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Subject: 3D Sound

Posted by [Hannah](#) on Mon, 22 Aug 2011 07:54:22 GMT

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I stumbled into a video in the internet portraying a 3D sound. I can't distinguish how the sound became 3D so I would like to ask here what is 3D sound? It states in the video that it is different from surround so how does it differ?

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Subject: Re: 3D Sound

Posted by [Wayne Parham](#) on Mon, 22 Aug 2011 13:16:02 GMT

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It's a phasing trick, to give an impression of improved stereo imaging. Carver used to do this, giving it the name "sonic holography". The Carver technique puts a delayed and equalized signal from the right channel at the left loudspeaker to cancel the signal from the right loudspeaker at the listener's left ear (and vice versa).

I personally do not care much for these kinds of processors. I think speaker placement and directivity are more effective, since they are acoustic solutions to an acoustic problem, e.g. unwanted reflections and room interactions. I prefer to have a good quality source, amplification and loudspeakers. Stick with the basics.

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Subject: Re: 3D Sound

Posted by [Hannah](#) on Fri, 26 Aug 2011 07:38:13 GMT

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So where do we need to use 3D sound if this is not necessary inside our homes. I guess that this kind of setup will also cost me unnecessary expenses wherein I could get the same kind of sound with good quality speakers.

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Subject: Re: 3D Sound

Posted by [audioaudio90](#) on Sun, 04 Sep 2011 01:04:59 GMT

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Hannah wrote on Fri, 26 August 2011 03:38 So where do we need to use 3D sound if this is not necessary inside our homes. I guess that this kind of setup will also cost me unnecessary expenses wherein I could get the same kind of sound with good quality speakers.

I don't think we do need to use 3D sound. I think it's just a marketing gimmick so we spend more money. Of course, I think that about 3D TVs too.

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Subject: Re: 3D Sound  
Posted by [Equinom](#) on Wed, 07 Sep 2011 15:00:13 GMT  
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Very interesting. I have also been wondering what exactly 3D sound could be. I know what 3D is in terms of the TV itself, but not with a speaker system. Thanks for the explanation!

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Subject: Re: 3D Sound  
Posted by [thannytoes](#) on Fri, 28 Oct 2011 19:48:54 GMT  
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I've been running my Carver C-9 Sonic Hologram Generator for awhile. You MUST set up your speakers correctly in order to get a correct effect. I have my tower speakers only 2" apart! It sounds amazing, I'll never go back to stereo.

Also, check out the next generation of this technology:  
[www.ambiophonics.org](http://www.ambiophonics.org)

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Subject: Re: 3D Sound  
Posted by [Wayne Parham](#) on Sat, 29 Oct 2011 00:57:24 GMT  
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What source material do you use? I mean, I know the Carver is synthesized because I have one too, a CT-17. It can be put into one of several modes. But as for binaural, do you seek out recordings made specifically for this approach? Or do you always use a processor?

Honestly, I always leave my Carver in the straight-through mode. I never turn on the synthesizer modes. They're neat, and can make a cool effect. But I just prefer the signals to be unmodified.

The only thing I don't like about my CT-17 is its goofy dual tape interface. For some reason, they chose a daisy-chain approach instead of the more straightforward A-B setup. I think Bob must've smoked his breakfast that morning. But it's the best multi-channel audio/video preamp/processor of its day, in my opinion. In general, I like the way Bob Carver thinks, and I like his products too.

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Subject: Re: 3D Sound  
Posted by [thannytoes](#) on Sat, 29 Oct 2011 01:25:54 GMT  
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You don't need any special recordings to achieve the effect, and I always leave the processor on. Mine has 3 buttons on the front: Injection Ratio (Normal/Theoretical); Listening Aperture

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(Narrow/Wide); On/Off. I leave them all on, all the time.

Try this: Put your speakers together, 2 inches apart, facing strait-forward for the time-being. Turn on the Holography and take a listen. After that, you can carefully toe the speakers in. The angle must be PERFECT, or you will get a lop-sided effect.

Of course, you don't need to use the synthesizer modes.

Let me know how it turns out!

Here is the C-9 manual if you want a thorough explanation.

<http://thecarversite.com/manuals/files-manuals/Carver%20C-9%20owner%20manual.pdf>

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Subject: Re: 3D Sound

Posted by [Wayne Parham](#) on Sat, 29 Oct 2011 01:55:05 GMT

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Oh, yes, I know. It's described in the Carver patent.

I have the same settings in my processor, and I've tried the setup. So I know what you are experiencing - a sort of headphone-like imaging from loudspeakers. It's very good, but the benefits are limited to an extremely small listening position. Anywhere else, for all other listeners, it is somewhat artificial sounding. Like you said, the angles have to be perfect, or the whole thing falls apart. You must be directly in the "special spot" for this approach to work. I kind of don't like that.

This is how I prefer to setup my system:

High-Fidelity Uniform, the basic approach

Speaker placement and wavefront launch, visualization of wavefront propagation in the room

Room modes, multisubs and flanking subs, for modal smoothing below 200Hz

Surround speaker placement, for ambiance from the sides and rearsMy approach also gives excellent imaging, and provides a much wider "sweet spot". The listening area is truly as wide as the couch. I like my front channels to be very directional with a high ratio of direct-to-reflected sound. The surrounds I like just the opposite. In fact, I found that pointing them at a wall and reflected back towards the listeners works great. Point the (side and rear) surrounds so the angle of incidence directs the reflection generally towards the listening area.

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Subject: Re: 3D Sound

Posted by [thannytoes](#) on Sat, 29 Oct 2011 02:10:38 GMT

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Yes, it's true, you must be in the sweet spot. This kind of setup would not be good if you have multiple people in a room listening or watching a movie.

I have a small dedicated listening room, so I don't have those concerns.

Just for fun, you should grab two of your surround speakers and set them up for holography and see what you think. Also, it's not really producing an effect; it's correcting the imaging-flaw inherent in regular stereo playback. You can read more about it in the manual (linked in my last post).

As I said earlier, I like it so much, I no longer listen in stereo.

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Subject: Re: 3D Sound

Posted by [Wayne Parham](#) on Sat, 29 Oct 2011 03:13:40 GMT

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I've done that. In fact, I did it for a whole summer one year when I was young. I really liked it, because it's pretty much a transformation of the stereo speakers into overgrown headphones. Cool effect. But like I said, it limits the listening spot to the span between the speakers, in a very narrow region where the path lengths are the same. Pretty much a one trick pony.

Back then, I tried both binaural recordings and regular "store bought" material. I didn't care much for the binaural recordings, but that may have been more due to the very limited content as it was with the quality and effect. There just wasn't much recorded in binaural back then, and I don't see much more now. But really, that didn't matter much - the cool imaging trick happens when you just have the speakers flanking you in fairly close proximity so that the right speaker is mostly in the right ear and vice versa. Positioned that way, the left ear gets much more volume from the left speaker, and little from the right. Same for the right speaker and right ear. Neat trick, as I said, it's basically headphones that you don't have to wear.

I much prefer the setup I described in my last post. It's much more attractive to me, because it gives me the same effect over a wider area. It also provides two other benefits, modal smoothing and purity of wavefront launch. These are acoustic issues, not psychoacoustic, so there are measurable improvements using this approach.

When I place speakers as I've described, I enjoy the same great imaging over a much wider area, and it also provides smoother response through the modal region. This is a pretty big deal, since most speakers (or I should say speakers in rooms) suffer huge response anomalies from the midrange down. The fundamentals of pretty much every instrument are fractured, unless techniques like those I've described are used.

Of course, you can do some of that (like flanking subs) even with a binaural arrangement like you described. But I must say that I wouldn't go back to that, because I like being able to move a little bit without having imaging fall apart. I have been using this arrangement for about 30 years now, starting with my constant directivity cornerhorns in 1980. While I've experimented with many other approaches over the years, I've never found anything that keeps me coming back like this arrangement.

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