CHAPTER 7
MUSIC MECHANICS

No matter what your background or experience is, as a producer, it’s likely you’ll be confronted with the same question on many of your projects—"Why doesn’t this song (or part in the song) sound right?"

Maybe it’ll feel great on one run-through, and not as good on the next. Maybe it sounds great except for one section. Maybe it never sounded great, but you think the song has something special and it’s worth spending time to work it out.

There are certain mechanics that determine how tight the music is, how it feels, and how "big" it sounds. These mechanics work for any kind of music, from marching band to deep house to reggaeton to speed metal—the principles are all the same. If something doesn’t sound right, it’s a pretty good bet that one or more of the following principles are being overlooked.

DYNAMICS
Playing with dynamics means playing with less intensity (i.e. not playing as hard or as loud) in certain places in a song, and with more intensity (playing harder) in other places. Some bands are oblivious
to dynamics and play at the same volume and intensity throughout an entire song, which can get boring for the listener very quickly.

Generally speaking, here’s how you use dynamics effectively.

- When the song begins, the band plays fairly loudly, about 7 or 8 on a scale of 1 to 10 (10 being the loudest).
- When the vocal or lead instrument (if the group is instrumental) comes in at the verse, the band drops down to about 4 or 5.
- When the chorus comes in, the volume level comes back up to a 7 or 8.
- When the second verse begins, the band drops down to a 5 or 6 (notice it’s a little louder than the first verse, but not as loud as the chorus).
- When the second chorus begins, the band comes back up to a 7 or 8.
- When the bridge (or whatever section is the peak of the song) starts, the band comes all the way up to 9 or 10.
- For the outro of the song, the band drops down to 7 or 8 (see Figure 7-1).
- If the song has a breakdown, the level might come down as low as a 1 or 2.

**Typical Song Dynamics**

![Diagram of typical song dynamics](image_url)

*Figure 7-1: Typical Song Dynamics*
While the level of intensity (and, as a result, the volume level) may change from the numbers indicated above, depending on what finally feels the best, that’s basically how dynamics are created. If the band plays a song dynamically, the song breathes volume-wise, and will be a lot more interesting as a result.

**THE SECRET TO PLAYING DYNAMICALLY**

*When you play loudly, play as loudly as you can.*

*When you play softly, play as softly as you can.*

*Learn to play at a third intermediate volume.*

There are a few byproducts from playing dynamically, too. The vocals can be heard more easily because there’s more space and there are fewer loud instruments for the vocalist to fight against (easier on the singer’s throat as well). Songs become more fun to play because true interaction exists between all the players to make the dynamics work, and as a result, the band automatically sounds tighter.

For a really great example of dynamics, listen to “Smells Like Team Spirit” by Nirvana. The verses are at about a 5, the prechorus at 7, and the chorus roars at 10.

**How to Learn to Play Dynamically**

Most bands learn to play dynamically if just one player is dynamics-aware and the others follow that person’s lead (it helps if that one aware person is the drummer).

If a band is together for a long enough time and plays enough gigs, dynamics will seem to magically seep into the group’s playing once it begins to get some self-awareness of just what it takes to get a crowd going.

You can’t spend years waiting for these things to happen by themselves, though (after all, you’re making a record), so just use the following method:
• When the band is going over a song, treat the dynamics as an integral part of the song and spend as much time learning them as you would learning the chord changes and the groove. As shown above, map out each section of the song on a loudness scale of 1 to 10, with 10 being the loudest.

• The following step is the most important: make sure that all band members agree on how loud or soft each dynamic number is. In other words, be sure that the drummer’s level 8, for example, is the same as the rhythm guitar player’s, and that the bass player’s level 2 is the same as the lead guitarist’s. After that’s commonly agreed upon, rehearse the dynamics of a song until they’re second nature, and then watch the audience take notice.

Don’t Confuse Volume Level with Intensity
A common complaint from a band that’s being taught dynamics is that the song just doesn’t drive as much when they play a section quietly. That’s because it’s easy to confuse volume level with intensity.

TO PLAY AT THE SAME INTENSITY AT A LOWER LEVEL

Make sure the attacks and releases are the same.

Make sure the tempo is the same.

Make sure each player plays with the same dynamic level from section to section.

Most beginner bands tend to get sloppier the softer or less intensely they play. They begin to play the individual beats at slightly different levels and even have slight tempo variations between beats. As a result, playing softly sounds wimpy.

Another thing that happens is that the band gets so used to playing at one level (usually loud), that anything compared to that level sounds so different that it’s perceived as less exciting. The same thing happens when you drive your car at 80 mph for a long time. When you bring it back to 65 mph, it feels as though you’re going very slowly, even though you’re still going pretty darn fast.
And finally, the internal dynamics of each individual player go out the window. Instead of playing crisply yet quietly with the same attack and releases (covered later in the chapter) as at the higher volume level, the attack and releases get relaxed and so the playing becomes less precise.

The real trick is learning to play with the same intensity at lower levels. Make sure that the tempo is even, the groove stays the same as at the higher volume, and the attacks and releases are crisp, and you should sound powerful at any volume level.

**Builds**

Another part of playing dynamically is to pay attention to builds. Builds usually occur during turnarounds (for example, the two or four bars between the verse and chorus), but they sometimes occur at the beginning or ending of a song, too.

For a good example, you’ll find a build at the beginning of each section of Rush’s “The Spirit of Radio.” Once again, all band members have to play the build the same way, starting from the same low volume and going to the same high volume.

Builds are easy to overlook, and many times a band will think that it’s performing one well if it just plays the rhythm of the build cleanly. It’s called a “build” for a reason though, since just playing it cleanly doesn’t mean much unless there’s an actual volume difference between each note.

**PLAY TOGETHER AND LISTEN TO EACH OTHER**

One of the fundamental errors that band members frequently make is not listening closely to the rest of the band. It’s easy to focus just on your own performance, but in order to play well together, what really counts is listening closely to each other as the band plays. *This is the single most important action that a musician can take when playing with other musicians, and is essential for playing well in the studio.*

So what do you listen for? You listen to how the other musicians are playing or singing a phrase or part. How loudly are they playing? What are their dynamics like? How do they start and end each phrase? Where are they placing their accents? How are they playing the accents? Are they playing ahead of the beat or behind it? Does their tempo speed up when they play louder or slow down as they get softer?
All these items require as much of your attention as possible. The more you listen to each other and how each of you play and sing, the tighter you become. It’s that simple.

That being said, it does require some work. During rehearsal, if you notice that a phrase or part isn’t being played the same way (or if a player doesn’t seem in sync), stop the song immediately and ask each player, “How are you playing that?” Then determine which way sounds best, and rehearse just that phrase or part until everyone’s playing it together.

**THINGS TO LISTEN FOR WHEN PLAYING WITH OTHERS**

- How loudly are they playing?
- What are their dynamics?
- How do they start and end each phrase?
- Where are they playing the accents?
- How are they playing the accents?
- Are they playing ahead of the beat or behind it?
- Do they speed up when they play softer or louder?

**TIMING IS EVERYTHING**

A big part of playing together well is developing good timing. Playing in time means that each player must play to the pulse of the song. But while an individual player may be doing that well, if the entire band isn’t following a song’s pulse in exactly the same way, it sounds sloppy.

There are three parts to timing: song starts and stops, the groove, and attacks and releases. Let’s look at each one.

**Song Starts and Stops**

You could call song starts and stops “beginnings and endings” except for the fact that there are sometimes stops and starts in the middle of a song. The trick here is to make sure that everyone starts and stops the song at the same time.
Practicing starts and stops cannot be left for later or treated with an “It will be better in the studio” attitude. Rehearse each start and stop until everyone is locked in and knows each one like the back of their hand! If things still don’t sound right after five or six tries, go back to the reliable “How are you playing it?” question.

As is the case with most things that don’t lock in tight, there’s probably at least one player who may be playing things slightly differently from the rest.

Even if one of the instruments begins the song with a pickup or fill (as with U2’s “Get on Your Boots”), everyone still has to play the start of the song the same way after the fill. Regardless of how the song starts or ends, everyone has to play it the same way—no exceptions.

**Accents**

Once again, any time there is an accent in the song, everyone has to play it the same way. This means with the same feel, timing, and phrasing. If it just doesn’t seem to sound right, make sure that everyone is playing it the same way.

**The Groove and the Pocket**

All good music—regardless of whether it’s rock, jazz, classical, rap, or some new space music that we haven’t heard yet—has a strong groove. You always hear about “the groove,” but what is it?

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The “groove” is the pulse of the song and how the instruments dynamically breathe with it.

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To your audience, the groove is an enjoyable rhythm that makes even the people that can’t dance want to get up and shake their booty. And while the concept of “the groove” is very subjective, the idea is well understood by experienced musicians at a practical, intuitive level. Musicians who play funk and Latin tunes refer to the groove as the sense of being “in the pocket,” while jazz players refer to the groove as the sense that a song is really “cooking” or “swinging.”

A common misconception about groove is that it must have perfect time, but a groove is created by tension against even time. That means that it doesn’t have to be perfect, just even, and all performances don’t have to have the same amount of evenness. In fact, it makes the groove feel stiff if the performances are too perfect.
This is why quantizing all the song elements and lining up every hit in a workstation when you're recording frequently takes the life out of a song. Its time becomes too perfect because there's no tension. The song has lost its groove.

Just about every hit song has a great groove, and that's why it's a hit. If you want to study what a groove really is, go to the masters: James Brown, Sly Stone, Michael Jackson, George Clinton, and Prince. Every song is the essence of what a groove feels like.

Groove is often thought of as coming from the rhythm section, especially the drums, but that's not necessarily always the case. In The Police's "Every Breath You Take," for instance, the rhythm guitar establishes the groove. In most songs by The Supremes, Temptations, and Four Tops, from Motown's golden age, the groove was established by James Jamerson's bass.

**How to Find the Pocket**

The phrase "in the pocket" is used to describe something or someone playing in such a way that the groove is very solid and has a great feel. When a drummer keeps good time, makes the groove feel really good, and maintains it for an extended period of time while never wavering, it is often referred to as a "deep pocket." It should be noted that it's impossible to have a pocket without also having a groove.

Historically speaking, the term "pocket" originated in the middle of the previous century, when a strong backbeat (the snare drum striking on beats 2 and 4) became predominant in popular music. When the backbeat is slightly delayed creating a laid-back, or relaxed, feel, the drummer is playing in the pocket.

Today, the term "in the pocket" has broadened a bit. If, for example, two musicians (usually the bass player and the drummer) are feeling the downbeats together and hitting beat 1 (the downbeat) at the exact same time, they are said to be in the pocket.

Whether you're playing ahead (in front) of the beat, behind (on the back of) the beat, or on top (in the middle) of the beat, as long as two musicians (for instance, the bassist and the drummer) feel the downbeat at the same time, they'll be playing in the pocket.

**The Three Places a Beat Can Land**

In terms of bass and drums locking to create a cohesive part, there are three main areas of focus. You have to know where your drummer is most comfortable in terms of the beat.
Does your drummer play “straight,” playing meaning that he or she plays right on top of the beat (which can sound like disco music or a quantized drum machine)? Is he or she laid back, sitting in that area way on the back of the beat (the way Phil Rudd does on AC/DC’s “Back in Black,” like John Bonham on anything by Led Zeppelin, or like Clyde Stubblefield on James Brown’s “Cold Sweat” or “Funky Drummer”)? Or does your drummer’s playing have the urgency of a musician who plays on top of the beat (like Stewart Copeland of The Police)?

This is crucial to know, because the bass and drums have to function as a unit. They don’t have to play everything precisely the same way, but they have to know and understand the way the other thinks and feels.

Getting the rhythm section to groove with the rest of the band is much more difficult than you might think, since guitarists don’t always listen to the drummer, a keyboardist may have metronomic time yet have a difficult time coordinating his or her left hand with the bass player, and vocalists often forget that there’s a band playing behind them. The key is for everyone in the band to listen to one another!

Many people feel that the question is not so much what the pocket is as much as how you know when you’re in it; I guarantee that you’ll know it when you feel it, because the music feels as though it’s playing itself. It feels as though everything has merged together, with all the rhythmic parts being played by one instrument. Whichever definition you choose to go with or use, having a pocket is always good thing!

**Attacks and Releases**

Attacks and releases (sometimes called “articulations”) are some of the most overlooked yet important elements in playing together. Attacks and releases usually refer to a phrase that you’re either playing or singing. The attack part is easy: everyone starts to play or sing at exactly the same time in the same way. The releases, however, are often overlooked.

A release is how you end a phrase, and that’s as important as how you begin a phrase. Once again, everyone has to end the phrase at exactly the same time in exactly the same way. Listen to the Eagles’ “Hotel California” for examples of attack, release, and phrasing of both guitar and vocals.
Getting the attacks and releases to fall together is essential to making a good record (thanks to editing in the DAW, you hardly ever hear an attack or a release that’s off anymore), because if they’re off in any way, the part just won’t sound tight.

TURNAROUNDS
Another often-overlooked portion of a song that needs to be tight is the turnaround between sections, like the one or two bars between the verse and chorus, chorus and verse, verse and outro, chorus and bridge, and so on. This part requires a lot of focus because it’s played a little differently from the rest of the section.

For the drummer, it’s usually a tom or snare roll into the next section, but unless it’s a build, most players inexperienced in recording will usually just randomly play something over the roll. This doesn’t work, because a turnaround requires a precise line that has to be played in order to stay tight with the drums. As an example of how it’s done well, listen to the bar before each new section of Lynyrd Skynyrd’s classic hit “Sweet Home Alabama.”

Most neophyte bands (and even some experienced ones) don’t think about the turnarounds too much, and so it’s your job to make them aware. Make sure that every player has an exact part to play and that all parts work together and sound tight (a good idea for the rest of the song as well).

TEMPO
Every song needs the perfect tempo to groove. One of the things you discover early on when making records is that something as small as a single beat per minute (bpm) can make a big difference in how a song feels. Just a little too slow, and the song seems to drag; a little too fast, and it feels uncomfortable or becomes difficult to play. Therefore, it’s really important that you establish the song’s ideal bpm before you record it.

Determining a song’s best bpm is pretty easy if the band is learning a cover song (and the tempo is already established), but when band members are working out one of their own songs, finding that perfect tempo can be a challenge.

I’ve found that the best way is for the writer of the song to play it by him or herself, and then establish the tempo that feels right. After
you determine the bpm that the writer has established (there are lots of mobile apps that do this, my favorite being Tap That), then the entire band should play the song at this tempo a few times.

Even if the song feels just fine, it's still best to move the song's tempo up a couple of bpm, and then down a couple, just to see how it feels. You might find that just going a little bit slower or faster from that initial point can make a big difference. If the song is difficult to perform, backing it down a few bpm might make it easier to play, whereas playing it faster might give the song more urgency.

**Faster Does Not Create More Excitement**

It's really important that you don't get sucked into the "faster is more exciting" syndrome. Typically, the only things you get from playing a song faster than its established tempo are sloppy playing, lack of dynamics, and no groove.

Playing a song at its correct tempo (especially something that is already slow, like a ballad) is especially difficult, because it requires a lot of concentration to play slowly with precision and also stay in the pocket. Once again, the best way to overcome any anxiety about losing the excitement is to relax, exaggerate the dynamics, and concentrate on the starts and stops and the attacks and releases.

**A Click Can Help**

The age-old argument about playing to a click will never go away, but it's easier to do now than ever before because most players (especially drummers) learn to use one so early in their career. Some musicians play better to a click than others, and that's just a fact. The most widely used session drummers work so much because they make playing to a click sound as though they're playing to their own inner beat, and that's the big trick.

_I realized that I really could play to a click and make it breathe at the same time, and that really is an important thing for drummers to learn. If you play to a click, don't be so focused on the click that you lose sight of the fact that you're actually playing a song._

—Session drummer Brian MacLeod

While you're recording, I'd recommend using a click if at all possible. Doing so will make the jobs of the producer, engineer, programmer,
editor, and anyone doing overdubs a lot easier in many ways. It will even make your mix better, because it will be easier to time delays and reverb.

That being said, if the band sounds too stiff while playing to a click, then use it only to get a feel for the tempo for, say, the first 16 bars, and then turn it off. Sometimes just having it for the intro of a song can do wonders in keeping the tempo locked.

Also remember that it’s not uncommon to increase the tempo by a bpm during the chorus to push the band a little. This requires that the tempo be premapped in the DAW, but this trick successfully mimics what a player might naturally do without a click and is used all the time in recordmaking.

PLAY IN TUNE

If you’re making a record, it’s important that every instrument be in tune. Being out of tune is one of the most serious offenses that can occur during a recording session, yet it’s also one of the easiest to control.

Young musicians with stringed instruments (horn players, too) sometimes overlook this critical aspect of playing, partially because they’re either unsure exactly how precise they need to be or their ear is undeveloped. Once upon a time before cheap electronic tuners were abundant, everybody was a little out of tune. If you don’t believe me, just listen to a few records from back in the ’50s and ’60s.

By the ’70s most recording musicians discovered the Conn Strobotuner (see Figure 7-2), an electronic tuning device developed primarily for tuning pianos. Using a Strobotuner was an expensive ($350 in 1970s money) way to get in tune, but it made all the difference in the world.

This fueled the demand for an inexpensive version, which resulted in the models that you can purchase for as little as ten bucks today (see Figure 7-3). Since tuners can cost so little and do so much (far more than their predecessors could), there’s no excuse for any musician not to own at least one, and to know how to use it.

But just having one position on the instrument in tune isn’t enough. It’s absolutely imperative that the instrument be properly intonated, which means that the instrument plays in tune in any octave up and down its playable register (up and down the neck, for guitar and bass players). Good intonation on guitars and basses can be tricky to achieve, at best. Just like on a piano, an instrument is never completely in tune all the way up or down the neck. A relatively new intonation system called the Feiten Tuning System, developed by session guitar player
Buzz Feiten, actually solves this problem, but requires a qualified pro to install it because it involves resetting the bridge and the nut.

The bottom line is that the closer everyone is to being perfectly in tune, the better the band will sound. Having an instrument that’s in tune with itself is only half the battle, though. You’re not really in tune until all instruments in the band (except for the drums, of course) are in tune with each other. You might think that just because each player uses a tuner that everyone will be in tune with each other. Not so fast—there are a couple of complications.

First of all, all tuners are slightly different, and even though it says one tuner might indicate that an E string is in tune, that particular tuning can differ ever so slightly from another tuner’s either because of the way it’s being read, or because some of its internal settings have been accidentally adjusted to something other than the standard 440 Hz A note. The easy way around that is for everyone in the band to either use the same tuner or own the same brand and model.

But that’s still not enough. Everyone who’s going to use the tuner (guitar and bass players, horn players) should get together to
make sure that they're all reading the meter the same way. That way there won't be any confusion as to what an E really sounds and looks like with that meter.

Finally, after everyone tunes, it's best to all play a couple of chords together just to make sure that nothing sounds sour. If it does, go back and look at how each player is using the tuner, and I bet you'll find that someone is reading it a little differently than everyone else.

A few times at rehearsal will probably tell everyone exactly what they need to know to make sure that their instrument will be in tune from that point on. In this day and age, with an abundance of available inexpensive and accurate electronic tuners, there's no excuse to ever be out of tune.

DEVELOPING STUDIO EARS AND EYES
What are "studio ears?" It's the ability to hear deep inside a track—to hear all the details, good and bad. At the beginning of a project, it's easy to hear major mistakes and flams, but it's difficult to hear the really small ones. Unless you're in the studio every day nonstop, it takes at least a few days to get them back. Things that sound perfectly acceptable during week one of recording will probably drive you crazy by week three.

How do you develop studio ears? For many producers, the best way is by editing the tracks after basics. Regardless of the musicians, there are always fixes in timing that are necessary to tighten things up.

As a producer, I'm a big one for working it out during preproduction, getting it close during recording, and fixing it during editing. This keeps musicians from feeling beat up from too many takes, as long as they're playing with feeling but just not laying perfectly together.

That means that I'll have at least several days per song fixing things up later, which is where my studio ears get bigger and bigger. Now a 10-millisecond flam, which is about as little as you can perceive, will drive me crazy until I fix it.

**Studio Eyes**
A bad habit that many engineers and producers fall into is "studio eyes," which means that you move tracks around on the timeline so they perfectly line up just because they look like they're not aligned, even though they may sound perfectly fine.

This is when your experience kicks in. You close your eyes and let your heart and brain take over. If it feels good, it is good!