM broadcast service transmissions in the 88.0-107.9 MHz frequency band remain pending, according to the FAA.

"The FAA says it isn't their intent to add a duplicative review and coordination process to that of the FCC, but that is belied by the nature of their original proposal," said Erik Swanson of Hatfield & Dawson Consulting Engineers. "They were asking to have their hand on just about anything you did on a broadcast tower, including changes that do not require prior FCC approval."

Another broadcast engineering consultant who follows regulatory matters said the FAA historically has set its own standards, not always consistent with those of the FCC. However, both agencies share the same basic concerns over air safety.

"The FCC has tried to cooperate with the FAA," the consultant said. "Congress has specifically delegated responsibility for spectrum regulation to the FCC. But the FAA must be able to control any use of radio spectrum that might affect air traffic safety. Any regulated industry, such as broadcasting, has reason to be concerned when two government agencies attempt to impose conflicting standards."

Ellen Crum, director of the FAA's Air Traffic Systems Operations, Airspace and Rules Group, has led the FAA's efforts to modernize their rules governing broadcast towers, according to observers.

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

'PERSONALIZATION' OF HD RADIO EXPLORED

Consumers can personalize the audio on their Internet radios, MP3 players and smartphones. Hoping to help radio participate in that trend, iBiquity Digital and the NAB FASTROAD technology development project are exploring personalization for HD Radio devices.

To that end, NAB's FASTROAD — which stands for "Flexible Advanced Services for Television & Radio on All Devices" — released an iBiquity report in November titled "HD Radio System Persona Radio Project Overview."

iBiquity's Joe D'Angelo, senior vice president of broadcast programs and advanced services, said the idea behind the proof-of-concept advanced receiver design for the Persona Radio is to see how broadcasters could leverage more content and storage, sort of mixing content transmission with personalization, "which is really a filter for content that is relevant to you."

How would Persona Radio work?

A station would devote a portion of its HD bandwidth to the service, while users would create a profile on the station website. It would be up to the station to determine how much of its data stream it wants to devote to this concept, much like today, when stations decide whether to subdivide bandwidth for multicast channels or to use part of their HD data stream to transmit traffic data.

Based on the user's demographic, Persona Radio would substitute other audio, text and ads based on his or her profile. That specialized content would be

RDS

(continued from page 3)

station's total modulation within FCC limits, robbing you of main channel modulation, which can affect loudness.

BE PRECISE

It's important to be precise about your modulation and injection rates, so make sure you have the proper test equipment. For those stations that don't have this equipment in-house, see if you can borrow it from a sister station, or buy lunch for a colleague who has access to the gear.

Precision is worth the effort. You should revisit your injection rate if you didn't do this when you deployed an RDS encoder on your station.

Likewise, if you make any changes to your system such as adding or replacing an STL, exciter, RDS encoder, audio processor or other Subsidiary Communications Authorization generators, revisit your RDS injection and other modulation parameters.

Be sure to follow the instructions for your RDS encoder to synchronize and align the RDS signal with the 19 kHz pilot. I've seen stations that don't have their encoders synchronized, and this has caused issues with RDS reception.

Also, keep an eye on the sync status of your RDS

downloaded to the receiver and stored in memory on the device, for later use by the listener or by the station itself. For this concept to work, receivers also must have the personalization capability built in; it may be just a software change. This is one of the things that would need to be worked out.

NAB Science & Technology Senior Director of Advanced Engineering David Layer tells me that attention now turns to gauging interest from stations about the concept. NAB and iBiquity will be seeking reaction, starting with the NAB Radio Board and the National Radio Standards Committee. D'Angelo said broadcaster interest must be determined before the technology developer can approach receiver manufacturers about what enhancements might be needed for implementation.

iBiquity discussed the premise at the recent Radio Show and had a mockup of the concept on an Insignia HD portable IBOC receiver. I'll be interested to see how this shapes up in the coming months.

TARGETED COUPONS POSSIBLE WITH PERSONA RADIO?

There are several questions raised by the Persona Radio concept.

In its report, iBiquity discusses how the station might determine its criteria for substituting spots, for example, whether by age, geo-location (such as home or work) or Zip code. The Persona Radio concept allows the station to set up basic parameters to create a micro-demo of its audience, iBiquity's Joe D'Angelo told me.

In one example of how the concept might be implemented, a user could go into "My Profile"

encoder; some encoders call this "free run" when it is not synced. On some units the synch status is displayed as an indicator on the front panel. On other encoders, this is done using software, such as a computer program, serial/telnet commands or Web configuration.

Watch this over time to make sure you're always synced. I've run into situations where an encoder was going in and out of sync and it turned out the input level of the 19 kHz sample wasn't sufficient.

When the encoder was going in and out of sync, it would cause RDS reception errors, creating a bad user experience of delayed RadioText reception and skipped Program Service scrolling frames. The added benefit of this process is that a properly synced RDS encoder in quadrature will reduce slightly the modulation peaks of the subcarrier without reducing their actual levels, giving you more room for your main channel modulation (see Fig. 1).

I've been getting good feedback from people interested in these details of RDS. Feel free to comment as we continue this discussion. My e-mail is alan.jurison@citcomm.com. In our next article in the series, we'll start exploring the RT+ tagging standard.

Alan Jurison is a regional IT manager/broadcast engineer for Citadel Broadcasting in Syracuse, N.Y. He holds several SBE certifications, including CSRE, AMD, DRB and CBNT. Opinions are the author's own.

on the device, type in a Zip code and see targeted advertising, stored in the radio's memory. If the consumer clicks on a text ad, for example, it would generate a "QR" or Quick Response code that can be scanned by a retailer and act as an electronic coupon.

NAB's David Layer, the project manager for FASTROAD, says this work can be seen as a follow-on to the new, upgraded Insignia HD portable radio because it's a way of offering new features.

Possible profiles discussed in the report include substituted content targeted to a 40-year-old female or a 40-year-old male, both with content choices in English or Spanish, teens and special "birthday" content.

FASTROAD has other projects cooking.

I wrote that FASTROAD released an iBiquity report, also in November, on HD Radio Single-Frequency Network Interim Field Test Results. FASTROAD is conducting testing on HD boosters and asymmetrical sideband transmission.

Layer tells me it plans to release an engineering analysis of technology for a low-bit-rate data service for analog AM to enjoy some of the IBOC-based receiver display capabilities of HD Radio tuners. We reported earlier that iBiquity had delivered its report on this technology to NAB by the Radio Show convention.

NEWSROUNDUP

NEW COMMERCE CHAIR: Michigan Republican Fred Upton will be chairman of the House Energy & Commerce Committee in the 112th Congress, which begins this month. The House Republican Steering Committee recommended Upton and the full House Republican conference voted for him. "We must work towards a new era of less government and more jobs — the administration's rampant spending and unfettered, two-year assault on the health, energy, and telecommunications sectors is now over," Upton said after the vote. He beat out GOP colleagues Cliff Stearns of Florida and John Shimkus of Illinois as well as former committee chair Joe Barton of Texas.

RATINGS BONANZA: Arbitron reached early contract renewal with its largest client, Clear Channel Radio, for Portable People Meter and diary ratings services. The six-year deal extends Clear Channel's access to Arbitron radio ratings and other services through Dec. 31, 2016. Clear Channel represented about 19 percent of Arbitron's revenue in 2009. Analyst Jim Boyle of Gilford Securities estimates the deal's value to be \$83 million in 2011, escalating to \$96 million by the end of the agreement, with a total of \$538 million.

NO MORE NIELSEN: Nielsen ended its radio measurement in the U.S. as of the fall 2010 period. It will continue its international radio measurement.

TRAFFIC: The Broadcaster Traffic Consortium launched a website, www.radiobtc.com, with tailored information about the future of digital radio. It is aimed at automakers, consumer device makers and other radio owners. BTC's 16 members form a broadcasting network to distribute local traffic, weather and other map-related data via RDS and HD Radio using their analog and digital radio signals, respectively.


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World Radio History

African Broadcast Alliance Helps Bring SRS Home

Project Involved Building Complete FM Facilities in Southern Sudan

BY DANIEL BRAVERMAN

Daniel Braverman is president of Radio Systems Inc. and founder of the African Broadcast Alliance.

JUBA, SUDAN — Since 2003, the Sudan Radio Service, an “independent media service dedicated to peace and development in Sudan,” has broadcast balanced news and information in Arabic, English and several local languages in an effort to help promote peace and to help the country transition to democracy.

FIRSTPERSON

Because conditions in Sudan originally were deemed too unstable for SRS to establish studios and headquarters in the country, it has operated from Nairobi, the capital of neighboring Kenya, with MP3 audio files sent via the Internet for broadcast from offshore shortwave transmitters.

However, conditions in southern Sudan have improved since the 2005 peace agreement that ended the north-south civil war; and in 2008 it was decided that the time had come to move SRS operations to Sudan and to supplement its shortwave broadcasts with a 2 kW FM transmission from Juba, the southern Sudanese capital.

In January 2011, southern Sudan is scheduled to hold an independence referendum on whether it should remain part of Sudan. The vote is the culminating political event promised by the agreement that ended the 1983–2005 north-south war.

SRS is operated by the U.S.-based non-profit Education Development Center (EDC) and is funded by the United States Agency for International Development (USAID), which marks all its development assistance with the tagline “from the American People.”

As such, Radio Systems has always been especially proud to donate services



and equipment through our charitable entity, the African Broadcast Alliance.

In 2003 and again in 2006 we helped build the original SRS broadcast studios in Nairobi. As challenging as those efforts were as our first African turnkey operation, we knew that building complete FM facilities in southern Sudan would be a whole new challenge.

From the onset, we were aware that every item needed on site would have to be purchased in the United States, pre-assembled, tested and transported



to include internal insulated walls, a 10-ton air conditioning system and fully prewired broadcast systems.

The preassembly (performed the parking lot of our New Jersey factory) caused a three-month-long loss of employee parking spaces, but that was the least of our problems. International shipping regulations allow no openings or protrusions to the containers, so every component had to fit completely and securely inside, but also be easily and efficiently “extractable” upon arrival.

With daily high temperatures in Juba reaching 120 degrees F and warmer, we were especially concerned about being able to get the HVAC systems up and running.

The three preassembled studio containers, a separate transmitter container and a 40-foot container holding the large self-supporting tower sections and other supplies were readied by September 2009 for their three-month cargo ship voyage to the Kenyan port of Mombasa. From Mombasa, the containers were trucked via road to Juba, the capital of southern Sudan.

Despite tossing on the high seas and baking in the heat awaiting the arrival of our crews this summer, the contents sustained no damage, thanks to help from

Radio has time and time again been proven as a powerful and event-changing force in politics and nation-building.

to Juba. We not only had to provide the broadcast equipment, but also the hand tools, test equipment, studio buildings with bulletproof windows and the electrical plant, complete with a 50 kW generator and fuel tank.

For this level of planning we engaged Ken Tankel of Future Media Design to engineer, design and document the project. Ken knew that the slightest oversight could crash the project.

Three 20-foot shipping containers can make an acceptable on-site studio complex, if they are carefully pre-configured. But this preparation had

EQUIPMENT ROUNDUP

The containerized studios for SRS were designed and documented by Future Media Design. They include Millennium network consoles and timing and audio distribution systems from Radio Systems, StudioHub+ wiring, Axia Audio Livewire Nodes and audio processing and studio furniture from Studio Technology. A Broadcast Electronics AudioVault system manages program playback.

Transmission is handled by a Broadcast Electronics FM transmitter and RPU equipment, as well as a Shively Laboratories multi-bay FM antenna. Power generation is via a Cummins Power Systems generator set, with power conditioning handled by APC products.

The customized shipping containers were provided by K&K International. Bard Manufacturing designed the heating, ventilation and cooling system.

FEATURES

broadcaster, knew the unique security issues (such as the aforementioned need for bulletproof glass), specifications for a self-supporting tower (no guy lines to be cut) and location of all structures well within the razor-wire security walls.

Security concerns also mandated no travel after dark on local roads, so the traditional pre-on-air all-nighters were not an option.

EDC mandated that Radio Systems be first on site with studios and transmission working and tested prior to the arrival of the SRS staff, even preceding the construction of the offices and the

completion of the well and septic system.

Arriving our first day with only half of the security wall established redefined "turnkey," but despite the heat, the daily monsoon-like drenching, the delays in firing up our local (and only) 50 kW power plant, studios and transmission were completed in the two-week on-site timetable allotted.

This was a testimony to our local Sudanese crews and above and beyond early morning customer service (due to the time difference) by Bob Surette of antenna manufacturer Shively and John MacDonald of Broadcast Electronics,

which supplied the solid-state FM transmitter.

When the rig was brought to full power, range was a full 75 miles with full coverage of Juba and beyond.

Radio has time and time again been proven as a powerful and event-changing force in politics and nation-building. The people of southern Sudan now have a local FM voice to aid the peaceful transition from war to peace and democracy in Sudan — via the informative and educational broadcasts of Sudan Radio Service.

Comment on this or any story. Write to radioworld@nbmedia.com.



The Sudanese crew is credited with getting the SRS studios operational quickly once the containers were on site.



our vendors, particularly Vince Fiola of Studio Technology, whose cabinets never fractured or de-laminated, and Chris Kreger of RF Specialties of Montana, who carefully over-engineered the 36.5-meter self-supporting tower and foundation.

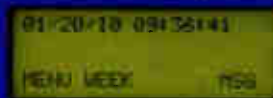
On-site we were fortunate to work with Jon Newstrom, chief of party for Sudan Radio Service. Jon, a former U.S.



Daniel Braverman in a completed studio.

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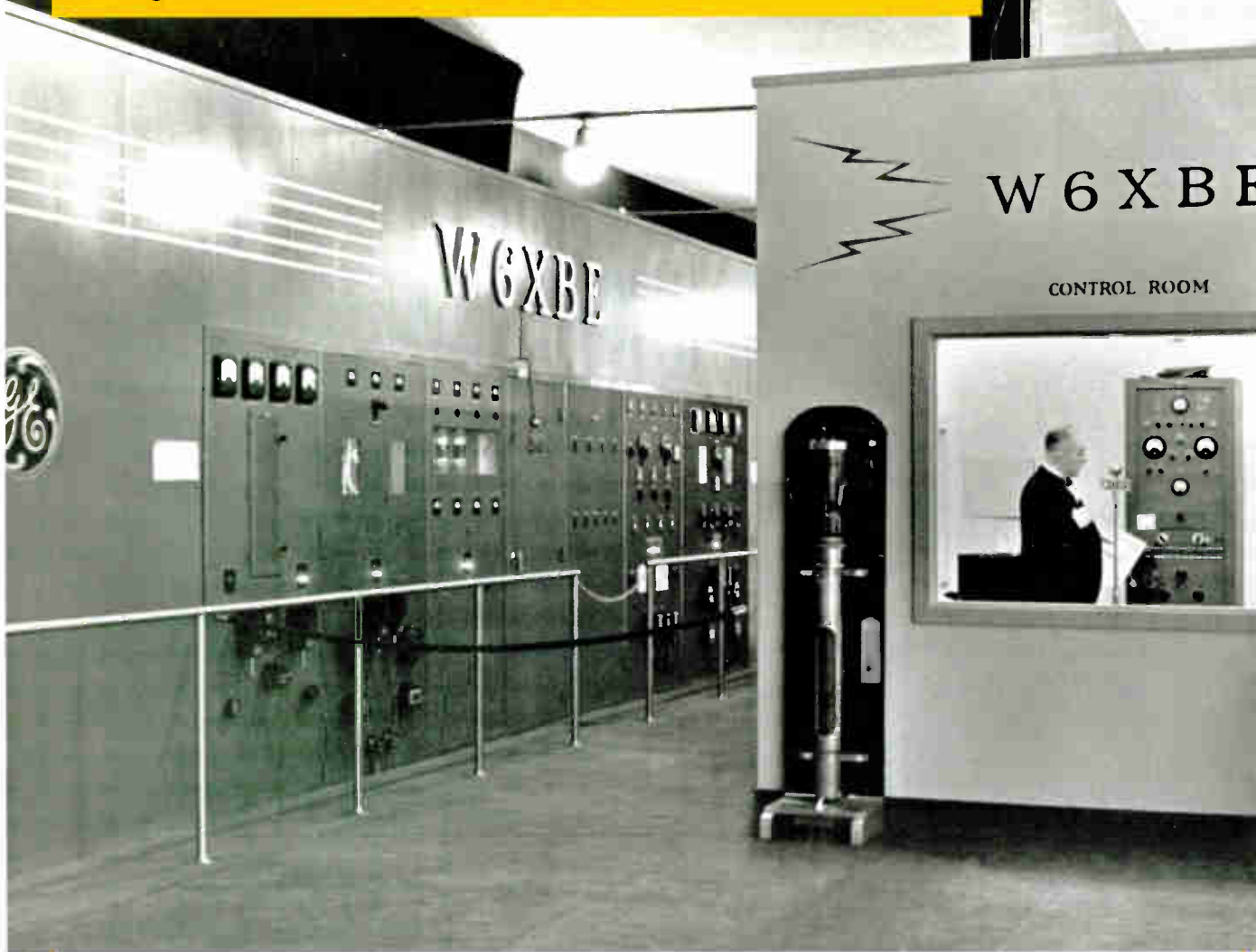
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W6XBE at the Golden Gate Exposition, 1939



BY JOHN SCHNEIDER

The Golden Gate Exposition was one of a long line of world's fairs celebrated in various U.S. cities in the 20th century. It was held in 1939 to commemorate the completion of San Francisco's two major bridges: the Bay Bridge and the Golden Gate Bridge. It took place on Treasure Island, in the middle of the Bay Bridge span across San Francisco Bay.

One of the many features of the fair was General Electric's operating shortwave station W6XBE. The station was licensed to operate with 20 kW on 9.530 and 15.330 kc. and broadcast regular programs to Europe and South America from the Electricity and Communications Building.

GE operated two more shortwave stations in Schenectady at a time when there were just a handful of international shortwave stations on the air in the country, all in private hands and operating under experimental FCC licenses with ham-style call signs. The government issued standard four-letter call signs to all shortwave stations late in 1939, and so W6XBE became KGEI.

GE hired chorus girls from the Folies Bergère and held a call-sign changing ceremony at the fair.

When the fair concluded in 1940, KGEI was moved to

property adjoining the KPO (now KNBR) transmitter site on the Redwood Peninsula near Belmont and the power was increased to 50 kW. At the start of World War II, the government took over all international shortwave stations to form the Voice of America, and it was KGEI's transmitters that beamed General Douglas MacArthur's "I will return" message to the Philippines.

Control of the station was returned to General Electric after the war; GE operated it for many years before selling it to Far East Broadcasting Company in 1959. FEBC continued to operate KGEI as one of the few private shortwave stations in the country until 1995.

In the photo we can see the W6XBE transmitter and control room. Spanish-speaking announcer Carlos U. Benedetti is on the air, broadcasting a program to South America. The original transmitter seen in this photo was still operational as a standby transmitter when the station signed off for the last time in 1995.

For more information about KGEI, see Jim Bowman's history of the station at <http://users.adams.net/~jfs/kgei.htm>.

John Schneider is a lifelong radio history researcher. Write the author at jschneid93@gmail.com. This is one in a series of photo features from his collection; see more at the *Roots of Radio* tab under Columns at radioworld.com.

WORKBENCH

(continued from page 14)

comes in a variety of package sizes. Broken bones and sprains can be stabilized with its splinting materials and elastic wraps. Many of this company's offerings are a la carte, so you can buy the specific products you need.

One such example is the Core Lite survival knife. It combines a 10 Lumen LED light and a short, steel blade. A 100 dB rescue whistle is built into the handle.

A good survival knife of some sort should be a part of your kit. What makes this one nice is the LED shines down the length of the blade to help you see what you're cutting in the dark, and it's also bright enough to use as a light source should you lose power. The best feature: It's just \$20.

Emergency Medical Products (www.buyemp.com) has what could be a useful Earthquake Survival Kit. Selling for less than \$40, this kit includes 12 drinking water packs, a food pack, a silver rescue blanket, antiseptic wipes, bandages and gauze pads, plus a light stick. For a basic, no-frills survival pack, at this price, you could put one at each transmitter site.

EMP also provides a variety of disaster readiness and emergency preparedness kits varying in price from \$14 to \$100.

Whatever you select, be sure to have some kind of first aid supplies at your transmitter. Here's hoping you'll never need them.

Send us your ideas for transmitter site emergency supplies and we'll share them.

John Bisset marked his 40th year in radio in broadcasting recently. He works for Tieline Technology and is a past recipient of the SBE's Educator of the Year Award. Reach him at johnpbisset@gmail.com or (603) 472-5282. Faxed submissions can be sent to (603) 472-4944.

Submissions for this column are encouraged and qualify for SBE recertification credit.



Fig. 4: It's a knife. It's a light. It's a whistle.

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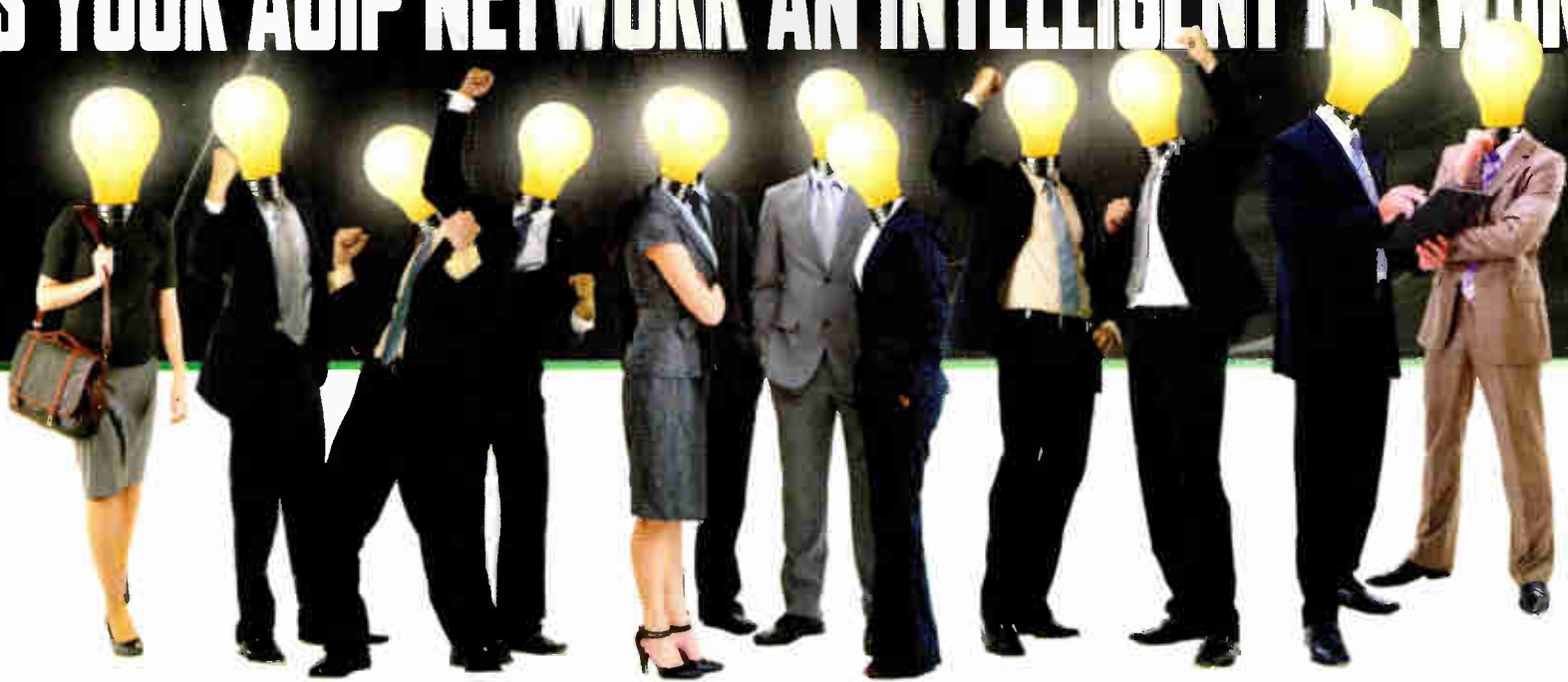
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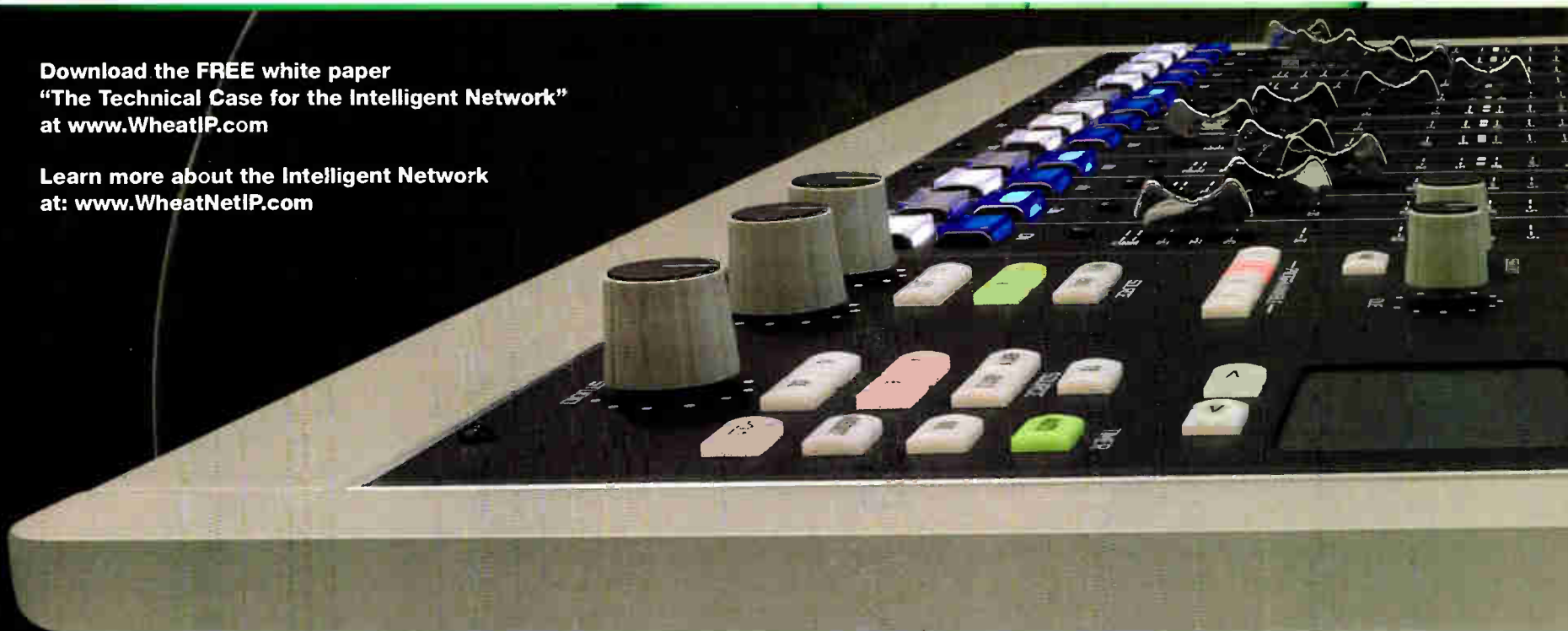
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Perhaps you're about to invest in a new set of consoles for your station. Or maybe you've already decided an AOIP network is right for you. Maybe you've already got a system and are looking for more or better functionality. Give us a call. We know this stuff inside and out. While no single entity wrote the book on it, we've got a few chapters under our belt and would be happy to offer enlightenment about WHY our Intelligent Network is better!

3. WheatNet-IP Intelligent Network is 10 X faster.



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4. WheatNet-IP Intelligent Network is NOT more expensive.



It's true. When you add up all the costs for your network, WheatNet-IP comes out to just about the same money as the other guys. No marketing mumbo jumbo about your labor or performance here - we're talking straight hardware comparisons. Go ahead, configure your network and see. Of course we DO out-perform them by up to a factor of ten. And we DO save you great googobs of money by giving you a system that configures, runs and heals itself... Still, do a full-network hardware comparison and check it out for yourself! Operators are standing by...



What Is Marketron Mobile?

Supply Side is a series of occasional insights about suppliers of products and services. This Q&A

SUPPLYSIDE

is with Steven Minisini, CEO of Marketron. The company is an affiliate of the Wicks Group of Companies (and thus is a distant cousin to Radio World, part of NewBay Media, another affiliate).



RW: What is Marketron Mobile, and what's going on in that space that radio managers need to know about?

Minisini: The media landscape's aggressive focus on digital has changed the way radio groups operate and drive new revenue growth. While

some pure-play Internet proponents say this rise in digital means an end for radio, Marketron sees just the opposite.

We believe strongly in the opportunity for radio groups to leverage one of digital's fastest growing channels: mobile. With mobile advertising revenues expected to grow to \$4.2 billion in 2015, up from \$1 billion in 2010, according to research firm Coda



Research Consultancy, there is tremendous opportunity for radio to thrive.

But in order for radio groups to tap into this fast-growing advertising segment, they need the right technology platform and applications which have not been available until now.

In September, Marketron acquired mSnap, the largest broadcast-based mobile advertising network in the U.S. and leading provider of mobile advertising solutions. mSnap's network consists of 30 million unique subscribers and 1,400 publishers and serves 250 million SMS-based ad messages per month.

Marketron's acquisition of mSnap enabled us to create Marketron Mobile, the solution that opens the door to mobile advertising for radio groups and other media companies.

Marketron Mobile is a solution delivered via Marketron Exchange, our flagship platform, that arms radio groups, mobile advertisers and publishers with whom they collaborate a mobile messaging solution, content platform and advertising network capable of targeting highly specific audiences on a large scale.

Marketron Mobile represents the natural progression of Marketron's strategy to help advance the radio industry through digital technology and channels, such as mobile. Now radio groups can confidently and easily extend themselves into digital and deliver mobile campaigns that ensure adoption, scale and measurable results.

Tapping into the vast distribution channel that Marketron Mobile provides, radio groups will now see new digital revenue streams open up.

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MARKET PLACE

END TO END: Fraunhofer IIS is emphasizing end-to-end Internet radio and mobile audio streaming solutions, such as its audio codecs like MP3, HE-AACv2 and MPEG Surround, along with Internet radio components on both the server and receiver sides.

"Fraunhofer develops and delivers all necessary components for true end-to-end Internet radio and mobile audio streaming services for Internet radio providers, broadcasters, chip vendors and device makers," it stated.

Info: www.iis.fraunhofer.de/amm.

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A 16-fader iQ costs only \$9,985⁰⁰. Really.



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World Radio History

'Our Radio Network Is the Mother Ship'

At Radio Disney, 'Whatever Success We Have Ties Back to Radio'

BY JAMES CARELESS

This is one in a series about how radio executives are putting new media tools to use.

Radio Disney promotes itself as "the No. 1, 24-hour radio network devoted to kids, tweens and families." Its content is heard on approximately 35 terrestrial broadcast radio stations scattered across the United States.

But programming also is carried on RadioDisney.com, Sirius/XM satellite radio, the iTunes Radio Tuner, various mobile phone platforms and the Radio Disney iPhone and iPod Touch App — the last of which has exceeded 1 million installations.

Further, Radio Disney recently launched a significantly more capable version of its app. Instead of being a passive listening program, the upgraded Radio Disney iPhone and iPod Touch App allows users to do other things on their iPhones while listening to "Take Over With Ernie D" and other network shows. The upgraded app also lets fans request songs, track down local Radio Disney public events and send "shout outs" to the network's personalities, which often are read on-air.

Sean Cocchia in October was promoted to Radio Disney senior vice president and general manager; he's been



An upgraded iPhone app lets fans request songs, track local Radio Disney events and send messages to the air talent.

with Disney for 12 years.

He was SVP of business planning and development for Disney Channels Worldwide and has worked at Disney Channel U.S. He oversees Radio Disney's programming, distribution and marketing departments; his role, according to a company bio, "also includes guiding strategic digital media extensions to optimize assets in the portfolio of Disney Channels Worldwide across digital platforms."

"We definitely do have a lot of distribution platforms," says Cocchia. "But make no mistake: At Radio Disney, our radio network is the mother ship.

Radio is the central pillar of our content, promotion and listener success. Whatever success we have ties back to radio, and will continue to do so in the future."

Radio Disney believes it reaches weekly audiences of 29.2 million listeners age 6 and up, and 8.3 million age 6-14 during its programming day.

CROSS-FERTILIZATION

Radio Disney's approach means that the network's



Sean Cocchia was promoted to senior vice president and general manager of Radio Disney this fall.

35 stations are the first link in the chain between the company and its listeners.

"Our local stations are tied into their local communities," Cocchia says. "As a result, they are the first point of contact for our audience, especially when it comes to local live events that we stage in the community. We also want them to be listening to Radio Disney in the car and at home. Since Radio Disney is something parents can feel comfortable tuning to, this approach works well."

The network's Sirius/XM presence covers gaps where local Radio Disney stations don't exist, or long road trips where access to a single national stream

makes extended listening easier.

The Web and mobile thus are extensions of the Radio Disney brand, albeit each with their own value-added features.

"RadioDisney.com is linked to the entire family of Disney sites online, so there is real cross-fertilization between them," Cocchia said.

"Meanwhile, our mobile platforms help kids stay with us when they are on the go. And since this generation is attuned to their mobile handsets, being here is vital to the

ongoing success of our entire operation."

Ironically, by being widely available on non-radio platforms, Radio Disney has found an effective way to drive young listeners to its radio stations.

"As a result, radio is still our number one medium," Cocchia says. "We expect it to stay that way in the future, no matter how many platforms we are on."

Nevertheless the network sees the advantages in embracing new technology.

The proof of this can be found in the Radio Disney iPhone and iPod Touch App's increased capabilities. Beyond supporting multitasking and two-way messaging, the upgraded app allows listeners to tag songs and add them to a list of favorites, access geo-targeted information on their closest Radio Disney station and its upcoming events and purchase premium "Radio Disney App Extras" for a one-time \$2.99 fee.

"Kids love to sing along with songs and feel that they have mastered them, so our premium features include offering song lyrics in real time, as the song is

(continued on page 29)

GR

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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

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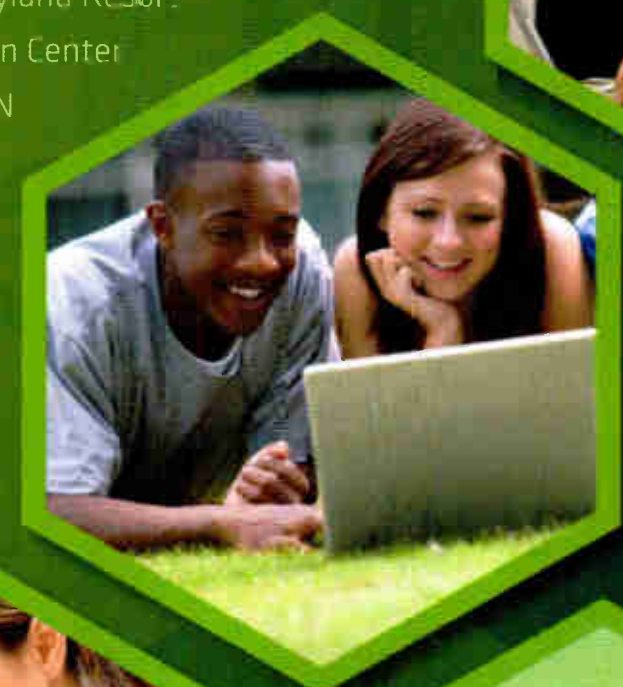
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You Are Local. Prove It.

Why Give Away Your Bread and Butter To the Web, Social Media or Mobile?

"We don't need to do that on the radio anymore."

The first time I encountered this syndrome, it involved the airing of school closings during snow storms. We were in the relatively early days of radio websites, and we had become adept at the technical and logistical skills of putting a list of school closings on the sites of our cluster. Looking to keep with the times, the morning show talents — followed by program directors — agreed: The school closing information belonged on our websites, not on the air.

They opined that the public at large was going to look on the Web anyway to find school closings; and that this offered us a greater opportunity to play more music or to offer other content listeners would find more enjoyable.

This all sounded logical.

NAIVE

What I did not realize 10 years ago is that this approach is naive at best and potentially dangerous to the future of local broadcast radio.

By saying, "We'll put that stuff on the Web so we don't have to put it on the air," we actually are proving to our listeners that we don't understand our role as a source of localism.

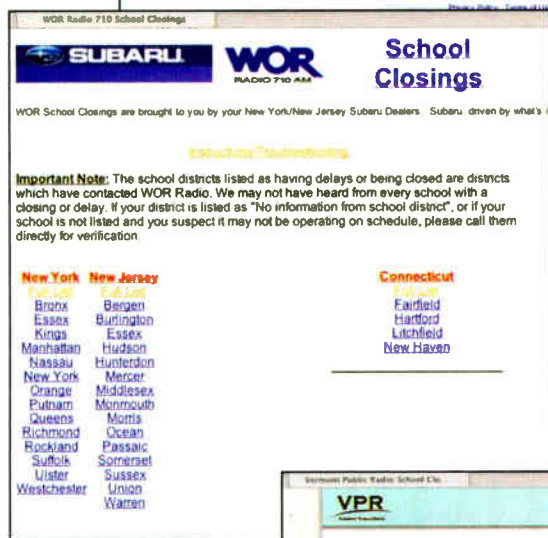
Without realizing it, many PDs — especially at music stations — now have developed a pattern of using the Web, social media and mobile to push information that was once the bread and butter of radio.

I was reminded of this last week when I heard a station do a promo pushing listeners to their website to see real-time traffic during afternoon drive.

In the time they took to air the promotional announcement, the station could have broadcast a brief traffic report.

Using the example of closings and delays, we may not choose to go 20 schools deep, because the number of interested parties decreases. However, most areas have four or five large county school systems that cover the bulk of the population. We can mention those

each time we do the closings, rotating the smaller systems as desired. Or, if you really want to own the position, be unconventional during this "we've got what you need locally" feature and



they keep their eyes on the road. What with all the foolish texting-while-driving these days, it wouldn't surprise me a bit to see someone dancing around on his iPhone looking for school closings while moving through rush-hour traffic.

IT'S ALL OF IT

I am by no means suggesting that information staples like school closings, traffic, weather, news and sports shouldn't appear on our websites or that we shouldn't promote them.

PROMO POWER



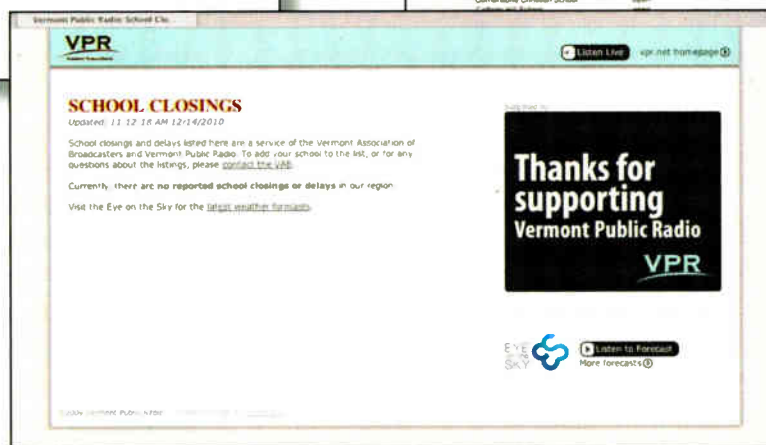
Mark Lapidus

orchestrated properly.

Here's another one. Listen carefully as you drive the country and you'll hear DJs advising listeners to send in song requests, stories and comments via Facebook, e-mail, websites and text.

I'm all for it. But I'm also for continuing to push the studio request line

Many PDs now have developed a pattern of using the Web, social media and mobile to push information that was once among radio's true differentiators.



Many broadcasters, like these, make school closings part of their online offerings. Mark Lapidus writes that, for most stations, such information should be on both the air and the Web.

efficiently do the entire list.

Timely information such as school closings — for most stations — really does need to be both on the air and on the Web. Because so much of radio listening occurs in-car, there will always be people who need local info while

As I've said before, we certainly need to compete effectively online as well. But we tend to forget that we are in a great position to serve consumers whether they're looking or listening. These media are not mutually exclusive and can be quite complementary when

regularly because it gives us something we desperately need more of: listeners' voices on our radio stations.

It's fine to hear on-air personalities reading comments received via social media, but let's remember to connect with real voices that can bring emotion into the audio picture

we must constantly strive to construct.

If I haven't yet convinced you to consider this proposition of rededicating radio to be a source of local voices and information, I suggest you examine competition like Pandora, Slacker, Sirius/XM and the hundreds of commercial-free streaming stations.

What do they have in common? They all play tons of non-stop music. What are they missing? The ability to deliver local personality, local entertainment, local news and local information.

Do a daily monitoring of your real on-air content (with a local voice) vs. the time you use to promote websites, mobile and social media. Make sure that your local on-air content wins by a considerable measurement.

In doing so, you'll be creating a more compelling product and helping the industry as a whole retain the largest mass audience in the United States.

The author is president of Lapidus Media. Contact him via e-mail to marklapidus@verizon.net.

DISNEY

(continued from page 26)

being played on Radio Disney," Cocchia says. "The fee also delivers exclusive videos and podcasts on a continuing basis."

The fee doesn't generate all that much revenue, but it does encourage loyalty on the part of those who have paid it, and opens them up to further Disney online purchases in the future.

Radio Disney appears to be taking a reasoned approach to building multiple platforms in this ever-changing media distribution landscape.

First, by staying grounded in broadcast radio, the network is staying close to its core business. But by embracing the Web and mobile, and leveraging their unique features, it appears to be getting the most mileage out of multiple platforms for growing its audience, staying with them wherever they go and ultimately reinforcing its core radio brand.

"We know what our business is about, and we are savvy to the opportunities that new media offers," Sean Cocchia concludes. "But we never forget that, no matter what, broadcast and satellite radio is Radio Disney's mother ship."

James Careless talked with Radio One's Dan Shelley in the Dec. 1, 2010 issue.

STATION SERVICES

KEEP YOUR SALES FORCE

Marketing and sales expert Doug McLeod helps managers fight a costly business problem with his 2010 book "The Zero Turnover Sales Force."

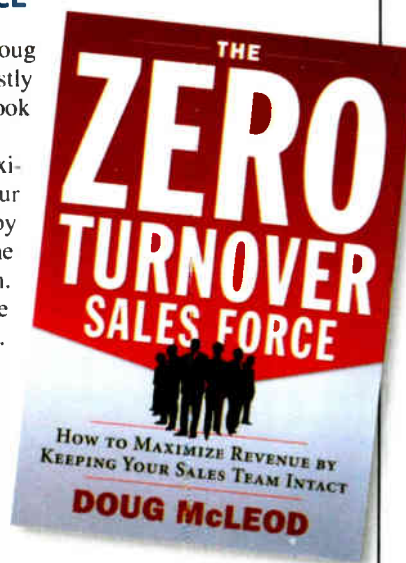
The book, subtitled "How to Maximize Revenue by Keeping Your Sales Force Intact," is published by AMACOM, the publishing wing of the American Management Association. McLeod's opinions and articles have appeared occasionally in Radio World.

"While 'the Zero Turnover Sales Force' is aimed at any business with a sales force," he wrote, "everything in it drives straight to the heart of radio's number one issue: not new media, competition or the environment, but sales force turnover. That transcends format and market size."

McLeod has experience in marketing, sales and communications including various levels of the sales process, including street-level selling, strategic marketing, sales management and business ownership.

The hardback retails for \$24.95 and was available for less via online retailers and in Kindle format recently.

Info: www.amacombooks.org.



ACT 1, BIA/KELSEY TEAM ON AD BUY PROCESS

Act 1 Systems has integrated BIA/Kelsey's Media Access Pro database into its software.

The firm provides station lineup and audience information to companies making large radio advertising buys. "Now subscribers of both services can view on one screen the important station and ownership data necessary to make advertising purchasing decisions nationwide," the companies stated in an announcement.

They said that wired network providers and syndicators had been using Act 1 Systems and MAPro independently and sought this capability.

"In its latest software update, Act 1 Systems enabled several important data points available through MAPro into its interface for its subscribers who already have subscriptions to MAPro. Those subscribers separately still have access to the full MAPro suite of 1,200 fields of data through their individual user accounts."

Act 1 said its client need station format and group owner info that BIA/Kelsey can provide.

Info: www.act1systems.com and www.bia.com.

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For \$1.99, an Audio Tool for iPhone

Engineers, Producers and Musicians Will Like the Features — and the Price

BY RUSS LONG

Performance Audio's Audio Tool is a collection of three useful apps.

At only \$1.99, it is possibly the best deal available in the world of pro audio gear. Included in the package is Decibel Meter Pro, an accurate sound level measurement tool; Audio Calc, a tool that

measures sound levels up to 110 dB, but not beyond. The meter can be calibrated ± 10 dB in 0.1 dB increments. The calibration tool is overly sensitive, making it somewhat difficult to adjust but just having the ability to calibrate the tool makes this easy to overlook.

The meter includes three level displays: Average, Peak and Max. Tapping



sample rate, number of tracks and length of time, and the app instantly provides the required amount of hard disk space (e.g., 24 tracks of 24-bit, 44.1 kHz running for two hours requires 21.298 GB of hard disk space).

The app allows the user to set personal defaults (I set mine to default to 32 tracks, 24-bit, 44.1 kHz) and besides calculating the space required for a set amount

of time, you can calculate the maximum recording time allowed based on a given amount of space. The app supports sample rates from 8 kHz to 192 kHz, bit depths from 8- to 32-bit and up to 99 tracks. I multi-track several live concerts each year; while I do have an Excel worksheet that does the same thing, I don't always have my computer with me. Now I always have the ability to calculate this information quickly on the fly.

The Audio Atlas is an extensive, searchable mini audio encyclopedia. My initial thought was this is just a filler app but it is quite handy, as it includes everything from "A-weighting" and "bias" to "parallel mono" and "time variant filter." While the list initially appears to be comprehensive, some important terms such as "slew rate" and "direct box" are absent. But newcomers to the industry or people working outside their area of expertise will find this application useful.

I love the Audio Tool app collection. All three of its apps are built into a single shell so you don't have to close one to open another. This collection is an iPhone essential for engineers, producers and musicians, as it will justify the price in a single use.

Price: \$1.99 from iTunes App Store.

For information, contact Performance Audio in Utah at (800) 771-8330 or visit www.performanceaudio.com.

This article originally appeared in Pro Audio Review magazine.

I don't always have my computer with me. Now I always have the ability to calculate this information quickly on the fly.

makes it easy to calculate the required hard drive space for a recording project; and Audio Atlas, essentially a mini audio encyclopedia.

Decibel Meter Pro and Audio Calc are available separately for 99 cents each, but buying the complete Audio Tool package is the only way to get the Audio Atlas.

Decibel Meter Pro provides both analog metering and a numerical readout of sound level measurement. The app's only limitation is the iPhone's built-in microphone, which is sensitive up to

the readout will reset the Max level; otherwise it is held indefinitely. I've routinely carried a Radio Shack decibel meter with me over the years but I often don't have it with me. Now, with Decibel Meter Pro, I'll always have a way to check sound levels. Having the Max level reading is a great feature, as I can know the maximum level of my measurement period without having to stare at the meter the entire time.

Audio Calc provides a quick, easy way to calculate drive space needed for recording. Simply enter the bit depth,

MARKET PLACE

TIELINE ENHANCED:

Codec maker Tieline Technology announced support for apt-X Enhanced audio coding and IP multicasting in software release v.1.06.00. "The ability of Bridge-IT to send multiple unicast audio



streams and now multicast audio streams from a single box, reduces capital expenditure costs and lets engineers design flexible routing throughout rapidly expanding IP networks," it stated, adding that apt-X Enhanced audio coding is used for STLs, audio distribution and remote broadcasts.

Info: www.tieline.com/bridge-it

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World Radio History

It's About 'Local' and 'Topical'

If We Don't Focus on That, Traditional Radio Will See Great Erosion to Web Radios

COMMENTARY

BY DAN SLENTZ

Paul McLane's editorial "Your Station Can Be the Hero" (Oct. 20) was spot-on.

I've been in radio since I was 16 years old, starting at WJER(AM) in Dover-New Philadelphia, Ohio. Back then most stations actively participated in relaying any emergency announcement that affected a community or area. Even WJER had a generator and was able to maintain air when everything else went down. Of course, 1980 didn't have the Internet or other instant communications we have today.

As time has gone by, I've worked for many radio and TV stations; and I see fewer generators, more automation and less attention to relaying information about even severe weather. Sadly, many stations have become jukeboxes (or automated video server systems, in the case of TV). And many stations I've seen do not have any generators or UPS systems.

FINE LINE

As I continue to reinforce in management, we as broadcasters still have the opportunity to make ourselves relevant, even life-saving, to our listeners.

The time will come quickly — some of the technology is already here — when personal communications methods and the Web will be able to localize information to people within a geographic area. When this happens, that fine line between "community-oriented" and "able to deliver community information" will go away.

Cable TV for years has been inserting local information within national programming via automation. Certainly we've done that in radio since its inception. An audio stream from, say, the U.K. could soon be interrupted by local information. It's really just a matter of time.

Local information might be cut into any stream from any Webcaster through a sort of "local portal." This would allow the user (based on geographical location) to receive relayed local information, commercials or emergency alert information. It might even redirect to a local advertising broker that inserts this info and returns to the Web stream without any user intervention (with payment made to whoever's stream was "spliced" with local info). If that stream is coming over a Web-based car radio or smartphone, and the same local information is cut in automatically (based on

location), they've provided the same life-saving information as your radio station does ... or should.

If anything, think how more accurate a GPS-based receiver will be at receiving specific area information. If a tornado were spotted at a specific location, a Web-based car radio could alert all radios within two or three miles of that location, telling people they're in a critical area. That's something we can't do in traditional radio ... yet.

It's really a no-brainer: For radio to remain relevant, we must focus on a community. Recent Radio World articles have included focus on localism, and again these are spot-on correct.

Many formats (coming from big group stations) push "we've got all your favorite music." And they do have a lot. But I have a radio station, music formatted, that has every single song I like, and it's called "my MP3 player." Being a former radio jock, I have a library of about 15,000 songs (far above most, if not all, radio station rotations).

The big difference though is that a radio station can tell me about a traffic jam, community event, how a song ties into a local person or event ... you know the routine here. I can beat any song any station plays with my own "radio station MP3" — but I couldn't touch that information, or the DJ's personality.



Of course, that's only if the station is doing anything more than a bunch of back-to-back songs (with me really liking maybe one out of every four or five, even within a tight format).

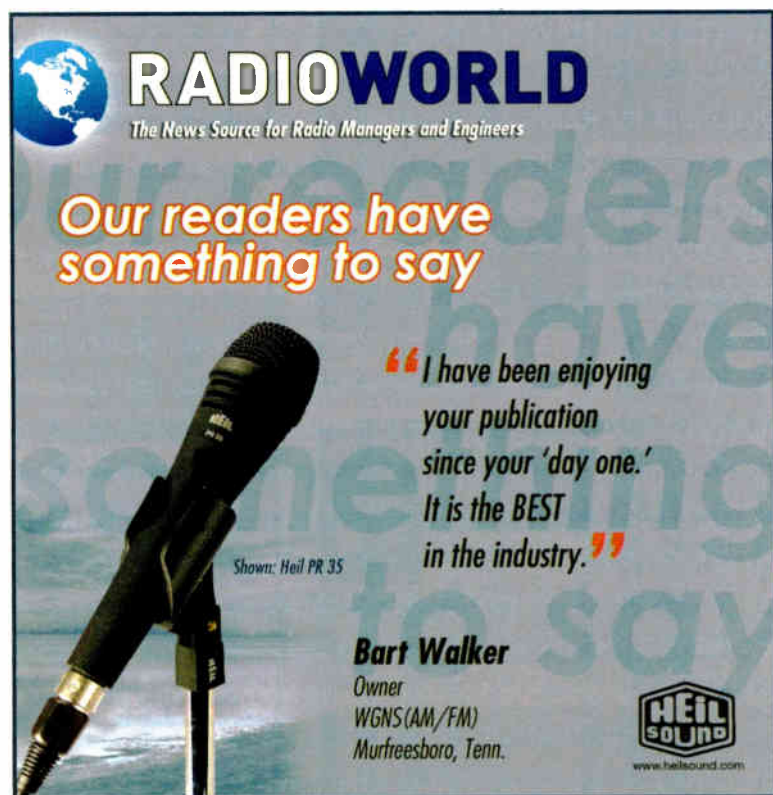
Yet we have many stations saying "music ... music ... music ... and only a few commercials." Well, I can live with the commercials, as long as you aren't running four-minute stop sets of spots; and I do like hearing a well-informed, funny or interesting jock, as long as you aren't rambling, irrelevant or self-serving. The key to the success is localism!

This goes hand in hand with Paul's editorial. Traditional radio likely will see great erosion to Web radios if we don't refocus on local and topical. It's a mindset.

EAS messages are critical (this is when we can be playing our best game and truly making a real difference). And oh yes: I think radio stations should be required to have working generators and backup systems. Even major-market stations I've been in don't always have generators or UPS systems. Power down, they're off.

Adaptation, evolution and invention with the focus on localism will be the keys to our future success.

Dan Slentz, former vice president of technology and broadcast operations at noncommercial KERA(TV/FM) and KKXT FM, Dallas, also has worked as a radio programmer and on-air personality at radio stations in Ohio and Colorado, and at Armed Forces Radio & TV Madrid, Spain. He is an occasional contributor to Radio World.



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17	Sage Alerting Systems	www.sagealertingsystems.com
9, 19	Telos Systems - TLS Corp.	www.telos-systems.com
1	Tieline Technology	www.tieline.com
2, 20, 21, 40	Wheatstone Corporation	www.wheatstone.com

READER'S FORUM

NEW SPECTRUM, OLD PROBLEM?

Regarding "BMC Hopeful About EXB Band Proposal" (Sept. 22 issue):

Most current audio distribution mechanisms offer a system of scaled quality, i.e., from what is, or at least passes for, a perfect duplicate of CD-quality (i.e., if not linear, then at least stereo AAC encoding at 128 kbps or better) ... all the way down to mono 10 kbps voice quality with obvious artifacts.

For example, I can play linear audio on my iPod that is an *exact* duplicate of the CD it was ripped from; on the same device I can also play music that is transparently or even aggressively compressed, and also lectures that are of such quality barely adequate for the understanding of speech. The quality reduction can be *scaled* to the need, and is invariably in reaction to a lack of data bandwidth or a desire to minimize storage space requirements.

The current digital audio broadcasting model offers scaling, too, allowing for more channels with a commensurate inverse level in quality for each of them. The problem, as I see it, is that at *best* the quality does not meet even that of 128 kbps AAC (never mind the linear format) that my little iPod offers!

From a scaled-quality standpoint, the scale starts pretty darn low, and only goes to worse. Added to that, with the limited amount of bandwidth available now on each broadcast signal, there is considerable economic pressure towards the bottom: More streams, even at lower quality, means more potential income.

So here we are, in a situation where the broadcast system in which audio is the focus (radio), at best actually offers *worse* audio quality than the system where video is the focus (HDTV)! Adding insult to injury, HDTV, with its nearly 400 kbps audio stream, even allows for relatively high-quality 5.1 channel surround sound.

I am a huge proponent of opening TV Channels 5 and 6 to broadcast audio services. My concern about any new broadcast band is that, if we should follow the model of the present IBOC system, we will lock ourselves into a broadcast system that does not allow for, never mind encourage, a quest for high quality.

Opening a new portion of spectrum offers the possibility to rectify this situation, if there is only the will. Is there?

David Reaves
Recklinghausen, Germany

WHO'LL COME TO THE PARTY?

EXB is a better use of the spectrum than stuffing a handful of digital TV stations in there, that's clear ("BMC Hopeful About EXB Band Proposal," Sept. 22).

But expanding an existing technology (one-way local radio) and ignoring new technology (IP distribution via the public Internet) isn't going to help local radio adapt to the new environment we're entering. The public is rapidly adopting smart phone technology that is inherently interactive. One click and you've got audio, video, downloads, links to other services, blogs, et cetera, all in one place. Pandora and similar services provide customized, on-demand music.

If local radio doesn't "get" that, in time it won't matter what channel it's on. There won't be any "listeners" left. Old-fashioned, over-the-air distribution still has an advantage in terms of data use on wireless networks, but without the other features being built-in, and the audio commercials left out, it's not very useful to a lot of people even now, and that's not just youngsters.

If the EXB party happens, will the public show up?

Gary O. Keener
Keener Technical Services
San Antonio, Texas

MY FIRST REMOTE

When I read James Careless' story "There I Was, at the County Fair ..." (Sept. 8), I had to laugh as it brought back lots of memories of those first days in radio.

While I admit I don't have the years of George Marti, I do relish those days of going on the road to the county fair and broadcasting from the animal barns and sack races.



Jeff Jones and his remote rig.

The first remote broadcast that I remember was in 1979 from an ag show in the little town of Greencreek, Idaho. We set up our gear next to the doors of the community center, where farmers and ranchers made their way in to look over all the new agricultural products, machinery and swap stories with one another.

Our job of course was to talk with everyone we could and increase the attendance at the show using our outdated yet "still working" Pulse Dynamics model 288 PD/MC. It was for its time a top-of-the-line POTS remote system; it had four XLR mic inputs and used a modular line that had a small transistorized 1/4-inch plug that you jacked into the back. The rotary dial on the front was a hoot because its return was always so slow. The system with case must have weighed about 25 pounds. It believe it was manufactured in the late 1950s or early '60s at the PD plant in Colchester, Ill.

While I no longer have our setup's Sennheiser HD 414 headphones, everything else here is still original and continues to work. The Electro-Voice RE10 took a lickin' and kept on tickin'.

If memory serves me, our only problem that day was having to share the party line the community center had with their Catholic Church neighbors next door. We would be right in the middle of a broadcast, hear a click and then the sound of the parish priest using his rotary dial phone trying to call out. Ha! Those were the days.

Jeff Jones
Owner/GM
KLER Radio
Orofino, Idaho

AN EAS GEAR WISH LIST

An open letter to EAS CAP encoder/decoder/receiver manufacturers:

In light on the revised EAS/CAP rollout I'd like to take a moment to encourage the legacy manufacturers to rethink your product offerings in order to bring them into the modern age. New encoder/decoders should have at a minimum the following features:

- A. An IP-addressable internal Web page for network configuration; multiple e-mail/text/pager alert settings for multiple alert levels (RWT, RMT, etc.). The e-mail/text feature must support modern server security features such as user log-ins/passwords, SSL and alternate IP ports.
- B. Pre-scheduling of weekly tests (RWTs) with operator pre-warn via Web browser with text import capability.
- C. Support for the configuration of multiple closure inputs and outputs, configurable for a multitude of features.
- D. An option to print to any standard IP/USB network printer with network/USB printer configuration and testing.
- E. IP-based NTP automatic time setting configurable for local time zone/DST. No longer should we have to rely on a 60 Hz AC line input in an attempt to hold an accurate time.
- F. Permanent alert/event capture buffer for all events, with report generation and printing (weekly/monthly), upon demand.
- G. RS-232 output support for Beta Brite-type signs/annunciators.
- H. RS-232 output for manufacturer/third-party EAS monitoring software.
- I. Ethernet-based e-mail/text/pager alerts for failed events, i.e. no RWT for eight or more days.
- J. Timely online 24-hour access to *full* equipment documentation.

Further, no longer should those of us in charge of ensuring the proper operation and compliance of the EAS/CAP system have to endure a printer that looks and operates like it came out of a 1970's-era calculator, utilizing a paper roll that is about 10 feet long and a ribbon that lasts about a week. In this day of ubiquitous IP/USB network printing, utilizing and relying on the above outdated technology simply makes no sense at all.

B. Robert Clark
Director of Engineering, IT and Communications
Taxi Productions Inc.
KILH Radio
Los Angeles

WRITE TO RW

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

NPR Should Look Beyond the Beltway

It's Time for Some Serious Adjustments Within Public Radio

COMMENTARY

BY PETE SIMON

Even before the Juan Williams fiasco there were those of us in public radio circles who saw a hobbled system that has never recovered from funding termination threats posed by President Reagan's budget director, David Stockman.

Since 1981, we have seen far too many public radio managers, acting out of this insecurity, hung up on the conformity of an audience-building mindset (following consultants and self-appointed experts, best typified by the moniker "guys in suits with charts"), at the expense of possessing a spirit of spontaneity, innovation and true passion for what should be a unique form of radio.

There is a place where this spirit can be rekindled, but it is far from large-market pressures and suffocating conformity.

For 30 years, the system has been in a slow glide. A mindset of complacency was illustrated recently when NPR and CPB both declined to get involved in any serious effort to lobby the FCC to expand the noncommercial/educational FM band to (at least) 87.7 MHz.

NPR and CPB apparently are happy with the status quo, in which all they can think of are new HD channels on existing public stations that they think will fill programming voids. Nice theory — if those HD channels are *controlled* by public entities other than ones controlling the main signals, entities not steeped in play-it-safe approaches to programming. Fat chance!

I'm reminded of the bankruptcy of this mindset whenever I hear the highly-compressed commercial sports talk ("The Ticket") signal at 87.7 in Denver, bleeding over into the signal of Denver's classical music station at 88.1 FM operated by Colorado Public Radio.

Through inaction, the slow-mo approach of NPR and CPB has killed chances to expand the NCE portion of the FM band. They just stick with what is safe on the programming side of things.

While on business travel over the past two years, I listened to large-market public stations in New York City,

Philadelphia, Baltimore/Washington, Norfolk and Richmond. In every locale, there was a sameness to the presentation of news and music.



Pete Simon says public radio needs to draw upon — and assure the survival of — small-market, low-budgeted urban public stations.

In Philadelphia, WRTI, a station I listened to loyally 30 to 40 years ago before moving to Colorado, sounded alien to me even though it continues to play jazz. The station has gone through a massive "upgrade." Gone are passionate and knowledgeable jazz announcers, replaced by uninspired people who sound as if they are reading from cue cards.

The best jazz station I've heard in this part of the country, in terms of content and presenta-

tion, is WESM(FM) at the University of Maryland Eastern Shore. Its remote locale has insulated them from major-market pressures and over-analysis that have crippled WRTI and many other "big-city" stations.

BREAK THE MOLO

One solution: Draw upon and assure the survival of small-market and low-budgeted urban public stations.

Currently the KGNUs, WWOZs and small community stations have little or no money for adequate promotion of programming, training and developmental funding for producing unique radio programming.

Conservative larger-market stations have had their chance to do this; with a few exceptions (such as WNYC's "The Take Away" and WHYI's new community news reporting initiative) the big boys have not contributed anything new or innovative for listeners down the street or across the country. "Conventional wisdom" within the public radio community runs contrary to this observation.

Some large-market stations, still in an expansionist mode, see the pittance that small stations receive from CPB and simply are waiting for smaller ones nearby to fold so they can "gladly" enter into "partnerships" with them.

If played out, this scenario will be the death knell of a system screaming for ideas and a viable platform to develop programs, announcers, reporters and producers.

Obviously, a lot of struggling small-market stations are lucky to broadcast every day. Then there are hamlets in

remote places that only need the right nurturing and money to make a national impact.

TALENT POOL

One such place is KVNF(FM), Paonia, Colo., a town with just 3,000 people nestled up against the West Elk Mountains and Wilderness Area.

Paonia's population is made up of miners, old hippies, writers, artists and talented, insightful reporters who work at one of this country's best environmental newspapers, High Country News. With an NPR station of more than 30 years in town, the possibilities for this potential talent pool of all ages are endless, given serious funding, for the development of radio programs and new voices with untried/unheard-of concepts for public radio.

As CPB goes through the congressional microscope again, it would be wise to evaluate where its limited funds for qualified stations are spent. Do they want to continue funding all stations (in part) by matching how much non-federal money each station raises each year? This formula works best for major-market stations, where the potential for community underwriting and potential listener support is high. Compare that to a place like Paonia and the 160,000 people that KVNF reaches across seven rural/frontier counties in western Colorado.

As it jumps through hoops with the new Congress over various issues, including the firing of commentator Williams, NPR would be wise to add to its roster of commentators someone from a town like Paonia, where it could start by seeking out one of the writers at High Country News.

I'm talking about people who are on par intellectually with major-market "experts." In the Internet age of the 21st century, people speaking from such places should no longer be thought of by people at NPR as charming yet nothing more than "country bumpkins." Is NPR ready to walk-their-talk about exploring ideas, diversity, etc.?

Let's change things up a bit to help our National Public Radio networks expand the horizons of listeners, with fresh ideas and concepts developed away from the Potomac. A good place to start: NPR should broadcast one of its regular news programs for a week from KVNF. That would turn some heads — even those of NPR critics — inside and outside the Beltway.

The author has worked in public and community radio since 1974. He is an announcer on KUVU(FM) in Denver.

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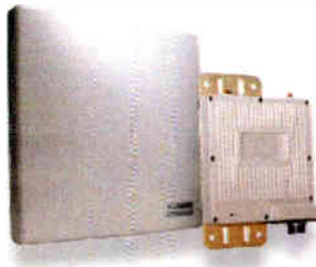




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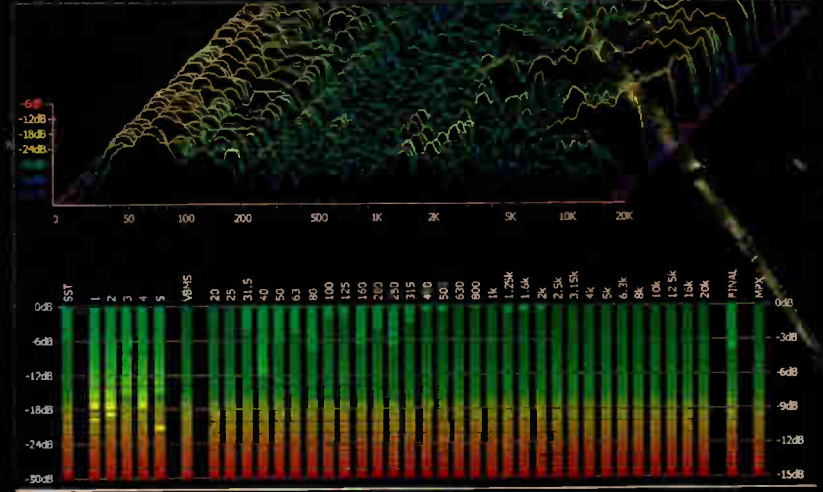
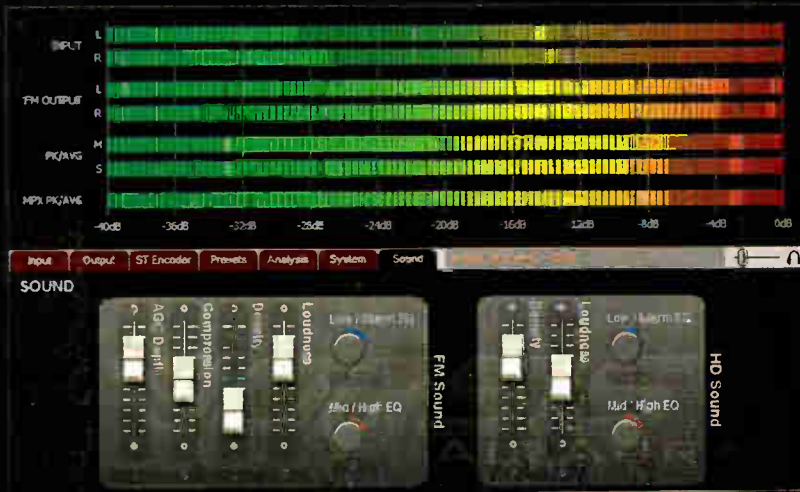
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"This processor is amazing!"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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