DIGITAL AUDIO SUITE PUTS RYERSON OUT IN FRONT

In February of this year, the Rogers Communications Centre at Ryerson Polytechnic University powered up its new Dolby Digital Audio Suite. The Dolby Digital Audio Suite enables the teaching of surround sound audio production for use in multi-channel environments.

This suite represents a real technological innovation and a genuine advantage for Ryerson students.

"This is an example of where we are clearly out in front, leading the industry," states Dr. Michael Murphy, Director of the Rogers Communications Centre. "This is very new and very innovative. There are very few places that are equipped to produce this type of thing, yet we have a facility to train people here now. Our graduates will be there in the months and years ahead, and it is clear that the industry is moving in this direction."

Mark Banbury in the Digital Audio Suite

Dolby Digital Audio or Dolby AC-3 Digital Surround Sound has been providing digital sound in movie theatres since 1992 and has been selected as the standard for HDTV (High Definition TV) in the United States. It is also becoming a standard for home theatre installations and will be utilized more and more in multimedia applications, music recording and on the internet. It is a perceptual digital audio coding technique which produces a true surround sound environment.

Tascam has been the primary audio partner with the Rogers Communications Centre since it opened. Murphy explains, "We have a long and excellent relationship with Tascam. We have about 50 DAT (Digital Audio Tape) machines in the building and we adopted their new digital multi-track format - DA-88 when it first came out. They have been maintaining leadership in these technology areas. . . As well, since Tascam has a wide range of equipment they were able to match our needs and stay within our budget point."

This technology and installation is so new, that there wasn't a template to follow when designing the Suite. The design called for cabling and patching together a host of equipment that had never before been used together. Murphy credits Mark Banbury, a faculty member in the School of Radio and Television Arts, as well as Don Smith of Broadcast Systems Engineering, for spending a lot of time surveying what others are doing with this technology and formulating a design and installation plan.

“The most rewarding thing of all is that after they had installed everything and turned it on, it worked! To someone like myself who has worked in analogue environments, an all-digital chain like this was somewhat mysterious," confides Murphy.

Not only was the equipment functional, but Murphy was also pleasantly surprised by the audio quality. "This is the cleanest facility. It just sounds great.”

Beyond the technical challenge of the digital studio design, there is the on-going challenge of teaching digital multi-channel mixing.

"Teaching a computer-based mixing console in a group setting is not for the faint-of-heart. An operator, who is using a system like this 5 days/week, 8 hours/day will pick-up a lot of subtleties of the equipment. We are teaching to students - a few hours here, a few hours there. We are dealing with a lot of new concepts. We are dealing with computer-based routing. So we really had to think this through from a teaching perspective and it's been quite a challenge.

"With digital audio, we have to worry much more about synchronization issues. Video people have had to deal with this for years with house sync and sending black burst all over the place, but that's now as important in an audio environment. You need all the pieces of equipment to synchronize to a common clock. We have had to first provide all of that infra-structure and then teach audio students about the whole idea of synchronization and this is something that is fairly foreign to them.

"Then we have to teach students about monitoring their audio - not with just a variety of speakers, but with a variety of numbers of speakers. We have to make sure mixes sound good throughout the spectrum from an analogue stereo environment, to Dolby ProLogic and to a full Dolby Digital AC-3 environment - with or without Sub-Woofers. And to add to that, when we collapse the mix, especially if it's music - does it still sound good on a car radio?

Monitoring now commands a lot more time to both teach and to do in a mix environment than it has in the past. We have to teach how to mix for this new environment and how to listen to a mix, and frankly that's something the whole industry is trying to figure out."

Murphy has high praise for the abilities of his students to understand the new concepts and technology and to incorporate the learning into their productions. Perhaps the students have the advantage of not having to unlearn things that are known those who have worked in analogue for years.

Murphy hopes that this new technology will be employed in a manner that rises above been a simple audio gimmick.

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Dr. Michael Murphy,
Academic Director of the Rogers Communications Centre.

He knows that it has the potential to greatly enhance the audience experience, but he believes this will be best achieved when the audio design is an integral part of the production from its earliest phases.

Murphy is also confident that some students will be on the vanguard of this.

"One of the exciting things about Ryerson and the RTA (Radio & Television Arts) program is that we have writers, producers and directors who will leave with a sense of what this technology can do and how to apply it in an artistic project."

The Dolby Digital Audio studio has opened up a whole new realm of exploration and research for the Rogers Communications Centre, its faculty, staff, and students. The future holds the promise of research into 3D spatial sound - sound that tracks with the camera as it cuts, zooms, pans and tilts.

Murphy concludes, "We are talking about a new generation of audio processing technology and computer based techniques to move the sound around in concert with the images." ○