

SONIC BOOM

*Todd-AO/Soundelux and Dolby Laboratories
Experiment With Sonic Whole Overhead Sound*

by Annlee Ellingson

It's a cool Friday night in September. You decide to head out to your local theatre to see a movie—a Mel Gibson movie. It's an earnest war movie about a family man, a religious man, who must explain to his little girl why he must go to war in an exotic land far away and kill other men.

But then the fighting begins, and you're suddenly thrust into the middle of combat. It's the Battle of Ia Drang in Vietnam, and the sound of beating helicopter blades descends from the sky, bullets whiz dangerously close overhead, and mortar rounds explode above.

This was the experience of moviegoers in Tempe, Ariz. who were the first public audience to encounter a channel of sound positioned directly overhead. It was the result of an experiment by Todd-AO/Soundelux, Dolby Laboratories and Randall Wallace, the director of "We Were Soldiers," who remixed and re-released the Paramount film, wedding a new overhead speaker system, comprised of a four-speaker array, with Dolby's Digital Surround EX system.

"While working on the sound mix for 'We Were Soldiers,' I wished out loud for some way to give the audience the full impact of helicopters blasting overhead, artillery shells crashing down, jets screaming by, bullets whizzing through the air directly above," Wallace says. "Lon Bender, the film's sound designer, told me that he and other sound specialists had been thinking along similar lines with other projects, but no major feature films had ever pulled together the technology on a practical level."

Wallace's film was particularly suited to the project, indicates David Gray, VP of Hollywood film at Dolby. "'We Were Soldiers' is a very intense movie, and it's done extremely well technically speaking," he says. "There were a lot of places to use the overhead channel specifically because there were so many helicopters, mortar rounds and large landscapes and vistas that it gave the sound people a real big palette to work with."

The effect is "significantly more engulfing or surrounding," Gray continues. "There's one scene in there where the heli-

copter hovers for a minute, and the picture is inside the helicopter as it's hovering, so they have the actual motor blades [beating overhead]. It was, in my opinion, extremely realistic of what it would be like to be in the interior of one of these helicopters.

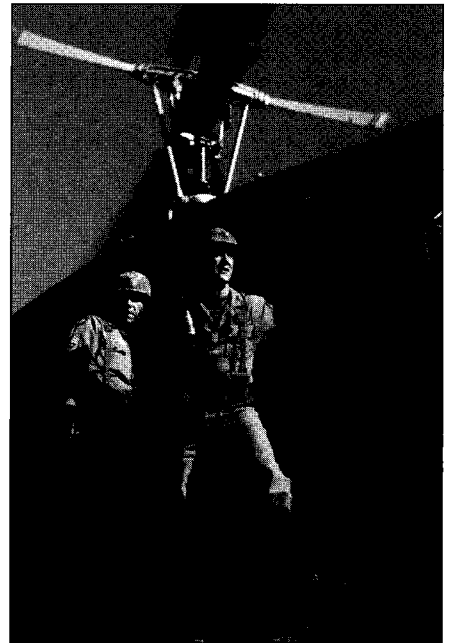
"[But] forget the spot effects for a second—in other words, helicopters hovering over your head are very, very effective, and I call those more specific spot-type effects. The other advantage is when you're just using the surround channels for ambience. Now with the channel over your head as well, you can completely cover the audience and make them feel like they're in the middle of this field.... Now you have all planes covered of the acoustic space."

"The biggest element that we're trying to achieve with the Sonic Whole system is to surprise, in an original way, the audience and to take their experience a step further than they imagined it would be when they first entered the theatre," adds Bender, president of Liberty Livewire's audio division, of which Todd-AO/Soundelux is a part. "Even with the sound design as excellent as it is on all movies, the limitations of the theatre and the speaker locations in the theatre are a black-arts area that everyone's been excited about for years and is always trying to push the envelope a little further. And this system gives people that 'Wow, I wasn't expecting that' experience."

The effect worked, as Bender reports that audience members in Tempe instinctually looked up at the ceiling to see from where the sound was emanating. "You sort of got this duck routine, which only seems right that you have people ducking when you have a helicopter coming [overhead]," he says. "And that's exactly what we wanted to have happen."

Gray attributes some of this reaction to the particular mix on the film. "[One] thing that happens whenever there's something new is the tendency to make sure you use it so everybody notices it," he says. "And then as time goes on, everybody—mixers, sound editors—[use it] more subtly, or people just get more experienced with it."

"Remember the original stereo records?" he further analogizes. "It was like ping pong balls with instruments and music popping back and forth between



"We Were Soldiers" was remixed with an overhead channel for an effect that Dolby's David Gray calls "extremely realistic."

the left and right because everybody wanted to make sure that you realized that this was *stereo*. In any format that's been released, there's a little bit of that in the first one. 'We Were Soldiers' didn't do that [explicitly], but there are a couple of locations where [an effect] was put there for a purpose, and everybody wanted everybody to understand that it was there."

Both Gray and Bender expect more Sonic Whole Overhead Sound installations to take place in the future. In fact, Gray hints, "We are in the process of doing another show. It will release, I believe, sometime after the first of the year. This would be an original release. And we're hoping for two theatres—a theatre in Los Angeles and a theatre in New York at the very least."

But there are physical logistics at the theatre level that could curb the sound system's widespread adaptation in the exhibition industry. "It's not the easiest channel in the world to install," Gray admits.

Among the challenges is the projector sightline. "Some theatres have very little space from the ceiling down to where the

line of sight is from the projector across to projecting the image on the screen," Bender says. "So you have to have space on the ceiling to mount the speaker system."

In addition, the type of ceiling must be taken into account. In the Tempe theatre, "it had a drop ceiling," Gray says. "There were trusses above the drop ceiling to attach to. So you just take out a couple of ceiling tiles [and hang the speaker array]—it was pretty easy."

"The hanging of the speaker array is a big issue for a lot of theatres that might have a solid roof, and some of those theatres would not work for this," Bender adds.

The increasingly popular stadium seating could also prove challenging to the implementation of Sonic Whole Overhead Sound. "The first [rows] in a stadium might be 26 feet to the ceiling, but it's only 10 feet to the ceiling in the rear, so that's going to take a speaker array to cover that type of thing properly and evenly," Gray says.

"It's a very heavily raked environment, and once you get into a situation where the rake is more than about eight or nine percent, you start to have people in the upper rows, of course, much closer to the ceiling, and then you have an issue of distribution and reflection that can become a problem," Bender adds.

A final logistical challenge—the delivery of the track and its playback at the theatre—was easily remedied at the Tempe theatre by Dolby's Digital Surround EX system, which only uses seven of the eight tracks currently available. "The theory was that at some point in the future, we may want to use the additional channel," Gray says. "There were a number of options and a number of proposals of what it could be used for, so we made sure that it was in there so that we could use it in the future. And then the overhead channel, which was one of the ones that we had been playing with, we thought had the most 'wow' factor. And then 'We Were Soldiers' got really interested, and we just all got together and made it happen for the one theatre." DTS' disk-based system could be easily adapted for the overhead sound system as well.

But while "there's a number of issues from an installation standpoint that I think can be overcome," Gray says, "[Sonic Whole Overhead Sound] will proliferate. It will be a little slower than perhaps other things because of the installation issues, and I'm sure that there are some theatres in which it simply could not be done. But I think there's a lot of theatres built like the theatre in Tempe, and I think the stadiums will be workable. So that opens up a pretty large percentage of theatres that are available."

"Our goal is always to push the filmmaking experience forward in this entire industry," Bender concludes. "And that's what this does because it takes it and it enhances it further. The technologies that have been coming along allow for these things to happen." 