TONAL RUMINATIONS: Bass Tone And Recording For Dummies
by Adam Nitti

Hello again, fellow bottom-dwellers! I hope you enjoyed a joyful and musical holiday season. For this installment, I thought I might depart a bit from applied theory and academics, and instead write about something that I have been quite engulfed in recently, and that is the recording process for a new CD. By the time you read this, official announcements will have been made regarding the release of my latest CD, "Liminal." I am so excited about the release this album, and even more excited about sharing it you, my online bass family. I thought that since I'm just now emerging from the studio after having fully completed the master for my new album, it might be fun to talk some about bass tones and some of the strategies I utilized to record my bass tracks. I also thought I would share with you some tips and tricks that you might be able to use in the studio and on your own home recordings, and also acquaint you with some very basic principles that will help you to understand where your basic tone comes from.

The whole recording process has inarguably been revolutionized in the last decade. Computers and software have completely changed the game, even to the point of changing our perception of what a recording studio must consist of. Ever since I started composing, I have always tried my best to at least be somewhat familiar with current technological trends in the recording world, but now things are moving so fast it is really hard to keep up. When I released my first solo record, "Liquid Blue," in 1995, it was more common to use computers for MIDI sequencing, but not so much for tracking audio. Back then, the idea of tracking audio to computers was pretty cost-prohibitive. In fact, analog tape was still the primary recording medium of the day in most of the studios I was working in, and ADATS were just beginning to show up in some of the higher end control rooms. I still remember when folks at the higher-end music stores were peddling the first versions of Pro Tools, and although the concept showed much promise and had good intentions, it was still a very volatile environment to work in, largely because of limitations in data transfer bandwidth and hard drive technology. We just didn't have the personal computing horsepower back then to really threaten the obsolescence of tape. Well, as we all know now, technology rose to the challenge, and the rest is history. Fast forwarding to today, now just about ANYONE with at least a mediocre computer and an audio interface has the ability to create decent sounding tracks on a tight budget, as long as they have the ears to produce it effectively. DAW (Digital Audio Workstation) software packages such as Pro Tools, Logic, Digital Performer, and Cubase have brought serious music production power to the masses, and combined with the open-endedness of the internet, we now live in a world where remote recordings and live streaming sessions have become much more commonplace. Although I admit I miss the romance, nostalgia, and unique sonic and tonal characteristics that were features of the 'good old days' of recording to analog tape, I don't think I could go

back to working in that environment ever again on a regular basis. I've become ever so spoiled by the convenience of audio editing in the digital world. And finally, yes finally, companies are manufacturing products that are now actually sounding really good in the digital domain, which is an added benefit!

For those of you that are curious what tools I currently use, my latest record was tracked primarily in MOTU Digital Performer and Apple Logic Pro, and was mixed entirely in Digidesign Pro Tools. My bass tracks were recorded using a few different signal chains (more on those in a bit...), but most of them ultimately made it into my recording software via an M-Audio Firewire interface. I still marvel over the fact that all of my bass tracks, as well as many of the guitar tracks from my "Liminal" CD were recorded using not much more than my Apple MacBook Pro laptop computer running the aforementioned software. Several years ago, I decided that it would be really cool to have a system that was powerful *and* portable, since I like to do a lot of 'on-location' remote recording. Years ago when processing speeds started to get really fast and hard drive prices started to get really low, a lot of independent producers like myself decided to build complete systems around laptop computers instead of desktops. With not much more equipment than my MacBook Pro, M-Audio interface, and an external hard drive, nowadays I am able to track all kinds of instruments, even simultaneously, without even threatening a system crash. What a cool world we live in!

THE HANDS

Having just now emerged from the trenches of "recording hell" upon recently completing my latest album, I have ruminated on tonal pursuits almost non-stop as I have worked through my final tracking and mixing stages. Over the years, I have come to learn many things about bass tone, and have likewise discovered some misconceptions regarding how to get it. To be honest, this whole tone thing has become quite an obsession of mine, and I'm convinced it will be a life-long quest for me; I still have so much to learn... However, as I contemplate what to share with you in this article, I am realizing I keep hearing the voice of my first bass instructor whispering in my ears.. Well, honestly it's not so much whispering... It's more like shouting... He incessantly rants, "It's all in the hands, man. The sound is all in your hands." You have probably heard this statement before from someone you respect. It's possible that I could end this article right here with that statement, and save you valuable time that you could maybe use to update your Facebook status, or check out the latest prank-gone-wrong on YouTube. I feel it is probably important to state this from the 'get-go' as it may be fundamentally the most important tonal lesson to get in your head. However, the truth is that this is a primary concept that is in place to remind you that no matter what bass you play, through whatever amp, using whichever strings, at whatever height above sea level, etc, etc..., the quality and style of your phrasing and technique will ultimately be the prevailing factor influencing the characteristics of

your tone. Having said that, this article will attempt to explain a little more in detail how all of those other variables will influence your sound, as well.

THE BASS

At the risk of stating the overwhelmingly obvious, the bass you choose can have a profound influence on your sound. Basses these days are made in all different shapes, colors, and sizes, using all sorts of different woods, metals, composites, electronics, and finishes. Unless you have only played or heard a single bass in your lifetime, then you have discovered that different instruments have uniquely different sounds. For this reason, over the years I have accumulated many different types of basses in an effort to be able to bring a variety of basic tones to recording sessions. Every instrument is going to have its own unique character, but you will find that particular categories of basses will often have a tone that will at least fit into the same "family.". For example, the success of the Fender Jazz Bass has influenced many manufacturers into building their own versions. The characteristic sound of the Jazz Bass mostly comes from the fact that it utilizes 2 jazz pickups placed in a strategic location in the body. Although some Jazz Bass copies might have a different scale length, different electronics, or have their pickups placed in a slightly different location, most will share a basic similar characteristic in tone. (Keep in mind the purpose of this article is not to try and educate you on what specific tones you will get from different wood combinations, or which integrated circuits work best with which preamps. I'll leave those discussions to the luthiers and folks much more qualified than myself. Still, there are some key bits of information here that I hope will help you.)

PICKUP PLACEMENT

In my humble opinion based on my own personal experience, more than any other variable it is the placement of the pickups that will contribute most to the fundamental tonal nature of each instrument. No matter what preamp you run through or how you eq it, you are not going to be able to get a stock single pickup Music Man Stingray to duplicate the slap tone of a mid 70's Jazz Bass. Similarly, you are not going to be able to get a Fender Precision to mimic the fingerstyle tone of a Ken Smith Elite G. I could cite many other examples, but you get the point here. Although there are still many other factors at work, I believe the most basic explanation for an instrument fitting into a tonal category will first and foremost come from the placement of the pickups. Familiarity with different instrumental characteristics is key to the success of a session player or live player working in a variety of genres and styles. When looking for an instrument for the first time or if you are looking to augment your collection, take the time to play many different types of instruments to get a feel for what their most basic tonal nature is. Some newer players don't realize this basic principle when choosing a bass for the first time, and then are later disappointed when they can't

get close to the sound of their favorite bassist's tone with their instrument. In a later installment I'd love to get more in depth on the characteristic tones of some of the most popular basses, but for now keep pickup placement in mind when you are listening to bass players live and on recordings. If you have never paid much attention to this before, you will quickly learn to differentiate the different types of instruments used. I have gotten to the point where I can usually identify the specific type of bass that was used on recording without even having seen it.

ACTIVE VERSUS PASSIVE

This can be a source of friendly debate among bass players as to how to get the best tones. Which are better? ...basses that use active electronics or passive electronics? For those of you who may not be familiar with the difference, here is a somewhat oversimplified definition: Active components have the ability to amplify a signal and produce gain, and passive components do not. Applied more specifically to instruments, if your bass requires a battery to make sound, it has active electronics. If your bass makes sound without a battery, then it's a passive instrument. We are not going to cover any in depth electronics discussion or theory here, but it is good to understand the basic differences. Most basses that are active utilize some sort of onboard preamp, which allows you to cut or boost low, midrange, and high frequencies. With the tone controls set at center detent, theoretically the instrument is set flat. But in many cases, even with the tone controls set flat, an active instrument is going to have a louder output than a passive one. A passive bass doesn't have a preamp, and its tone control(s) operate a bit differently. Only with the tone controls set wide open will the bass be set 'flat'. At any other setting, the tone control is attenuated, and for most basses most noticed in the higher frequencies. Think of a passive instrument's tone control as being a sonic buffer to the instrument's natural tonal output.

You might be reading this and making the assumption that an active bass is going to be more versatile and more dynamic than a passive bass. To a certain extent this may be true on paper. However, in the recording world, what you *'see'* is not always what you *'hear'*, so to speak. I have played on many different types of sessions in all sorts of genres and scenarios, and frankly what I have learned about tone along the way has often surprised me. It is true that when played by themselves, many active basses have a sound that is characteristically more 'colorful', more 'full-sounding', or more 'hyped-sounding' than your typical passive bass. This is mostly attributed to the fact that bass's preamp and pickup combination incorporates increases in gain across key frequencies that allow the instrument to have a tone that is more vivid, able to cut through a mix more effectively. However, over the years I have found it interesting to see how the increased tonal bandwidth of my active basses had ultimately influenced engineers and producers in the mixdown stages.

THE MIX AND YOU

A little bit of history, here... As I became more involved with different types of recording sessions over the years, I noticed that in a significant number of the master sessions I played on in which I was using an active instrument, the perceived level of my bass in the final mix would often be lower than expected, and I would find myself struggling a bit to hear definition in the lines i had played. Conversely, on master sessions in which I used passive basses, I would notice that the bass would often seem much more present in the final mix, fitting in its own space among the other instruments, with every note audible. This perplexed me for a long time before I finally figured out what was going on. The huge dynamic range of some active basses gives them more tonal character, but it can also mean that they occupy some of the same tonal space in a mix that would already be occupied by guitars, keyboards, and even vocals. For this reason, if a mixdown engineer perceives your bass level to be competing with other instruments or in the way of other parts in the mix, then your bass level will usually be lowered until it is out of the way. Unfortunately, this can mean that your bassline might lose some identity or definition in the mix. A passive bass can be looked at as having a more 'narrow' tonal bandwidth; for this reason, it can often sit better in ensemble mixes, occupying its own space without competing too much with other instruments. The net result is that a mixing engineer can have more confidence in keeping the bass level higher, because the bass tone does not step on the other mix elements as much. One of the most common misconceptions that players mistakenly embrace is that their recorded bass tone needs to have an abundance of low end in order to be punchy. Subsequently, they will dial in some bass boost using their onboard active eq's thinking it will help them to maintain a presence in the mix. Unfortunately, it is often this extra low end level that ends up encroaching upon the other instruments most noticeably, and an experienced mixing engineer will either have to dial out significant low end or bring the bass level down overall in an effort to sustain mix clarity and eliminate 'muddiness'. Keep these key points in mind the next time you record and try your best to listen to your mixes as objectively as possible. Learn to differentiate the frequencies coming from your bass that excessively stand out or are more hidden, and don't be afraid to *cut* some recorded frequencies in an effort to find the best sonic space for your bass to sit in. And finally, don't be surprised if the engineer on your session ends up preferring the sound of your passive bass to your active one.

THE SIGNAL CHAIN

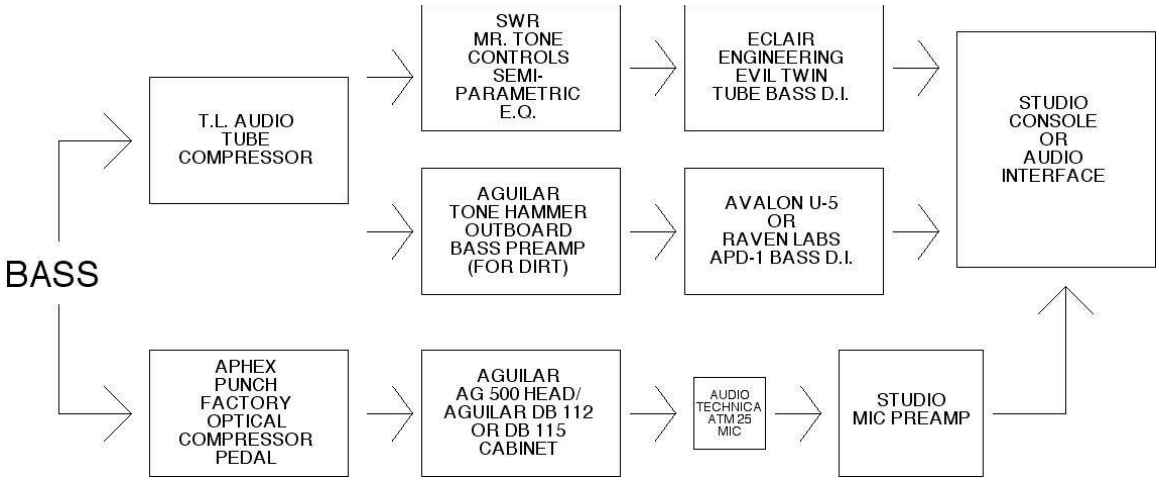
Your *signal chain* is the path that leads from your bass to the recording console at the studio, or if you are recording at home using an audio interface, the path between your bass and your audio interface's input. A signal chain can be very simple, very complex, or anything in between. However, at the very least you

need to make sure that your signal chain's output matches the impedance of the input of the console or interface you are using; otherwise, quite simply your tone will be compromised and you will have issues trying to get a proper signal level for recording. For this reason, a bass D.I. box (Direct Input) or preamp is often used as the last component in a bass player's signal chain before being recorded. There are all different kinds of shapes and sizes of bass D.I.'s out there, some inexpensive and some very expensive. They all accomplish basically the same task, but some are designed to color your tone, while others are designed to sound as transparent as possible.

One of the challenges of recording bass, especially in the digital domain, is making sure that you are not ending up with tracks that sound sterile or brash. Although inexpensive audio interfaces have become commonplace offerings from a variety of manufacturers, they don't always include good mic pre's or good quality A/D and D/A converters. (These converters are what translate your analog bass signal coming from your signal chain into a digital signal and allow it to be edited and manipulated in the software you are using.) For this reason, you will find that you won't always get the best results if you plug your bass straight into your audio interface when recording your tracks. It is often helpful to be able to incorporate a bit of very subtle 'color' through your signal chain through the use of a D.I. or preamp. This is another example in which a good-sounding signal chain component can help you to avoid having to use the onboard preamp of your digital interface, thereby protecting the integrity of your tone more effectively.

Ever since moving to Nashville, I've discovered that many of the engineers I have worked with have similar approaches to recording bass. As a studio bassist, my tone is my business card, so I'm always concerned with its quality, and I really try to learn something from every session I am a part of. I have made it a point to engage in tonal dialogue with the engineers on sessions, always wanting to make sure they are getting what they need from me. Especially in pop and rock settings, the engineers I typically work with really like to get 2 individual D.I. lines from me, one clean and one dirty. They will then record them onto separate tracks so that they can be later blended together in the mix. It's a great method for expanding the dynamics of the bass part in a recorded track, and it allows engineers and producers to essentially work with 2 different tones. Rarely am I asked on sessions to also provide a miked amp signal, but I have done some before in which I have provided 3 signals: one clean, one dirty, and an amp track.

My current studio signal chain which includes an amp line is illustrated in figure 1:



From top to bottom, this diagram shows my clean D.I. line, my dirty D.I. line, and my amp line, all being sent to the console simultaneously. This is about as complex as it can get for me, and often it is appropriate to completely bypass or even remove certain components from the chain if they are not contributing something necessary or beneficial to my bass's natural sound. This chain is what I will typically bring to more elaborate master sessions if an engineer wants a combination of D.I. and amp signals that he or she can blend in a final mix. However, it is becoming less and less common for me to bring an amp to a session. It should also be noted that I like to bring several types of basses to sessions so that I have a variety of bass tones to choose from. Rather than attempt to change or modify a bass's tone using drastic eq settings or pedals, I will always choose the instrument that is most suited for the job on its own and without much need for any tonal tweaking. You will notice that I am using 2 compressors in-line, the T.L. Audio for the 2 D.I. lines, and the Aphex for the amp line. Although I have these in the chain, I must emphasize that I use very little compression on my signal. I use compressors more for tonal color than anything else, since they can subtly affect your sound even when the compression ratios are set very low. One mistake that some bass players often make is the use of too much compression in their sound. Unless you are going for a super-squashed sound on your recording or in your live setup for effect, you should strive to use compressors very sparingly, and instead depend on your hands mostly for dynamics control. You don't want to have a compressor set to where you can hear it 'breathe' as the bass signal moves in and out its threshold. In my opinion, if you are going to use one at all, use very conservative ratios and threshold settings at first, and above all else, use your EARS and not your EYES to determine whether or not it is doing something helpful or harmful to your sound!

RE-AMPING

One of the things that I have started offering as an option to artists and engineers in more recent years has been 're-amped' bass tracks for them to use later as a blend track in their final mix. Re-amping simply means taking a bass track that has already been recorded and sending it via buss output or auxiliary send to an amplifier, and then recording that back into the session. It's a fantastic way to create an amp track without having to lay it down during the recording of basic tracks. This tactic offers fantastic tonal options and versatility for your mixes. On my latest album, I incorporated re-amped bass tracks blended with the D.I. bass tracks on almost all of the tunes. It really can fatten things up, and through the use of panning, can also create some really neat stereo imaging options.

I hope that this article has provided you with some new ideas that can be incorporated into your own recordings. In future articles, I will address some more specific applications and strategies, and maybe get into some of the specific methods I used to record some of the tunes from my "Liminal" album. Until next time, keep it bassy, but by all means, make it funky!

Adam