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from left to right:

Gerrett Conover *Vice President*
Daniel Braverman *President*
Michael Sirkis *Chief Engineer*
Dennis Greben *Manufacturing Manager*
Jo-Ann Dunn *Sales Manager*

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2012 NAB Show Attendance

The National Association of Broadcasters released preliminary figures for the 2012 NAB Show. The NAB reports an uptick in exhibitor participation and an almost 10 percent increase in size. The event comprised 1,600 exhibitors spanning 815,000 net square feet of exhibit space, up from 1,550 exhibitors occupying 745,000 net square feet in 2011.

92,112 **Total registered attendees**

24,928 **International attendees**

151 **Countries represented**

1,652 **News media attendees**

Inovonics Celebrates 40 Years

In May 1972, Inovonics was founded in Campbell, CA. At that time, research and development began on the company's first products: 355 Replacement Tape Electronics, 200 Limiter and 360 Tape Electronics.

Inovonics President Jim Wood commented on the milestone, "Inovonics began with a single product idea: a replacement tape recorder electronics for tired, old vacuum-tube machines. Inovonics has kept attuned to the wants and needs of broadcasters, evolving into an innovator and leader in the broadcast equipment field. We are proud of our 40 years under the same ownership and management, and proud to be associated with an industry dedicated to serving '...in the public interest, convenience and necessity.'"

Nautel Limited has promoted Wendell Lonergan to Head of Broadcast Sales. Lonergan has been with Nautel for more than 30 years, and he has helped the company pioneer its broadcast transmitter line.

Elenos USA has hired John Bisset as director of technical services and education. Elenos, a manufacturer of FM transmitters will draw upon Bisset's industry experience as it expands its reach into North America. He is an active member of the Society of Broadcast Engineers and a past recipient of the society's Educator of the Year award.

ALC Networx and the Telos Alliance announced a partnership to combine the Axia Livewire system with the Ravenna technology to create an interoperable system. The new Axia xNode IP-audio interfaces support all fundamental operation principles of Ravenna, and thus they are capable of interacting with Ravenna-enabled devices.

Keiler, Burnham New SBE Program Chairmen

Society of Broadcast Engineers President Ralph Hogan, CPBE DRB CBNT, appointed two members of the Board of Directors to lead two essential programs of the SBE. Charles "Ched" Keiler, CPBE 8-VSB CBNT, has been appointed chairman of the SBE Government Relations Committee. Paul Burnham, CPBE, has been named the chairman of the new Mentor Subcommittee of the SBE. The subcommittee will develop and implement the new SBE Mentor Program, which seeks to enhance the professional development of younger engineers in the broadcast industry by creating mentor relationships with more experienced engineers.

2012 NAB Show Booth Winners

The 2012 NAB Show named the first annual ACE (Awesome Cool Exhibits) Awards to NAB Show exhibitors for their innovations in booth design and execution. The winners are:

Small Booth: Shenzhen Skyworth Digital
Medium Booth: Sennheiser
Large Booth: Harris

The following companies were nominated:

3ality	Artel
Brainstorm	BSI
Canon	Cineflex
Corplex	Dektec
Fujinon	Go Pro
Grass Valley	Harmonic
Harris	Immarsat
Kit Digital	Lawo
Litepanel	Logic Keyboard
Masstech	MYT Works
Optical Cable	Panasonic
Pixel Farm	SAS
Screen Keys	Sennheiser
Shenzjen Skyworth	Small Lens Baby
Sony	The Foundry
Whisper Room	Zylight

The booths were categorized by size: Best Small Booth — up to 200 square feet, Best Medium Booth — 200 to 900 square feet, Best Large Booth — 900 square feet and up. Booths were judged on four points:

- Creativity: use of color, sound, light and other creative elements
- Effectiveness: how well the booth draws in and engages the visitor?
- Overall structure: quality of the build and innovative use of materials
- Peer review: overall "look and feel" as judged by other Exhibitors

FIND THE MIC AND WIN!

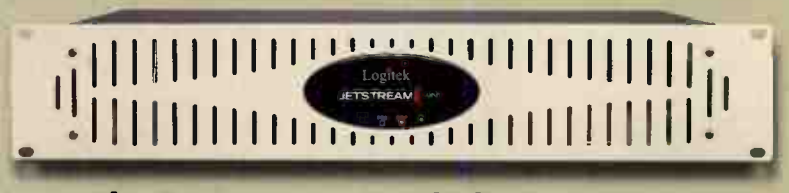
Tell us where you think the mic icon is placed on this issue's cover and you could win a Hosa USX-100 mic-to-USB interface . Send your entry to radio@RadioMagOnline.com by June 10. Be sure to include your guess, name, job title, company name, mailing address and phone number. No purchase necessary. For complete rules, go to RadioMagOnline.com

ROC YOUR WORLD

The new ROC console from Logitek

When Logitek introduced its first ROC console back in the 1990s, it marked a revolution in audio console design. One of the industry's first router-based digital consoles, the original ROC boasted simple wiring and access to multiple sources at each fader.

Over the years, the router-plus-console Networked Audio concept has become the standard in console architecture. Although the original ROC was retired years ago, Logitek has continued to develop systems for both TDM and AoIP audio networking. The new ROC takes the best of the original design and pairs it with the latest technology and styling.



The ROC is paired with the JetStream, a powerful 128-channel networked audio node.

Available in multiples of 6 faders (up to 24), the ROC is housed in an attractive tabletop enclosure. Durable Penny & Giles faders, OLED source indication and intuitive controls make the ROC a natural for on-air, production rooms or even in temporary studio setups. Two monitor feeds, front panel headphone connection and user-assignable softkeys will please even your fussiest operators.

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VIEWPOINT

Wait ... It's Over?

Around October we start thinking about the NAB Show in the spring. April seems so far away at that time, but the early planning begins. When January rolls around we start building the framework for the pre-convention issues, supplements and online. When we flip the calendar to February we launch into full gear gathering information on new products, getting the exhibit hall map and assembling the exhibitor list. We continue the full-steam effort until the April issue is sent to the printer and we post all the information online at RadioMagOnline.com.

But it's still not over. In some ways we haven't really even begun.

In the two weeks before the NAB Show opens, we're still in full convention planning mode. We're making appointments, setting meetings, filling our calendars. And we of course are already working on the May and June issues.

Once I arrive in Las Vegas, it's nearly a non-stop rush to get everything in. This was my 24th NAB convention (and my 15th as the editor of *Radio* magazine), so I know the drill quite well. Most of my time during the day is taken up with booth visits, and fortunately I can make some of them on Sunday before the exhibits open. Every little bit helps.

And then as quickly as it all came upon us, it's Thursday afternoon and the announcement is made that the 2012 NAB Show is now closed. The usual hoots and hollers ensue, and some exhibitors crank up their audio systems in celebration.

While this is a brief moment to relax, we're still not finished. We have tons of photos. Pounds of material on new products (and thanks to electronic distribution this weight is greatly reduced from previous years, but there's still quite a lot). I have video of the Pick Hits winners. My feet get a rest from walking miles and miles, but there's still plenty of work ahead to compile and sort all the collected information.

A great deal of information has already been posted online, and we'll share much of it in the June issue show wrap-up. By the middle of May, much of the NAB Show effort is finally set in place. The August Product Source and our ongoing New Products Extra email newsletter extend the NAB Show new products collection a bit longer, but that's more a long tail than the frantic pace in March and April. By the end of the summer, the April convention is a distant memory.

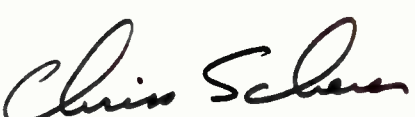
But not for long. A few weeks later it's time to start thinking about the 2013 NAB Show. And it all begins again.

BRIEF NOTES

We'll get into the meat of the NAB Show next month, but there are a few appetizers I'll offer. On the exhibit floor, the general theme seemed to be unveiling updated products with added features but at the same (or nearly the same) price. Many manufacturers have already found a product sweet spot, so rather than reinvent an idea, they're updating ideas to fulfill user requests.

EAS was top of mind for many following the FCC's recent report and order. The text-to-speech issue had not been decided before the convention ended, and the missing station reports from the November 2011 national test kept emergency alerting on everyone's mind.

Finally, the debut of HD Radio on smartphones caught lots of attention. While it's still a proof of concept while iBiquity, Emmis and the NAB sell the idea to the cell carriers, it's an important step for the technology in getting it in all devices by default and not just as an add-on.



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THIS CODEC HAS BEEN THROUGH TWO WARS, MULTIPLE ELECTIONS, FLOODS, FAMINE, EARTHQUAKES, HURRICANES, MARATHONS, CHAMPIONSHIP GAMES, REGATTAS, LOTS OF CONCERTS AND WAY TOO MANY CLUB EVENTS TO ADMIT.

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Prior Coordination for STLs

by Jeremy Ruck, PE

Let's face the fact that broadcast auxiliary facilities are somewhat less than glamorous. These quiet, unassuming workhouses of the program stream tend in many facilities to be housed in a sketchy rack in a dark back closet or furnace room of an otherwise slick and beautiful facility. No doubt, they are aware of this relegation to second-class citizen for functionality issues tend to pop up at inopportune times. While we cannot totally eliminate equipment failures, due diligence in the realm of coordination and licensing can go a long way towards reducing other types of "gotchas."

It was not that many years ago that the Federal Communications Commission revised the broadcast auxiliary coordination requirements to put some more teeth into them. Before those procedural changes, applications were routinely filed without undergoing any formal coordination. Since there tends to be courtesy among broadcasters, incidents of problems tended to be rare. The increase in the number of broadcast facilities and consolidation in the marketplace has made the coordination process essential, the Commission's rules notwithstanding.

FINDING SPACE

Every new station that goes online can require up to 500kHz of spectrum in a band only 8MHz wide. In cases where multiple paths are required, the amount of spectral real estate carved up tends to double. Combine this with consolidation situations where several stations are programmed out of a single building, and the available auxiliary spectrum is indeed scarce. These situations do not even address the desired use of the auxiliary spectrum by licensees of translators. The popularity of translators for AM fill-in use has definitely increased spectrum demand. It should be noted, however, that auxiliary facilities providing program material to translators may not interfere with or preclude full-power STL uses.

No doubt, you have received several, if not many, frequency coordination notices. These notices form one side of the coordination process. The notifications must include the relevant technical details of the proposed facility. In essence, the proponent must provide sufficient technical details so that an independent analysis of the proposed path can be made before the facility application is submitted. Although the actual format of these notices will vary subtly, most firms will include an introduction letter, tabulation of technical details, and graphical illustration of the proposed path.

From these details, a qualitative analysis can usually be made fairly simply. For instance, if the proposed path is 100 miles away from yours, cross-polarized and operating in the opposite direction, it is a good bet that it will not cause you problems. On the other hand, a proposed path in the same market as yours that is very close in frequency could prove problematic. Thus, any coordination notice received should definitely be considered carefully.

If the proposed path looks to be potentially problematic at face value, a more in depth quantitative analysis is warranted. Several different methodologies for quantitatively analyzing a path are available including TIE-EIA Bulletin TSB10-F among others. These standards are usually not in the library of a station due to their cost, so a call to your consulting engineer may be the most efficient way to address the concern. In reality, a once-over by your consulting engineer is a cheap insurance policy against loss of financial income by the station, and political capital by you.

If there are no issues with the path, then the response phase of the coordination process kicks in. Under this phase, a response is made to proposal provided by the proponent. The Commission's Rules state if no response has been received after 30 days following receipt of the proposal, then the proponent can be assumed to have made a reasonable effort to coordinate the proposed facilities. This provision

is what most firms utilize in coordination requests, and why many request letters will advise no response is necessary if there are no objections to the proposed path.

WHEN TIME MATTERS

Although the 30-day period is the norm, the Commission's Rules do provide for expedited coordination under shorter time periods. Expedited coordination may be employed if deemed necessary by the notifying party; however, the Commission does not provide guidelines on what are the criteria for expedited coordination. What the Commission does, however, state is that the notifying party is responsible for receiving written concurrence with the proposal if expedited coordination procedures are followed. In other words, it is not acceptable, although frequently done, to request an expedited coordination window, advise that no response is necessary to the proposal, and assume coordination is complete in two weeks time.

Once the responses are received, or the necessary time has elapsed as the case may be, the coordination process can be assumed to be complete. At this point, the application, if for new or major changes, can be filed. Certification that frequency coordination has been completed must be submitted in order to obtain a grant of the license. The certification of coordination is an exhibit that spells out the procedures utilized, and lists the entities with which contact was made regarding the proposed link.

Any negative response to a proposed facility in essence stops the clock. Before coordination can be assumed to be complete, these issues must be mutually worked out between the affected parties. Sometimes these issues are fairly simple in nature. For instance, some time ago we received an objection to a proposed path due to a significant increase in interference. The apparent substantial increase in interference resulted from an incorrect receiver parameter. Following a friendly discussion, the objection was withdrawn, and coordination completed. In this instance, no change to the proposed facility was made, so no additional notifications were required. In other cases where changes must be made, subsequent notices must be provided. The clock has to be watched here as well, as the coordination request sunsets if no application is filed within six months of the date of coordination initiation.

The coordination process is essentially required anytime an application is filed. Since the threshold for what is considered a major change under the wireless radio services is quite low, figure on going through the coordination process anytime you file an application. Although initially the process was seen as an added burden, the reality is the imposition of the process on broadcasters has tended to mitigate problems for a number of years now.

Ruck is a senior engineer with D.L. Markley and Associates, Peoria, IL.

Radio and the Social Internet

by Lee Petro

While attending the NAB Show in Las Vegas last month, I was part of a panel discussion on the use of social media by radio and television stations. Many stations have been enhancing their presence on the Internet by setting up Facebook pages, tweeting station updates, and encouraging employees to create blogs.

However, as stations move more of their content online, and encourage online exchanges with their audience, there are new responsibilities. Stations have to remember to comply with the FCC's regulations that apply to station promotions and contests run on stations and the website at the same time. A recent FCC enforcement raises new concerns for the promotion of a Web-only contest advertised on the station's website.

Moreover, as stations interact with their audience, regulations promulgated by the Federal Trade Commission are implicated, as are copyright concerns raised when stations seek audience posting of content that may, or may not, be of their own creation. While there is an endless flow of permutations regarding these issues, here are some issues that stations must confront.

FCC Regulations: Hopefully, all stations are aware of the Commission's rules relating to contests and promotions. The Commission requires stations to regularly air the rules of contests and to follow those rules in awarding prizes. On many occasions, the Commission has imposed forfeitures and established compliance programs for stations to follow to ensure the station properly educates its staff. Some stations have seen the move to the Internet as an avenue to avoid the FCC's onerous record-keeping and compliance obligations.

However, a recent decision by the Commission reminds broadcasters they should not stray too far from established FCC practices. Specifically, the FCC applied its contest rules and levied a $22k forfeiture because the station ran on-air advertisements of its Web-based contest directing listeners to go online to enter the contest. The Commission concluded the station violated rules regarding the airing of announcements that disclose the material terms of the contest rules. The Commission reasoned that once the station began promoting the contest over the air, the FCC's rules became effective. It did not help that the station named the contest winner before the ending date specified in the posted contest rules.

FTC Regulations: The FTC also imposes obligations on websites that affect broadcasters. Many stations have audience fan clubs that collect information from their members and send station news and updates. The FTC gets involved, though, when the information collected comes from children under the age of 13. Not only does the FTC have rules on its books regarding the collection and disclosing of information from children under 13, the FTC has a pending rulemaking to consider tightening its rules to take into account new technology and practices.

In particular, the FTC is considering rules that would expand the definition of information to include geolocation and cookie tracking information. In addition, the FTC is looking at enhanced mechanisms, such as video chatting and collecting parental consent forms prior to allowing websites to collect information. Finally, the FTC is also looking at the practice of Data Brokers, shadowy figures that collect and package information for sale to third parties.

Copyright Concerns: Finally, enhanced interaction with a station's audience means the audience may create copyright concerns for the station. While the station may make every effort to clear the content it places on its station, new liabilities arise when the audience is invited to post content on the station's website.

For example, it has become a common practice for stations to encourage breaking news information, such as pictures of accidents or traffic. However, stations must make it clear to users that these pictures must be of the their own creation (can not repost from other sources), that the station reserves the right to reuse the pictures posted to its website, and that it reserves the right to remove any content that it deems objectionable. Most importantly, the station should identify a contact person to receive infringement complaints.

These are a few of the issues raised when a station enhances its online presence. Absent from this discussion are the fees owed for streaming a radio station's signal online, captioning of IP video, and the development of strong privacy statements, which are easily separate columns.

Petro is of counsel at Drinker Biddle & Reath, LLP. Email: lee.petro@dbr.com.

DATELINE

May 16, 2012: Stations in Michigan and Ohio continue running License Renewal Pre-Filing Announcements. Stations in Indiana, Kentucky and Tennessee continue running License Renewal Post-Filing Announcements.

June 1, 2012: Stations in Michigan and Ohio file License Renewal Application and EEO Program Report. Commence running License Renewal Post-Filing Announcements. Noncommercial radio stations in Michigan and Ohio file their Biennial Ownership Report (FCC 323-E). Stations in Illinois and Wisconsin begin running License Renewal Pre-Filing Announcements, continuing on June 16, July 1 and 16.

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Audio Production from the Field

With all the available choices for remote broadcasting, consider your requirements, functionality and budget

By Doug Irwin, CPBE DRB AMD

One of my first jobs in radio was for a small public FM in Santa Cruz, CA. We had a remote truck that was basically just a bunch of ¼" stereo tape decks mounted in racks inside. It was, and remains, a great way for a radio station to present exclusive content. Stations with a long history often have quite a tape archive.

If you were charged with going into the field and capturing long-form programs in this day and age, how would you go about it? That's our topic this time around.

Clearly the way you would design your remote system would depend upon what you were planning on recording. For example, if you were planning on recording a speech, the requirements are obviously less than if you were planning on recording live music; and, if it is live music you intend to record, will it be a small ensemble, or a 20-piece band? Will you record that material as a single track, or multiple tracks? Do you intend to edit in the field, or will you send the entire thing back to your HQ, unedited? There are many details to consider, and quite a few items to have on hand to ensure success.

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THE MICROPHONES

Microphones are an entire topic unto themselves so we'll just talk about them in the context of remote recording.

Many times you might find yourself recording a speech along with others – like at a press conference. The podium mic might have 12 outs available, and you might be the 13th person to show up; for this reason you always want to have some sort of microphone splitter along.

Whirlwind IMP Splitter 1X2

Whirlwind is a good resource here: the IMP-Splitter-1X2 would be a handy item to have in your kit: XLR input, two XLR outputs, and a ground-lift switch. Likely you'll have multiples of this anyway.


Rode NT4


Tascam TM-ST PRO

Perhaps your assignment is to make a more complex recording – say a string quartet at the local university. Again, stereo mic techniques are an entire topic; but just to make it easier (and to perhaps whet your appetite for learning even more) you could simply take a stereo microphone with you. An easy solution would be the Rode NT4; this is two mics (matching capsules) physically mounted together, with a 90 degree, X-Y arrangement. It needs phantom power or a 9V battery. The unit comes with a custom stereo output cable (XLR or mini). Other examples would be the Tascam TM-STPRO or the Audio-Technica AT8022. These also have two capsules in the X-Y configuration and come with a custom stereo output cable. Both operate on phantom power or AA battery.


Audio-Technica AT8022

You'll need some mic-level preamps as the next part of the system. If you only expect to use four microphones (or less) then you could consider a USB interface that makes the microphone signals available to record on a laptop computer. If you need more than four, likely you'll use an outboard mixer, followed by a USB interface. Options abound for this part. Let's say you just need two inputs – with adjustable gain so that you can use mic or line levels. Presonus offers the AudioBox USB: two inputs, with adjustable gain, a small headphone mixer; and an overall gain trim. TRS output pair. Phantom power is an option. A/D resolution is 24-bit (44.1 or 48kHz sample rate). The device is powered via the USB bus.

Presonus AudioBox USB

Avid MobilePre

Another option is the Avid MobilePre. It has two front-panel XLR/TRS combo inputs that can be set as mic-level (with phantom) or as direct inputs, and two rear panel 1/4" connectors for line-level inputs. A front-panel button is used to switch between the two. (Inputs sample at 48kHz/24-bit word length.) Front panel knobs are used for adjusting the input and output levels, as well as headphone level. This device is powered over the USB bus.

Perhaps two inputs aren't enough, but four are; in that case you could consider the Akai EIE Pro. This device has four XLR/TRS combo inputs, switchable between line/mic level (with front panel gain trims) or alternatively each input can be set as a DI (direct interface). Outputs are on TRS connectors. Sample rate can be 44.1, 48, 88.2 or 96kHz; 24-bit word length. Even though it has four channels, it isn't a mixer; you can switch its front panel VU meters, and the headphone amp input, between channel pairs 1 and 2, in or out, and 3 and 4, in or out. It connects to your laptop via USB of course, and in addition, it has a three-port USB hub built in to the rear apron. The EIE pro comes with a power adaptor – evidently the USB bus is not sufficient to power this device.

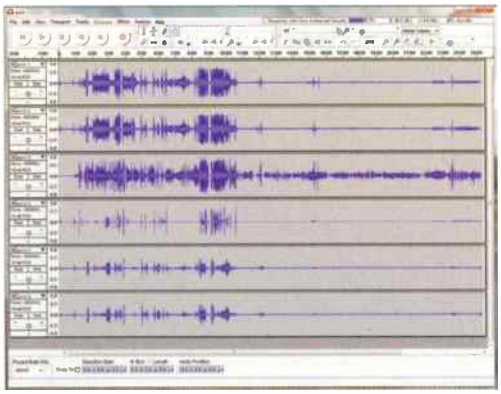

Akai EIE Pro

Perhaps you have in mind to record larger groups of musicians and find you need a larger outboard mixer that will still feed an editing program residing on a laptop. In that case it would be worthwhile looking at the Mackie ProFX12. It's a 12-input mixer, including six mic-level inputs (via XLR) with phantom voltage available, and 12 line-level inputs (via TRS). One of the 12 can be operated as a DI. Each of the inputs has a three-band EQ. It has four stereo buses, with one set of XLR balanced outputs on the rear apron, one TRS set on the front, and of course the USB I/O.

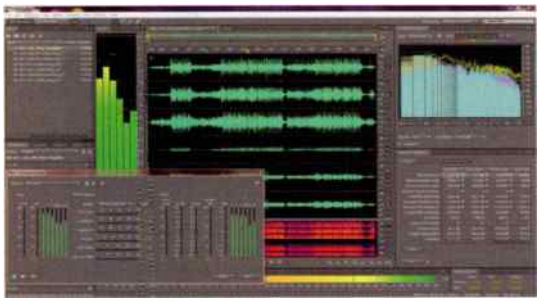

Mackie ProFX12

DAW SOFTWARE

Of course you cannot go anywhere nowadays without your laptop, and it's especially valuable for remote recording and production. There are many options for digital audio workstation software. What you decide to use is going to depend upon your requirements, your budget, and to a large extent your own personal preferences.



Audacity 2.0



Adobe Audition

The first option is freeware – Audacity. On March 13 of this year, the latest version (2.0) was released. By using Audacity on a laptop, you can record using the microphone or line inputs, USB, or Firewire devices. You can use sample rates to 192kHz (and higher) with 16-, 24-, or 32-bit (floating point) word length. The toolbar allows you to manage the various input and output devices. Level meters can monitor volume levels before, during and after recording. Clipping can be displayed in the waveform or in a label track. With the correct hardware you can record multiple channels. You can edit and mix large numbers of tracks and multiple clips are allowed per track. The editing tools are cut, copy, paste and delete, with an unlimited sequential undo and redo) to go back any number of steps.

Another option would be buying Adobe Audition (CS6 was just released). Audition provides native Mac OS support, running on Mac OS X v10.5 and v10.6, as well as Windows. You can record, mix, edit, and master your audio, with 24-bit or 32-bit files with sample rates up to 192kHz, with (according to Adobe) an unlimited number of tracks. You can resize track heights individually in the U.I. to focus on the tracks you need. You have the ability to add effects to the master channel and hear the results prior to mixing down to a single file; and there is real-time input monitoring that allows you to listen to the audio inputs as you record, including effects applied to the input track. You can go back and modify those effect parameters after the recording should you so desire. Some of the effects that are native to Audition are the DeClicker, the DeHummer, the DeEsser, the speech volume leveler, and an analog-modeled multiband compressor.

The user interface consists of workspace panels that dock and group for optimal organization. You can customize input and output metering to suit your workspace and the tasks at hand. Monitor peaks and valleys, using LED segments or continuous output, and stereo and multichannel tracks and sessions.

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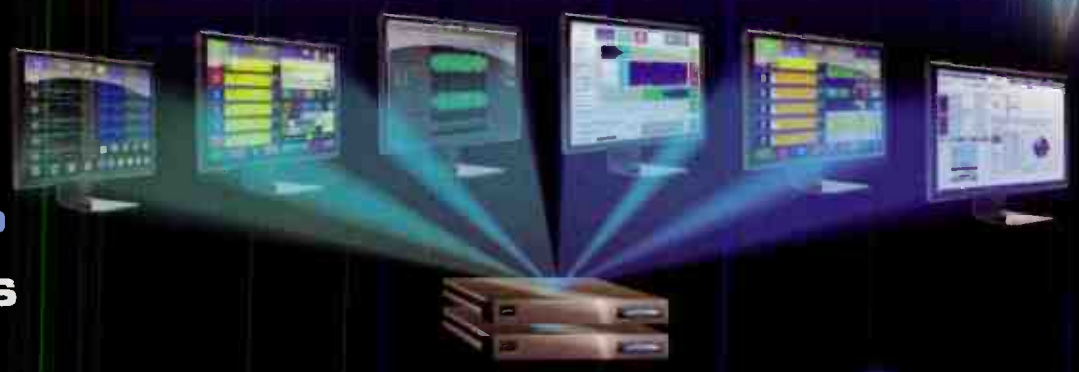

ENCO1

The Virtually Perfect Automation System.

Avid ProTools MP

Another well-known option for DAW software is Avid's Pro Tools MP. This would be an appropriate version of Pro Tools to use in the field for recording, editing and mixing, with the capability of up to 48 stereo tracks at 24-bit word-length/96kHz sample rate. (Note: this would be limited to 24-bit/48kHz sample rate when pairing MP with the MobilePre audio interface.) With MP you can use up to 32 internal mix buses and 10 sends/inserts per track – so that you can make use of the 70 included plug-in effects. MP also has something called Automatic Delay Compensation that time-aligns the tracks that don't run through effects with those that do. MP will import MIDI, REX, ACID, WAV, SDII, AIFF, AAC, and MP3 audio files.

MP is compatible with all versions of Pro Tools, so if you take the session back to your HQ, you can use the more sophisticated versions of Pro Tools later on.

Other options for audio editors include Steinberg Cubase and Sony Creative Software Sound Forge.

TO THE TABLETS

You can bypass the laptop-with-DAW altogether and go with an iPad; not surprisingly, more and more accessories and applications are showing up for it.

Alesis iO Dock

Alesis offers the iO Dock. This docking station allows you to use an iPad (model 1 or 2) as a recorder/playback device. The dock itself includes two XLR/TRS combination inputs with phantom power available, and individual gain trims. Each of the two inputs can be switched to DI mode. It has MIDI i/o, a composite video output and USB connector. It is Core MIDI-compliant and according to Alesis, works with virtually all audio and video apps.

Mackie makes a combination docking station/mixer known as the DL1608. It's a 16-input mixer, with 16 mic preamps with Cirrus A/D converters. It has six aux sends; four-band EQ, gating, and compression on all

Mackie DL1608

in the inputs; and a 31-band graphic EQ with a compressor/limiter function on all outputs. It will also support up to 10 other iPads for monitor mixing; in other words, musicians can bring their own iPad to derive their own headphone mix, sent between units on an ad hoc network. Again, it's claimed that this will work in conjuction with any iPad application.

Auria

It's easy enough to find applications at the Apple site. However there is one from Auria that I'd like to introduce to you. With Auria, you can playback 48 mono or stereo tracks back simultaneously (24-bit word, 44.1kHz sample) and you can record up to 24 simultaneously through any supported USB interface. (Those include the Presonus Audiobox 1818VSL and Focusrite Scarlett 18i6. According to its website: "Auria supports both standard two-channel USB audio interfaces and multichannel USB audio interfaces. To use a multichannel interface with Auria, it must be USB Class 2.0 compliant. Not all USB2 audio interfaces support Class 2.0. Apple's Core Audio must recognize the interface without the need for a driver.") You can add up to four plug-ins per input channel; and there are eight subgroups, each of which can accept four plug-ins. You can generate output files as WAV or MP3, or you can export an AAF session right in to Pro Tools and other well-known DAWs.

No matter how you decide to record your projects in the field, you may want to send them back home prior to your own arrival. The files are going to be too big to e-mail, so for that reason FTP is the likely way to go. Filezilla is a good option for that. A free server and client version are available. You may have to complete a networking project back at home so that you can reach this server from the field though. Larger organizations will

RESOURCES

Adobe
adobe.com
Alesis
alesis.com
Audacity
audacity.sourceforge.net
Audio-Technica
audio-technica.com
Auria
auriaapp.com
Avid
avid.com
Filezilla
filezilla-project.org
Focusrite
focusrite.com
JoeCo
joeco.co.uk
Mackie
mackie.com
Marantz
d-mpro.com
Presonus
presonus.com
Rode
rodemic.com
Tascam
tascam.com

Marantz PMD580

likely already have ftp servers in place – check with your IT colleagues.

Let's back up a little bit now. Perhaps you aren't interested in recording to a laptop+DAW or even an iPad – a portable recorder is more to your liking. One option for you could be the Marantz PMD580. This device has two input channels (analog balanced, AES, or S/PDIF), and records at 16- or 24-bit word length (up to 48kHz sample rate). The media is Compact Flash – the size of which determines how long you can record. It has Ethernet connectivity, with an internal Web server, so you use a browser to control it, although it has the basic front-panel controls as well. File formats are WAV and MP3, and it can automatically archive files to a server on the network. If you want to mix down to two tracks – kind of like was done in my old station's remote truck – then this could be a way to go.

JoeCo Blackbox

On the other hand, you may want to take care of the mix later on – after having recorded multiple tracks in the field. One option for you then would be the JoeCo Blackbox recorder. With one single rack unit Blackbox, you can record up to 24 tracks (more if you want to link multiple units together) in the WAV format, to an external USB drive or even a USB flash drive. Sampling is done at 16 or 24-bit word length, as high as 96kHz. Inputs and outputs are on the rear panel, done by way of DB connectors. (You have to select unbalanced analog, balanced analog, or AES, since those are all different versions.) The device has the basic controls on the front panel, and a full-color LCD display, along with LED bargraphs. A standard computer keyboard is attached in order to label the recordings. The idea with Blackbox is that you take the recorded tracks back to some sort of post-production facility in order to make the finished product.

Like any other system used in a broadcast environment, you'll need to know your requirements prior to designing a system for field use. The required functionality, the budget, and the end user's personal preferences all come in to play.

Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at doug@douginwin.net.

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CAT 5 cables included on the ARC-10BP

The ARC-10UP with unbalanced inputs and PC sound card built in is displayed above. The ARC-10U has unbalanced inputs without a sound card. The ARC-10BP has balanced inputs with the PC USB sound card

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all prices are msrp

Inside the Radio Network

Take a peek into Dial Global to see how the syndicator delivers programming to your station.

By Conrad Trautmann, CPBE

The Culver City control room looks like any radio studio, complete with SAS console and Omnirax furniture.

The odds are good that at some point in your career one of your radio stations has taken programming from a national or regional radio network. In most cases, delivery of that programming has been via satellite. You connect a satellite receiver to a dish, audio and relay closures are available at the back, and you play the audio over the air using the relays to trigger your automation. But did you ever wonder what goes on at the network to get that audio to you?

The best way to illustrate the operation of network distribution is to describe each step in the process a network uses to get content to your station. Those steps include:

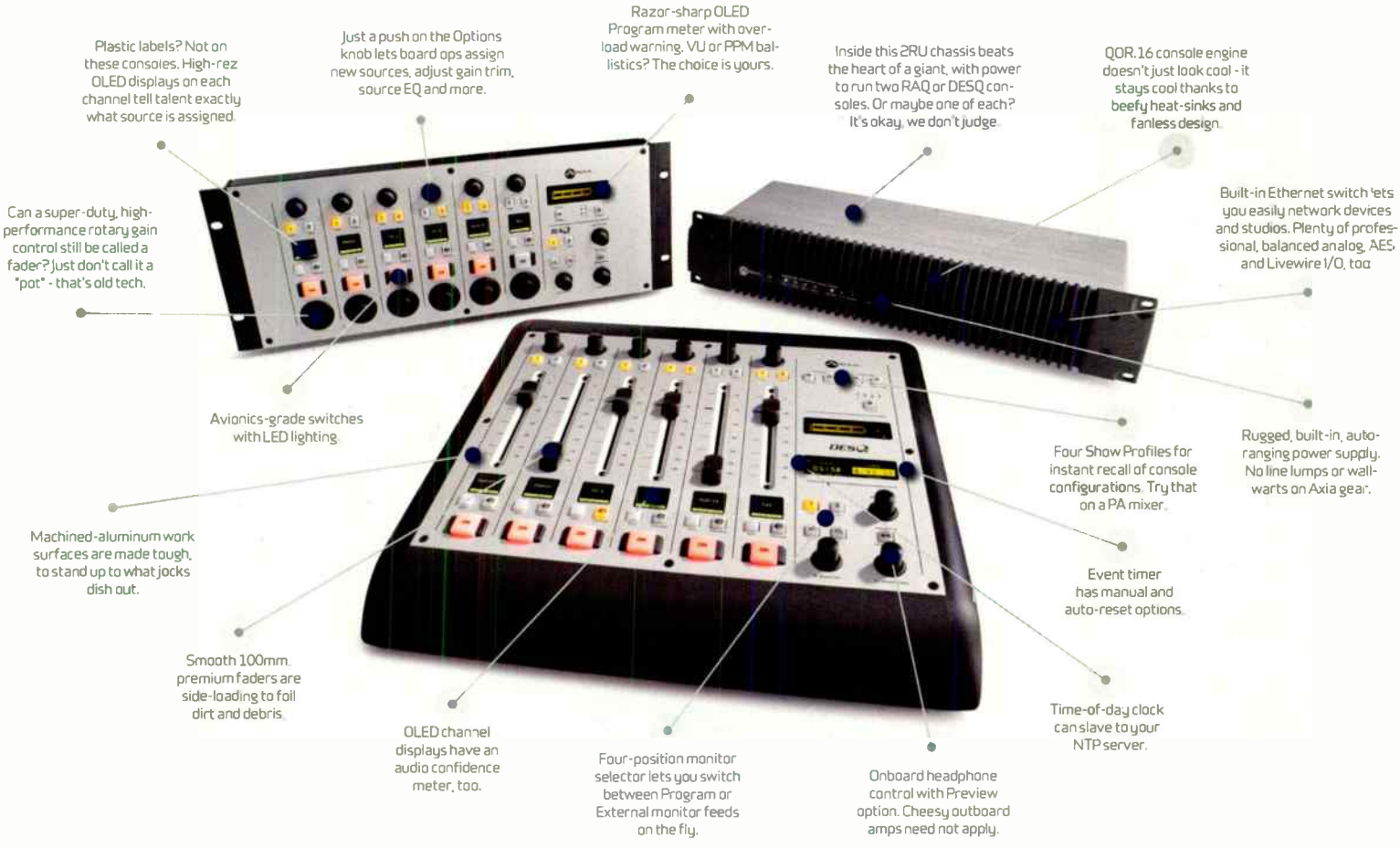
> Content creation
> Program contribution/ingest
> Content management/automation/audio routing
> Distribution

CONTENT CREATION

This is where it all begins, the programs your station runs from the network have to start somewhere. Some content is produced by the network itself, other content may be created by our content partners and distributed by the network. Dial Global has approximately 70 studios combined across our company. We have studios in our offices in New York, Los Angeles, Dallas, Denver, Seattle and Valencia, CA. Our content partners also have studios of their own, which amount to another 30-40 studios in use during a typical day. There's a good chance most of these studios are in use simultaneously

MEET AXIA'S NEW, SMALLER IP CONSOLES.

THEY'RE BIG WHERE IT COUNTS.



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

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

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

AxiaAudio.com/RAQ | AxiaAudio.com/DESQ

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- Mix minus in-out for an external Telephone hybrid
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Multiple SAS 32KD frames (left) are integrated with a Harris D-series automation (center) and controlled by a workstation in master control (right).

creating some program that's being fed to our satellite uplink's 120 channels.

In addition, we have our sports programming (including the NFL, NCAA and the Olympics) broadcasts, each of which is a remote broadcast. The model used to produce a sporting event or any remote is not unlike that of a stand-alone radio station. The challenge is doing multiple remotes simultaneously. We broadcast all 64 NCAA basketball games at the front end of March Madness for example. That's a lot of simultaneous remotes. Imagine all of those games going on at the same time that reporters in Washington and the Middle East are about to go live on a top-of-the-hour newscast. Our ability to take in all of the feeds from the studios, partners and remote locations requires quite an elaborate array of connections to those locations, which leads to the next area, program contribution.

BACKHAUL, CONTRIBUTION AND INGEST

A network head end can house an amazing array of telecommunications. Some of the studios are located at the same location as the head end. For those, direct wiring via the router is the connection method. But for studios not on site or for remotes, there are various ways to connect. Common backhaul methods used to get programming to the head end include ISDN and T-1. For studios that require 24/7 connectivity, the point-to-point T-1 has been the method of choice. We can get high-quality audio across a T-1 and it has bidirectional paths for monitoring feeds and return cues (IFB). To send automation cues to the head end, we'll typically use serial or IP connectivity on the T-1 to send next event closures from a remote studio to the head end. These are to signal a commercial break or station identification. We use ISDN codecs to back up the T-1s in the event of a failure.

For short-form content or remotes like sporting events, ISDN works well. T-1 circuits tend to be impractical in these examples. While Internet codecs have become popular and work well, they introduce latency, which is terrible for live events, and shared Internet connections tend to be unreliable, even if they are broadband. In our experience, they are

okay to file a news story, but not very good to go live with.

Lately, we're seeing an increase in the use of IP codecs over a PTP Ethernet link or MPLS. A few manufacturers make hybrid units that will connect to an IP link and use ISDN as a backup using an auto-failover feature. The quality on an MPLS or PTP Ethernet line is superior to a shared Internet connection in that the bandwidth is dedicated and the quality of service on the line is guaranteed by the provider. Latency is typically lower on these lines because of the higher quality of service. Audio quality over MPLS can be adjusted to various algorithms and compression schemes – it all depends on how much you want to spend for the bandwidth.

Another backhaul method is satellite, where some program producers with small networks of their own will deliver their program to us via satellite and we'll rebroadcast that. We downlink their signal, decode it, run it into our router as a source and then re-uplink it as necessary.

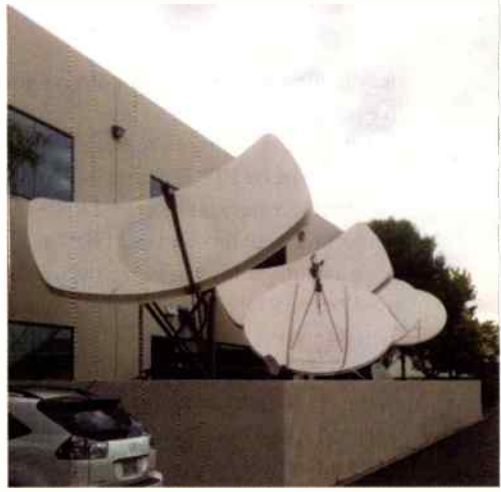
It is desirable to have the programs delivered to the network head end without any audio compression. While not always possible, we strive to keep all audio backhauls in linear PCM formats as much as possible to minimize transcoding effects downstream.

CONTENT MANAGEMENT

We've created content and gotten it to the head end. With literally hundreds of programs to manage, how is it possible to keep track of it all?

Let's start with routing. A network would be impossible to manage without a large audio router. Each of the audio content sources appears on a router input. The audio router supports analog or digital and a source might be a studio, an ISDN output, output from an audio card from an automation computer or a T-1 frame or codec output. Each of these router sources has a direct index association to our automation system. Each outgoing bus of the automation has a fixed router output. That gives the network the ability to send any audio source to any destination. Those destinations will be satellite channels, studios, audio automation inputs for recording or return feeds to the producers. In NY our audio router is 1049 × 1049 and in Denver our router is 672 × 800. There's a lot of flexibility here to share sources to





From master control in New York (left), audio can be monitored and routed. Telos Zephyrs encode the audio for the IDC Max system (center). Satellite uplink/downlink dishes in Valencia, CA, (right) back up the Denver and New York uplink sites.

our uplink channels. Routing them all manually would be impossible to keep track of.

To keep track of everything we use a multi-channel automation system. In a typical radio station environment, schedules of what the station airs come from the traffic department (commercials) and programming department (music, liners) and are loaded into the audio content management system to create the day's operating log. At the network, we have the same need but imagine doing that 150 times. Multichannel automation systems are used in larger networks like cable head ends, television networks and here at the radio network.

To scale up to run 150 simultaneous schedules from one system, we use an enterprise network controller. This ingests schedules and commands for all 150+ channels daily and sends commands to all external devices telling them what to do at just the right time to keep everything in synchronization. It controls the audio router, the audio record and playback system and the satellite uplink.

The network automation system is the heart of the network and really what keeps all programs running on time and over the right channels. Custom software is used to merge the traffic logs with the program schedules to create the day's log. Which leads to the final area, distribution.

DISTRIBUTION

The network automation has done its job in playing and routing the content we created earlier to a destination on the router. That destination is the satellite channel. Virtually all radio networks these days are using digital audio encoding of some type to encode the channels into a MCPC (Multiple Channels Per Carrier) uplink system. The head end multiplexes all of the individual channels into a single uplink carrier, which is then decoded by the satellite receiver. At the station, you tune your receiver to a channel and you get what the network is feeding into it at the head end.

Today's more sophisticated satellite systems have the ability to do more than just stream audio in real time from the head end to the station. Programs and audio content can be sent in advance over the satellite and stored on the receivers hard drive or solid-state memory drive and can be played on command from the head end. The network automation system described above can be programmed to send those commands.

Programs can also be recorded by the receiver and played back at a later time in the event a station wants to delay broadcast a program. Before this feature was available, it was common for a network to play a program live, record it while it was playing live and then play it again three hours later for a West Coast time shift. This used satellite bandwidth to play the same thing twice, which can now be accomplished by the receivers, allowing more efficient use of the satellite bandwidth.

A radio network is a complex combination of many different systems that all need to work seamlessly together from many different locations involving many people. Now, the next time you listen to a network program, you know what's gone into delivering that program to you.

Trautmann is CTO of Dial Global, New York.

All About Storage

by Doug Irwin
CPBE DRB AMD

It's hardly possible to overstate the importance of storage in the engineering shop. It's all organization: knowing where to look for things in an emergency or just a plain old urgent situation. I moved a radio station (way back in 1998 – last century) and one of the ideas we took from the old place to the new place was the use of Vidmar cabinets from Stanley Storage Systems. You've probably seen them before: cabinets with slide-out drawers of varying height. When you pull the drawers out you see that they are compartmentalized so that it might have 24 or 48 sections (dimensions like 6" × 6" × 3", for example). These compartments are ideal for storing audio connectors, RF connectors, Ethernet connectors, and more.

Like anything that is built well and meant to last, they're not cheap though. You may want to consider "rolling your own" – at least in terms of the overall concept. The photo at right is a nice array of storage built by the engineering department at Entercom in Kansas City. These storage cabinets also store stuff in a horizontal fashion, with compartments inside. (A tool used to put on a connector that is stored in this case is also stored in the same case.) One definite advantage these have over the Vidmar units is that you can take the entire case with you. The holders themselves are just 2 × 4s with press-board shelves; you could put the whole thing together in an afternoon.

TO THE CABLE

Aside from storing parts and connectors and whatnot, cable storage is always an issue, whether they're in a finished form or raw material form. Often, especially after a construction project, all manner of loose spools of cable are all over the place. A wire-reel caddy could be the answer in this case. I found one that looks good from Grainger (see resources bar for website link).

While connector adaptors are always vital to have around (for example BNC to N or TNC to BNC), cables that have very specific purposes often are made up during the shakedown phase of a new studio or transmitter build. Perhaps I hold on to too much stuff, but I make a point of keeping cables like that. No sense in making them again later, right? You do need to keep track of them though. Middle Atlantic makes what it calls the claw for hanging cables on the wall. This allows you to keep them out of the way, but still you can identify them easily enough.

So when you clean up after a big project, as I mentioned earlier, you often end up with spools of cable standing around taking up valuable space. If the spool doesn't have that much cable left over on it, clearly you'll take the remainder off, tossing the empty spool afterward. You're then left with a collection of coils of cable waiting around for the day they're needed. Storing these in some sort of translucent container works well so you can see what they are later on after you've forgotten the details. Here I'm suggesting something like stacking drawers from The Container Store that are held on to a wall, kind of like shelving. (By the way, The Container Store is a great resource for all kinds of storage goods.)

Container Store Elfa

These are held on to the wall in the same way shelves are.

Engineering offices and shop spaces are often not that large and luxurious, and keeping items you need well organized is important not only so that you can find them when the need arises, but also so you can just walk through the place.

WE NEED YOUR TIPS

Tech tips may be suitable to earn SBE recertification credits. Send your tips to radio@RadioMagOnline.com.

RESOURCES

Stanley Vidmar	stanleyvidmar.com/products/cabinets
Grainger	grainger.com/Grainger/VESTIL-Wire-Real-Caddy-1XGC2?Pid=search
Middle Atlantic Products	middleatlantic.com/rackac/cablem/cablem.htm#claw
Containerstore	containerstore.com/shop/elfa/components/elfaDrawersAccessories?product Id=10022920&N=80348

Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at doug@dougirwin.net.

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ARC-10UP... **$1,999**
ARC-10BP... **$2,495**

The ARC-10UP with unbalanced inputs and PC sound card is displayed. The ARC-10U has unbalanced inputs without a sound card. The ARC-10BP has balanced inputs with the PC USB sound card

CAT 5 cables included on the ARC-10BP

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all prices are msrp

IsoAcoustics ISO-L8R 155

by Gil T. Wilson

There are as many mounting or free-standing apparatuses for monitors as there are manufacturers of monitors. But one of the most important things about the studio monitor is that the sound should be as close as you can get to the audio being heard. With the amount of money spent on studio monitors, something as simple as a vibration or bad placement should not impede that sound.

Here's where the IsoAcoustics ISO-L8R 155 speaker stands come in. These little stands can help your studio sound cleaner by simply raising the studio monitors to ear level and cutting out unwanted vibration. Taken out of the box the set contains two upper sections for the base and two lower sections, four long pieces of tubing, four short pieces and four additional pegs to add a bit of an angle to the monitors. Using these pieces there are 14 combinations of height and tilt adjustments to achieve the ideal monitor positioning. The stands raise the monitor either 3" or 8" depending on the rods used, and from there you can angle the sides to tilt forward or back or any other direction at a 6.5-degree angle.

Gone are the days of trying to hang the monitors or having them sit on foam mattresses, which is really an eyesore. Any client who comes to listen to the audio needs to see a professional studio. The rubber isolators on these stands allow the speakers to "float" and remove that excess bass, which creates undesirable bass build up and resonances. This resonance/vibration can dirty up the sound and can even cause the monitors to vibrate themselves off a counter top. The rubber isolators also create a bit of a non-slip surface for the monitors and the counter so that when tilting, the monitor will stay on the stands.

FEELING ISOLATED

Once I had the box opened it was time to put these little gems to the test. On the box it is written that the compatible speakers for the ISO-L8R 155 are studio monitors with dimensions greater than 6" × 7.5" and weighing less than 30 lbs. each. On the IsoAcoustics website there is a link to a document that provides guidelines for which monitors work best. (IsoAcoustics has two other sizes of stands, 200 for 7.8" × 10" and 130 for 5.1" × 6" monitors.)

I work out of three studios and each one has its own set of difficulties. I'll start with my radio station production studio.

This studio doubles as a morning show broadcast room and the space is limited for the speakers – meaning there is only one place to put the monitors: on a shelf behind the person running the computer and console. The shelf is an old plywood shelf built into the studio wall and sits about 4' above the head of the production person's head. The older shelf is used to store CDs for the production library and yes there are some records and carts up there. The records are mostly for nostalgia anymore, but the carts are still in use due to our morning DJ being blind and still using carts. With all that plastic on the shelf we get a lot of vibration.

Sometimes the vibration is not noticeable but when I push some serious bass through the system, you can hear the buzz. Another issue is that the speakers face straight shooting the sound straight over the head of the production person.

The ISO-L8R 155 allowed me to compensate for both problems. I was able to angle the monitors downward without fear of them falling on my head and without trying to hang the monitors. The rubber isolators built into the stands cut out all vibration. I played the Queen song "Dragon Attack" with its serious bass riff, and the shelf was free of vibration. With the speakers angled down, I finally got the full stereo effect of my production.

ANOTHER ROOM

I then tried these stands in my professional studio, which is in the basement of a business I have recently opened. The problem with the monitor speakers here is when the system was turned up loud the bass created the vibration, which could be heard, and sometimes felt, upstairs. The upstairs is a gaming store, and when the customers are playing tournaments when I'm mixing audio it can be a distraction. The studio is still in its being-built phase so eventually we will have the room sound dampened so this won't be a problem, but I thought this would be a suitable test for these stands. The bass vibration was cut to a minimal/acceptable level that worked out nicely. My solution before was to set the monitors on mattress foam, and that did the trick, but looked nowhere near as professional as these stands. These look good while doing the job at the same time. I was also able to raise the speakers higher than before and again fully enjoy all the sound.

The final test was my home studio. I have a very small space and being my home I have not been ready to commit to mounting my speakers by hanging them from the ceiling. What if I want to change the mixer location? Then I'd have to rehang, and maybe re-cut the chain. These stands fit perfectly on my desk, which not only serves as my production console but also as just my work desk where my computer sits that does more than only audio production – a guy's gotta have his games.

Changing the height and tilt of the monitor speakers is very easy with this kit. Simply place the bars into the holes, and if you need the tilt, add the inserts into the side you need raised. I saw it as Tinkertoys for the audio engineer. In fact toying around with the pieces is almost fun.

Having the vibrations cut out and the ability to change monitor height and angle makes these stands a nice addition to any studio.

Wilson is an announcer, producer, webmaster and promotions guy at WAKO-AM/FM, Lawrenceville, IL, and an independent producer/voice talent.

Budget Mics for Remotes

Remotes are radio's original social networking tool. Because the station is out in the public, there are lots of unforeseen situations, so the equipment needs to be durable. But because it's used in the field, budget-minded options are key. The first item in the remote audio chain: the microphone.

Look at a typical radio remote and you'll see a few regular mic choices: The Shure SM58 and Electro-Voice 635. These two mics (a cardioid and an omnidirectional respectively) typify the two pickup patterns. The omni is good for less experienced mic users or in cases where more than one person may use the mic (such as an interview). But the cardioid pattern helps eliminate some background noise, which can help in noisy situations.

A variation on the 635 is the RE50, which is essentially a 635 with a shock-mount housing. The E-V versions are also available with neodymium magnets for higher output. The Shure Beta 58A is another popular choice.

While the legacy performers are an easy go-to choice, we looked to see what else is available for a list price of about $150 or less. We stuck with dynamic mics for our comparison.

Model	Audio-Technica ATM410	Audix OM2	Heil Sound PR20 UT	Rode M1	Sennheiser e 835
Freq. Resp.	90Hz - 16kHz	50Hz - 16kHz	50Hz - 18kHz	75Hz - 18kHz	40Hz - 16kHz
Sensitivity	-55dB	-55dB	-55dB	-56dB	-51dB
Output Impedance	300Ω	250Ω	600Ω	320Ω	350Ω
On/Off Switch	N	on OM2-S	N	on M1-S	on e 835S
Features	Neodymium magnets	Very low mass diaphragm	Neodymium magnets	Neodymium magnets	Neodymium magnets
Screen	Multi-stage grill	Steel wire mesh	Stainless mesh	Steel mesh	Refined steel
Pattern	Cardioid	Hypercardioid	Cardioid	Cardioid	Cardioid
Dimensions	6.69" x 2.11"	6.9" x 2.08"	7.24" x 1.65"	6.7" x 2"	7.1" x 1.9"
Weight	8.2 oz.	10.8 oz.	14 oz.	12.7 oz.	11.6 oz.
Accessories	mic clip, 5/8"-27 to 3/8"-16 adapter, pouch	mic clip, pouch	Foam windscreen, mic clip, pouch	mic clip, pouch	mic clip, pouch
Other Models	AT8004, AT8004L	OM3, OM5	PR20, PR22	M2	e 815S, 3325S, e 840S
List	$139	$133	$99	$153	$99
URL	audio-technica.com	audixusa.com	heilsound.com	rodemic.com	sennheiserusa.com

NEXT MONTH Coming up in the June issue, we compare backup power to meet your ever-demanding need for more, well, power.

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NEWPRODUCTS

Portable PA systems | Alto Professional

Mixpack, Mixpack Express: Designed to be set up or packed away at a momentís notice in small to medium-sized venues, Mixpack and Mixpack Express feature a central powered mixer with a storage compartment and two speakers. These three components attach to one another to form one pod-like structure with wheels and a handle for easy transport. Speaker cables are also included with both systems, as well as two speaker stands. Mixpack features built-in Alesis DSP effects, six inputs, two aux sends with stereo returns, RCA input/output, switchable phantom power, three-band EQ on each channel, headphone out, LED meters, 600W of power, and a three-way speaker system including a 12" sub-woofer, four 6.5" MF drivers and two 1" HF drivers. Mixpack Express provides 350W of power, up to six channels of audio, seven-band graphic EQ, two-band EQ on each channel, one aux send/return, RCA input/output, Headphone output, LED meters and built-in effects.

altoprofessional.com

Live recording mixers | Allen & Heath

ZED-16FX, ZED-18: New to the ZED range of multi-purpose live sound and recording mixers, ZED-16FX and ZED-18 each have 10 fully featured mono channels and three or four dual stereo channels, respectively. Both mixers have a connection for USB send and return for recording, playback and effects. The 10 mono mic/line inputs feature Allen & Heath's DuoPre two-stage preamp, 3-band MusiQ EQ with swept mid frequency, and 100mm faders. The stereo inputs have 2-band EQ and inputs for extra sources, and there are four auxes accessible from each mono and stereo channel. Additionally, the ZED-16FX has a built-in FX processor with TAP tempo delay settings and a 24-bit/48kHz conversion rate, with access to a comprehensive set of 16 in-house designed effects.

allen-heath.com/US

Webinar | Society of Broadcast Engineers

The Nuts and Bolts of the FCC FM Allocation Procedures: This webinar exposes some of the history and technology behind the FCC's current FM allocation rules and procedures for non-commercial FM stations, FM translators, LPFM and full service commercial stations. The differences in the various allocation procedures of these services and the reason behind the differences are explained. Some of the advantages and flaws in the methodology are discussed, as well as some of the recent petitions to amend the procedures. This webinar provides insight into how a station can improve its coverage or move its city of license using the rules. Lastly, the role of directional antennas, which provide protections in certain directions allowing more power to be transmitted in other directions, is discussed. Find the recorded webinar at www.sbe.org/sections/FMAllocation.php.

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jblpro.com

Interconnect boxes | Altinex

TNP128, TNP128C: As an easy-to-use tabletop interconnect box, the Altinex TNP128 is ahighly functional tool for facilitating power, Internet/network access, plus audio and video connections for a laptop computer. The standard TNP128 provides a single input plate with HDMI, VGA, Network (RJ-45), and computer/MP3 audio (3.5mm) input connections in 6' lengths. It also provides an ac power connection in 9' to 10' lengths. The TNP128C is highly customizable, with more than 27 different connector options, including USB, S-Video, RCA, BNC and more. Each connector comes with a 6' cable and is terminated appropriately for quick connections to an A/V system (wall plate, floor plate, etc.).

altinex.com

Lightning protection | L-com Global Connectivity

DIN Rail Mountable Lightning and Surge Protectors: This new line of DIN rail mountable lightning and surge protectors come in models that protect Cat-5, Cat-5e and Cat-6 lines; RS-422 and RS-485 lines; telephone/DSL/T1 lines; and 4-20 mA current loop lines. They are designed to mount onto DIN 3 rail systems. L-com's DIN mounted protectors are easily integrated in DIN rail systems without the need of drilling holes into the racks and cabinets.

l-com.com

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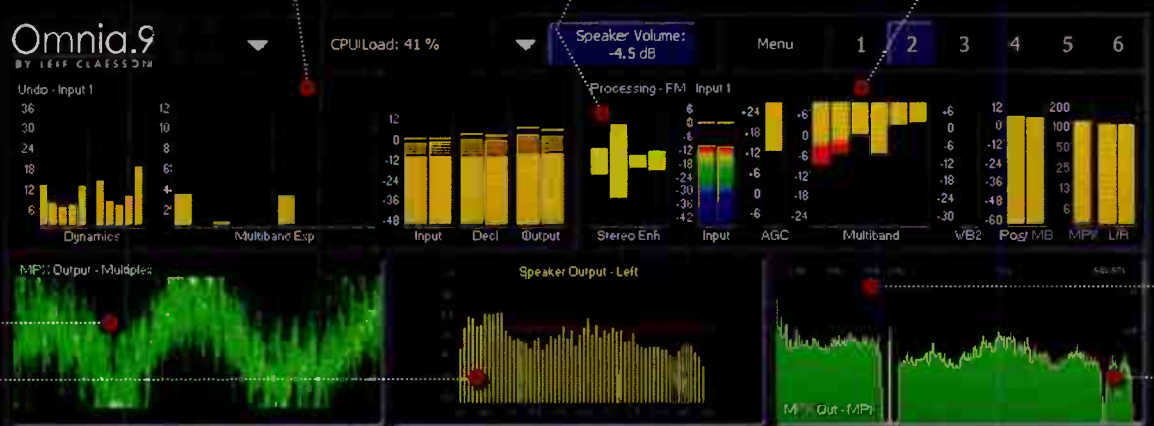

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NEWPRODUCTS

USB recording interface | Focusrite Audio Engineering

Scarlett 2i2: The Scarlett 2i2 is a two-in/two-out USB recording interface featuring two award-winning Focusrite preamps. Housed in an anodized aluminum unibody chassis, it is solid enough for the road. The front-panel Neutrik combination input can be used to connect line and instrument level signals as well as microphones. Unique halo signal indicators let you know you have a good signal level for recording. Red means the signal is clipping, and that gain should be reduced. The halo will momentarily turn amber as the level returns to a healthy level, at which point it will turn green. A large monitor dial provides a tactile control for speaker volume, while a high-quality headphone amp provides a clean signal.
focusrite.com

Portable recording mic | IK Multimedia

iRig Mic Cast: iRig Mic Cast is an ultra-compact portable voice recording microphone. It features a tight unidirectional pickup pattern that minimizes background noise making it ideal for single-source audio recording. In addition to an incredibly flat frequency response with zero tonal coloration, the iRig Mic Cast features a stereo mini-jack headphone output, mini-switch for two sensitivity settings, adjustable desktop stand, bumper-friendly mini-jack connector, and iRig Recorder and VocaLive apps.

ikmultimedia.com

Speakers | Dynaudio Professional

DBM50: DBM50 is an active desktop monitor featuring a 7.1" woofer and a 1.1" soft dome tweeter. All aspects of its design point toward desktop use – from the angled front over the waveguide around the tweeter to the optional addition of a level controller that never compromises the level interrelationship between speakers. DBM50 comes with the option of adding a sleek controller.

dynaudioacoustics.com

Wireless mic system | AKG

WMS 40 Mini Series: The WMS 40 Mini Series features a dual-channel receiver. The WMS 40 Mini 2 Dual wireless system offers high-definition audio performance, with body pack and cardioid mic transmitters, ensuring advanced, reliable and quality sound for performances. The WMS 40 Mini 2 Dual Package is available in Vocal, Instrumental and Mix sets. The Vocal set features two HT 40 Mini dynamic cardioid microphones and the SR 40 Mini Dual receiver. The Instrumental set includes two PT 40 Mini body packs (the smallest transmitter in its class that lasts up to 30 hours on one AA battery), the SR 40 Mini 2 and two guitar cables, while the Mix set offers one HT 40 Mini, a PT 40 Mini and the SR 40Mini 2.

akg.com

UPGRADES AND UPDATES

Inovonics has shipped 100 INOmini 632s in two months since it was first available. The HD Radio monitor earned a *Radio* magazine Pick Hit at the 2011 NAB Show. (invon.com) ... **AudioScience** has expanded its licensing of **25-Seven**'s Audio Time Stretch/Shrink technology. The multichannel driver boasts a software-only implementation of real-time audio algorithms. (25-seven.com, audioscience.com) ... **Middle Atlantic** has released version 4.0 of its Designer 3D software. The free 3D design program features new layout capabilities. (middleatlantic.com) ■

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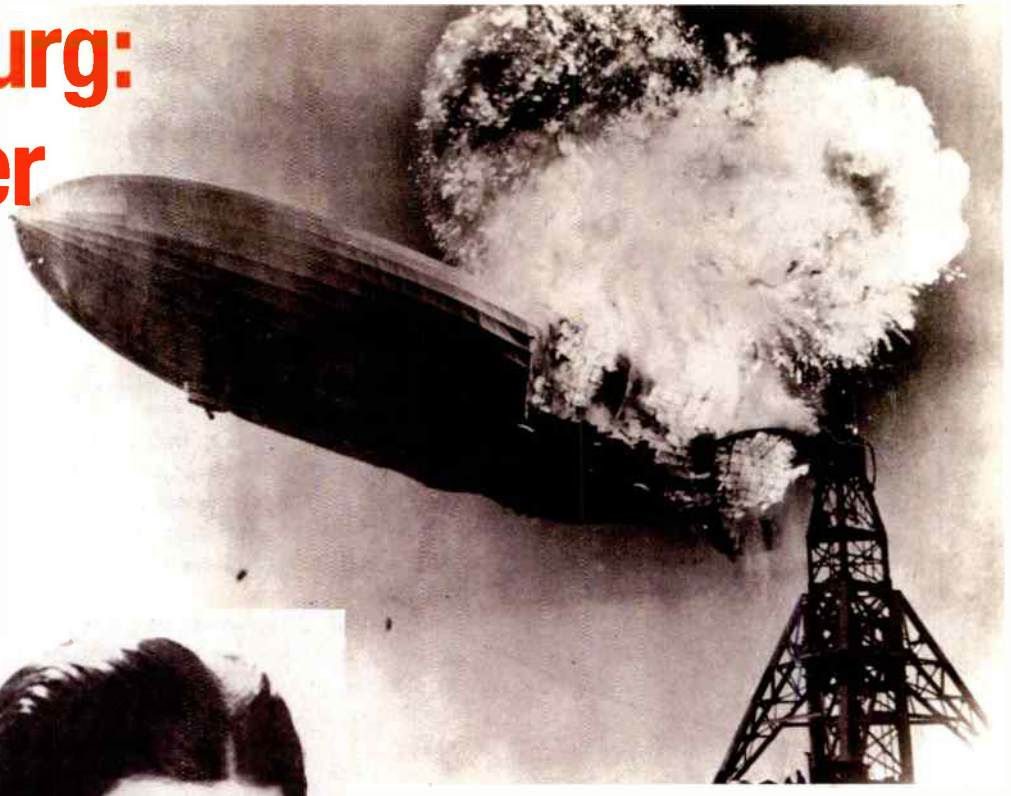

by Erin Shipps
Information from Wikipedia

Only 75 years ago Herbert Morrison gave the country it's first taste of "live reporting" when his emotional account of the German passenger airship LZ 129 Hindenburg disaster was aired on WLS Chicago on May 7, 1937, the day after the tragic fire aboard the zepplin.

The ship was attempting to dock with its mooring mast at the Lakehurst Naval Air Station, adjacent to the borough of Lakehurts, New Jersey. There were 97 people on board (36 passengers and 61 crew); 36 people lost their lives that day, including one death among the ground crew.

The actual cause of the fire remains unknown, although a variety of hypotheses have been put forward.

The disaster was well recorded because of the extent of newsreel coverage and photographs, as well as Morrison's eyewitness radio report. This being the first transatlantic passenger flight of the year by Zeppelin to the United States, there were many journalists at the landing. The fire and its coverage shattered public confidence in the giant, passenger-carrying airship and marked the end of the airship era.

Herbert Morrison

Wikipedia: "Morrison's broadcast remains one of the most famous in history. Parts of it were later dubbed onto the newsreel footage, giving the impression that the words and film were recorded together. Part of the poignancy of his commentary is due to its being recorded at a slightly slower speed, so that when it is played back at normal speed, it seems to have a faster delivery and higher pitch. When corrected, his account is less frantic sounding, though still impassioned."

Morrison's broadcast: *"It's practically standing still now they've dropped ropes out of the nose of the ship; and (uh) they've been taken ahold of down on the field by a number of men. It's starting to rain again; it's... the rain had (uh) slacked up a little bit. The back motors of the ship are just holding it (uh) just enough to keep it from...It's burst into flames! It's burst into flames and it's falling it's crashing! Watch it; watch it! Get out of the way; Get out of the way! Get this, Charlie; get this, Charlie! It's fire... and it's crashing! It's crashing terrible! Oh, my! Get out of the way, please! It's burning and bursting into flames and the... and it's falling on the mooring mast. And all the folks agree that this is terrible; this is the one of the worst catastrophes in the world. [indecipherable] its flames... Crashing, oh! Four- or five-hundred feet into the sky and it... it's a terrific crash, ladies and gentlemen. It's smoke, and it's in flames now; and the frame is crashing to the ground, not quite to the mooring mast. Oh, the humanity! And all the passengers screaming around here. I told you; it—I can't even talk to people, their friends are out there! Ah! It's... it... it's a... ah! I... I can't talk, ladies and gentlemen. Honest: it's just laying there, mass of smoking wreckage. Ah! And everybody can hardly breathe and talk and the screaming. OOOOOOO, I... I... I'm sorry. Honest: I... I can hardly breathe. I... I'm going to step inside, where I cannot see it. Charlie, that's terrible. Ah, ah... I can't. Listen, folks; I... I'm gonna have to stop for a minute because [indecipherable] I've lost my voice. This is the worst thing I've ever witnessed."*

– Herbert Morrison, describing the events, as transcribed for broadcast by WLS radio.

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