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**Hey Hollywood,
Not So Loud!**

BY

JOHN F. ALLEN

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Hey Hollywood, Not So Loud!

**BY
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Well, here goes. The subject of how loud movies are raises passions everywhere. Audiences can complain, mixers can complain, theatre owners can complain and yet we do seem to be getting louder and louder movies. Filmmakers do not want to be told how loud their movies should be. It is an artistic decision. It can also be a marketing decision, if we are going to be honest about it. Frankly, this is probably my least favorite topic. Everyone has an opinion. Yet few seem to fully grasp how complex the subject actually is.

But let's back up a bit. It is a complex situation and we need to understand a few things. First, when we hear a film that is too loud in a theatre we need to differentiate between how loud movies are made and how loud they are played. After all there are faders -- level controls -- at both ends of the process. We need to ask whether the film recorded too loud, being played too loud or both? Because we are probably in a theatre, it's best to start there. How do we know if a film is being played at the correct level? Generally we need only to listen to the dialog. Dialog level is basically the same in every film. Maybe I'm optimistic, but I don't think we need to be in this business too long before we know what that level is. I have been impressed with the number of theatre people who can get it right.

Unfortunately, theatre faders are often set low enough to stop complaints about loud trailers and left there for the features. This means that the features are played so low that as far as I am concerned it's not even worth watching movies in theatres anymore. If all through the trailers the faders are left at the proper feature setting, then the audiences are simply going to suffer the abuse forced on them by trailer makers who still don't know any better. We will not only get complaints, we will deserve them.

Once we know that we are playing a feature at the correct level, irrespective of the fader setting this requires, we can form an opinion about the overall loudness of the mix. Easy, right? Well, yes and no. This is sound. Nothing is that simple.

We first have to take a hard look at the movie theatre sound systems. Even if movies were never recorded too loud, a large number of them are way too loud for many of the sound

systems in today's movie theatres. These systems are too often too small, with inadequate loudspeakers and insufficient amplifier power and, in addition, are poorly calibrated. Any one of these deficiencies alone would be bad enough. But added together in a world with the dynamic range of both Dolby SR and especially digital soundtracks, we have a hopeless situation.

When many of today's films are played in these theatres, the result is often excessive distortion. Distortion makes sound seem louder. A clean system could play an action movie with lots of loud scenes and have no complaints from the audience. Indeed the audience could have a great show and an unforgettable experience. A distorting system playing the same film at the same level will seem to be louder even though it isn't. That, and the irritation caused by the distortion itself, will likely result in complaints of excessive loudness. The same effect can result from a poorly calibrated system that exhibits a shrill sound. This particular problem is all too common in movie theatres.

So even if we get to a point where there is never a movie that is too loud, one should not underestimate the contributing factor of sound system deficiencies and distortion. Much of the cause of loudness complaints has been and remains squarely with the sound systems in the theatres.

What has changed is the number of peak level sounds and the average level of the background sounds and the effects. This means that films are indeed getting louder.

That having been said, there certainly are theatres that have sound equipment without these weaknesses, that have crystal clear properly aligned systems, that have plenty of headroom -- and therefore never distort. So when we hear complaints that movies are too loud in these theatres, then perhaps they simply are too loud.

Although listening to the dialog level is still the best way to know if a film is being played at the correct level in the theatre, this is becoming harder to judge. The sound of the dialog is becoming more stylized in more films. This is not a bad thing. Among the ways characters are defined are the sounds of their voices. Adding reverberation is common, perhaps a certain equalization or sound effect. But when we are listening to stylized voices, it can sometimes be more difficult to judge dialog level. In fact the dialog may sound louder in some cases because it is meant to be louder.

As we know, motion picture soundtracks are made of three basic elements: music, sound effects and dialog. But they are so much more than that. The soundtrack of a film is much

like a symphony. It's not an exaggeration to think of sound designers as composers or mixers as conductors. I say this because both a composer of music and a modern sound designer have such similar tasks. Both are using elements made from a variety of sources as well as instruments to create a finished work that is designed to engage, move and even thrill an audience, all while telling a story with sound.

My favorite soundtracks are those that use both music and sound effects together at a pacing that builds excitement and evokes feelings with sound and rhythms that would challenge any conductor. But in the end, it all comes down to what producers and directors all hope to create: that certain magic that happens in a theatre that connects the story to the audience. The best films can bring us to the edge of our seats.

When composers score a film, they work with a keyboard and ultimately the instruments of an orchestra. But a sound designer may have an even bigger job. Perhaps also with a keyboard, he or she has to create sound for the entire length of the film. Many films may require the sound of something that doesn't even exist -- a spaceship for example. Yes, I know that ships in space are silent. That's the whole idea. Soundtracks are made to be fun and to (magically) transport us, perhaps to another reality, without calling attention to the fact that most of what we are really hearing may be completely artificial. We hope to convince an audience that they are hearing the scene as though they were there. Try to imagine watching a spectacular action film if there were no music or sound effects. Would you get up and leave or just fall asleep?

One of the truly amazing things about modern soundtracks is that no matter where they were made, the vast majority can be played in theatres without having to adjust the faders or anything else. This is only possible because movies are mixed in sound studios that are carefully calibrated so that there is a relationship between a specific level on the sound recorder and a sound level in the rerecording theatre.

Movie theatres are also calibrated. When the auditorium fader is set to 7.0 or 0.0 for SDDS, the sound systems are supposed to be adjusted to maintain that relationship and deliver the same sound level in the theatres that was heard on the rerecording stage. For a variety of reasons that I have explained in previous articles, most auditorium faders are in fact set anywhere between 4 and 5.5 when the sound level in the theatre is correct. By the way, this fact alone is absolute proof that most cinema sound systems are misaligned.

Are films in fact getting louder? In one sense they are not. Because the recorders have a finite upper limit, one can only record to one maximum level. Of course that maximum level is reserved for the momentary peak sound levels that occur from time to time. So we

can say that at least the potential peak sound levels have not changed. What has changed, it seems, is the number of peak level sounds as well as the average level of the background sounds and the effects. This means that films are indeed getting louder.

Then there are the (fortunately rare) films that are recorded at a level that matches the excessive sound levels of trailers. This is in response to the fact that so many theatre faders are set low for trailers and never set correctly for features. The problem with this is that we get bad mixes with no dynamic range and a sound so compressed it almost resembles radio.

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more analog tracks one had, the greater the distortion and accumulated background noise. Today's digital recorders are extremely clean and quiet, allowing many more elements as well as recording generations than ever before. Keeping all these elements under control is almost impossible without various processing tools that mixers have used in recent years.

Digital technology has allowed sound designers to build up sound effects with many more elements than was practical with analog recorders. The

I think that the result of more complex backgrounds as well as some of the processing is that the background sounds in some films have crept up in level over the past few years and in the process become somewhat fatiguing to listen to. When the background level is louder, it reduces the dynamic range of the soundtrack. This reduces the potential impact of the sound and can ultimately lead to louder peaks in order to compensate.

Action films are the loudest. They wouldn't be called actions films without dynamic and exciting sound. Loud can be good. The things that have caused people to complain about excessively loud movies aren't a few explosions. But if there are lots of big effects, more and more they can all seem to be as loud as possible.

One film I personally recall had monsters walking around. Every single footstep was accompanied by the same huge subwoofer hit, as loud as the subwoofer track could be -- every one. It was relentless. Couldn't at least some of the steps been less hammering and more varied? Couldn't they have had more life, more distinction and perhaps, as a result, been more interesting? Not this time. We just had to sit there, getting hammered, over and over again, for two and a half hours.

This is the kind of film that gets the most complaints. If the mix had more life, less compression, more poetry, by that I mean creativity as well as some distinction between the various big sound effects, and less loudness, not only would it have been more exciting, it would have been a better movie.

An analogy might be Tchaikovsky's 1812 Overture. This familiar piece contains two sections of canon fire: The first has five shots. The second has 11. (I know because I sometimes played "first canon" with Arthur Fiedler and the Boston Pops). We all know and love the 1812 Overture. But how would we feel about it if there were 1000 canons and only 11 simple chords from the orchestra? I think it's fair to say that an audience would be pretty upset after sitting through "music" like that.

Is there a way to "measure" or at least rate the loudness of films? Perhaps. In response to the loud trailer problem, Dolby introduced their model 737 Leq(m) sound level metering system. Basically this meter measures the sound level of a trailer over its typical two minute or three minute duration and gives a long term average sound level. Dolby is now investigating a new method for features that would chart the sound levels throughout the entire film. By integrating this data, one can come up with a number. Although this number won't be a unit of anything such as a pound or a Watt, it can at least provide us with a relative scale by which the loudness of films can be compared. This would not be intended as any kind of rating system. An action picture is clearly expected to have louder scenes than a "dialog film." The hope is that it could at least indicate trends over time and show not only if films are getting louder, but also the rate this change is occurring.

Professional sound engineers rarely get any recognition for their often difficult and tedious work. The main exception to this is the Academy Awards. Personally, I hold a certain reverence for motion picture sound designers, editors and mixers. Let's face it, sound is more than half of the show. Take the picture away and you have radio. Take the sound away, the audience walks out and we are all out of business. In fact, we all are not just in the moving picture business, or the popcorn business. We are in the sound business and we shouldn't forget it. Unpleasantly loud movies or excessively loud presentations are obviously bad for business because they drive customers away.

When we look at the sound and recording business as a whole, too much of the product delivered to our ears is no where as good as it could be or should be. The one shining exception to this is the creation of recordings for motion pictures. To my ears, the consistent high quality and beauty of many soundtracks is something too seldom found elsewhere in the audio business.

Yes, there are serious and to my mind inexcusable problems that can only be addressed in the theatres. This should not be forgotten. But on the production side, I hope that the movie sound community -- including the filmmakers giving the orders -- won't mind some constructive feedback from the world that listens to their work every day. We are simply getting too many complaints. We love your work. We just want and need it to be more "musical" and less hammering.

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