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The Corporate Audio Revolution

SIMPLY STATED, AUDIO PRODUCTION AND playback serves a crucial role in today's corporate world.

Businesses operate much differently than they did 10 to 15 years ago. While downsizing is one of the most notable (and often much-derided) differences, another is the indisputable fact that the depth, quality, and variety of services and products supplied by the majority of companies have never been greater.

Corporate audio mirrors this paradigm shift. To the point, the people and tools for every facet of audio-for-business purposes are better than they've ever been.

This evolution and growth has occurred in tandem with advancements of other multimedia elements, which are merged with ever-increasing power and effectiveness. Yesterday's slide and overhead projectors are today's ultra-high-resolution video systems; reel-to-reel tape recorders are the seemingly ancient predecessors of digitally fueled, multichannel hard-disk players and recorders.

Despite the rapid advances of audiovisual tools and mediums, the goals of their application remain the same: To communicate, to educate, to unite, to motivate, to entertain, to deliver a specific message and create excitement, and, yes, to market and sell.

The purpose of this supplement is to provide a look at the world of corporate audio, to enjoy its rather primitive past while celebrating the modern age. We've taken a broad approach, talking with a host of qualified professionals who count corporate audio as at least one of their specialties. Some head up in-house operations, while others ply their trade independently and still others have worked both sides of this fence.

One thing you'll notice is that the authors we've assembled have done a highly capable job of presenting information. All of these individuals are either veteran A/V journalists who really know their stuff or working professionals with years of practical experience. In some cases, a combination of both is offered.

Whatever the case, all have been a delight to work with, and we're grateful for the value of their contributions.

Ty Ford kicks off our coverage, giving a behind-the-scenes look at some corporate audio pros that helps provide context on the current state of the market. Of particular interest is the discussion of the challenges of meeting an ever-growing list of demands and duties.

Next up, Phil De Lancie takes a look at the methods and thinking that goes into assembling tools and technologies for quality audio production. Insight is supplied for several different levels and needs, all with nice perspectives.

Two other contributions, from Michael McNulty and Pete Tidemann, detail facilities that are set up to provide corporate audio. These two examples are quite different, on purpose, again to offer as much depth and diversity as possible. Meanwhile, managing editor Tom Kenny of *Mix* magazine steps up to the plate to deliver a fascinating profile of a one-man audio dynamo in Reno, Nevada.

Our coverage concludes with another contribution by Tidemann — a look at audio playback systems deployed for larger corporate applications. It seems a perfect capper, the final piece of the puzzle.

We hope you enjoy and benefit from this audio supplement, which was a collaborative effort between *Mix* and *Video Systems* magazines. Please feel free to share your thoughts and comments with me at *clark@cbd.net*. And, my thanks and gratitude to Tom Kenny for his considerable input with this project. – *Keith Clark*

Corporate Audio: State of the Market

By Ty Ford

IN THE FEATURE-FILM INDUSTRY, AUDIO is sometimes spoken of as a stepchild. In corporate environments it's often termed something even less flattering. Yet after surviving the '90s trends of downsizing, reorganizing, and outsourcing, corporate audio production, sometimes also referred to as the industrial market, still stands as a much-needed — if often overlooked — specialty.

To get a better pulse on the state of corporate audio, I visited Sheppard Pratt Health

System's Brian Glock, as well as Steve Kuhn, who recently left USF&G (Now The St. Paul) to join Don Armstrong at Hocus Focus Productions in Baltimore. Both Glock and Kuhn are actively involved with corporate audio production — one *in-house,* dedicated to serving a corporation; the other an independent working for a wide range of clients. As a result, they serve as a good gauge for the realities of the current market and how it's evolved over the past decade.

Downsizing hit Sheppard Pratt in August 1992, reducing the audio-visual service department (now called the media production department) from a two-plus-person operation to a one-person shop. Of course, the number of services expected of the department didn't face the same cutbacks: videotape production, photography, signs, slide and overhead projectors, 16mm film projectors, VCRs, and monitors ... not to mention pre-production script meetings,

At work at home: Brian Glock's studio includes a Roland VS-880 digital audio workstation, a CD recorder, as well as an impressive collection of vintage synthesizers.

videotape conferences, recorded audio for lectures, and slides for staff presentations.

Glock now wears all of these hats, and has added a few more. "I need more room on my hat rack," he jokingly points out. One of the newer *hooks* on the rack is responsibility for satellite downlinks for the conference center across the company's campus of buildings and facilities.

The conference center has its own technician, but Glock fills in when needed, including some system design work. "The original system was done with a patch bay," he says. "I changed that to video and audio distribution amps, which greatly simplified matters, and recommended a new audio mixer set-up for the auditorium that allowed the routing of audio to two separate sound systems, one for recording and the other for each of the conference rooms."

When he's shooting field video, Glock seeks any assistance possible from staff members to help out with the audio side of things. Usually, this is level monitoring only to ensure that suitable sound is being captured well enough to be mixed down later.

"I use an Audio-Technica 815 shotgun microphone for 98% of field recording, but there are also Sony ECM-50PS lavaliers and four single-frequency wireless mics for more specific applications," he notes. "Three of these wireless systems are Telex ProStars, while the other is a Telex FMR50. I love the Telex ProStar lav mic. It picks up really well at farther distances, such as when someone is speaking across a room. We also have a few Crown and Radio Shack PZM mics available as well."
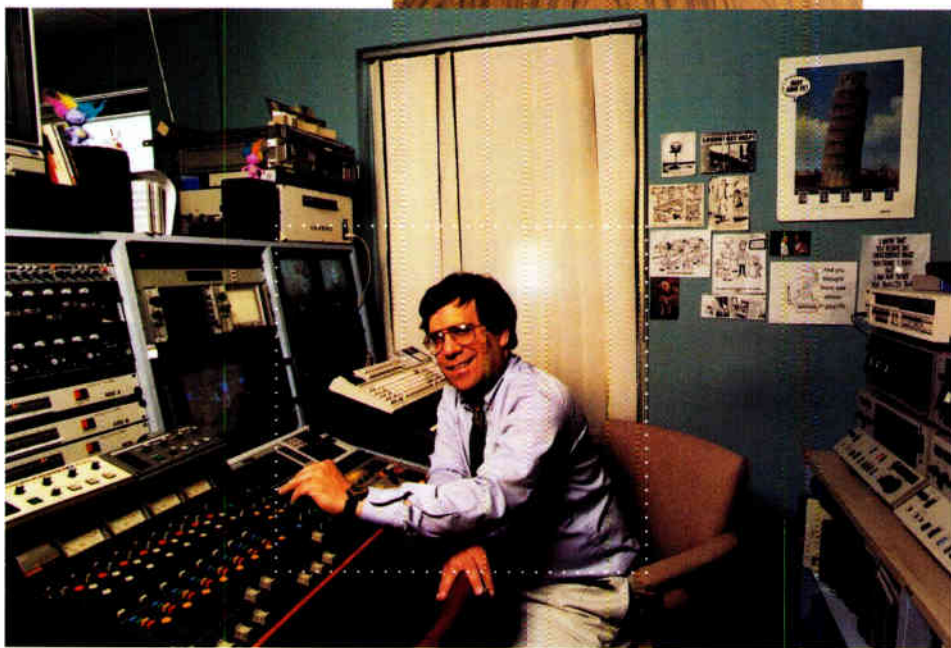
Sheppard Pratt's in-house audio production department includes a Tascam M-30 mixer, an Orban 672A paragraphic equalizer, as well as a Rane PE15 parametric equalizer, a Klark Teknik DN-504 quad limiter compressor, Tascam CD-501 CD player, Videotek audio distribution amp, and Realistic Minimus 7 monitors. Glock uses selections from the Impact Music Library for underscoring.

Audio for narration and voiceover are generally recorded to one of the facility's Sony ¾-inch video decks. "I edit the audio programming from the Sony deck directly to the master. If someone blows a line, I keep rolling and just have them redo it," he adds.

Replacing the Tascam mixer is a likely move in the future. "The Tascam still works very well and is really versatile, but if it wears out, I'd look at a Mackie 1604VLZ XDR. I'd also like to get some more source CDs from the Impact library, as well as an audio patch bay for use with audio dubbing decks," Glock says. "Right now to route audio and video from our S-VHS

source deck into the system, the audio and video outs feed the audio and video inputs on the ¾-inch 5800s. It's kind of a poor man's patch system, but it works for now."

Glock's passion for audio is evident at his home studio. In addition to an impressive collection of vintage synthesizers, he also uses a Roland VS-880 DAW (digital audio workstation) with effects card and CD-R (recorder). "Every once in a while there's a music bed that's not in our library, so I'll go home and record something original for a particular video's needs. In addition, the hum cancellation feature of

Above: Corporate audio can require an editor to wear a lot of different hats.
Below: Glock at the edit bay in Sheppard Pratt's in-house audio production department.

the VS-880 is useful in cleaning up material from our archives," he says.

Meanwhile, Steve Kuhn definitely knows what it's like to be a one-man shop. For the first three of his nine years at Baltimore-based USF&G, he was a solo act, with a main emphasis in producing audio and video for the company's human resources, training, and development department. Following moderate downsizing in 1991, his responsibilities switched to audio and video production for employee and agent communications.

Whatever the case, extensive A/V communication was vital to USF&G as the company continued along a path of introducing numerous new products and services, making management changes throughout the executive level, and undergoing extensive reorganization in many departments and levels.

"I was shooting and producing videos

that communicated the various strategic objectives, reorganization strategies, and financial results as a result of the reorganizing," Kuhn says. "We also did some audio-based projects. For example, claims adjusters spend 95% of each day in their cars. So we created audiocassette programs that gave them news, general information, and other updates. We started with four-track, reel-to-reel editing with razor blades and splicing tape, and then mixing to cassette format, which were duplicated in house."

As the internal reorganization continued, even more information needed to be communicated to employees. "We'd do a talking-head shoot with the CEO first thing in the morning, add graphics, simple animation, and music and have the whole program packaged for review late that afternoon and be ready for duplication and shipment by overnight courier to branch offices the next morning," Kuhn explains.

Steve Kuhn ensconced in his new digital editing suite.
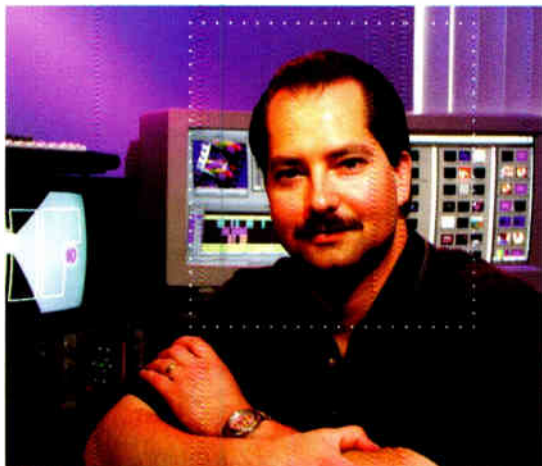
Avid Technology has aided Kuhn in several aspects of the production process.

"From an audio and video standpoint, we had to have the tools to produce a quality product to meet those types of deadlines."

Most of the video gear was Panasonic, while on the audio side, there were a lot of Sony lavalier and handheld mics, Audio-Technica shotgun mics, and Shure, Soundcraft, and Tascam mixers. Recording was done direct to video or to the four-track reel-to-reel.

By 1995 Kuhn had moved on to Adobe Premiere on a Mac Quadra 950, but found that it too wasn't the perfect solution. "You had to create a preview to see edits, and that could take several minutes," he recalls. "My first version of Premiere had only 8-bit audio, so I couldn't even use it. I'd have to wait until online for finished-quality audio and video."

Using the tools on hand at that point, Kuhn recalls a rather cumbersome audio recording and production process, requiring loads of manual labor, give and take, and time. He would lug microphones, a mixer, and an S-VHS video deck into conference rooms and roll tape. It was a process reflecting the state of the market and technology for corporate audio only five years ago, serving as an interesting benchmark for the progress made since that time.

"I'd record audio on the hi-fi tracks, do a window burn, and send it to the client for a paper edit," he notes. "Later, we would digitize the client's selects into the nonlinear environment to produce a rough edit then send that to the client for approval. Once feedback was received we would make changes and revisions, get another approval, and then create an EDL and move to online. Sometimes that would take place all within a very, very long day, but it was an improvement over the past when we used to record to cassette and have someone transcribe the cassette to paper for approval. Just having timecode was a luxury and normally meant less changes to the rough and final edits because of the specific timecode points."

Later came an Avid Media Suite Pro, which provided nonlinear editing with finished quality for video and 44.1kHz, 16-bit audio. The interface was much easier and the edits actually could be heard and seen in real-time. In addition, Sound Designer and AIFF files could be imported, as well as CD programming, albeit indirectly. "If we were lucky enough to go to a sound studio, we'd have them cut the audio directly to a Syquest disk. From there it was a two-step process — import the audio and convert it to media that the Avid would recognize," he says.

Still growing, with the need for a separate audio production solution becoming ever-more pressing, Kuhn opted for Digidesign Pro Tools. "The interface was great and you got multiple-track recording and editing," he explains. "Mix automation also saves time. Networking files between the audio and video workstations maintained the original quality, eliminated *sneaker-net*, and most of all saved time. Ethernet between workstations is such a plus."

Fast forward to 1998. USF&G merged with The St. Paul Companies, and the production philosophy switched to outsourcing, away from the in-house role Kuhn had performed for years. Adapting to the shift, Kuhn decided to merge his talents with a local house, Hocus Focus Productions, filling his former role for St. Paul while at the same time working with a wider range of clients.

"I was interested in purchasing the assets of the USF&G/St. Paul video department, but this required a partnership. Don Armstrong, who owns Hocus Focus Productions, and I formed a great working relationship. We were able to acquire all of the gear I had assembled at USF&G. At the same time, we've maintained them as a client, along with their life insurance subsidiary, F&G Life," he says.

The gear in Kuhn's current technical dowry resulted in a major renovation at Hocus Focus. Building out from bare walls, their facilities now include an Avid suite, Postbox suite, online suite, digital audio suite, V/O booth, multimedia and 3D graphics, videotape duplication, and a sound stage. "My father was a contractor and an all-around handyman so I grew up knowing how to be a *do-it-yourselfer*," Kuhn says. "We've also had a lot of help, from two other business partners as well as contractors, friends, family, and even clients. Everything will be fully in place by this fall."

So, whether modestly in-house, or in a synth-based, CD-writing DAW home studio, or in outsource format, corporate audio has obviously not only survived, but evolved. There still isn't a door with a Corporate Audio sign on it. But that's probably because the person who makes the signs is too busy recording. ▲

World Radio History

Audio Production Tool Assembly

By Philip De Lancie

AUDIO PRODUCTION FOR CORPORATE AND institutional applications, just as with all other (sometimes more high-profile) areas, requires the basic ingredients of tools, talent, and time. The question is how best to tailor the toolset to meet the specific demands of this market sector.

"Most audio production work for corporate clients falls into either sales and marketing presentations or some type of training," says Dave Van Hoy, president of Advanced Systems Group in Emeryville, California. The company has supplied audio production systems to corporate clients including Lockheed, Hewlett-Packard, and Boeing. "Most of the audio production today is tied to video production, with a small area for Internet and Intranet delivery."

According to Jeff Richards, director of multimedia services at Jesse Walsh Communications, "typical projects for corporate clients might include sales and marketing presentations, interactive multimedia catalogs, and promotional CD-ROMs. Then there are training materials, covering products, services, and policy or other in-house areas. And audio may also be needed for the Internet, such as product demonstration sound bytes or interviews." Based in Buchanan, Michigan, Jesse Walsh Communications is both an advertising agency and an audio/video production facility serving professional audio brands such as Denon, Crown, Electro-Voice, Amex, Harman Music Group, Soundcraft, and Klark Teknik.

Richards says the biggest factor that distinguishes audio production for corporate clients from other types of audio work is the "varied delivery mediums being used and the preparation that each requires. Our projects are delivered via a variety of media, including Internet, Intranet, kiosks, CD-ROM, and videotape. So a particular audio segment may end up being used in several different situations ranging from streaming Internet audio to a DVD-based presentation."

The Corporate Setting

While Jesse Walsh Communications is an independent service provider, the variety Richards speaks of seems to be a constant for those working in-house in corporate or institutional settings as well. "Most of our productions are anything but typical," says Thom Coberg, manager of the audio-visual studio at the Federal Reserve Bank of San Francisco. "Our corporate clients include the Federal Reserve System, U.S. Treasury, and the U.S. Mint. We do our fair share of employee communication programs, but more often than not we are working on marketing programs, educational programs, and community outreach."

With a wide range of media used to deliver a given company's message to a variety of different audiences, the in-house audio engineer is often called on to cover an unusually broad range of tasks. "I'm everything from a broadcast engineer to a composer

Jeff Richards, director of multimedia services at Jesse Walsh Communications, works on a diverse group of corporate audio projects that require a host of digital tools.
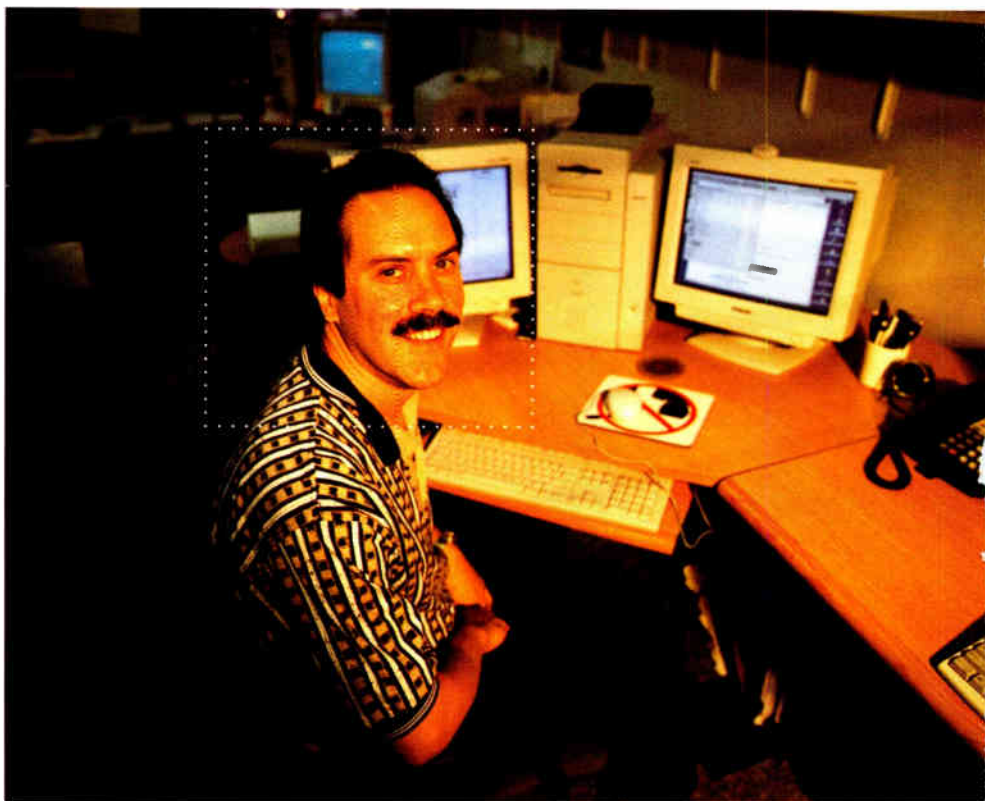
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and sound designer," says Eric Land, audio specialist at NASA's Ames Research Center, Mountain View, California. Land's department prepares video and multimedia productions covering the center's activities — from wind tunnels to supercomputing to space shuttle simulation. He also works on materials for outside agencies such as the Federal Emergency Management Agency.

Land says an audio engineer may have to be less of a specialist in an in-house setting. "Prior to coming here," he says, "I worked in a scoring-to-picture situation on a project-by-project basis. But here you get more of the day-to-day things: a tape that needs to be cleaned up, a press conference, and some sound effects for a multimedia project. You may be the only one there, so you have to be able to handle everything. It's much more varied here than what I personally was doing before."

Another important distinction from working in the entertainment industry is the uncertain level of experience and understanding that the client may bring to the

Thom Coberg, manager of the audio-visual studio at the Federal Reserve Bank of San Francisco, at a WaveFrame digital audio workstation used to edit audio before it's synced to picture.

production process. "Often you are dealing with a client who has no background or any sense of production standards, so you have to do a lot of education up-front," says Skip Pizzi, former audio technical manager for Microsoft Studios, the in-house A/V production facility at Microsoft's headquarters in Redmond, Washington. "You have to be part teacher, part salesman, and all patience."

Pizzi, who is currently Microsoft's program manager for interactive TV technology, speaks from a 30-year background in audio and music technology, including work on projects for the National Park Service, Fred Hutchinson Cancer Research Center, Los Angeles Museum of Modern Art, and The World Bank. "There is often a lot of

hand-holding required throughout the process," he says. "You may even be faced with questions like: 'Why do I need all those production hours?' or 'Why do we need to rent such expensive field equipment?' or even 'Why can't I just go to Radio Shack, buy the equipment, and do this myself?'"

Choosing the Tools

Though budget is obviously a major factor in the choice of production tools, factors such as the variety of projects and the types of clients influence equipment decisions as well. "Because corporate clients often don't understand typical production workflow," Pizzi says, "they often make what we professionals would consider outrageous demands for massive changes at the last minute, without realizing the difficulty of what they're asking for. Nonlinear editing systems with good A/V synchronization capabilities really help in these cases." Pizzi also advises keeping plenty of hard-disk storage available, so you never have to overwrite an earlier version with an update. "Chances are good that they'll change their minds back to what they had [previously] after they see or hear what they thought would be an improvement," he says.

Land also names a nonlinear audio editing system as the core tool for his production process at NASA Ames. "It offers a lot of freedom to manipulate pieces of audio, and to do things that you couldn't really do on a tape-based system. You can very quickly bring in several different elements, combine them together, do any effects processing you need with plug-ins, and basically keep it all in the computer domain. Then you can kick it out into a multimedia project in the same environment. So you can save steps and gain a lot of speed."

Land has combined his workstation with a MIDI-based sequencing and sample playback system for music on the same machine. "The sequencing software can address the audio workstation hardware, so the two are married together. It lets me create and work with MIDI and audio all in one world," he says. He also works with a digital console and a digital 8-track for projects exceeding the I/O capacity of the workstation.

Integration like what Land achieves be-

tween his DAW and his MIDI setup is also an important factor for Richards. "I want to be able to use all the tools together as if they were a single production tool," he says. "This integration of tools and flexibility of use within the workflow makes it easier to go from conception to finished production. What I'm driving at here is a complete digital workstation with minimal outboard gear.

"There is a lot to choose from as far as digital tools," Richards continues, "running the gamut from the high end represented by Avid/Digidesign to a single audio editing application using a standard sound card for audio I/O. Products such as Digidesign's Pro Tools and Audiomedia III provide the highest quality and professional features. Peak and Deck II from BIAS are also popular digital editing and multitrack recording tools. These tools can require fast computers with lots of storage, but they are popular because they allow you to accomplish many tasks, such as recording, editing, and effects processing, all under software control."

With this said, Richards acknowledges that traditional gear still has its place at Jesse Walsh Communications. "We use both traditional recording methods along with more recent digital audio production techniques based around personal computer workstations," he explains.

To Richards, typical production room requirements for the corporate environment would be very similar to a small project studio. "You will probably want a 16- to 24-channel mixer," he says. "We use the new Spirit 328 digital console. You may want one or more ADATs, one or more CD recorders or DATs for master recording, an effects rack, near-field monitors, and a modest PC with basic audio and video I/O."

For his part, Coberg points out that as the Fed becomes involved in more and more multimedia projects, he finds it very valuable to be able to export audio into files in many different formats. For the time being, however, Coberg says that "most of our audio production is associated with video. We use the WaveFrame digital audio workstation for all of our video post-production sessions, recording and editing voiceover narration, and syncing to picture. But if you can't afford a high-end system such as the WaveFrame, I've found that Sonic Foundry's Sound Forge XP and SoundEdit 16 are appropriate and seem to be popular. I'm a big fan of these programs. It's amazing what's possible on the desktop."

Overall, Van Hoy finds a few basic guidelines that seem to work best in terms of recommending gear for his corporate clients, who he says most often need "mixers, DAWs, low-cost effects and production

microphones — corporate work entails a great deal of voiceover work." Beyond ease of use, he looks at whether a given tool can justify itself with multiple uses rather than being specialized for only limited applications. He also points out that "corporate clients have little or no in-house support." That makes reliability crucial, and underscores the value of good vendor support. "Many times a corporate client will opt to pay a little more," he says, "to get good outside support." And of course, he says, "price is a big factor" in equipment purchase decisions.

In an outside facility catering to the corporate market, the price consciousness that affects the buying habits of in-house departments manifests itself as an emphasis on getting the job done economically. That may be incompatible with the top-of-the-line, name-brand gear that seems to impress music business clients. "Smaller corporate clients don't care how fancy your equipment or facility is," Pizzi says. "They won't care how you do things, as long as it's done on time and under budget. It's the classic case of wanting it good, fast, and cheap with emphasis on the latter two. If you do a good job for them, they'll keep coming back. The exception may be a large, Fortune 500-type client who needs the low-

lights and limousine treatment, but even there the bottom line is still most important."

On the Horizon

While the emphasis on economy has been a constant in corporate production, digital technologies have spawned new ways for corporations and institutions to communicate, in turn requiring new skills from production staff and new capabilities from their tools. Van Hoy sees the most important current trend as "the need for tools that can output in many different formats: audio for video, CD-ROM, the Internet. The same material may have to be formatted many ways for all these different modes of delivery," he says.

"The new MP3 digital file format will provide much higher quality audio for Internet and Intranet applications," adds Richards. "And recordable DVD will be big, allowing for more and better-sounding audio on a single disk, which could be especially important in the production of training material."

DVD is also seen as having an important impact at NASA Ames, where a decision has been made to add support for surround sound. "We want to be able to offer surround audio to our clients that want to distribute their video or multimedia on DVD,"

Land says. "And even if they are distributing on VHS, we can offer them surround on the Dolby ProLogic level. Also, we want to include surround sound on some of our high-definition TV productions. So we are going to add surround sound capabilities in the next eight months."

In terms of the types of production tools used, Richards says the most important trend continues to be toward "more advanced and less-expensive digital workstations, both dedicated and computer-based. Ultimately the digital revolution will put very powerful tools into the hands of the corporate A/V department at more affordable prices," he says. Of course, tools alone, no matter how capable or affordable, do not guarantee a good outcome in a production setting. "As the desktop publishing revolution demonstrated," Richards says, "it's not enough to provide powerful and affordable production tools. You still have to have the skills and creative capabilities to use them effectively."

Philip De Lancie is a freelance writer covering media production and delivery technologies in areas including DVD, professional audio, multimedia, sound for picture, and the Web. He can be contacted at pdel@compuserve.com.

A Custom Music Shop, Plus More...

By Michael McNulty

IN THE "COOL NAME" CATEGORY ALONE, Handsome Brothers deserves honorable mention, at the very least. But as a Boston-area audio shop offering a wide variety of services, they garner top prize designation from their clients.

Specializing in creating original music for corporate clients since 1976, Handsome Brothers provides music scoring, songwriting, score-to-picture, sound design, and a vast music and sound effects library. Recent projects include scores for Simplex's 1998 100% Club Meeting and the International Windows NT Symposium.

"While other places are big, full-service audio production houses, creative music is not their strongest point," explains Douglas Stevens, the company's founder. "They may do a little bit of creative music, but our main thing is the music."

Handsome Brothers consists of five staff members — co-owners (composers/producers Ed Grenga and Charles "Kook" Lawry, as well as Stevens), one audio-technical specialist who doubles as post-production master (Herb Ross), and one part-time composer (Mike McMahon). It's a small group, but considered by many in Boston to be a *first stop* because of their capacity for original scoring and innovative solutions to audio problems.

"We consider ourselves more of a boutique. Personal service is our specialty," notes Grenga.

A team philosophy dictates work habits, equipment purchases, and even studio layout. The philosophy is simple: Create a product that may be *owned* by one member of the staff, but likely has the fingerprints of all five on it before it leaves the premises.

The studio and staff size create an atmosphere where producers feel relaxed and "let their hair down a little," Grenga says. "Walking into Handsome Brothers is more like going to someone's house as opposed to a doctor's office."

Recent renovations include the addition of a loft with a full skylight as a lounge area for clients. With only two full-time composers on staff, the studios have been designed to complement one another and allow the composers to attack any type of musical style. While the studio setups are not overly elaborate, they're very well conceived and meet all needs comfortably.

Grenga started out as a piano player and an organist, and has molded his studio around that specialty. "My bread and butter is a big sound library," he says. "All of my other instruments are basically support for the samplers." He relies heavily on two Roland S-760 samplers, which contain a vast sound library of audio samples. The master keyboard, a Roland RD-600, controls all sound modules and is his main composition tool. It is MIDI-linked to his main computer, which is outfitted with Mark of the Unicorn Digital Performer 2.45 software that acts as both a sequencer and a hard-disk system.

He adds that MIDI helps him avoid the lockup problems of editing to ADAT, in addition to synchronizing and locking the computer to video for instantaneous scoring. As a result, Grenga composes, splices, and edits on computer rather than on physical tape, with the added advantage of both the Undo option and the ability to go back and tweak without completely re-doing the mix.

Some might be surprised to see a piece of mastering gear more indicative of a much larger studio — a tc electronic Finalizer — working alongside a MIDI system. Thirty-two presets with all sorts of sound shapes (rock, country, orchestral, and rap to name a few) process the whole mix before going to

Handsome Brothers, indeed: Ed Grenga, left, Charles Lawry, center, and Douglas Stevens have built a reputation with original scoring and innovative solutions for audio problems.

SENNHEISER INTERVIEW: CHRIS NEWMAN

the award-winning sound mixer discusses the nature of the industry, the use of sticky putty-like materials, the excessive noise of clothing, and indispensable Sennheiser equipment

Having garnered eight Oscar nominations, including winning five American and British Academy Awards, Chris Newman is truly a sound mixer at the top of his game. From his beginnings at a small recording studio in Englewood Cliffs, New Jersey to the sets of such blockbuster films as "The Godfather," "The English Patient," "The Silence of The Lambs," "Amadeus," and many others, Newman has made some remarkable contributions to the film industry during his thirty-plus years in the business.

Though he is constantly on the go—as one would expect of a man in such demand—Newman was kind enough to share his perspective on the sound recording industry and his affinity for MKH Series mics with Joe Ciaudelli and Uwe Sattler during a recent visit to Sennheiser's U.S. headquarters in Old Lyme. Following is some of what he had to say:

SENNHEISER: So Chris, what really excites you? I mean in the film business, of course.
NEWMAN: I figured that's what you meant. Well, the most exciting thing that is happening is that the processing of noise is about to become a piece of cake.
SENNHEISER: Pardon me?

NEWMAN: Noise of clothing, motors running, and background—they'll all be much less critical in terms of being able to be removed. As digital signal processing and digital equalizing begins to attack all this kind of material, a lot of the problems in noisy locations will go away.
SENNHEISER: But what about the bounce effect, and problems of that nature?
NEWMAN: That's where the mics come in. We're always tearing up the acoustics when we're shooting. We change the acoustical environment of the room, and use the MKH 816 without worrying about the bounce effect. The boom people prefer the MKH 70—it's lighter and more forgiving, and sounds better off-axis. You don't hear the head turns. If I had to take one mic with me that I could walk into anywhere and have anybody work with, I'd take the MKH 70.
SENNHEISER: How about "rolling off"?
NEWMAN: Forget about rolling it off, I'll do the rolling off.
SENNHEISER: So—have you picked up any other tricks in your years in the business?
NEWMAN: Well, I suppose there are tricks of the trade, but not too many. I use a very sticky kind of putty-like material sometimes to attach mics to hide them. But the rest of it will work itself out. The recording instruments we have today are all so powerful they can solve just about any problem. Radio mics work about 95% of the time, the other mics about 100%, as do the recorders and mixers as long as you keep them in good repair. That's the trick—to spend some money to make some money!
SENNHEISER: Do you have an ideal?
NEWMAN: An ideal mic, you mean, or a philosophical ideal? (Laughs.)
SENNHEISER: I mean an ideal mic.
NEWMAN: It should be light in weight, short in length, have low distortion, be reasonably directional, have a smooth off-axis response instead of just dropping off, and be easily moveable in terms of wind noise. Sennheisers meet most of those criteria and they're relatively bullet-proof to RF interference.
SENNHEISER: Any advice you'd like to give?
NEWMAN: What, to you?
SENNHEISER: No, to anyone entering the business or wanting to know more about it. Or for us too, I suppose.
NEWMAN: There is no substitute for going out and doing it, and making every conceivable mistake. It's the only way to learn about sound recording.
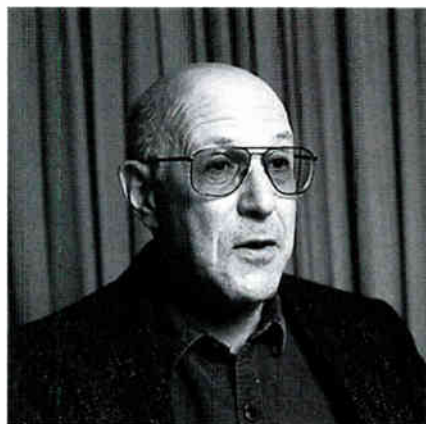
PHOTOGRAPHY BY ELYSSIA STRATTON

". . . the most exciting thing that is happening is that the processing of noise is about to become a piece of cake."
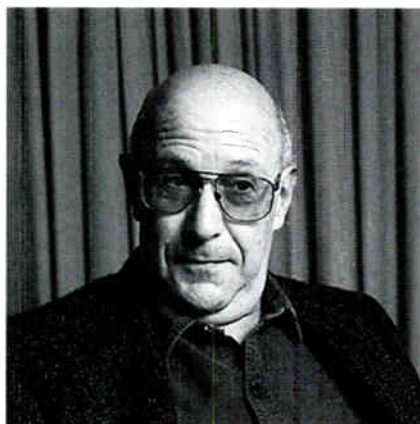
"My tricks? Let's see. I use a very sticky kind of putty-like material sometimes to attach mics to hide them."

"If I had to take one mic with me that I could walk into anywhere and have anybody work with, I'd take the 70."

tape and create a custom finish that's authentic to that genre. Unless it's appropriate for the piece, Grenga wants his sound as organic as possible. Often he will bring musicians in to redo parts that sound too *electronic*.

Lawry usually handles guitar, doing most of his work on two '64 Fender Stratocasters and a versatile ESP Telecaster. He currently edits in ADAT, but soon plans to upgrade to Grenga's MIDI/Digital Performer system. A Roland S-750 sampler is another consistent staple, and his Roland Sound Expansion Modules are "designed very simply," he says. "There's a lot of sounds without a lot of options, which is what I found good about them. I don't want to go in and worry about the decay of the triangle."

Like Grenga, Lawry uses a mid-level mixing console and rounds out his set with some high-level outboard equipment, such as a White Instruments Series 4000 graphic equalizer. Used for "delicate surgery," this tube-based EQ gives Lawry command over 30 discrete bands for fine-tuning without having to re-record.

"My system is kind of a mutt," he says. "Some stuff I wanted, some stuff was handed down to me, and some stuff I couldn't refuse because it was too darn cheap to turn down."

Lawry and Grenga send their finished pieces off to Herb Ross' post-production room, the newest addition to the Handsome Brothers studio. Constructed last December, it features the 24-bit Digidesign ProTools system for editing and digital hard-disk recording, another quality-control step in producing a more carved musical sound. In the past, this type of editing was done by physically cutting tape.

"I feel like the kid that just got out of college," says Ross. "I've worked with ADAT's and the like and I said, 'Ed, how can you work with this stuff?' It's so slow, whereas here I just grab everything, and if I don't like it I can just undo or redo it."

The new room includes a wide variety of software-based EQ plug-ins to smooth out the sound. "It's like having a whole physical rack of plug-ins, but it's all software-based in here, and I can just keep adding them," says Ross.With eight channels of recordable input and 64 channels for playback, Ross can record instruments directly to his system or from ADAT.

"If we find a flaw in the mix, rather than going in and remixing, (Ross) can take care of the fixes 80% of the time," Grenga says. "If something's too long or too short, he can time-compress or stretch. He can make edits a lot easier than we can make edits. He can even do stuff like play with the spectrum. Things that in the past you'd have to completely remix to do."

This type of precision helps Ross to not only boost individual words for voiceovers,

Studio B, where Charles Lawry edits on an ADAT but soon plans to upgrade to a MIDI/Digital Performer system.

but even syllables without the peaks and valleys associated with compression. In addition, having three musicians on-staff (Ross also plays keyboards) allows instant remixing with live instruments, making virtually any edit possible.

And all three rooms, plus a pre-production digital workstation, are compatible and can talk to each other. Stevens gives this example: "By all having the same systems, Ed (Grenga) can be working on a project, score up to a certain point, send it to Kook (Lawry), who can be working on guitar overdubs or guitar parts while [Grenga] plows ahead on the project."

Beautiful Relationships

This system is obviously one that agrees with the Handsome Brothers' clients, including companies like Lotus, Fidelity, and Gillette, and corporate communications companies and ad agencies like Caribiner International, Jack Morton Productions, and Arnold Communications. Keeping the client happy and staying on budget also requires an understanding of what they're really asking for.

"Most people can't verbalize what they want," Stevens says. "The thing that takes the longest to learn is to figure out what the client wants. That is an unbelievable skill. We have to be intuitive about what clients are going to like. The best way to do our job and save money for the client is to be right the first time."

Another feature that's made the Handsome Brothers such a valuable audio resource is its vast music library, which Lawry estimates contains 300 to 400 hours worth of original music. He utilizes library cuts to provide a greater value for clients who don't have the budget for a fully original score but desire original music. Almost every type and genre of music has been recorded in-house, and can be recycled for clients' use.

Besides corporate work, the company creates TV show theme packages, produces radio and TV ads, and scores films. Many of

its library cuts are also available as part of the Parry Music Library CD collection. And, of course, there is Red Peters, the fictional character created by Stevens and Grenga whose CD of culturally satirical humor has given the character a cult-figure status at radio stations around the country. Stevens (as Red) has even made several appearances on *The Howard Stern Show* and *Dr. Demento*.

The future for the Handsome Brothers includes becoming a "one-stop shop" for mixing audio to video (mix-to-pix). The shop will continue to diversify its work base, focusing more on film scores and broadcast and entertainment industry work (which includes another *Red Peters* CD), where ASCAP and sync fees can extend residual profits of these music creations. In addition, they're working on putting their huge music audio library online, which will be located at *www.handsomebrothers.com*.

Regardless of future developments, Handsome Brothers plans to stick to the same basic principles that have been the core of the shop during its 23 years in the audio business. "We're about personal service," Grenga says. "We're about solving problems, doing what's right for the project, and making the client look good. Everything we've built here is about making the experience enjoyable and hassle-free."

And, Stevens adds, "having as much fun as we can."

Editor's Note: The unique Handsome Brothers name was concocted by Stevens and his then-partner Tom Dempsey. Its origins would take several paragraphs to explain, but suffice it to say that clip art, boring corporate mantras, and memories of the *Ed Sullivan Show* all were elements in its creation — plus a healthy sense of humor. ▲

Michael McNulty is a producer of corporate and broadcast video based in the Boston area.

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Big Sound in the Biggest Little City in the World

By Tom Kenny

Jim Mitchell at his all-in-one video/audio editing bay. Note the bass sound trap on the ceiling, upper left and center, that surrounds the perimeter of the room. Photo: Jim Hines.

IT'S REFRESHING TO SPEAK WITH A CHARACTER like Jim Mitchell. He's colorful, loyal, a straight shooter, self-deprecating nearly to a fault, and after 32 years in the film/video/audio production business, he's maintained the boyish enthusiasm of a 13-year-old who just picked up his first tape recorder. He calls himself "one of the little guys," in reference to the fact that he works in the small market of Reno, Nevada. But his reach is global, and he's sitting on a gold mine, though you'd never hear it from him.

As the owner of CAMRAC Studios (the name is both a reference to "racking a camera lens" and an homage to George Eastman, who gave Kodak its name because it was a two-syllable word that was easy to pronounce in any language), Mitchell is a resident generalist in an age of specialists. He produces, directs, shoots, edits, designs soundtracks, and creatively markets his productions around the world. He co-owns the business with his wife, Shirley, and has a small staff that does everything from design print ads to operate the cyc stage. As he puts it, "We're bigger than a breadbox and about a size 3 in a gray flannel suit. There's 12 of us hopping around on stilts doing the job of 20 angry men."

It would be hard to pigeonhole the type of work that comes out of CAMRAC. They shoot and edit commercials; they've won a New York Film Festival award for a Las Vegas Convention & Visitors Authority production; they have corporate clients in several industries; and they have a home video series under the trademark Skyfire: America's Video Storyteller, which now includes about 60 titles — everything from *The Great Reno Flood* to a profile of the F-4 Phantom Fighter plane.

The variety of work that comes through CAMRAC is mind-boggling, though corporate clients have been a mainstay for the past couple of decades. Because Mitchell and his team provide a complete marketing/production package, including focus group research, demographic studies, print ad creation, radio and TV spots, sales presentations, and complete facilities for video production, they offer a true one-stop shop, which corporate marketing personnel tend to like. And he can put out a sales presentation in widescreen 16:9 with 5.1 audio, which may make a difference, considering his competitors are laboring under PowerPoint presentations.

The majority of his corporate clients who require high-end sales/marketing packages reside outside Nevada, and he has literally flown all over the world for field productions. Although regular clients come from a variety of industries, recently he's seen a lot of business from the gaming sector. All casino gaming licenses have to pass through a particular state's gaming board, and the competition can be intense. Mitchell is a firm believer that if a client shows up with a powerful, comprehensive presentation, it can make the difference.

On one occasion, he recalls, the company provided a 5.1 widescreen package, and had gone into the community beforehand and polled residents on what issues were of concern. When the gaming board asked about the effect of a casino proposal on a rare species of fish in a local waterway, Mitchell's client was the only one with a ready response. And it made a difference.

The history of CAMRAC serves as a model for any up-and-coming, small-market enterprise in that smart purchasing decisions, savvy trend-spotting, and growth within limits rule the day. Mitchell started the company in 1967, working on film. When video came along in 1979, he purchased a ¾-inch system, then in '84, he updated to a seven-machine, 1-inch bay. ("We've always been heavy in transports," he says, "because we do a lot of multi-camera shoots.") Today he works primarily in Digital Betacam, and in defiance of the norm, he edits video and audio out of the same room, usually at the same time.

The suite was designed in 1994 by Carl Yanchar of Wavespace. Yanchar came recommended by long-time Mitchell friends Jody Peterson, a sound recordist, and John Holliman, now director of sound recording at Brigham Young University. The space Mitchell had was, in polite terms, problematic — 32 feet wide by 15 feet deep — with a plethora of panels and housings related to the video editing equipment. "Carl came in and said, 'Acoustically, you're killing me! I have no spread here!'" Mitchell recalls. "But he came in, did all his measurements, and went back and built all these traps. You just can't believe the sound in here."

Yanchar designed a series of eight individually shaped baffles and traps to reduce standing waves. A bass trap was fitted into the back-wall ceiling, leading to an upper chamber that measures eight feet high by 80 feet long. The four Digital Betacam and Beta SP machines were housed in air-conditioned, pressurized cabinets with rear vents to draw off noise and heat. The same airtight/exhaust design was used on all housings for source monitors, color correctors, and DATs and DA-88s. Because of the odd room shape, Yanchar specified a Bag End surround monitoring system because he knew Mitchell had loud source material and needed a "big-room sound" in a near-field environment.

"I've never heard anything like them in

my life," Mitchell says. "We feed some outrageous, high-SPL material through these speakers, and I've never heard a rattle in this room. They're faithful and don't mask."

Yanchar also sold Mitchell on the concept of separate Bag End subwoofers for each of the five speakers, debunking the myth that low frequencies are non-directional. "We had this train clip that comes thundering in from the left and moves across the room," Mitchell remembers. "The room was just up, and I wanted to play it for a friend. I went to playback and said, 'What happened to the sound?' All the power coming from the left had disappeared. Well, it turns out the carpenters doing the carpet behind the speakers had accidentally disconnected the wire from the left subwoofer. Anyone who wants to tell me that low frequencies are non-directional, I invite them to come up here and I'll show them how non-directional they are."

Yanchar has continued to consult for the company, and Mitchell speaks of him as he would a friend. Yanchar developed a proprietary box to allow 24-channel monitoring, driven by the video preview switcher.

"A real problem in the way we do things was monitoring," Mitchell explains. "There's a preview switcher on the video switcher. When you hit Preview and backroll for five seconds in an online system or linear system, it rolls down and what you're hearing is what's on the program. Then at the edit interval, this preview switcher switches to source — it gives you video and audio. Well, it's only capable of switching four channels, so if you're listening to 16 or 24 tracks of DA-88 and you're trying to hear what's laid down, there's just no way to monitor it. So [Carl] designed a system to do that back in the days before Zaxcom and Graham-Patten came out with the ability to monitor eight channels. He's a very gifted guy."

And, taking off on Mitchell's love for 4-channel PCM, Yanchar built a small collection of 4-channel discrete mics for field recording. "I really have to attribute the development of the mic to a great guy who recently passed away, Brad Miller," Mitchell says. "He made all the great late-train recordings in this country. He produced the Mystic Moods Orchestra series and started Mobile Fidelity. He was a genius. For years, Brad had sung the praises of discrete, 4-channel surround. I used to go out into the desert with my two Neumann KU100s side by side with Brad and his mic, and I would get hosed away. His stuff was clean and clear. I bought one of his mics and figured I needed to do this with video. But the mic was old technology at that point, so I started again from scratch and went to Carl. He built a mic with even higher SPL ability. It was quiet, shock-mounted and came de-

powered, so you don't have to lug along a 12V car battery. It's actually powered right off the camera. It's brilliant."

Mitchell, it seems, likes to spend as much time outdoors as he does in the edit suite. CAMRAC specializes in aerial photography, and field production has taken him all over the world. One of the growing aspects of his business, the production and distribution of family entertainment programs under the name Skyfire, came about purely by accident. It's a lesson for finding that proverbial silver lining.

"In 1984, a company came up from Los Angeles and hired us to shoot the National Championship Reno Air Races," Mitchell recalls. "In those days, I was riding around in my '67 Volkswagen with three Mole-Richardson lights, a pair of baby sticks, and a Bolex, and that's about all I had to my name. But they hired us, and someone said to me, 'Do you know anything about these guys? Why don't you see if you can get them to sign something where you don't turn the stuff over until they pay.' Well, they did not pay, and we had all this footage. I was facing about a $42,000 negative cash flow from that project. I called all my staff together and said, 'What are we going to do? We're in trouble, and we're in this boat together.' That's the way I manage — we're all together. One guy says, 'There's this new thing called home video and people are actually buying these VHS tapes and watching them at home. I said, 'You gotta be kidding me. Who

would do that? We got TV.' And that's how Skyfire started. We threw this hour-long thing together, and in a weekend we sold 4,800 copies for $49.95, thank you very much. Man, I was rich. I said, you know, if people will buy that problem, let's show them what we can really do."

So, ideas are submitted and shows are produced, then marketed creatively. The graphics department creates ads that run in places like USA Today and Parade magazine. One title has sold more than 48,000 copies; another on the Reno flood of '97 sold 23,000 copies locally.

For the past 32 years, Mitchell hasn't thrown anything away. He has an incredible library, archived with care. A Sonic Solutions system was just installed, and the company just authored its first DVD, entitled Steam Clouds and featuring the famous 4449 Daylight steam locomotive. Without giving away his future plans, look for much of it to be available on the Internet before too long.

But consumers aside, he's sitting on a gold mine with his multichannel sound library alone. You can hear the enthusiasm as he looks forward to the next 32 years. He'll be in his eighties then, and it's a safe bet he'll be hunkered down in an edit bay or waiting for the space shuttle to shoot across the mountaintop.

Facility Spotlight

Dayton Hudson's Success Via Diversity and Flexibility

By Pete Tidemann

Dayton Hudson Corporation, based in Minneapolis, produces its own audio and visual presentations for its department store division, utilizing a variety of hardware and software tools. Specialties include creation of music for TV and radio commercials, editing existing music and voiceover tracks for live shows and producing a variety of materials for walk-through exhibits.

Headed up by Mike Gansmoe, Dayton Hudson's audio production department includes three different sections that handle specific production aspects, all ensconced within the company's flagship store located in downtown Minneapolis. While certain musical tracks are recorded out of house,

everything else is done at this location. Gansmoe provides virtually all production aspects — from composing original music to overseeing the division's technical side.

A MIDI production suite enables creation of original music tracks for less-demanding applications. "We have our hands full building these tracks from scratch," Gansmoe notes. "I meet with the creative team and decide what kind of musical elements or sound design is needed. We talk about the general theme, then I typically create a scratch track to edit the visuals. After all visual elements and graphics are complete, it's my turn to post score the commercial to completion."

The scene at "Fash Bash," one of the live Dayton Hudson events produced by Gansmoe. (Video projection by AVF of Minneapolis.)
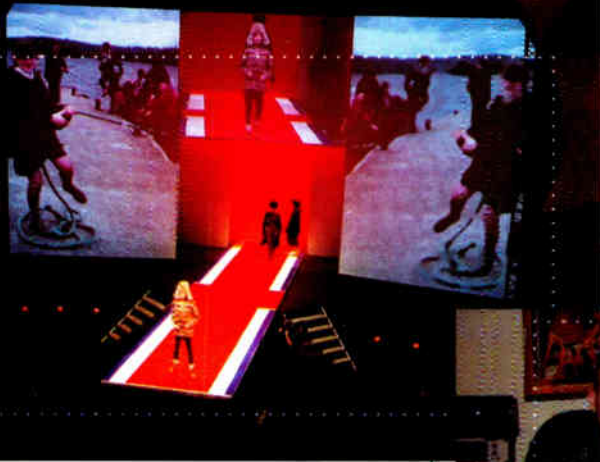
Mike Gansmoe in the Dayton Hudson audio production facility.

The suite, which also houses an extensive sound effects library, is comprised of a variety of equipment for recording and sequencing. Sequencing is done with a Mac that runs Digital Performer software. This is recorded to a Sony DAT machine, with mixing courtesy of a Yamaha ProMix 01. Musical scoring can be notated on the Mac as well for additional studio tracks to be added by live musicians.

Gansmoe uses a Yamaha P100 MIDI keyboard controller to control several different keyboard modules from Emu, Korg, Roland, and Alesis. "My cornerstone piece of equipment, though, is an Akai CD-3000 sample player with an extensive sample library. This allows me to come up with many of the sounds I need for composition even if we will eventually record the tracks with live musicians," says Gansmoe. Tracks can be edited longer, shorter, faded up or down, with voiceover overlay and/or general changes made easily.

The anchor of the facility is a somewhat crowded yet highly versatile and functional audio production room. Everything is within arm's reach, including a CD resource library. One corner is occupied by a voiceover booth just big enough for two. This pre-built isolation booth, ideal for existing spaces like this one, includes two Audio-Technica 4050 large diaphragm condenser mics for vocal and effects recording.

These tracks are recorded to a 16-track Tascam DA-88 deck with an RC-898 remote controller, with mixing on a Yamaha 02R digital console. "When I have several different elements to put together, the RC-898 remote for the DA-88 puts everything at my fingertips," says Gansmoe. "Meanwhile, the automation and onboard effects of the O2R allow me to sit back and listen to the mix instead of having to worry about manually pushing the faders around.

"In the not-so-distant past, I would have to worry about mixing several different things at once, so it was difficult to concen-

trate on getting the mix consistently right. Automation has really helped shorten production time while also simplifying things to a great degree."

Gansmoe listens to mixes with a pair of Yamaha NS10M monitors flanking the 02R. Any format of source material can be accommodated, with material from the in-house MIDI production suite recorded to DAT. A Denon DN2500F CD player can be linked with another similar unit, by remote, for instantaneous access.

The digital editing system is controlled by a Mac running Digidesign ProTools 24 Mix software. This recent addition replaced a Hybrid Arts digital system.

"The Hybrid Arts system served me well for many years, but it was just time to update our editing capabilities, with ProTools a great choice," Gansmoe says. "We couldn't have dreamed of the options it provides only a few years ago. Pro Tools has become an industry standard and I expect it will remain that way for some time to come."

For tracks intended for live shows or walk-through events, everything is mixed down to stereo and recorded simultaneously to DAT and to a Tascam RW-5000 rewriteable CD burner. The DAT can be used for backup and the CDs are used for live shows or walk-throughs. Gansmoe feels that the reliability of the CD format is essential for live events, noting that DAT seems to be more susceptible to operator error.

For tracks created for video, mixdown is done to a SMPTE DAT recorder. In video post production, the tracks are mixed with other sound design elements and then edited in full-motion video with an Avid system. The final step is to lay back the final sound mix to the video master.

Gansmoe is also responsible for audio playback systems that Dayton Hudson frequently employs, generally in an auditorium on the top floor of the department store.

This space regularly hosts fashion shows and other events, including an annual, elaborate Christmas show open to the public. It usually includes several different scenes.

As a result, each scene has its own discrete audio system controlled from one central location. After Gansmoe composes, records, and produces all soundtracks on CD, he then designs each sound system. Multiple loudspeakers are concealed in the set, with source material supplied by multiple CD players mixed through Mackie compact mixers.

A concert sound reinforcement system is also on-hand for larger applications, like store openings, press parties, and other special events. The rig includes Turbosound Flashlight and Floodlight loudspeakers with Crest Audio power and Turbosound speaker processors. Electro-Voice subwoofers provide a thumping low-end, necessary in this MTV age of ever-escalating production values. A 40-channel Mackie console is just the right size for the needs of this application, accompanied by an effects rack with Behringer digital equalizers, Presonus compressors, and Lexicon effects processing.

Dayton Hudson is also branching out into some emerging technologies, such as the ability to provide music tracks online to their stores, to be used to accompany displays. As a result, Gansmoe is in the process of producing these tracks, which can be transmitted via T1 lines for downloading. This will give Dayton Hudson direct control over source material content and quality, while eventually saving on mass mailings used for distribution of these materials. "We can tailor tracks to enhance the moods of different departments, better fitting the demographics of the targeted customer base while enhancing the image of the particular products being featured," he notes.

In the modern age of corporate audio, it seems a rarity for an in-house audio production department to offer the amount of capability as that found at Dayton Hudson. Yet it makes considerable sense, with the same qualified source able to provide all of the pieces of the puzzle — a distinct advantage. A portent of the future, perhaps?

"One thing's for sure," Gansmoe concludes. "This market is wide open for people with multiple talents. The future of our division depends upon my keeping abreast of the technology available in a variety of disciplines, and to remain flexible to new ideas. I feel fortunate that I'm able to use all of my creative and technical abilities in one place. Boring days are a rarity around here." ▲

Pete Tidemann is head of sound reinforcement for Audio-Visual Film Group, a leading corporate audio-video company based in Minneapolis.

Corporate Audio Playback Systems

By Pete Tidemann

SYSTEMS FOR PLAYBACK OF CORPORATE audio are a direct reflection of what's being achieved on the audio production side. In other words, just as the tools for creating and producing audio tracks have gotten increasingly sophisticated in the past few years, so too have the systems and devices created to play back this source material.

From corporate boardrooms to huge international shareholders meetings, many of the same audio playback formats are used. It's the size of the system that's different. However, just as many boardrooms these days offer the capability to play back audio in surround format, so too do the larger-concert-type systems used for bigger applications in spaces like hotel ballrooms, sports arenas, and stadiums.

As an audio engineer who designs and mixes on many of these systems, I've found that particular formats work better than others. We consider it to be our primary responsibility to deliver the absolute best audio quality, no matter the format. In every case, we try to act as a partner with the client and their production people to provide suggestions as to what will work best, given our experience. But we're prepared to deal with anything and everything that might be handed to us for audio playback.

Here's a look at the most common formats we work with and some ways we go about the business of providing optimum playback audio in the corporate realm.

Format Options

CDs are popular for what we term *audio cues*. These are portions of corporate meetings for *walk-ups* to the stage, voiceovers, general music, and other sound effects. Not so long ago, clients had outside production companies record these audio tracks and then burn them to CD for playback.

With the advent, affordability, and ease of use of CD recorders (CD-Rs), many clients now produce these tracks in-house and then hand them off to us. We find the quality of these to generally be quite acceptable, although of course there are a few exceptions. (But then again, this was also the case with professionally produced tracks as well.) Standard, professional-caliber CD players are employed for these applications.

However, the whole ballgame changes when we have multiple tracks to be organized, cued up, and played back from 10 different CDs. It can be extremely difficult to switch discs and cue up the track. And you don't always have the ability to offer a backup track playing in sync, to be brought up in case of a problem with the main track. At times like these, we employ a 360 Systems Instant Replay system.

Instant Replay is configured to record up to 16 hours of 44kHz stereo audio onto its internal hard disk. All cues can be assigned to the 50 hot keys on the unit's front, with each key providing access to 10 cues. This gives you up to 500 audio cues that are almost immediately accessible. Gone are the days when we had to have multiple CD players and tape decks onsite. Now everything is at our fingertips. Cue lists also can be assigned — hit play and the cue is triggered, with the next one ready to go.

Audio can be recorded to Instant Replay via either its analog inputs or digital AES/EBU. And, you can also set up an internal threshold so that recording won't start until the signal breaks the preset barrier. This allows playback of the cues to be instantaneous as soon as the operator hits one of the hot keys. Editing can also be easily done with the addition of an Instant Editor unit, which will store up to to four hours of audio for editing purposes.

Another option, although we don't utilize it much anymore, is the 360 Systems Digicart system. Audio is recorded on individual cartridges that can be plugged into multiple Digicart units, all controlled via computer from one center location. Given the comprehensive nature of Instant Replay, combined with its compact size and

At the house console, Pete Tidemann incorporates technologies like a 360 Systems Instant Replay system (right, foreground) during live corporate productions.

High-end corporate audio playback systems, like the one assembled here by AVF, help to fully realize all of the work done on the production end of the process.

ease of use, we believe it's really the better way to go for our particular needs.

Audio accompanying video presentations is usually supplied to us on Beta SP tape, which has four tracks available specifically for audio. We don't always receive stereo format, however. Sometimes it works better to have the music and voiceovers separated on different channels. The advantage is that this separation provides us with the ability for more individual control over factors like gain and equalization of these two distinct entities.

Times Are Changing

We are also receiving an increasing number of audio tracks that offer music produced in stereo with another discrete channel for spoken word segments and/or certain effects. This, of course, allows us to present music in the full soundstage, as big and dynamic as possible, while spoken word has more point-source intelligibility and localization to the front podium or stage.

And there's surround sound, with at least five separate full-range audio channels and a discrete subwoofer channel. Surround tracks work especially well for us if they're recorded on a Tascam DA-88 eight-track recorder. In playback, each individual channel can be routed through the mixing console to the appropriate loudspeakers. I've found recordings done this way to be easily and accurately controlled, even while adding live voiceovers to the center channel.

A hot new item we've recently seen in production suites is 360 Systems' TCR4 and TCR8 hard disk recorders. They provide four or eight tracks of 24-bit digital audio, plus complete timecode implementation and large storage capacity with removable, high-density disks for multiple recording capability. (Also viable for playback applications, we're thinking about adding at least one of these units in the near future.)

Certain computer-literate types have been known to employ software/hardware

combinations to achieve this type of capability, recording everything to hard disk as desired. We've also found audio tracks produced in this manner work quite well, providing that the sound card in the computer is a quality component.

Sometimes more simple solutions work best. And they offer us ways of improving the quality and impact of a client's audio production. For example, there are audio processors that produce surround sound from a standard stereo signal. The one we utilize is called the MTI-3 TriSonic Imager from Miles Technology. You give it any stereo input, it gives you true, pristine left, center, and right output, as well as stereo surround that's full-bandwidth.

The MTI-3 also includes discrete inputs for center and surround channels, allowing an unprocessed signal to be mixed and sent to those locations. This is valuable when a voiceover needs extra boost in the center channel to separate it and provide distinction from what's being produced in stereo.

Fixed Solutions

In the world of installed systems — let's use corporate boardrooms — AMX and Crestron have created wonderful automated control devices that allow virtually any audio and video playback source to be activated at the push of a button. The good news for everyone is that audio can be presented in virtually any produced format, assuming the playback system has been designed to accommodate it.

Certainly no one will be surprised when I mention that DVD is emerging as a popular choice in the upper echelons of boardrooms and theaters. We're also going to be implementing DVD as the technology evolves. An interesting development on this front that we've been keeping an eye on is the Digital Theater Audio Controller (DTAC), produced by IMAX and Sonics Associates. DTAC can control a wide range of hardware- and software-based technolo-

gies, including film projectors, DVD players, CDs, cassettes, DA-88, and a host of other playback devices.

In a DTAC-based system, DVD supplies super-clean, compression-free digital audio to all channels of the sound reinforcement system. Entrance music and voiceovers can be easily programmed to loop for the length desired, and DVD audio can be tightly locked to film or video source for digital-quality surround sound.

DTAC also stores pre-programmed emergency announcements that can be inserted at any point during any event. Program set lists can be assembled simply from the different sources controlled by DTAC, and scheduled for automated playback. This allows for the flexibility needed when assembling a large exhibit or an ever-changing corporate theater.

One thing is certain: We're able to provide better services to our clients as a result of all of these developments. Going further, the state of audio playback in the corporate realm has never been better. In fact, I can't wait to see how much better it gets on the production and playback sides. △

Pete Tidemann is head of sound reinforcement for Audio-Visual Film Group, a leading corporate audio-video company based in Minneapolis.

Buying a new digital recorder or workstation between now and September is sort of like buying a new turntable just before CD players came out.

September 24th, 1999. AES. New York City.

Significant new digital products

from Mackie Designs. D8B owners

will love 'em. So will most everybody else.

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If you need digital I/O for your computer. MOTU's new 308 delivers more than any other audio interface.

The 308 gives you three banks — 8 channels each — of optical S/PDIF, RCA S/PDIF and AES/EBU digital input and output.

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- 8 channels of RCA S/PDIF digital I/O (24-bit).
- 8 channels of AES/EBU digital I/O (24-bit).
- Word Clock In and Out.
- Adds 24 channels of digital I/O to a core 2408 or 1224 hard disk recording system.
- Expandable — connect up to three 308 rack I/Os to a PCI-324 audio card for 72 inputs & outputs.
- ASIO and Wave drivers — compatible with all major Macintosh and Windows audio software.
- Suggested US retail price: $695.

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