

John F. Allen

Digital Sound Pioneer

When it comes to finding new ways to solve old problems, Boston-based sound engineer, John Allen, has a long track record of doing just that. Years before founding High Performance Stereo, and developing the HPS-4000® motion picture sound systems, he'd invented a real-time audio-tape duplication system at Boston's WGBH that was capable of simultaneously creating different copies with different noise-reduction systems. In 1976, he built Boston's biggest outdoor stereo for Arthur Fiedler and

the Boston Pops on the Charles River Esplanade. The orchestra's Fourth of July 1976 bicentennial concert, held there, went down in the *Guinness Book Of Records* as the largest concert music audience in history. Allen was at the controls and, for his work, was duly awarded a special commendation by the then-U.S. president, Gerald R. Ford.

THE FUTURE OF CINEMA SOUND

Allen's innovations for movie theatre sound systems began in 1980, with the first use of powerful modern three- and four-way fully-

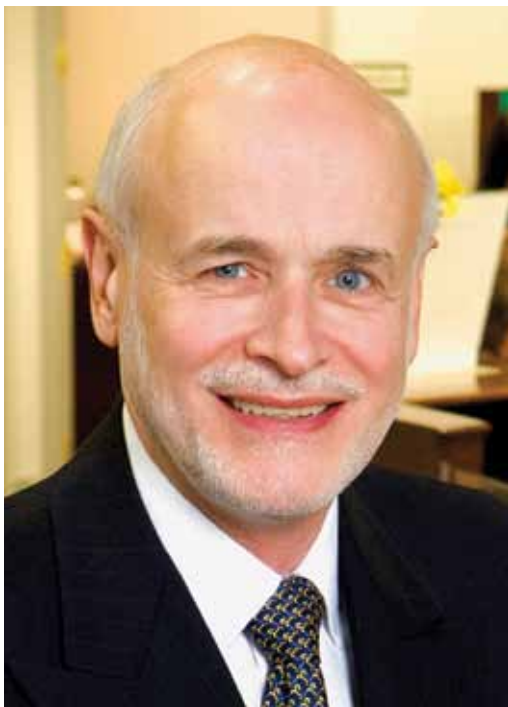
horn-loaded speaker systems. Equally important was his development of the first successful mathematical formulae for precisely locating surround speakers for extremely uniform coverage with a complete lack of single-speaker-localisation. By 1982, he was the first to use computers to design cinema sound systems.

However, perhaps the most important advance brought to the world of cinema sound came during 1984-85 when introducing the first, ground-breaking, presentations of motion picture features with digital sound, held at the Plitt Century Plaza Theatre in Los Angeles. Plitt executive VP, Edward M. Plitt, wanted the best sound system for his flagship theatre and so hired Allen to design and build it,

While many in our industry will recall the introduction year of digital sound in cinemas as being 1992, it was actually around seven years earlier in 1985. **screentrade** acknowledges its pioneer, High Performance Stereo's **John Allen**, on the 30th anniversary of the phenomenon.

before unleashing it at an invitation-only event. How best to showcase the system? John's answer was: 'digital sound'. However, the problem was that it couldn't be done – except maybe for 20 minutes only, and with \$150k of special equipment, but certainly not for an entire feature.

Still, the challenge was to offer the audience a preview of the digital sound future using a custom sound system with the acoustic power of no fewer than nine symphony orchestras. Allen contacted Tom Kobayashi, President of Glen Glenn Sound, who, having experimented with digital soundtracks, agreed to loan the \$120k, 600lb digital tape-recorder to run a 20-minute reel at the Plitt. Giorgio Moroder would also loan his personal answer print and digital sound print master for



his release of Fritz Lang's 1928 silent film, *Metropolis*. Despite the maximum digital playing time and achieving sound-synchronisation only after a minute, the programme was a complete success and on December 6, 1984, an industry audience of 350 heard a digital sound demo on a [sound] system that one LA paper described as: "the best in the area... and perhaps in the country."

The sound quality of the digital recordings, played for the first time over such a system, proved so impressive that Ed Plitt immediately asked Allen: "Now what?". The response



was simple enough: to play an entire feature in full digital stereo, something never done before – indeed, who knew how to do it? At that time, most were predicting a further decade before digital sound would find its way into movie theatres.

FULL DIGITAL STEREO SOUND


Luckily, Disney's 1940 film *Fantasia* was weeks away from its scheduled re-release and, two years previously, the studio had commissioned Irwin Kostal to re-record the entire film using digital recorders. Although it had never been used outside the re-recording stage, *Fantasia*, like *Metropolis*, used a digital stereo print master.

Plitt and Allen agreed *Fantasia* to be the ideal film for introducing digital sound to movie-goers, but the unanswered question remained: how to reliably offer regular commercial screenings of a full-length feature with digital sound? Allen called-up Disney sound engineer, Nelson Meacham, and outlined a potential solution. To achieve a two-hour running time without projector changeovers, the *Fantasia* digital print master could be copied onto a VHS cassette in the PCM-F1 digital sound-format with the time-code recorded on the audio track to synchronise the projector. With only weeks to pull it all together, Allen, Meacham *et. al.* assembled, tested and installed all the necessary equipment, while, from Dolby, was loaned a new prototype stereo-decoder-card – actually, just one of two in existence.

Fantasia opened at the Century Plaza in full digital stereo on February 8, 1985, the audience reaction being beyond all expectation and all 1,500-seats totally sold-out for several performances. Some audience-members, so touched by the sound experience, remained in their seats for up to 10 minutes after the show. Furthermore, the world's first-ever digital sound feature presentation grossed twice the next highest-grossing theatre, five times the national average, and played four times longer. A record by any standard.

DIGITAL SOUNDTRACKS ON PRINTS

Of necessity, these two historic events were executed with studio-like double systems and now needed was a way to marry a digital soundtrack to a standard release print. While the digital *Fantasia* still ran, Kodak contacted Allen to ask how they might help, the reply being 'to put it on the print'. Kodak was unsure, but went to work so that, in five years, the technology and new film stocks were launched together with four different digital soundtrack formats. For sure, the digital revolution we see as here today was indeed on its way.

Since 1985, Allen had introduced further innovations, including 'All Seats Hear Stereo™', which provided full-stereo coverage throughout the theatre and not just for those seated in the middle. 

For more on Allen's 2015 cinema sound systems:
www.hps4000.com

SONIC SELL-OUT:
The world's first ever digital sound performance in a theatre – enabled by Allen, in 1985 – broke several important records