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**THE BIGGEST IMPROVEMENT
D-CINEMA BRINGS
IS THE SOUND**

BY

JOHN F. ALLEN

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FIRST IN DIGITAL STEREO

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THE BIGGEST IMPROVEMENT D-CINEMA BRINGS IS THE SOUND

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As I am writing this, I have been watching the latest Blu-ray disk that has just arrived. It's one of my favorite films. The picture is sharp, the focus deep. The sound is so clear and beautiful, it's positively startling. I can imagine that the orchestra is right in front of me. The film is *SOUTH PACIFIC*, released in 1958 -- over 50 years ago. Of course this is not the only example of a major release of the period with spectacular sound. *WEST SIDE STORY* is another wonderful illustration. Having heard an original 70 MM print with 6-track stereo on one of my sound systems, I and the others present were stunned at the sound quality. It remains one of the most realistic and beautiful recordings I have ever heard in any sound format.

Sound engineers in Hollywood have been producing recordings of incredible quality for many decades, even before stereo long playing records were widely available. Obviously the microphones of 50 years ago were far better than perhaps anyone knew and certainly better than the loudspeakers of the time.

Until 1984, when I introduced digital sound to a commercial movie theatre, no audience had been able to hear the original soundtrack master. All motion picture soundtracks were analog copies of the original. True, 70 MM magnetic soundtracks were very high quality, but copies just the same and not as good as the original. When I first presented digital sound at the Century Plaza Theatre in 1984, we were playing the digital print master from the studio. The sound quality was so clear and beautiful it could bring tears to your eyes. Sadly, five years later when digital sound became available on 35 MM release prints, this amazing quality was missing. As good as the digital sound has been since 1989, the soundtracks have been compressed as much as 13 to 1.

Digital cinema brings audiences uncompressed sound recordings. For the first time the beauty and clarity that I have missed since 1984 are back forever for audiences to enjoy.

Many may not realize it, while the blemish-free image quality that D-Cinema delivers is not only important but a welcome relief from the scratches and dirt too often seen in 35 MM theatres, it is the uncompressed clones of the original soundtrack print masters now available in theatres that is the biggest improvement of all. One should also remember that the sound mixes themselves are digitally produced allowing for far more tracks and elements to be included but without the noise and distortion that would have occurred in the analog days.

How can exhibition be sure to take full advantage of this unprecedented sound quality? In my opinion several things are needed. Added up they mean a virtual reinvention of the way motion picture sound systems are designed, purchased, installed and maintained. Indeed one might even go so far as to suggest that one forget most of what one thinks they know about these systems and start over.

To begin with, most of the speaker systems we find in today's theatres are simply too small. Given a casual look at today's speakers and one readily sees that the speaker systems can't even approach the air moving capability of real music. So the speakers need to be much bigger. Next we need to take a hard look at the power amplifiers. There is simply no substitute for a large and robust power supply. The sudden peaks of real sound cannot be rendered without large, heavy power transformers and lots of storage capacity in the amplifier's power supply.

Another area that needs to be rethought is acoustics. In recent years the acoustics of theatres have become too dead -- so dead that one feels like they are listening to movies outdoors. This has been done to improve dialog intelligibility. Problems understanding the words are mostly self inflicted, typically brought on by inadequate speakers but even more by improper equalization. This last item is the most difficult to fix. Because there is no measurement system, except trained ears, that measures what something sounds like, technicians are stuck with pink noise and real-time-analyzers. Such methods are not only unlikely to yield the best results, they often cause technicians to over-equalize and as a result simply crush sound quality.

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John F. Allen (hps4000.com) is the founder and president of High Performance Stereo in Newton, Mass. In addition, he has served as the sound director of the Boston Ballet. He is also the inventor of the HPS-4000® motion picture sound system and in 1984 was the first to bring digital sound to the cinema. John Allen can be reached by E-mail at johnfallen@hps4000.com.