

INTO THE RED

The 'Loudness War' has made new music increasingly difficult for discriminating listeners to enjoy—and now it threatens to claim the classics

BY CHRIS NEAL

Mastering engineer Friedemann Tischmeyer knew something had gone terribly wrong in the music world when he found himself asking clients to leave his name off their albums.

He had been prodded again and again to make the recordings that he was mastering louder, and louder, and louder—and when his arguments made no headway, he acquiesced. But he didn't want his name associated with a sound that he feels is destroying the good name of his chosen field. "It was a daily fight in the mastering process between good taste and commercial needs," he says. Good taste was losing.

Tischmeyer is but one of the many recording professionals who find themselves caught in the middle of what has come to be known as the "Loudness War." Over the past 15 years or so, at the urging of artists and label executives, engineers have been pushed to raise the loudness in master recordings up to and even past the point of distortion—while also using compression to raise the level of quieter elements in the music, flattening out each song's natural dynamics. The aim is to make the music jump out at listeners on the radio (futile, as most stations use equipment that automatically evens out the volume differences) or in noisy environments like cars, clubs and restaurants.

But for listeners who actually pay attention to music, what they're hearing is a shrill, clattering cacophony that is physically fatiguing to the human ear. "Highly compressed or limited music with no dynamic range is physically difficult to listen to for any length of time," writes mastering engineer Bob Weston. "This 'hearing fatigue' doesn't present itself as obviously aching muscles, like other forms of physical fatigue, so it's not obvious to the listener that he or she is being affected. But if you ever wonder why you don't like modern music as much as older recordings, or why you don't like to listen to it for long periods of time (much less over the years), this physical and mental hearing fatigue is a big part of the reason."

Certainly, loudness and compression have their constructive uses. "I believe every album has a 'sweet spot' where there are actually benefits from lifting the level, if it's done well," says veteran mastering engineer Ian Shepherd, who has done much to bring attention to the issue through his postings at mastering-media.blogspot.com and productionadvice.co.uk. But many modern recordings go well beyond that "sweet spot," pushing recordings to levels at which the music becomes distinctly sour.



Anton Corbijn

Metallica

The "Loudness War" began in the mid-1990s with notoriously loud recordings such as Oasis' *What's the Story (Morning Glory)*, and noticeably escalated around the dawn of the millennium. Artists who have released albums in the

past several years marked by excessive loudness include everyone from young acts like Lily Allen and Arctic Monkeys to veterans like Bruce Springsteen and Paul McCartney. But the public didn't truly take notice until the September 2008 release of Metallica's *Death Magnetic*, an album so distorted by excessive loudness that even non-audiophiles took note.

Fans noticed that the versions of *Death Magnetic* songs created for the video game *Guitar Hero* sounded significantly clearer and more dynamic—owing to the fact that the game's engineers worked directly from



how we make records." Ulrich indicated that the sound was the vision of the album's producer, Rick Rubin, and that he and his bandmates had resolved to "not

get in Rick's way." Indeed, Rubin has produced some of the past decade's loudest recordings, including albums by the Red Hot Chili Peppers and System of a Down.

Death Magnetic mastering engineer Ted Jensen explained that the distortion was present in the mix he was given to work with and couldn't be reversed, much to his chagrin. Shepherd points out that while the Metallica album offers an extreme and highly visible example, this practice is not uncommon. "I get sent a lot of mixes from studios where the level has already been pushed way too high," he says. "Most mastering engineers

I know hate the 'Loudness War' and being asked to push the level higher than necessary, but also there are studios where everything I hear has been smashed."

Another factor is the growing affordability of digital home recording, which has mastering engineers increasingly handed mixes performed by amateurs eager to have the loudest record on the block. "The loudness insanity melts our professional technological benefit over amateurs and home mastering people away," Tischmeyer notes. "Who cares about the quality of the equipment when the end result is distorted anyway? What's the use of our experience and listening skills when nobody cares about that?"

'I personally believe that this is not just a matter of good taste anymore.'

— mastering engineer Friedemann Tischmeyer

the original stems (individual instrumental and vocal tracks) rather than the final mix. An unauthorized version of *Death Magnetic* created from the *Guitar Hero* tracks quickly became a hot item on the internet bootleg circuit, while some buyers protested by sending their copies back to the record label and signing petitions demanding the album be remixed.

Metallica drummer Lars Ulrich said in November 2008 that "there's nothing wrong with the audio quality. It's 2008, and that's



one. For a clear-cut case study, look no further than one of rock's most venerated acts, the Rolling Stones. As the band owns the master recordings for its output from 1971 forward, it has made a practice of reselling the distribution rights every few years—resulting in a new round of remasters. The 1994 remasters for the Virgin label uncovered new depth and clarity in landmark albums like *Sticky Fingers* and *Some Girls*. Fifteen years later, the 2009 remasters of the same recordings released on UMe are much louder, resulting in a more brittle, less dynamic sound. The label “digitally remastered” no longer necessarily holds the promise of improved sound.

Stephen Marcussen, who oversaw the mastering of the 2009 Stones reissues, has been one of the few engineers willing to defend the loudness trend—if only ambivalently. “That’s the gig, you gotta rise to the occasion,” he told *Mix* magazine. “If it’s difficult, it’s difficult. It’s part of what we do.” He points out that with certain genres loudness can be used

Like many great conflicts, the “Loudness War” has its roots deep in the past. Pop and rock music-makers in the 1960s perpetually pushed against the loudness levels possible on a seven-inch vinyl record. The legendary Motown record label adopted an in-house mastering policy it called Loud and Clear, setting a standard that would make its singles uniformly ... well, simultaneously

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loud and clear. Motown mastering engineer Robert Dennis compares those records to the sounds of today: “There were many technical things that we did to maintain the Motown Sound standards, including using custom-designed filters and adopting a half-speed mastering technique,” he writes. “With today’s plug-in and mastering programs the job is a lot easier, yet many releases still are

loud and very distorted or weak but clear. Too many releases are without the loudness and clarity that would be possible.”

Loudness levels have always bumped against the dynamic range afforded by the format of the day. As the already unprecedented range offered by compact discs steadily improved, many artists took advantage of the additional sound spectrum to create albums with great depth and subtlety—while others simply kept pushing levels further and further into the red. One recent study showed that an average modern recording of today is 14 decibels louder than one released 25 years ago.

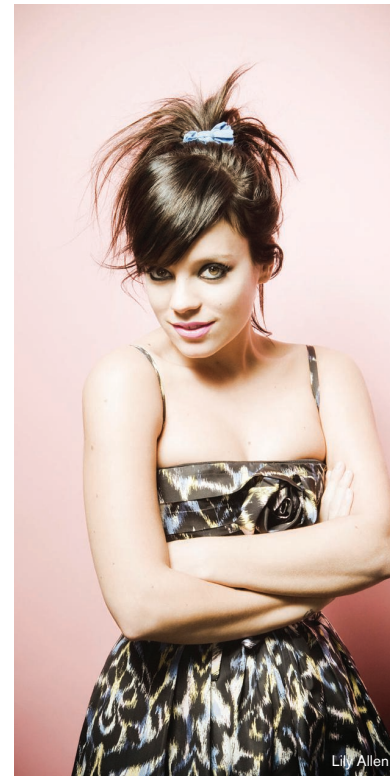
And now the “Loudness War” is beginning to claim victims retroactively: Some classic recordings are now being remastered to jack up loudness and compress dynamics, making this arguably the first time in history that a new generation of reissues sounds worse than the previous

WHAT IS LOUDNESS?

The political debate over global warming is made far more difficult by the inability of the layperson to tell the difference between “climate” and “weather”—hence, every snowstorm becomes an opportunity for climate change deniers to say, “You call this global warming?” The “Loudness War” debate is cursed with a similar muddiness of terminology, one that allows loudness proponents to say, “What’s wrong with loud? People love it loud! That’s what rock ‘n’ roll is all about!” So it’s vital to understand the difference between “loudness” and “volume.” Loudness is used to push sounds toward (and sometimes past) the ceiling of a recording’s dynamic range, and those levels are locked in to the recording. Volume is the intensity of the sound, which you control with your playback equipment—and if you indeed “love it loud” you can always turn it up.

WHAT IS COMPRESSION?

When we talk about the “Loudness War,” we’re also talking about the increasing abuse of dynamic compression. This is the practice of making the loudness levels of instruments in a recording roughly equal, meaning the quietest moment is just as audible as the rowdiest. That means that you won’t miss little details in a noisy environment, but it also robs an inherently dynamic song of its power—Metallica’s “The Unforgiven III,” for instance, begins with a soft, mournful passage of piano and strings that is boosted so high in the mix that there’s no contrast when the band itself enters. Mastering engineer Ian Shepherd points out that there’s nothing inherently bad about compression: “Used well, it can pull a mix together, add punch and impact or ‘bounce,’ make things warmer and fuller, more exciting and more immediate. I use it all the time; I couldn’t work without it. But excessive or clumsy compression flattens music.”



without detracting from the music’s effect. “With dance music, for example, when you are in a club, it’s beneficial to have a louder CD,” he said. “It’s more exciting, you’re not sitting there scrutinizing the sound; it’s more of a gut feeling rather than an intellectual comprehension of somebody’s

work. There are genres of music where it’s appropriate to make screamingly loud records.” Hip-hop recordings, which typically have fewer sound elements than those of other genres, are also routinely mastered very loudly and compressed without problems.

While the Stones remasters avoid outright distortion, other classic recordings haven’t been so lucky. Last year’s reissue of Pearl Jam’s 1991 debut, *Ten*, is so loud that it regularly crosses the line into clipping. The Red Hot Chili Peppers’ 2003 *Greatest Hits* increased the loudness on tracks from earlier recordings to the outlandish levels of their most recent albums, a common occurrence among new compilations. In at least one high-profile case, the sound was deliberately distorted

by the artist: Iggy Pop remixed *Raw Power*, the 1973 album by his band Iggy and the Stooges, and increased the loudness well into distortion territory in an attempt to make the already-aggressive album sound even more so. A reissue of the album set for release in April will restore the original mix.

There are reasons to be hopeful for at least a cease-fire in the “Loudness War.” Several organizations have formed to battle the continued advent of excessive loudness, including Turn Me Up! (turnmeup.org) and Tischmeyer’s Pleasurize Music Foundation (pleasurizemusic.com), which urge artists and industryites alike to begin featuring informational labels on albums that boast a wide dynamic range. A few sound-focused magazines have begun including dynamic range levels in album reviews.

A two-minute video succinctly explaining the effects of the “Loudness War,”



Rush

GETTING BETTER ALL THE TIME

Audiophiles held their breath last summer leading up to the September release of the Beatles’ remastered catalog, perhaps the most anticipated reissues in the history of the CD format. An April press release was both worrying and encouraging: “[As] is common with today’s music, overall limiting—to increase the volume level of the CD—has been used, but on the stereo versions only. However, it was unanimously agreed that because of the importance of The Beatles’ music, limiting would be used moderately, so as to retain the original dynamics of the recordings.”

Thankfully, the levels were raised by a very modest three to four decibels. “For something like the Beatles, a band from the ‘60s, it would have been inappropriate to have given it that treatment,” says project coordinator Allan Rouse. “But we have made them slightly louder, so that they are at least slightly contemporary for today—but certainly not as loud as the more contemporary bands.” No extra loudness at all was applied to the more collector- and audiophile-targeted *The Beatles in Mono* box set.

“Good remastering aims to present the original material in its best possible light, without trying to change it into something it’s not,” says mastering engineer Ian Shepherd. “The recent Beatles remasters are a great example of this being done well. They’re louder, but not excessively so, and they sound better than the old releases—closer to the way the music was intended to be.”

produced by Matt Mayfield, has been viewed around 900,000 times on YouTube. Many other YouTubers have also produced videos sharing the results of their own amateur analysis, producing homemade clips of

‘Most mastering engineers I know hate being asked to push the levels higher than necessary.’

— mastering engineer Ian Shepherd

wave-form video captures pointing the finger at loudness offenders. (Shepherd notes that such sleuthing has its limits: “I’m seeing lots of posts from people looking at waveforms without listening and assuming it must sound bad just because it peaks near zero. That makes no sense. You need to listen to it to see how it sounds.”)

Tischmeyer believes the most effective way to sway public opinion is to argue the issue from a health standpoint, pointing out the damaging effect that consistent exposure to loud, highly compressed recordings that never give the ear a moment

to rest and recover can have on hearing. "We have already a lot of evidence that this is the main reason for the drastic increase of hearing damage in the young generation," he says. "I personally believe that this is not just a matter of good taste anymore, it is a matter of responsibility to protect the pleasure of hearing."

But perhaps the best chance comes from artists themselves moving to protect the fidelity of their own work rather than allowing

the whims of the marketplace to sway them. The 2009 remaster of the Beastie Boys' hip-hop classic *Paul's Boutique* is actually more dynamic than previous masterings. Rush's 2002 album *Vapor Trails* was harshly criticized for an excess of loudness; two of its tracks were remixed to scale it down to a more listenable level for 2009's *Retrospective 3* compilation. "[*Vapor Trails*] was mastered too high, and it crackles, and it spits and it just crushes everything," guitarist

Alex Lifeson acknowledged last year. "All the dynamics get lost, especially anything that had an acoustic guitar in it," Lifeson said the group may eventually undertake a remix of the full album.

Shepherd believes the public backlash against excessive loudness is getting through to artists. "It's an issue that is getting a lot of mainstream coverage, and recently I'm getting people asking me to not 'do a *Death Magnetic*' to their music, which is great," he says. "There are also some artists who are making a point of choosing a more dynamic sound for their CDs. Hopefully this is a trend that will continue." He also sees a ray of hope with the overwhelming success in Europe of the subscription-based Spotify music-streaming service. Touted by many as a likely future model for music distribution, Spotify uses audio volume normalizing software that makes the relative loudness of any one track irrelevant.

An early shot in the "Loudness War" came with the 1987 release of Guns N' Roses' debut, *Appetite for Destruction*, one of the loudest recordings of its day. So mastering engineer Bob Ludwig was pleasantly surprised when he offered frontman Axl Rose and co-producer Caram Costanzo three different versions of his master for the Guns album *Chinese Democracy*, with increasing levels of loudness applied to each—and they approved



the most dynamic option. "I'm hoping that *Chinese Democracy* will mark the beginning of people returning to sane levels and musicality triumphing over distortion and grunge," Ludwig writes. "I have already seen a new awareness and appreciation for quality from some other producers. I pray it is the end of the level wars." **M**

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