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Digital Sound in Movie
Theatres, Few Audiences
Really Get to Hear It's Full
Potential**

Movie Makers Get An A+, Exhibition A C-

BY

JOHN F. ALLEN

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FIRST IN DIGITAL STEREO

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After Twenty Years of Digital Sound in Movie Theatres, Few Audiences Really Get to Hear It's Full Potential

Movie Makers Get An A+, Exhibition A C-

**BY
JOHN F. ALLEN**

In 1979 digital sound was still in its infancy. Consumers were just beginning to become acquainted with the digital compact disk. However, it soon became apparent to anyone paying attention that the dramatic improvement in sound quality would be so embraced by the public that they would all but drop further additions to their LP record libraries and switch over to CD's at an amazing speed. I remember my own mother's reaction to her first CD, "I will never buy another LP" she said.

She was not alone. Sure the convenience of the smaller disk was a welcome improvement, but it was the beautiful noise-free sound that made the CD such a success and made the word "digital" synonymous with unexcelled quality.

In 1979 motion picture sound was in a state of transition -- grudgingly of course. Dolby had been gaining ground with their Dolby Stereo optical sound format, but still some 80 percent of the films were released in stone-age mono sound. A surprising outgrowth of the introduction of Dolby's noise reduction technology to the motion picture business was an increase of films released in 70 millimeter. While this format had been around for decades, it soon became apparent that Dolby's noise reduction along with their cinema processors (especially everyone's favorite, the CP-200 which was then being introduced) provided an added quality to not only the theatre presentations, but to the mixes themselves. Noise reduction allowed for far more complicated mixes because noise reduction made it possible to use far more tracks. Films such as SUPERMAN, STAR

WARS and, of course, APOCALYPSE NOW were released with absolutely astonishing sound.

Unfortunately the sound systems in the theatres of 1979 lacked the performance needed to play these and other films the way they deserved. As I have written in previous articles, this situation is what prompted me to completely change the direction of my life when I decided to design and build motion picture sound systems with the power and dynamic range truly required for modern sound. Even though the CD was still a bit of a novelty for some, it was clear that the future of recorded sound was going to be digital. So one of the first decisions I made was that all the sound systems I designed would be digital ready.

Of course, I was only one of many who were thinking of digital sound for films. The engineers at Disney were constantly looking for ways to improve the sound and the reliability of the theatres at Disneyland and Disneyworld. These theatres run 365 days a year like any other, but they run the same short films over and over for years. Replacing sprocketed tape players and analog magnetic soundtracks with robust digital recordings made sense.

In my introduction to this film, I told the audience that we were doing something so advanced, it almost couldn't be done. I wasn't kidding.

Digital recorders in 1979 were difficult to work with. Most digital recordings were done on video tape recorders using special analog to digital converters that would format the data into a video stream. Soundstream and 3M soon introduced dedicated digital sound recorders. Disney chose to use the 3M machines and made the first motion picture soundtracks ever

recorded in a digital format. These first recordings were for films shown in their parks.

In 1982, after years of complaints about the outdated sound quality of Walt Disney's classic masterpiece FANTASIA, it was decided to record an entirely new digital soundtrack for the 1940 film. That year the film was released with the new soundtrack but only in analog formats. Several theatres played 35 millimeter prints with four-track magnetic sound.

When multitrack digital audio tape recorders became available, multitrack recording became much easier and more reliable. Glenn Glen Sound chose the Sony 3324 24-track digital machines to produce their own film, DIGITAL DREAM. This was an ambitious project for a sound facility. But they believed that digital sound would bring so much to

film sound that they made this promotional film designed not only to show some of the possibilities, but also to identify their company with this leading edge technology. At his Oasis Recording Studios, Giorgio Moroder also used the 3324 to record an all digital soundtrack for Fritz Lang's 1928 silent film METROPOLIS, using a complete score of contemporary music.

In 1984 it was my hope that the exhibition industry would truly embrace the potential of digital soundtracks and install sound systems big and powerful enough to fully play them. In my opinion, this has still not happened.

Both of these films were shown at the Academy of Motion Pictures Arts and Sciences in 1984. Coincidentally Plitt Theatres engaged our services in 1984 to design a new sound system for their flagship Century Plaza Theatre in Los Angeles. This installation was designed to play any sound format that the CP-200 could handle as well as digital through a special six channel input patch bay. (See THE ULTIMATE SYSTEM? in the January 1985 issue of BOXOFFICE. This article can also be downloaded at

www.hps4000.com/pages/install/the_ultimate_system.pdf.) To show off this new sound system, Ed Plitt decided to hold a demonstration for an invited industry-only audience. Upon learning of the existence of DIGITAL DREAM and Moroder's newly scored METROPOLIS, I arranged to play these films at the Century Plaza. Glenn Glen Sound and The Record Plant provided the 600 pound Sony 3324 as well as a huge amount of technical support for this presentation that took place on December 6, 1984.

Unfortunately one of the challenges that had yet to be entirely overcome was keeping the 3324 digital machine in sync with the picture. By the time we were ready for the technical rehearsal it became clear that the synchronizer could not be relied upon. After taking as long as a minute to lock the picture and sound together, it would often fail to keep things together for more than a short period. So we decided to only run METROPOLIS in digital sound because there were no sync points in the film and the 3324 could be manually synchronized with the picture. Moroder's engineer Dave Concors handled the job brilliantly. (See Figure 1) In my introduction to this film, I told the audience that we were doing something so advanced, it almost couldn't be done. I wasn't kidding. We ran DIGITAL DREAM with a Dolby "A" optical stereo soundtrack that convincingly demonstrated the benefits of digital recording and mixing even if the ultimate release would still be in analog. In a sense, the synchronizer trouble turned out to be a sort of lucky break in that it forced us to demonstrate this important point.

It's interesting to recall just how fast these technologies were developing at the time. Late in 1985 we repeated these digital presentations at the Century Plaza at the request of the Society of Motion Picture and Television Engineers for their annual convention. Again we carried the 600 pound 3324 up and down the stairs. By that time Glenn Glen's chief engineer Dana Wood had solved the synchronization problem. Not only did everything stay synchronized, we could now start and stop anytime we wanted and reestablish lock almost immediately.



Figure 1. The Sony 3324 24-track digital tape recorder

Following the success of our December, 1984 program, Ed Plitt and I decided to enlist the help of the Walt Disney Company to play FANTASIA in digital sound. Nelson Meacham had been the project manager during the digital recording sessions two years before. Fortunately he was available to help bring this event to fruition. Using the 1982 digital master, we opened FANTASIA at the Century Plaza Theatre in digital stereo on February 8, 1985. This marked the first time a feature film was presented to the public in a commercial theatre in digital sound. This presentation helped speed the development of at least six different digital soundtrack format technologies. Of those, three of them, Dolby Digital, DTS and Sony's SDDS have survived. (See PRESENTING DIGITAL STEREO in the July 1985 issue of BOXOFFICE. This article can also be downloaded at www.hps4000.com/pages/digital/presenting_digital_stereo.pdf.)

In 1984 it was my hope that the exhibition industry would truly embrace the potential of digital soundtracks and install sound systems big and powerful enough to fully play them. In my opinion, this has still not happened. Credit is deserved for the installation of digital stereo sound systems in virtually every theatre, finally putting the days of monophonic sound behind us forever. But as I have lamented before in previous articles, too many theatres today have sound systems that -- bi-amped, tri-amped, baffle walls or not -- are simply too small. I would give these presentations a C-.

On the bright side, digital sound has revolutionized the creation of motion picture sound. Today we are treated to film after film with superb recordings. Music can sound like a live orchestra playing in the theatre, sound effects are so real that they can create unprecedented connections to the audiences. Twenty-five years ago we had only rare 70 MM releases with six discrete channels of sound. Even more infrequent were 70 MM films with stereo surrounds. Today virtually all films are released with six or eight discrete channels -- including stereo surrounds. The sound quality available from today's films is truly wonderful. I would give the sound editors and mixers an A+.

Looking back it's hard to believe that I have been writing for BOXOFFICE for a quarter of a century. Upon reaching such a milestone I would like to once again express my appreciation to the staff of BOXOFFICE magazine, the three owners and the four editors I have had the pleasure of working with. During this time I have held firm in my belief that superior sound will sell more movie tickets. I have certainly seen it happen over and over again around the world when such quality has been installed. At a time when motion pictures are facing a kind of devaluation by becoming easier and cheaper to see on small screens, I shall continue to work and write in anticipation of the day when anyone thinking of seeing a film in a real movie theatre will know that they are in for a sensational and worthwhile experience -- something at a level they won't get at home or anywhere else.

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John F. Allen is the founder and president of High Performance Stereo in Newton, Mass. In addition, he serves 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. Mr. Allen's 26 year series of articles written for BOXOFFICE are available for download at <http://www.hps4000.com>.