



Previously we said that 'Stereo Sound' helped bring the musicians into our room while 'Surround Sound' transported us to where the musicians were. So, what's the big deal? What difference does it make whether they are here or we are there? Well, it's only as different as watching a well made documentary on Disneyland and actually being there! The purpose of surround sound is to bring a kind of realism into our listening experience, which makes us feel completely transported into another reality.

Stereo sound from two loudspeakers can be very gratifying. But with two more speakers and some added circuitry, surround sound can be dramatically more spacious and true to life. People have been experimenting for the past quarter of a century with sound which has an enveloping effect. In the mid-'70s the foundation was laid for two major classes of surround sound that are popular today — 'Concert Hall Ambience' for music at home and 'Dolby Stereo' for video programmes and cinemas.

Today let's have a look at cinema sound, for I presume that for most of us, our first exposure to an enveloping sound field must have been at the cinema. Watch the film *Jurassic Park* at Sterling Cinema, Bombay, for a total experience of truly dynamic sound. Believe me, the growl of the 'dinos' will get to your stomach. Dolby Laboratories, USA, revolutionized cinema sound when they invented a special encoding process while recording sound on film. The encoded sound is then played back, using special decoders called 'Dolby Cinema Processors'. The decoded sound consists of four separate channels of sound.

Sound, a living experience

The Dolby processor helps to create the right sound effect, writes SANJIV MALVI

The left, centre and right channels — these are played back on speakers placed behind the screen. The fourth is the surround channel — this is played back through speakers placed all around the cinema hall.

Today's state of the art processors have evolved through years of experience. They provide a very clean sound coupled with a very stable and accurate sound image. If for example a truck moves across the screen from left to right, these processors will enable the sound effect to travel along with the truck, with the automatic switching on and off of the various sound channels. The

function of a Dolby cinema processor is akin to that of a war time general marshalling his troops. His job being to strategically send his troops at the right place, at the right time in sufficient strength. He bases his moves on the intelligence data he receives. So also the Dolby processor receives its intelligence data in the form of previously encoded signals on the film's sound track. This data is decoded and then the various sound signals are sent accordingly to the required channels. The result of this smart manoeuvre is the creation of a true to life sound field. If the sounds associated with

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SOUND

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the scene came to us just from the front of the screen, from one speaker, the entire effectivity of the scene would be flattened and washed out. But, imagine for instance the sound of the wind all around us — on the sides, back and front, the sound of thunder came from the left and then moved to the right. Our involvement in the scene would be greatly heightened.

The Dolby process not only helps to create a magically moving sound field, it reduces spurious noises which otherwise make dialogues unintelligible. The kind of 'bass' and 'treble' we can hear is difficult to forget. Remember the space ship moving from back to front in the film *Star Wars*, almost shaking us out of our seats. The Dolby process also makes it possible for low level background sounds like that of a gentle breeze, of the waves at a distance, far away traffic, birds chirping on trees, to be reproduced authentically. All this goes a long way to increase the realism associated with a scene on screen. There are other modes of enhancing cinema sound, but they are poor country cousins of the Dolby process.

The world over there are over 4,000 films which have had their sound track recorded using the Dolby technology. For a film director, this recording process is like a chisel is to sculptor. He can literally carve out the sound field he wants his audience to experience. If the Dolby technology is not used while recording the film's sound track, the play back of it in a cinema will also be like any ordinary film, the processor in the cinema hall becomes redundant. The heart of a Dolby Stereo Cinema system is the 'Processor'. The technology of this piece of equipment is the patented property of Dolby Laboratories. The rest of the links in the audio chain, like amplifiers, speakers etc have to be of a very high standard. To incorporate a sound system of such a high quality is not only expensive but very complex. All over the world there are only over 18,000 theatres equipped with such a sound system. In India we have the Sterling cinema in Bombay, Priya in Delhi and one more is coming up — under the stewardship of yours truly. More about 'Concert Hall Ambience' next time.