GUITAR

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SHOOT TO THRILL
DEMI MEARS PRADA
DANGER: WILDFIRE
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PLUS THE ULTIMATE GUIDE TO RECORDING HARD ROCK & EXTREME METAL!
As the cost of digital audio workstations (DAWs) and recording equipment has come down over the years, it’s become possible for musicians at all levels of income to produce their own songs. Unfortunately, this hasn’t guaranteed that everyone’s projects will meet with excellent results. Money still matters when it comes to hardware, software, and the recording environment, as do expertise and talent of the performers and producers.

For some music genres, low production standards may sometimes be perfectly acceptable. For example, some varieties of rock and folk are basic enough in instrumentation, arrangement, and rhythm to translate through even a raw recording, without impairing the listener’s ability to gauge the quality of songwriting and performance.

But nothing could be further from the truth when it comes to modern or extreme metal. Poorly produced metal will almost always result in a mush of sound, in which the quality of the material and performances is indeterminable. Much of the reason has to do with the music’s particularly fast, complex and demanding drum parts and the challenges of reproducing them clearly. Double-kick drums are a prerequisite of the genre, as are the fast patterns and subdivisions that they employ. Then there’s the dynamic complexity and speed of the snare performance.
including techniques such as blast beats. Finally, there are issues modern metal production, even on a tight budget. In this article, the first of two parts, I’ll explain how to deal with these issues in ways that can make your record-wonder that the novice engineer/mixer will often deliver highly suggest that you devote it to the drums, due to the complexities of re-recording the studio. When checking out a studio’s offerings, make sure it has a live room with sufficient acoustic treatment (see previous paragraph), a mix selection suitable for recording drums (covered later in this article) and high-quality mic preamps, since you’re tracking some if not all of the other instruments in another facility (possibly your own home), make sure that the drum tracks are provided to you in a format that you can access. They may be saved as complete session files that can be opened or converted in the format you’ve used during mixing are installed at the studio to take advantage of the more accurate critical listening space and monitoring. In this instance, you’ll have to ensure that the software platform used for mixing is the same as the studio and also ensure that all the plug-ins you’ve used during mixing are installed at the studio to capture the right guitar tone. And since the tracks will be pre-recorded, your time in the studio can be spent getting the right guitar tone as well as capturing a performance. Just like the drums, vocal tracks can benefit tremendously from a commercial studio’s offerings. The facility will have not only the best gear for vocals but also a sound-proof booth. In addition, an experienced engineer can be helpful in properly recording the wide dynamic range of vocalists and helping them with mic technique. Once you’ve decided what mics to use, you should be able to do the majority of editing, processing and mixing at home. As the project approaches the final stages, you can transfer the session back to a commercial studio to complete the project with little or no money, or you can re-record the tracks in any acoustic space where the instruments are well defined and intelligible in the mix. For this reason, avoid studios with live spaces that are very ambient, as the added reverb will muddy the recording. Instead, use a studio that has extensive acoustic treatment, with a very short reverb time—around 0.3 seconds. This will provide the tightest, most controllable results, particularly with the drums. Many studios have a drum room for this very purpose, giving the engineer great control over the sound.

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DOWNTUNING: STRING GAUGE AND INTONATION

While many modern metal guitarists and bassists use drop D and B tunings these days, I’ve encountered very few players who compensate for the lack of string tension by using higher-gauge strings. This is unfortunate. Tuning down a standard-gauge string can result in poor tone, because the string is much more slack than it was intended to be. For drop B tuning, I recommend using a minimum gauge of .060 for the 6th string. For the 5th, 4th, 3rd, and 2nd strings, I suggest .050, .046, and .042, respectively, for tuned-down guitar gauges. For the entire 6-string set, I suggest .032, .028, .025, .021, .017, and .013, respectively. If you’re going to tune down in increments of a half-step, you might consider using 4th and 5th strings to achieve this. This will enable the right “weight” and movement of air from the kick drum. Snare tunings vary depending on taste, but if the performance involves a lot of faster rolls, stick drags and ghost notes, the batter head should be very tight to enable the right stick response. If your snare drum tends to ring, try using a drumhead that is less resonant. I’ve used Evans snare heads and have had good results with the company’s “dry” models.

For the drums, opt for smaller drum sizes, but again with relatively low tuning. However, avoid having the batter and resonator heads tuned to the same tension. While doing so will increase projection, it will result in a less-placing tonal effect, which is undesirable part of the modern metal tom sound.

VOCAL SCHEDULING

A commonly overlooked element of the overall recording process is the vocal scheduling. Vocal scheduling is the practice of setting aside a separate day for recording the vocals, after the drums, bass and guitars have been tracked. Instead, schedule the vocals as the last block of the recording process, after all other instrumental tracks have been recorded. This will enable the right “weight” and movement of air from the kick drum. Snare tunings vary depending on taste, but if the performance involves a lot of faster rolls, stick drags and ghost notes, the batter head should be very tight to enable the right stick response. If your snare drum tends to ring, try using a drumhead that is less resonant. I’ve used Evans snare heads and have had good results with the company’s “dry” models.

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TOOLCHEST

FOR DRUMS AND CABINETS

In addition, it’s essential that you place a fresh set of batter and resonator heads (Fig. 2). A vocalist can sing “You have to be able to play a click today. I think it’s helped me a lot.” - Lombardo

While it won’t give you as much control as using two mics, the mic’s greater distance from the heads will make it easier to isolate the snare sound. This will capture the top and bottom tones together. It will also reduce the presence of overheads and bass and drum room effects and colorization. Other options, such as the AKG 414s, which are creative EQing. I suggest AKG 414s, which are effective in overcoming this problem. Keep the mic at least six to eight inches away. You can minimize bleed from the snare by pointing the diaphragm toward the bass drums and drumset. If you have the money, opt for the superb Neumann KM 184 small-diaphragm condenser mics or the more expensive wide-diaphragm Neumann U 67s or U 89s. To improve separation between the overheads and drums, ask the drummer to raise the cymbals as high as he can without impeding his performance or comfort.

Some condenser mics will let you select the diaphragm’s polar pattern—that is, how sensitive it is to the directionality of sound. A cardioid pattern is ideal, as it will minimize room effects and colorization. Other options, such as the AKG 414s, which are effective in overcoming this problem. Keep the mic at least six to eight inches away. You can minimize bleed from the snare by pointing the diaphragm toward the bass drums and drumset. If you have the money, opt for the superb Neumann KM 184 small-diaphragm condenser mics or the more expensive wide-diaphragm Neumann U 67s or U 89s. To improve separation between the overheads and drums, ask the drummer to raise the cymbals as high as he can without impeding his performance or comfort.

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a pair of overhead mics will suffice. As mentioned before, keep the overheads 18 to 24 inches away from the cymbals, and aim the diaphragm at the rim of the cymbal (FIGURE 5). Place each of these the same distance from the snare to ensure a stereo image that doesn’t pull to one side (many engineers use a piece of string to measure this). In addition, observe the 3:1 rule: the distance between the overhead mics should be roughly three times the distance from the cymbal nearest to the mics. For example, if the cymbal closest to one of the eves will be brightest at the dust cap (the speaker’s center) and boomiest near the grille cloth. I suggest starting out with the mic just off the speaker’s center and close to the grille cloth but not touching it. If the sound is too bright, move the mic toward the speaker’s edge until you achieved the desired tone; if it’s too boomy, or not tight enough, move the mic away from the speaker in half-inch increments until you achieve the desired amount of low-end definition and clarity.

You can also reduce brightness by placing the mic off axis. An on-axis mic is pointed 90º perpendicular to the grille cloth (FIGURE 6). Placing the mic from 45º to 85º off-axis relative to the grille cloth will reduce the brightness (FIGURE 7). I recommend trying an off-axis placement that is around 70º to the grille cloth but pointing in toward the speaker cone. Additionally, many producers will use their favorite guitar mics in on- and off-axis configurations simultaneously to give them a broader range of rhythm tones. When doing so, the capsules of both mics should be placed as close to one another as possible to reduce phase problems when the two signals are combined.

I recommend tracking two rhythm guitars for each side of the stereo picture, unless there are extremely challenging guitar parts, in which case stick to one rhythm guitar per side to avoid creating a muddy sound. When recording two guitars per side, vary the tone between takes, either with the guitar, amp, cab or mic, as this will help produce a thicker tone.

**Vocals**

**While a condenser mic is typically better suited to vocals than a dynamic mic, that doesn’t mean it’s the right choice for every vocalist. For that matter, you can’t know which mic of either variety is best for your vocalist without some trial and error.** I suggest recording a quick test with your singer, using two or three vocal mics placed with their diaphragms as close together as possible. Record a vocal take using all the mics simultaneously, then listen to the results and determine which mic you prefer. It’s essential that the singer stand the correct distance from the mics, as the proximity effect has a huge effect on the sound. Once this has been established, place a pop shield at least three inches from the mic, and

**Guitar MIKING THE GUITAR IS relatively easy. You don’t need room mics or any micro- phone further than six inches from the source, nor will you need to mic the rear of the cab. Dynamic mics are better suited than condensers to recording down-tuned guitars. Capturing the right rhythm sound is usually as simple as placing a Shure 57 or a Sennheiser 421 on the best-sounding speaker within a 4x12 cab. If you find that one of the bottom speakers sounds best, turn the cab on its side so that the speaker isn’t close to the floor. This will help mini-
make sure that the vocalist remains at the same distance from the pop shield for the entire recording. Your singer can create a reference point by placing his hand perpendicularly between his mouth and the shield and noting the number of fingers he can fit within the space. Taking this step will ensure consistent volume and tone from one vocal take to another and over the selection of songs. (Note that you can achieve different tones for harmony and backup vocals by having the singer move to a different position relative to the mic.) If breath blasts are still a problem, experiment with placing the microphone slightly off axis (facing toward, but not directly in front of, the mouth area), so that the breath blasts go past the diaphragm rather than directly into it.

**CLICK TRACKS AND DRUM POST PRODUCTION**

**ON MANY MODERN** metal productions, the drum tracks are often altered to improve the quality of the performance. Often, the tracks include elements that weren’t performed at all but rather were added by the producer using samples. Most producers are loathe to discuss the post-recording work they perform on the drum tracks, and the drummers themselves are even less likely to own up to it, for obvious reasons.

For modern metal drum performance, accuracy is more important than vibe, feel or groove. The kick drum work and the beats, patterns, subdivisions and syncopation involved demand the highest standard of precision and accuracy. However, in many instances the drummer simply can’t perform the parts with the accuracy required, leading producers to use various methods to edit, quantize (fit to the beat) or build patterns that make the drum track sound tighter. Doing so is one of the specific engineering challenges of the modern metal.

A click track is essential to this task. It provides an essential reference point that helps the drummer keep time and turn in the tightest performance possible. It also helps the producer after the fact by giving him a grid-like guide on which he can edit and quantize beats and build new patterns that make the drum performance sound more accurate.

Recording to a click track has become a staple of the modern metal method. Slayer’s Dave Lombardo, one of the world’s finest metal drummers, told *Modern Drummer* in its September 2006 issue that he recorded all his parts for the album *Christ Illusion* to a click track. He said, “There was one tune where we wanted to speed up the ending, so we turned the click off at that point. But that was it. You have to be able to play to a click today. I really like using one. It’s helped me a lot.”

Mastodon’s Brann Dailor is another metal drummer who has changed over to playing with a click track. He told *Rhythm* magazine in the April 2009 issue that he played to a click track for the first time when the group recorded its most recent album, *Crack the Skye*, at the urging of the album’s producer, Brendan O’Brien.

“Brendan said, ‘Look, let’s just get it up and see how you get on, if it doesn’t work, we’ll lose it.’ But it worked great... With a lot of our songs they’ll start with a theme, then go somewhere else with a heavier feel, then return to the first theme again. And so I have to be careful that when we return to that part, it’s the same tempo as we started. It was always a bit too fast [without a click] when we were recording. Then you have to think very hard about slowing yourself down, [and] then it feels too slow. It’s a nightmare.”

There are a few ways to create a click track. Your DAW will have a simple click-style metronome that can be turned on or off, and this signal can be sent to your drummer’s headphones for reference. However, a heavier-sounding tone is often required, and some producers will simply build a click track on their own, then loop it for the duration of the song. For the main accents, such as the first beat of the bar, a piercing tone with plenty of body, such as a cowbell, will work fine. A guide guitar can be recorded on a separate track to give the drummer a reference point for the song.

Once you’ve worked with a click track, you’ll begin to appreciate its benefits. To help you get started, here are five production tools and techniques that a click track facilitates, each of which you can use to improve recorded performances.

1. **Playlists**

**PLAYLISTS ARE A** particular function within the Pro Tools platform, but I’m using the term here as a generic reference to recording multiple takes within the same arrangement. A DAW lets you comp together multiple takes easily and quickly. The various takes can then be compared and the best parts selected and assembled into a composite performance. Recording each to a click track ensures that the various takes match up.

2. **Edits**

**EDITS ARE FIXES** within the track itself. If you want to fix a mistake in the second verse, it might be as simple as copying the same pattern from the first verse and pasting it in place of the bad pattern. Again, a click track is required for the timing of each part to be in sync. This technique can work to varying degrees of success with all instruments, as well as vocals.

3. **Overall Quantization**

**WHILE PLAYLISTS AND EDITS** allow you to utilize the best parts of the performances, quantization lets you tighten up the re-
cording by moving individual hits so that they fall exactly on the beat. The Elastic Time function within Pro Tools is a powerful and effective method of quantizing drums without causing glitches or artifacts (except in extreme cases; see below). Using time compression and expansion algorithms, Elastic Time lets you stretch waveforms in real time. To do so, however, a tempo needs to be allocated as a reference. This is where a click track is beneficial. While it's possible to quantize performances that haven't been recorded to a click track, it's much easier to do so when they have, and the results will sound more natural.

**4. Kick Quantization**

**Ideally, Elastic Time** should be applied to all the drum tracks collectively, to retain the phase relationship between these sources. However, it's not a cure-all, especially when it must be used to such an extreme that glitches and artifacts result. Excessive quantization can be unforgiving with hats and overheads, resulting in an unnatural sound. However, you may find that only the kick drum is in need of quantization. As it is the most challenging part of the extreme metal drum performance, the kick drum is usually the one part in greatest need of help, and tightening its performance relative to the other instruments may make the overall track sound much better.

**5. Kick Building**

**Some Kick Drum** parts are so challenging that it's best to forego the drummer's footwork altogether and build a kick drum track entirely from samples. Again, a click track will make this task much easier. Grid lines within the DAW's edit window will show where the beats fall, making it easy to place and copy kick drums within the track, whether the kick pattern is based around 16ths, 32nds or triplets. Once a section is completed in this manner, it is a simple enough process to copy the bass drum patterns over to where the section is next repeated.

While it's not impossible to build a kick drum track when a click track hasn't been used, it is incredibly difficult and time consuming, as you'll have no grid on which to place the beats. Furthermore, once you've completed the kick drum part for one section, you won't be able to copy and paste it onto the next section, as the drummer's tempo will have undoubtedly drifted and the kick patterns will not line up properly.

However, the success of kick drum quantization and building depends on how well the edited track syncs up with the original kick drum signals that may still be apparent on the tracks recorded with the overhead mics. If the sync is noticeably off, you'll hear a “flam” as the edited and original signals are played back—a sort of blurring of the kick drum sound that will make the performance sound inaccurate, despite your best efforts.

Techniques can be employed during the tracking stage to minimize kick drum bleed. The drum can be covered with blankets to limit the amount of bleed onto the other mics. Another solution is to pack the kick drums with pillows and blankets and push them right up against the batter head, so that the only noise that the bass drum makes is the slap of the beater hitting the head. Both methods will minimize the sound level from the kick drum, making any bleed onto the overheads irrelevant. Finally, a bass drum trigger pad can be used, which will give the drummer the sensation of hitting a drum but produce no sound.

As an alternative, the drummer can be asked to simply stop playing on particular sections where the kick work will need to be built from scratch, thereby removing kick bleed completely. This technique works well, but it could be confusing for the drummer and may cause him to lose the groove and feel.

It takes skill and experience to build a kick pattern so that it’s effective and perceived as authentic. Certainly, most producers would prefer to have the drum parts performed live and accurately. But much of the time, building a track in this fashion will be the best way to establish a strong production standard.

*Next month: how to mix modern metal.*

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