MUSIC

Recording & Production

DISCOVER HOW TO RECORD EXCEPTIONAL TRACKS AND PRODUCE MASTERPIECES JUST LIKE THE PROS DO

by JZ Microphones

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FOREWORD

Impatience and blind desire will rarely be the qualities that lead to success. This is especially true when it comes to the particularly complicated record and music-making process. If you want to give shape to your creative ideas, you need a steady hand and knowledge.

We have been working with leading industry professionals for more than a decade and in this book we've compiled advice from our best partners, experienced, award-winning sound engineers and producers, thus revealing tried and true methods of achieving the desired results in the studio.

To become a professional, one has to understand that success in the recording studio should always translate into success in the business arena. To help you achieve this, we have dedicated a large part of this book to the ins and outs of building a functioning and profitable sound recording studio.

We also dive deeper into all stages of record-making – from setting up your microphone to polishing the final mix as well as the psychology and human aspect of it all. Those who are just starting out will find this to be the perfect source of comprehensible advice and inspiration. Seasoned professionals will learn a trick or two as well.

Here in JZ Microphones we believe that knowledge should be shared as often as possible. We dedicate this book to everyone who is pursuing their dreams in music business.

"Please know that money, connections or luck alone does not guarantee success. There once was a green field where our factory now stands. It became clear to me a couple of years ago, that back then our most valuable assets were curiosity, dedication and sense of adventure,"

JZ Microphones founder Juris Zarins (1952 - 2017)

CHAPTER 1

STARTING OUT

1.1

How To Start As A Newbie

So you want to start producing and recording audio but you're unsure of what to buy and where to start. That's fine, as taking the plunge into the recording world can be very confusing and expensive.

The internet forums may have you fooled into thinking that you need a specific piece of gear or a specific DAW to be able to do great work, which is all false, of course.

Here are a couple of pointers to get you set up and recording in no time.

PICK A DAW AND GO WITH IT

DAW or Digital Audio Workstation is the main way you'll interface with your recordings and you'll spend most of your time looking at it and mixing in it, so obviously this is a tough choice.

Whatever the discussions on the internet may be, there is no "ultimate" DAW - every major DAW is just as powerful and feature-rich as the next one. Whichever you choose will serve you well if you learn to use it effectively. Pro Tools, Cubase, Logic, Studio One and Reaper are all incredibly feature-rich systems and all will be a good choice.

To find out which DAW you might like the best, just download a trial version and check it out. Pick whichever looks the best or logical to you (no pun intended) and just learn it well. DAWs have no sound of their own, no matter what the myths are. Every DAW will also come loaded with a selection of plugins which will cover all your basic needs, so you don't have to worry about getting a bunch of expensive plugins from the get-go.

GET THE BEST AUDIO INTERFACE YOU CAN

A good quality converter will make your life easier, as the recorded audio will be of higher quality, your drivers will be more stable and you will get much lower latency which will come in handy when monitoring.

Be realistic when choosing your hardware. If you're not going to record a full drum kit, you generally won't need more than two inputs. In this case it makes sense to buy an interface that has two really good channels instead of buying a crappy interface with eight to twenty channels for the same price. Universal Audio, Apogee, RME and Audient make some excellent 2-channel hardware that you can check out. These will cover 90% of your needs every day.

GET A GOOD ALL-AROUND MIC

When starting out, you'll probably want a microphone that's suitable for recording a wide range of sources, from vocals and acoustic instruments, to guitar cabinets and possibly, even drums.

Considering your budget you'll probably have two good choices - on the lower end of the budget spectrum you will have a dynamic mic, something like a Shure SM57, which can be used on almost everything with predictable and acceptable results, but it probably won't sound stellar.

On the other side you'll have an entry level large diaphragm condenser mic that will handle all of these tasks with much more finesse and polish.

Condensers will generally be a little more expensive, but it's worth it, especially if that's the only mic you will have for a while. A great choice to check out would be the V11 from JZ Microphones - it's an excellent all-rounder for a great price.

JZ Microphones V11

TREAT YOUR ROOM

It may sound a little overwhelming at the beginning, but take a few hours to investigate the basic principles of room acoustics and either get or make a few rockwool/fiberglass panels and set them up at your primary reflection points.

These panels come out very cheap if you decide to make them on your own. The internet is full of DIY guides to make panels for all budgets, so you'll be covered. Google "DIY acoustic panels" to find tons of plans, ideas and set up instructions as well.

Don't just get slabs of foam to minimize reflections - foam will absorb only the high frequencies and leave you with a weird sounding dead yet resonant room, which will be even harder to record and mix in, as the reverb times will be very different for certain frequencies.

Once you have a few panels set up, you can move them around to hear what sounds best. Start with the primary reflection points and corners though. Primary reflection points can be found easily with a mirror. Sit in your mixing position and have a friend move along the walls with a mirror. Anywhere you can see your speakers in the mirror, you have a reflection point that should be treated.

DO SOME WORK FOR FREE

Once you've got your basic setup in place, make a few recordings to showcase what you can offer to people.

If you play music yourself, record a couple of demos and make them sound as good as you can, so that you can start building a portfolio. The best thing about working on your own stuff is that you can scratch the song and start another one, if the first one doesn't sound good.

Once you feel confident enough to work with others, offer to do a few tracks for free or for very cheap. Choose good musicians though, because the recordings will sound vastly better if the players are great. Do the best you can and you'll be well on your way to building your name as a producer.

JOIN ONLINE FORUMS AND EDUCATIONAL ACADEMIES

There are a lot of very good educational resources on the internet where you can learn from the top producers of the world for not that much money. Most of these services offer subscriptions that start at 20 to 40 dollars a month, which is nothing compared to a recording school fee.

Most of these services also offer forums where you can get answers to all of the questions you may have coming up.

Don't get discouraged if your progress seems slower than you would like, as this really takes time and dedication. Just keep grinding and you'll definitely succeed. Just like in the saying - 80 percent of success is just showing up!

1.2

Setting Up Your First Studio

It's a well-known cliche that a thousand-mile journey starts with one step, but there’s no denying the hard truth in that statement. It basically applies to anything in life, as you can't really take shortcuts to your own future.

Every studio starts in a basement or in a bedroom, every producer starts by making music that doesn't sound all that great and that's all great - it's never been a better time to start making music than now. The amount of information is growing by the day and gear is getting more and more accessible by anyone.

Here are the basic essentials you'll need to take your first steps into working in the music industry.

COMPUTER

The core of any modern production workstation is a computer - it replaces the old tape deck, mixing console and racks and racks of gear.

If you're reading this then you probably own a computer and it's probably powerful enough to handle at least a light session with a couple of tracks and plugins.

If you're setting out to buy a computer, you'll need to set your priorities straight to make the best of your resources. The key factors when buying a computer are budget, portability and power. Everyone has their own specific needs for their situation, so there isn't a one size fits all answer. Here are a couple of ideas.

If you need maximum power for minimal money and don't need the machine to be portable, get either a really decked out PC with parts from the previous generation or simply get a used one.

The same goes for macs - getting a used classic aluminum tower mac is not such a bad idea - they were monsters when they were new and audio software hasn't gotten that much more power thirsty since then.

If you want to get a new one, look at the refurbished macs - a nice refurb iMac will give you ample power in conjunction with an awesome display.

If you need a portable rig that's powerful, be prepared to spend quite a bit. When it comes to the higher end laptops, price differences between PCs and Macs tend to get less significant, so pick the one you like and go. The minute differences in the specs won't be very important once you get up there in the premium segment.

If a cheaper laptop is what you're looking for, go either with an older non-retina MacBook pro with higher specs or get a more modern PC laptop. MacBook Airs and 12” MacBooks are simply not worth their price, as while being very nice little devices, they don't have a lot to offer when it comes to crunching numbers.

It has to be said, though, that most mid-level computers from the last 5 years are generally good enough to work on.

Audio isn’t the heaviest of workloads, especially if you're not using a lot of virtual instruments that like to chew up RAM. Speaking of which, 8 GB of RAM is probably the least amount you'll need to be able to run most things smoothly. The more the better! Getting an SSD drive for your system will also speed up your workflow dramatically. It's the best thing you can do to make your computer much more responsive.

DIGITAL AUDIO WORKSTATION

Choosing a DAW and learning it is an inevitable step in this whole journey. It's like a language - the more you know, the easier your life will be in many different situations.

While all DAWs sound the same, you need to choose one and go. The trick is to choose one and learn it inside out so that you are not limited by your knowledge of how to operate the system.

If you don't really care about paying a lot to get a premium DAW, go with Reaper - it's free (or very cheap if you want to buy it when you're starting to make money) and as capable as any other DAW out there. If you want to be able to go to any world-class studio and work with huge consoles, learn ProTools - it’s still sort of the industry standard because of its tight integration with large studios that need to manage high track counts.

If you want something more modern and sleek with an “in the box” approach, check out Cubase, Logic (Mac only) and Studio One - these are some of the most capable DAWs out there with tons of included instruments, loops and sounds to help you start creating within seconds of opening a project.

AUDIO INTERFACE

This will be the main thing your audio goes through every time you play something back or record. Aside from recording drums, almost everything you do will not require more than two channels at once - guitars, bass, vocals, percussion are all things that fall under this category. In this case it makes sense to buy a good two channel interface that will have far better preamps and converters than a similarly priced eight channel unit.

Usually the higher end small interfaces also will have the option to add an additional converter to expand its input count by at least eight more if you need to track drums. In this case make sure to plug your overhead mics in the highest quality interface, as those will make use of the extra clarity the most.

A good money saving tip is to buy the best interface you can afford and expand it with a cheaper unit via ADAT, if you have to cut corners. Plug your main tracks into the better preamps and use the cheaper ones for utility tracks - triggers, extra room tracks and mics you'll replace or supplement with samples anyway.

Getting a modern USB or Thunderbolt interface will serve you well, and most brands will provide you with a good enough product that will do everything you need. If you're looking for a higher quality interface that will serve you for years and years to come, check out RME, Universal Audio and Audient - they all have stellar reputation, great build quality and bulletproof drivers.

Don't get a very old interface if you're buying it used, as most likely you'll run into driver support issues at some point which will render the unit virtually useless.

MONITORING

In order to make good decisions on what you're doing, you'll need a set of monitors or headphones.

Of course, it's always best to get the highest end gear possible, but not always will you have the opportunity to do that - no matter what monitors you have or buy, setting them up properly is the key to success.

The old equilateral triangle trick is quite useful when setting up speakers. The idea is to set them up in such a way that the two speakers and your head in the listening position create an equilateral triangle (all sides are equally long). This will ensure that you're sitting in the recommended position and that the positioning is somewhat close to even.

If you have the space to do so, leave a little space between the back of the speakers and the wall for improved frequency response - a couple of feet will go a long way.

If you don't have the option of using speakers for production and mixing, you can use headphones. For mixing you'll probably want a good pair of open back headphones with a relatively flat frequency response. The usual choices are Sennheiser HD600, Beyerdynamic DT880 and AKG K240 - neither of them are cheap, but they'll sound good enough to let you make good decisions.

ROOM TREATMENT

Having a ringy room that's so reflective that your mixes don't translate to the real world is a real pain. Having at least some acoustic treatment in the first reflection points will help you clean up the room very much. You can order pre-made rockwool panels to hang on your walls for the same amount of money you would spend on a pack of not very effective acoustic foam.

If you're especially handy and have the tools, you can make your own panels by building a wooden frame to the size of a rockwool piece, throwing the rockwool into the frame and wrapping it in a breathable fabric - this will have the same efficiency of the pre-made panels but at a fraction of the cost. There are many tutorials online detailing every step of the process.

MICROPHONES

Once you have everything ready for sound output, there's only one thing missing - a microphone. If you're buying your first microphone and you want it to be as versatile as possible, consider getting a large diaphragm condenser mic, as it'll provide you with great detail, clarity and precision.

JZ microphones V11 would be an excellent choice for your first mic, with it sounding great on acoustic instruments, vocals, amplifiers and just about anywhere else. Don't forget to use a pop-filter when recording vocals to prevent the bursts of air created by plosives from distorting the sound when they hit the capsule.

Once you've bought a good all-around mic, it never hurts to get one of the good old studio classics - Shure SM57 or SM7B. These dynamic mics will sound good on everything, especially instruments, offering a different tonal flavor that can make your recordings sound more diverse. They are also extremely reliable and durable - there's a saying that you can hammer nails with an SM57 without it breaking.

OUTBOARD GEAR

Let's just get this out of the way - plugins have finally evolved to the point that they can fully replace outboard gear most of the time, but they don't have that sexy vibe and look that a real unit in a rack has. Outboard gear is a great way to add some analog warmth to your tracks, not to mention the client appeasement factor.

When buying outboard gear, first try to get something that can be used on a large variety of tracks, to maximize the bang for the buck ratio - something like a good pair of preamps would be a nice addition to your choice of tonal options, as you can track literally everything through them.

A good bus compressor can also add a dimension of movement to your mixes, even though it may have an arguably lesser effect on the overall tone.

500-series lunchbox racks are probably the most cost-effective way to get a nice set of outboard units. These racks are compact, they provide a unified power supply for all of the units and they are way cheaper than their full sized alternatives.

Sure, there are people that say that this format does not sound as good, but there is no evidence that any of their claims are true. These units are cheaper because they’ve no power supply and therefore many regulations don't apply to them, which makes them cheaper to manufacture.

PLUGINS

Plugins are a very tricky thing - they try to convince you that they can solve problems you didn't even know existed. Since there are so many plugin developers nowadays, their products are mostly different interpretations of the same basic concepts. Do your research and make a list of what you really need, so you don't end up buying basically the same thing twice.

Check for deals online - usually plugin manufacturers have sales going on every few months, with prices dropping as low as to a third of the original price. There are websites for checking these deals, so keep your eyes peeled. Usually it's wise to wait for deals to come up, unless it's something super important that you just have to get immediately.

Plugin subscriptions are also a great way to get a huge amount of software without spending a fortune. More and more manufacturers are offering subscription plans with prices starting from 10 dollars a month, which also includes instant access to every new plugin that comes out. The other great thing about subscriptions is the ability to cancel and re-subscribe anytime you like. This way you can really take the guesswork out of what a certain plugin will do or sound like before buying it.

BUYING USED GEAR

Buying used gear is an excellent way to acquire nice stuff for a fraction of the sticker price at a music store. First of all, you have to know what you're looking for to get the best deals on it. Do the homework and find out everything you need to know about the piece of gear that you want to buy.

For example, know what to look for to spot a cheap knock-off - this will save you a lot of grief. Popular microphones are often getting “cloned” in China and sold for very cheap. A Shure SM57 is one of the most popular mics in this regard.

Still, there are things that will give away the fake gear, so be sure to know as much as you can. Find out what the weak points of the gear are, so that you can check those first when you meet up with the person selling it. Once again - the more you know, the better.

Even when buying gear, your social skills are very important. Sure, you need to have your technical knowledge down, but when you're trying to get the best price in town, you have to earn it.

When negotiating a deal, be very, very respectful and reasonable. Don't low-ball the seller, just make a fair offer based on the condition of the gear, how “hot” it is and how long it has been listed for - the longer the seller has been trying to sell it, the more likely he will give you a better deal.

There will be times when the seller will not accept your offer and you should respect that as well. You have better chances of negotiating a deal if you are a nice, open person.

CUT THE CRAP

It might sound a little harsh, but such is reality - we spend way too much money on basically useless crap that we could easily live without and, arguably, even have a better life without. Chocolate bars, pizza slices, drinks and smokes are just the tip of the iceberg.

Try an experiment - put together how much money you spend on non-essential things during a one month period - you'll be surprised how much these small, seemingly cheap things add up. It will probably be well into the three figures a month. Don't multiply that by a year if you don't want to cry.

Those things that you feel you can't afford are actually being stolen from you by your everyday habits of living a comfortable life. This is a win-win situation, as you'll live a healthier life and will be able to buy more stuff that makes your mixes sound slamming!

1.3

The Recording Studio Toolbox

As recording engineers, we need to make sure that our sessions run smoothly, which means taking care of a lot of tiny technical issues, many of which you won't see coming sometimes.

Here are a couple of things that are nice to have around in the studio to save yourself from losing time and creative flow.

PAINTER'S TAPE

This is one of the most important things to have, as it has so many uses in the studio. Painter's tape is cheap, easy to apply, easy to remove and it leaves virtually no residue so there's no risk of damaging whatever you stick it on.

First of all, it's useful for marking channels on a console, settings on a processor or an amp that you need to write on. Even though consoles have a special strip for writing down notes, they generally are hard to clean and wear down over time. This is where tape comes in - stick a strip on the unit and write on that - this will make your life way easier. Tape strips can be easily removed and even reapplied, if necessary.

Painter's tape is also very useful for muting any loose strings on a guitar to eliminate any unnecessary ringing that can occur when playing hard staccato parts. Tape off the headstock strings (behind the nut) and the tailpiece if you have a tune-o-matic style bridge, and you will immediately hear the difference. The guitar will sound way cleaner and there will be no annoying atonal ringing poking through your takes.

If you need to mark off microphone positions on cabinets or microphone stand placements on the floor, tape is your friend once again. Marking mic positions is a very easy way to ensure that everything stays in place even if someone bumps into the mic stands.

ALLEN KEY SETS

Often times there will be musicians that have not taken their instruments into the shop for a professional setup before recording. This is where everything can go south, as guitars with buzzing frets and unhealthy neck angles can really ruin a recording session.

In order to save the day, get two sets of allen keys - metric and imperial - and learn at least the basics of setting up guitars. The two sets of keys will help you tackle every situation with ease and you won't damage any truss rods or strip out anything. Before you start the adjustments, find out which type of keys the instrument was designed for.

Usually, USA-made guitars and basses will use imperial keys, while European and Asian-made guitars will use metric keys. Using the wrong key can strip out the adjustment screws, so be careful.

Allen keys will also come in handy for adjusting guitars with a floating tremolo bridge, and they are also very useful for drums. Musicians will often forget to take these things to the studio, so be prepared.

SPARE GUITAR STRINGS AND DRUM HEADS

Nothing kills the recording vibe more than having to stop mid-take and run out to the music store for spare strings and drum heads if they break (and they will).

Always try to have musicians bring a few extra packs of strings and drum heads with them, but keep in mind that they also may not. Buy a couple of guitar string packs in the most popular gauges, and also get a pack of bass strings. If they manage to break some strings, you'll at least have a few packs in stock to sell them and save a lot of time.

Drum heads are a little more tricky, as there can be many different sizes of drums. If you don't want to buy a head of each size, at least get a 13 and 14-inch head for the snare drum, as the snare gets hit the most. It never hurts to keep a few extra kick drum heads as well, as they can go out pretty fast with a powerful drummer, especially if they use hard beaters on their pedals.

MOON GEL

Moon gel is a very cheap and vastly useful drum muffling tool that comes in a pack of five to six little pieces of clear, sticky material. Moon gels are a way more efficient muffling devices than anything else, as they are way more flexible than, say, a muffling ring or duct tape. Muffling rings are simply an on/off solution without anything in between - you either have the full effect or you have none.

The same goes for duct tape - yes, you can apply varying amounts of it, but it is hard to remove and it often leaves sticky residue that can have a negative impact on the way the drum head resonates.

With moon gel, you can apply any amount of muffling you need. If the gel is too effective, just move it to the side of the head. If you need to muffle the drum more evenly, have a few pieces spread across the rim or the drum. You can cut the gel up in smaller pieces and get even more precise control over the amount of muffling.

These little gels are also effective for muffling ride cymbals, if you find that you get one that's a little too prominent.

Keep in mind that muffling is not a substitute for a badly tuned drum or a new head. Tune the drum to the best of your ability and only then apply muffling.

CABLE TIES AND DUCT TAPE

Sometimes you just need to fix or reinforce something. Everyone knows that duct tape is the ultimate solution for most cases, and what can't be fixed with duct tape, can be fixed with cable ties.

These wonderful things are cheap and widely available, so there is no excuse not to get a roll of tape and a few different sizes of cable ties.

From fixing up mic stands that are on their way out to hanging up acoustic panels around the studio, you will find countless cases where these things will literally save your life and not let a few technical difficulties to ruin your recording session.

The recording studio toolbox can be put together for less than 50 bucks or euros, if you don't count the guitar strings and drum heads. This is an excellent investment that will definitely save your back on more than a few occasions. There's no better feeling than saying “I've got this” when things go sour.

1.4

Common Myths In Modern Audio Production

The world of modern audio production is a magical place - there are endless resources of audio related information, but this also means that a part of that information may not actually be valid advice or may not be true at all.

Here are a couple of popular misconceptions that seem to be floating around as general knowledge.

YOU NEED EXPENSIVE GEAR TO MAKE GREAT SOUNDING RECORDS

This is one area where many people get confused - it seems that all those shiny pieces of expensive gear do have a magical sound to them and they are exactly what's missing in your setup to get that polished sound.

More often than not, this is actually not true at all - you'd be surprised how many modern mixers work in the box without any outboard gear at all. Sure, you need to get your basic equipment straight, such as your computer and your monitors, but you can definitely do without that fancy 1176 or Distressor unit.

Would that gear be nice and exciting to use in your mixes? Definitely. Would it make a mediocre mix sound perfect? Definitely not. The most invaluable piece of gear you need is the one you already have - your ears. If your mixes are not sounding professional enough, it's probably you, as much as it sucks to acknowledge it.

SOME DAWS SOUND BETTER THAN OTHERS

The internet is full of arguments about some DAWs being better than others and even that they don't sound the same. While not all DAWs are created equal, they generally have no “sound” of their own, so it does not matter if you're using Reaper, Mixcraft, Pro Tools or something else.

Sure, each system might have a different workflow that may eventually lead to different different sounding mixes, but that can not be defined as the DAW itself sounding better or worse.

The most important thing is to pick a DAW of your choice and just learn it inside and out. Knowing all necessary functions and using it to it's full potential is what will get you the best sound.

A well mixed song in Reaper will beat a poor Pro Tools mix any day. Don't get discouraged if you are using anything other than one of the major workstations - think of it as just a host for your audio files.

YOU CAN FIX IN THE MIX

With technology getting more powerful, it's increasingly easy and tempting to take a mediocre or weak performance and edit it to achieve an acceptable take. Sometimes it's a useful way of getting that extra 5% out of the performance, but usually it just makes us lazy and more ignorant.

Yes, you can edit drums to be perfectly on time, you can edit vocals to be perfectly in tune, but you can't edit power and emotion into the performance. A part of what makes people react more to the older recordings is the actual human element - masterfully played and greatly recorded takes with small human “flaws” in them.

Keep in mind that every bit of processing you do to an audio file is going to affect the tone. Pitch correction software has a certain sonic character that can be identifiable with trained ears.

Even though the older recordings do have flaws, they still tried to record the takes as cleanly as possible - today we should still try to do the same. The tools that we use to fix things should really be viewed as the last solution to get that extra few percent and make the artist sound still like him, just on his best day ever. The software gives you great powers, don't abuse them!

YOU CAN ONLY MIX ON HEADPHONES

With so many of us doing work form our laptops, it's inevitable that we will mix on headphones from time to time. While this is an excellent way of monitoring fine details and the super low frequencies that are out of a normal speaker's range, headphones do have their limitations - they lack the natural cross-talk that a speaker system has and the stereo image becomes very separated.

While there successful engineers that do a lot of their work on headphones, they also use speakers. The more sources you can reference the mix on, the better.

Most of the time amateur mixes that are done on headphones don't translate very well in the real world and it's quite easy to spot which mix has been done this way.

PARALLEL PROCESSING IS THE KEY TO SUCCESS

This is one of the most talked about topics today in the online recording community. Parallel compression seems to be the go-to answer for all the mixing problems we seem to face every day.

Do your drums not sound good? Probably need some parallel compression, bro.. Does your vocal track sound weak? It's because you don't have parallel compression, man.. This happens every day online, without even knowing what kind of problems the mixer is having.

While parallel processing might get you that extra punch and sustain for your drums, it should not be viewed as a magical solution that fixes bad mixes, because it really doesn't.

Think of it this way - if your drums sound bad, parallel compression will only smear the bad tones and make them more apparent when crushed and mixed back with the original drums.

By no means is parallel compression a bad tool. It's an excellent tool for the right job, but it's still just a tool, like EQ, volume and regular compression. You should have a clear vision in mind why you need to use the tool to get the best results, not just use them because they sound cool and are trending at the moment.

CHAPTER 2

RECORDING

2.1

Good Recording Session Habits

Recording music is a creative process that needs to flow dynamically and naturally for the musicians to feel and perform well. Nothing kills the recording vibe more than having to stop the session and fix or check something that does not work just because you didn't check it ahead of time.

Mic placement and traditional recording skills are the fundamentals that you need to have down to be able to record audio well, but it pays to have good social skills, safe backup systems and DAW proficiency in check. Most of these tips are very basic pieces of advice that you can start using right away - the rest will come with experience.

ARRIVE EARLY

This is super important - you should arrive at the studio before the musicians get there for a couple of reasons.

First of all, you have to make sure that everything works and is set up as needed. This includes getting all necessary gear out, running cables and setting up the session by creating and routing all the necessary tracks. This will help avoid situations where musicians are sitting and waiting on you while you click around in your DAW. The band should not be paying to watch you do most of the prep work that could be done ahead of time.

Arriving a little early also helps you to get into the mindset of recording. Playing a couple of reference track to tune your ears to the style of sounds you'll be recording while you set up is a nice way to prepare for a session. If something has already been recorded in a previous session, play it back and get familiar with the tracks for a minute or two.

SET UP TRACKING TEMPLATES

Just think about it - how much time do you usually spend routing inputs to tracks, tracks to buses, setting up which tracks are muted and which are linked together? It's a safe bet that it takes 5 to 15 minutes each time you start a session.

Now add that up over a course of a number of songs - for each four songs you record, you lose an hour. An hour of plain dumb clicking in the DAW that could be spent any other way. You could edit a few songs worth of audio during that time.

Tracking template is an easy solution to this problem - simply create an empty session, route everything the way you like it, record a test pass to see that all is working just fine and save the template.

It's also useful to set up the basic panning and polarity, like flipping the polarity of the bottom snare mics and so on. You can also set up a basic gain structure to make sure that everything you play back sounds already roughly balanced - the clients love it when their stuff sounds nice from the get go.

You can also set up different tracking templates, such as drums, guitars, vocals and so on, so that you can bring in only the tracks you need at the moment.

CONNECT WITH YOUR CLIENTS

Once you have booked studio time, have the client come over to the studio a couple days earlier to check things out, talk over some details and just hang out - this way you'll get a feel for who they are and what you'll have to do to become a part of the team for the duration of the record.

If the artist or the band is very serious and calm, you'll also need to be like them and blend in to achieve the best connection. If they're childish and joke around all the time, you'll also have to do that, as it'll help you bond and become more of a unit.

When working on less intensive tasks, talk to your clients and get to know what they like and don't like in music - this is an excellent way to get a sneak-peek into their own music, as it'll probably be influenced by what they like. For example, if the artist hates auto-tuned vocals, he'll probably not want to have his vocals auto-tuned and so on.

It's also good to know the group dynamic if you're working with a band. Get to know if there's a leader and also, if there's a guy whose ideas get shot down. Keep all these things in mind to be able to manage the session effectively and keep everybody happy.

Musicians are very dependent on the vibe of the room and the situation - make sure that you provide the best possible circumstances for them. If you feel that a musician is feeling hot, cold, tired or anything else, do what you can to fix it.

Take breaks when the musician needs them and don't push them too hard when they're not hitting the mark. No good can come from bullying a musician to perform better - it won't help.

Try to find the best ways to communicate with them and encourage them to do better. If a musician feels empowered, the performance will show it. This is especially important if you find yourselves "stuck" - working on a part that just does not seem to work or maybe the musicians can't play their parts for some strange reason.

Don't keep beating your head against a wall - just take a break, chill out and when you come back, you'll probably work out the issue in no time.

Also consider taking a day off every so often. A single day off between six days of work would be a minimum, so that everybody has a chance to cool off and catch up on their life. No taking a day off will actually slow down the process, as everybody will get tired and bog down.

EDIT AS YOU GO

This really takes time to practice, but try to make sure that your editing skills are up to scratch for tracking as well. You'll win if you'll be able to do blazing fast edits on the recorded takes, as the musicians won't have to worry about you editing the session later. Quick editing on the fly also looks really impressive from the client's perspective.

Editing on the fly is very effective for avoiding dodgy performances later down the line. For example, recording a bass track on top of perfectly edited drums will ultimately result in a better bass performance - now you'll need to edit the bass less, as it'll probably sound better than it would if it were played on top of drums that aren't as tight.

If you're really fast, you can edit the vocal takes before playing them back to the singer. This will greatly improve their self-confidence and empower them to perform better. The edits don't need to be super perfect, but it sure helps to at least smooth out the rough spots.

Editing on the fly also means that once the song is recorded, it's done - there will be no guesswork involved as to how it'll sound once it's edited. Imagine listening to untuned quad tracked three part vocal harmonies and trying to determine if you have everything you need - it might be a nightmare if the vocalist is less than stellar.

MANAGE YOUR OWN QUALITY CONTROL

Be mindful of getting tired as the day goes by. This may lead to you becoming more accepting of sub-par takes, as you just want the parts to get done.

Keeping this in mind will help you not to lose your objectivity so fast - the takes have to be good, whatever it takes. If you feel that something is not working when everybody's tired, maybe it's time to call it a day and just continue tomorrow.

If it's early in the day, it might be time for a break. Be fair and realistic at all times - a record stays forever, so you better get takes that are worth keeping, no matter how tired you are.

DOCUMENT YOUR SESSION

Spreadsheets are an excellent way for you and the artist to stay on top of everything during a long tracking session. Make a spreadsheet to document every instrument for every song and cross out each respective section once it’s been done.

Making this spreadsheet in a digital form (Google docs, for example) and sharing it will help everybody to stay up to date on what's going on in the session. Printing it may not leave room for comments or changes that may take place.

This kind of system will also make it easier to plan studio time for each member of the band - everybody knows when they need to be in the studio to track their parts or assist others.

SET UP A SAFE BACKUP SYSTEM

One of the worst nightmares we face as recording engineers is the thought of losing our session data. Recording someone else's music is a very serious responsibility that’s not to be taken lightly.

Every DAW has at least some way of preserving your files in the case of an error or power outage. Auto save is an excellent way to provide immediate backup if something goes wrong. Be sure to set the interval to something like 1 minute or so - while it might seem a little excessive, a lot of things can happen in a minute when you are recording.

A relatively safe system is to set up auto saves that happen every minute and to save 60 backup files, as this way you’ll be able to recover any minute from the last hour.

Auto saves are a great precaution, but they still don't mean much in case of a physical disaster - the drive might fail, the computer might get fried by lightning, or it just might get stolen (the list goes on).

This is where an off-site backup comes in handy - many backup services offer unlimited cloud storage for as low as 5 to 10 bucks a month.

The saying goes that nobody that has been saved by insurance feels that they paid too much for it. You and your clients will feel much safer knowing that the session files are backed up all the time.

2.2

Recording Drums

Miking a full drum kit is something that everybody struggles with from time to time. For beginners it's like a very steep hill to climb even at the best of circumstances. For the seasoned pro it's a battle of getting everything to play nicely and making the best of each little piece of the puzzle to make up a powerful and natural recording. Drums are notoriously difficult to record just because of the sheer amount of instruments being hit at once.

It should be said that the drummer himself or herself is the best drum mixer in every session. No amount of post processing will make up for a poor dynamic performance, such as hitting the hi-hat too hard and hitting the snare too soft. The engineer does not have full control of this though, so there are a few things that can be done to make the session run smoothly.

MIKING OVERHEADS

Overheads can be recorded in a couple of different ways to achieve different sounds. Two of the most popular approaches are “spaced pair” and “XY”. Both use 2 cardioid condenser microphones and offer varying degrees of stereo width and mono compatibility.

The spaced pair is a commonly used technique in modern productions, as it provides you with the widest stereo image which can be desirable for all kinds of modern pop and rock, for example.

A general rule of thumb would be to set one mic above the hat side crash cymbal and the other one above the crash or ride at the opposite side of the kit. It takes caution to set this up correctly to achieve a phase-coherent overall picture of the kit without any comb filtering, but it’s not very difficult.

The most important aspect of setting up overheads this way is to make sure that both mics are placed an equal distance away from the snare, so that the snare signal is picked up at the same time. If that means placing one mic higher than the other, go for it. A well balanced overhead recording goes a long way.

One very important thing to check when placing microphones is how the cymbals will swivel when they’re hit hard. You want to place the overheads along the axis of the cymbal movement to prevent sudden blasts of air hitting the capsule and creating a phasey “whooshing” sound that can really ruin a drum recording, as it can not be fixed later.

XY pattern is a narrower, more natural and generally more mono-compatible mic technique. It uses two mics set up above the center of the kit in a way that their capsules are almost touching and each mic is looking 90 to 135 degrees to each side of the kit. It still provides some separation, although it won’t be so extreme.

Whichever way you choose to go, make sure that you have the best quality mics you can get, as overheads are very sensitive in this regard. The better the mics, the more width, depth and clarity you’ll achieve.

When placing the microphones, keep in mind what you're going for in terms of overall kit picture – if you want a fuller kit sound, put the microphones up higher above the drums. If a more direct, sort of like a cymbal spot mic sound is needed, bring them down a little bit. A general rule of thumb for a starting point would be to set the mics up around 4 feet from the snare drum, then adjust as necessary.

MIKING KICK DRUMS

Miking the kick drum is very preferential, as different projects might require different sounds. Basically to cover most needs you might need to record the direct kick using two mics – inside and outside the kick and then create a blend of the two.

Every kick is different and every kick pedal beater sounds different. Round felt beaters will create a softer feel, while harder, flatter felt beaters will bring out more attack. Wooden or plastic beaters will emphasize the attack even more, but generally will wear out the beater head more quickly. Keep all these factors in mind and move the mics around to bring out the best qualities of the setup you have.

The inside microphone usually is a dynamic cardioid and will mostly capture the attack and the fundamental tone of the drum. The closer you move it to the beater at the centre of the head, the more pronounced the attack will be. If you feel that the attack is too much, try moving the mic back towards the resonant head and point it more to the side of the head.

The outside microphone usually is a large diaphragm condenser and will capture a more natural overall tone of the kick, as well as emphasize the low end, especially in combination with the inside kick. Usually the outside mic is placed between the centre and the side of the resonant head a couple inches back. The further from the drum you move it, the more natural and roomy the kick will sound, but you'll get a higher cymbal bleed to signal ratio. Sometimes it's a good idea to put a high quality pop-filter in front of this mic, to minimize excessive blasts of air, if there are any.

When placing these mics it's important to check the phase and polarity relationships between the two to achieve the best results. Multi miked sources that have tracks out of phase will sound smaller and thinner therefore defeating the purpose of such a feat.

MIKING SNARE DRUMS

Sometimes you'll find that a well tuned snare will sound nothing like the real thing once it's recorded – the sound may be dull, ringy and muddy. This is a classic example of bad mic placement that's made the mic pick up all the wrong things.

There are a couple of things to consider when miking a snare – how much low end and resonance you want to capture and the required ratio of drumhead to shell sound.

First, let's start with low-end and resonance. Generally, when using a cardioid dynamic mic for recording the top of the snare, mic placement is everything. If you need a more heavy bottom end, move the mic closer to the source and make use of the proximity effect. The closer to the snare the mic will be, the more low-end will be picked up.

As for the resonance (also known as "ringing"), the more you point the mic to the side of the drumhead, the more ringing you'll pick up. If the snare rings too much, point the microphone more to the centre of the head. Sometimes it helps to point the mic almost at the drummer's belly.

The drumhead to shell ratio can be altered by, you guessed it, pointing the mic either more to the head or more to the body of the snare, or more precisely, to the rim. A mic pointed at the rim will sound very natural, bringing out the rattle of the snare wires, the sustain of the shell and the crack of the head. The placement might look strange at first, but be sure to experiment and hear the difference for yourself.

It's always a good idea to record a bottom snare mic. Even if it's overlooked as not very essential, it helps to give the snare track some life and articulation, especially if the drummer is very dynamic and plays a lot of ghost notes. A good starting point would be to aim the microphone at the snare wires.

Different engineers use different microphones for bottom snare application - some swear by large diaphragm condensers, some really love dynamics, as both work really well. Whichever one you choose, be sure to check its polarity against the top mic, as it'll be reversed by default, just because of the direction of the placement.

MIKING ROOMS

Generally it's best to use large diaphragm condensers or ribbon mics for recording drum rooms. A good way to place room mics is to walk around the room with the drummer playing and find a spot that sounds nice to your ears - chances are that the mic will work really well in those spots.

If you're going for a more diffuse room sound with less direct articulation, you can place gobos or acoustic panels in front of the microphones to "shield" them from the direct sounds.

A nice way to get really exciting room sound effect that glues the whole drum mix together is to place a mono room mic in front of the kit and then really slam it with compression later in the mixing stage.

It'll sound messy on its own, but when mixed in with the rest of the drums in a subtle way, it'll provide a nice layer of extra depth. It's also a good idea to check that the distance from the snare to the room mics is equal to ensure a stable stereo image.

TIGHTEN UP THE PERFORMANCE

Sure, many recording purists will speak against drum editing to time-align them with the grid, calling it music fakery and artificial talent creation, but in the real world only one thing matters - does it sound great.

If you need to tighten up a couple of fills in order to make a drum track sound great, by all means do it. If you need to time-align each and every drum hit exactly to the grid to make a track sound as inhumanly tight as possible, do it. Just do it and don't even think about what others say or think. If you'll do a good job editing, they'll never even have a clue - all they'll hear is awesome drums.

The method you use to do this is largely irrelevant, just as long as you crossfade all your cuts to make the transitions smooth. Usually an equal power crossfade will provide you with the smoothest results. If you need to edit just a few spots, try to to them by hand, so that the automatic editing system does not make any unnecessary slices and fades.

Once the edit is done, listen through the track to check for mistakes or glitches and then print the tracks to make them solid pieces of audio once again.

CLEAN UP THE TOM TRACKS

Working with clean tom tracks is a real gift when you're sitting down to mix - you can worry about tones rather than figuring out where the hits are and trying to gate them out without much success.

Cleaning tom tracks is actually very easy - just play back your drums with the tom mics turned up loud and cut out everything that is not a tom hit. This method will really help you make sure that every hit is clean and it'll also let you define how long you want the tom hits to ring out - noise gates with fixed release controls won't.

As a general rule of thumb, you can try cutting the tom sustain when the next hit happens, as it'll take the spotlight from that moment on - snare hits are excellent, as they're loud and hard.

Once you've cleaned the toms, you must consider how much dynamics you'll need in them. A method that's used in rock and metal to make the tom fills really even is to slice each tom hit separately and then to normalize them to make every hit equally loud. This helps to get that almost sampled tom sound but it'll preserve all the natural variations of the hits. Many producers have done this with kicks as well to get unbelievably consistent tones without using samples.

CLEAN UP THE SPOT MICS

If you have recorded spot mics for the hi-hat or any of the accent cymbals (ride, china, splash, stack and so on), it's very useful to either cut out or automate down the sections where the cymbal isn't being hit to keep the overhead image as clear as possible.

Having spot mics playing in the background can sometimes add to the overall drum sound, but usually it'll just introduce unnecessary kick and snare low-end buildup you don't necessarily want in your mix. When cleaned up, it'll also be very easy to visually identify where each of the spot cymbals are being played to quickly mix them later.

Often times the spot cymbals will need some extra attack to make them come through, especially for small splashes and dark chinas. In this case you can make small automation bumps on the hits to make them pop through.

Don’t worry that they might sound a little too pronounced - once you’ll blend them with the main overheads, they’ll provide just the necessary boost for everything to fall into place.

These cleanup steps will really streamline the whole process of drum production, as you won’t have to deal with editing and prep-work in the mixing stage.

If you’re sending the drum tracks to be mixed elsewhere, the mixer will definitely notice your effort and will be very pleased to work with you. Just don’t forget to add clear names to the tracks!

2.3

Recording Electric Guitars

Getting a great guitar tone can be a surprisingly easy task or it can be a horribly difficult one, depending on the tones you're going for and the preparation before hitting the record button.

Even though there aren’t hard and fast rules for getting a great guitar tone, there are a few things to take into consideration that might help you achieve your goals faster and keep the messing around factor to a minimum.

SETTING UP THE AMP IN THE ROOM

This might seem ridiculously simple, because it is - you have to set up the amp in the room you're going to record it in.

Try a couple of different spots in the room, as chances are one of them is going to sound better than the rest. Then, once you've determined the final placement of the amp or cabinet, lift it up from the ground - put in on a different amp, a chair or anything else to decouple it from the ground and clean up the tone.

Now is the time to adjust your amp settings to your desired tone - make it sound as good as you can in the room before even thinking about microphones. This is especially true if the amp will be in a different room than the player.

CHOOSING AND PLACING THE MICROPHONE

All kinds of microphones can be used on guitar speakers, and this is definitely an area for experimentation. As a general rule of thumb, dynamic microphones can withstand very high signal levels without distorting and are considered a great overall choice for recording guitar speakers.

JZ Microphones have designed a mic that's voiced to fit your guitar recording needs - the HH1. Its frequency response will help you get a guitar tone faster, as many nuances of guitar speaker miking have been taken into account.

For example, it features a gentle low-end rolloff to counter the proximity boost effect that occurs when close-miking speakers, so that you can use it up against the speaker grille without getting a tone that's boomy and muddy. The mic's voicing is also a little more modern - it features a gentle dip around 200 Hz and a boost around 2 to 6 kHz that'll help you get a great tone with less EQ.

JZ Microphones HH1

Many engineers agree that a good starting point for mic placement is to put the mic against the grille and pointing at the spot where the dust cap meets the cone. If the sound is too bright, move the mic out towards the edge of the speaker. If the sound is not bright enough, move the mic towards the centre of the dust cap. The farther you move the mic back from the speaker, the more diffuse and natural the tone will become.

Record a few test tracks with different positions, make notes and compare. This way you can be sure that you are heading in the right direction.

CHOOSING THE BEST SPEAKER

If the amp has 2 or more speakers, it's well worth it to spend some time finding which speaker sounds the best. Even though they’re supposed to sound identical, they almost never do.

Record a short test track of each speaker in the same mic position, then compare. If you're recording a rhythm guitar track that's supposed to be double tracked, double the test track and play it back as it should be. Compare the speakers and choose the one that sounds better. It's a good idea to make notes of this, so that you can save some time in this step the next time you record the same amp or cab.

MULTI MIC SETUP

Some engineers like to use different microphones on a cab to capture different tonal ranges of the speaker and blend them to create a rich, full tone. The problem is, many times this technique will result in a phase problem in some sort that you’ll have to solve either at the tracking stage or when mixing, otherwise you’ll be left with a weird, phasey tone that sounds nothing like you planned it would.

When tracking, a good way to make sure that the mics are perfectly in phase is to set them both up at their approximate positions at equal volume, reverse the polarity on one of them, play a test signal through the speaker and just move one of the mics around slowly until the sound cancels out almost completely. Once the position is zeroed in, simply reverse the polarity back and you’ll have two mics that are in phase.

If you plan to phase align the mics later using you DAW, it's even easier - set up both tracks at equal volume, reverse the polarity on one of the tracks and move it around until they cancel each other out the most. Then reverse the polarity again and you're done!

This approach can also be used when blending different amp tracks, such as microphone tracks and amp simulator tracks. Always check the phase alignment when blending amps to ensure that the amps are actually complimenting each other, not cancelling each other out.

ISOLATE THE AMP

You'd be surprised how much of the room sound can make it's way into a close miked guitar track, even when the mic is right up at the speaker grille. It's always a good idea to try to isolate the amp as much as possible - you can use acoustic panels and heavy blankets to make a “fort” around the amp and mic to keep the signal as dry as possible.

Compare the sound once the amp has been isolated as much as you can - you'll be in for a surprise!

TAKE DI TRACKS

There’s absolutely no excuse for not recording a DI track alongside a mic track when tracking guitars and bass, even if you think that you’ll never use it.

Think of it as insurance for your project, as sometimes you’ll come up with better tones after the fact or you’ll just need to edit the guitar part, which is much easier to do when you have the clean DI track as a visual reference. Pitch correction also works way better on clean DI tracks rather than overdriven amp tracks that are saturated beyond recognition.

If for some reason you become dissatisfied with your guitar tones, DI tracks allow to breathe new life into your recordings without spending unnecessary amounts of your and the artist's time.

For guitars, a nice way to make overdriven tones more open and spongy would be to blend in a much cleaner tone of the same performance, and a DI track will allow you to do just that.

DI tracks that are shifted an octave up or down and fed into a reverb can create very interesting shimmer effects that can be blended with the main tracks in a subtle way to create a warm and interesting atmosphere. Print the track to an audio file and reverse it to achieve a ghostly effect that couldn’t be possible otherwise.

DI tracks can also be used as a key input for expanders and noise gates to make these processors work more efficiently, because gating an overdriven track would yield far less clean results.

You never know what techniques or gear you'll have in five or ten years from now, so keep your guitar DI tracks in case you'll want to make a remix of an old project of yours. A tone that seems excellent today may completely fall apart compared to what you'll be able to create sometime in the future. If you're sending the tracks for someone else to mix, it also is important to include DI's in case your tones are not exactly what the mixer would want them to be.

DON’T IGNORE THE MECHANICS OF THE INSTRUMENT

This is a classic problem that many engineers encounter on a regular basis - a musician shows up with a guitar that's not adjusted correctly and still has strings on from that gig 6 months ago. There’s no way that this instrument will sound good when recorded.

Be sure to use the appropriate string gauge for the guitar and the tuning. Strings that are too thin will be loose and won't stay in tune when played with more attack. Strings that are too heavy may impact the player's performance and will generally sound a little less bright.

Be aware of the fact that new strings are new for a very limited time. As crazy as it may seem, strings may start to sound dull even after 40 minutes of intense playing, so be sure to check the DI track from when the strings were just put on and compare if the high end has died off.

It's not uncommon for bands and producers to change strings after each song when tracking an album. This especially applies to bass guitar - there’s nothing that can sabotage a recording like a bass tone that's dead and has virtually no harmonic content other than a boomy root note. If the instrument has active pickups, change the batteries before recording. A dead battery will make the signal distorted and lo-fi sounding which can only be fixed by retracking the takes.

COACH THE PLAYER

It's often said that the tone is in the hands. Once the aforementioned mechanical issues are taken care of, this is very well the case. The pick attack and fretting techniques vary greatly from player to player, ranging from mushy and squeaky tones to tight and crystal clear using the same gear and settings.

Sometimes the player will whack the strings way too hard causing the notes to go out of tune - in this case a thinner pick may just be the answer. Thin pick essentially works as a compressor - it flexes more and dampens the force of the stroke, while preserving the energy of the attack, making the notes sound more stable and clear. Thinner picks will generally produce less low end and that may just be what's needed.

Keep an eye out of extreme force being put into the fretting hand - this can also cause notes to go out of tune because the strings are being bent around the frets. Don't be afraid to coach the guitar player in a constructive way about this, as the results will speak for themselves.

Tuning and timing are the most important things that can make or break a guitar recording. A part that's in tune and on time will gel with the rest of the instruments and will sit in the mix nicely without much effort. On the other hand a part that's not in tune and on time will sound weak and will never have the same clarity.

Make sure to check the tuning as often as possible. Adjust the tuning according to the player and part - if a player has to really dig in with his picking hand, you may need to actually tune the string a little flat so that when it's picked it goes up to the required pitch. Just don't forget to tune back after the part is done! It's a good idea to make yourself a small list of things to check before recording guitars to make sure that you're ready to capture lightning in a bottle at any moment without worry.

2.4

Recording Vocals

So you've got a mic set up, the vocalist is rehearsed and everything seems fine, yet you feel that the results still could be better.

Here are a couple of things to consider that may help you get better vocal recordings with minimal effort.

TRY OUT DIFFERENT MICS

It's dead simple - there's no guarantee that your "best" mic will always work for every singer and every style of music. Sometimes a less expensive mic will actually do the job better.

When warming up, set up a few different microphones that you think may work for the singer and test them out. There will definitely be times when a large diaphragm condenser will be the obviously better choice, but sometimes you'll find that a dynamic mic suits the vocalist and the song better, especially if it's a heavier rock song and a more abrasive vocalist.

Be sure to show the vocalist the differences in the tone and choose the best sounding mic together. The vocalist will have the best idea of how their voice should sound and which microphone works best for the project.

Don't forget about using a pop filter - you don't want sudden plosives to ruin an otherwise perfect vocal take.

SET THE ROOM TEMPERATURE

Room temperature is a very important factor when recording. If the room is too cold, the vocalist will tend to get more tense and won't be able to relax as much as necessary. If the room is too hot, it'll become hard to concentrate and will make it harder to breathe, also diminishing the performance.

Try to get the tracking room up to optimal temperature before the session so that it doesn't change during tracking, which may also result in not the best performance possible.

If the tracking room has air conditioning, make sure that it's not turned up very high, as it dries the air and makes it harder for the singer to keep the throat hydrated.

When you're starting the session, ask the vocalist if the room temperature is good and adjust as necessary. A vocalist that feels good will deliver tracks that sound good.

KEEP THE VOCALIST HYDRATED

Hydration is a vocalist's friend. Make sure that you have water, or even better, tea available in the studio. Musicians will often forget to bring water to vocal sessions, so you have to think ahead of them.

Tea is good for more than just drinking - it makes steam that can be inhaled to directly moisturize the vocal cords and revitalize the voice very effectively.

Make sure to keep vocalists away from drinking anything with sugar or dairy to keep the voice clear of any unnecessary mucus that'll make the voice sound weird and not clear.

TRY TO GET LONGER TAKES

This is super important - unless totally necessary, try to record longer takes and not punch in every line separately. Longer takes will preserve the feel of the vocals a lot better than a heavily compiled take.

It's also easier for the singer to not get caught up on a specific word or phrase when redoing a tiny section of the par a bunch of times. It's much harder for a singer to punch in a specific phrase and retain the same emotional content they have when singing the song as a whole.

Keep recording longer takes and comp later, if needed. If you still feel that you need to punch in a couple of spots, do it after the main vocal tracks are laid down and you know exactly what you need.

Also, when punching in, start recording earlier to get the vocalist already singing before the punch-in for a cleaner take that'll glue with the rest of the performance.

This will also help to keep words at the necessary length, as punching in separately might lead to some words being too long if the next line is not taken into consideration.

DON'T PLAY BACK THE RAW TRACKS

Vocalists rarely like to hear their voice unprocessed, as it makes them feel very exposed - almost everyone feels weird hearing their voice coming from somewhere else other than their mouth.

Have at least some compression and vocal sweetening going on when you play back the recorded vocals, like delay or reverb. Also make sure that the levels are good so that the vocals sit well with the music.

If you have the skill or technical ability, use pitch-correction software to smooth out the biggest pitch deviations if there are any. Be quick though, don't make the vocalist wait on you - this has to be seamless.

Hearing back a smooth vocal track that sounds good will give the vocalist a lot more confidence rather than hearing a dry, uncompressed vocal that magnifies all of their flaws.

2.5

Recording Outside The Studio

There's something very exciting about recording outside the safety and comfort of your studio.

It's like an adventurous journey for a producer, a one that not only offers unusual and interesting soundscapes, but also one that presents many different challenges.

GET AS MUCH INFO AS POSSIBLE

Knowing where you'll have to set up your recording camp is the first and most important thing, as it'll generally give you an idea of how things might sound and what to expect.

Given that the range of places you may go can range from recording in a small wooden cabin in the countryside to tracking drums in a church or even recording in a wide-open space under the clear skies, the tools that you'll need may vary greatly.

Also, get info on not only how the place will sound, but also what other sounds may there be in the background - this is very important to avoid any surprises like recording next to a very loud airport or things of similar fashion.

Make a list of potential problems that you might face during the recording process and talk them over with the client, so that everybody is on the same page and everybody is aware of the potential issues.

GET YOUR CABLES READY

Once you know where you're going to record, be smart and make an mic input list to know how many mics and cables you'll need. This will not only help you pack and organize everything, it'll also tell you how many cables you have to bring with you.

If you're recording in a huge space (for example, a huge hall), be aware that you'll probably want to record room tracks to sonically utilize the available space as much as possible. Room tracks are usually placed further away from the source to capture the ambience, so the cables have to be long enough to allow you to do just that.

It's a good idea to bring more cables than you think you might need, as well as making sure that the cables are longer than you think you may need. It would really suck to find out that you're a little short on cable length when you are setting up, especially if you're in a remote location that does not have a music store nearby.

If you have a multi-core stage box or two, take those with you - they'll significantly reduce the need for long individual cables and will make routing vastly easier.

SET UP A CONTROL ROOM

Not always you'll get a chance to set up a separate control room, so you might need to prepare for tracking in the same room where the musicians are playing. This is highly inconvenient for monitoring purposes as you'll have to monitor the tones by playing back the recorded material, but sometimes you'll have to work within the boundaries that are there.

In order to be able to monitor when the musicians are playing, you'll need to have a pair of good headphones. If you can, take your studio monitors with you as well, so that everybody can hear what they recorded once the take or session is done.

Also make sure that you can provide the necessary monitoring options - long cables, closed back or in-ear headphones and a powerful headphone amp is a must. Always be ready for even the stupidest of situations and problems.

BRING YOUR TOOLBOX

You can never be too safe when it comes to recording. Even if you have enough cables, some of them might die. Even if everything you have is new and in pristine condition, things can go wrong, especially when you least expect them to.

You may need to fix up a drum kit that has loose screws from transporting it, or you may have to fix guitar intonation issues or even replace dead pots and switches. There are a million things that you won't even suspect to go wrong.

Make sure that the toolbox contains a soldering iron with all the accessories, duct tape, painter's tape, cable ties, a few sets of different keys and wrenches, spare cable connectors, a knife, scissors and everything else that you can imagine. A toolbox is never too full.

When things go south, you'll be the hero that can quickly save the day with all the tools that the musicians have not thought to bring. This will save time and money for everybody.

BRING TWO OF EVERYTHING AND BE OVER-PREPARED

This is literally one of the most important points. Have backup for everything if you're going somewhere without a music store. Without you knowing, a bad power supply can make some things act weird or not function at all. In this case a spare unit might save your back.

Make sure that the computer has a back up power source like a UPS unit or a good battery if it's a laptop. A power conditioner can also save you from horrible electrical hum that you may sometimes get from a bad power line.

Take extra things with you like acoustic panels to kill the most annoying reflections or to separate instruments that are bleeding into each other too much. The panels may also help you set up a more usable listening spot.

Extra microphone stands can also come in handy, as well as extra hard drives and power extension cords - simple things that might save you.

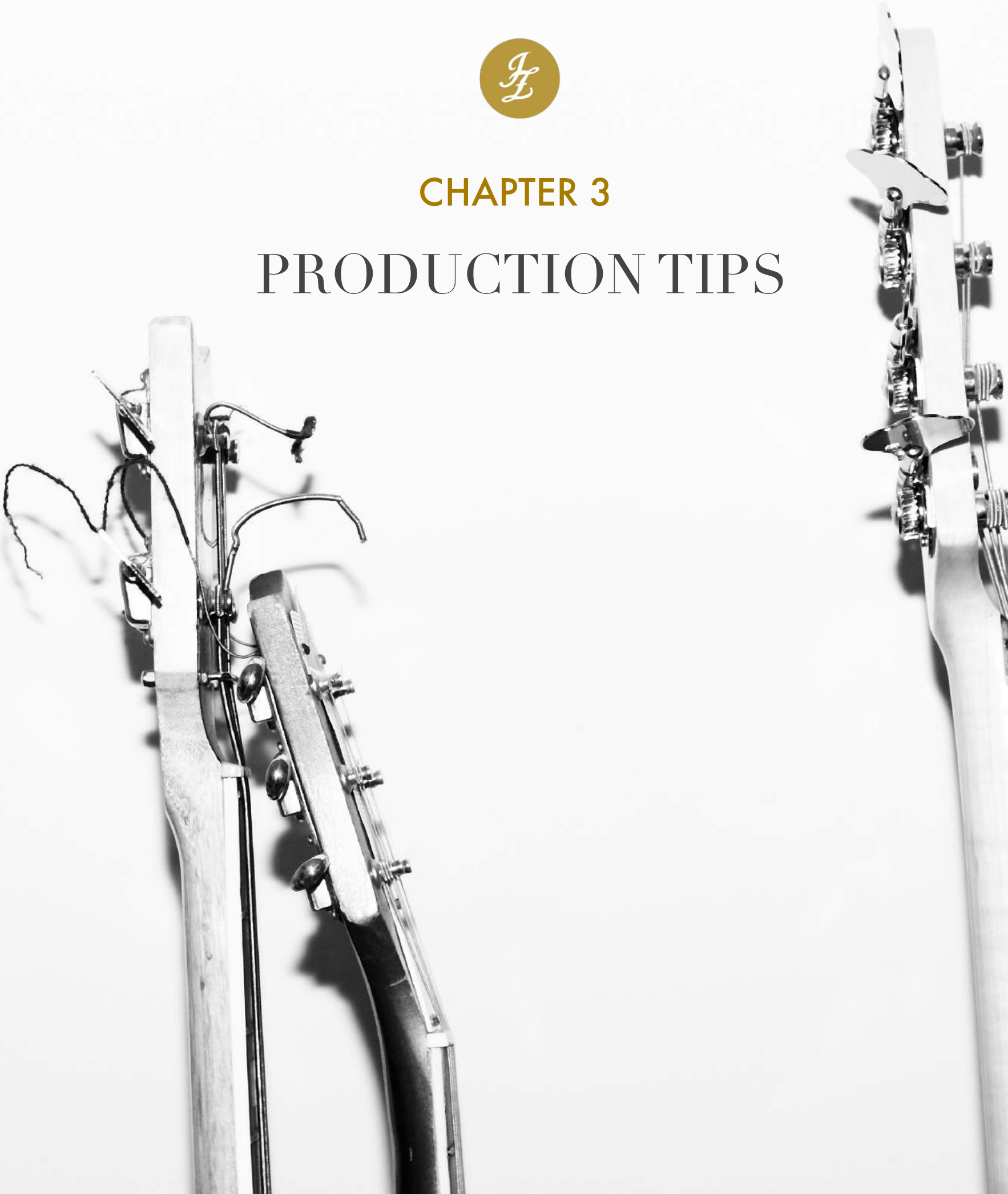
Keep everything organized and stored in safe cases to avoid damage. If you break your gear, you’re not really working with a profit.

Also keep notes of everything you've packed for the recording so that you can cross things off the list once the session is done to make sure that nothing gets lost.

In short, you have to be ready for everything, even for the things that you are not really aware of. Seems a little out there, but you can never really be too prepared.

CHAPTER 3

PRODUCTION TIPS



3.1

Acoustic Production Tips

Recording acoustic music can be a challenging task, because sometimes it may seem easier than it is and other times it's way more easy than we try to approach it.

The key here is to keep everything sounding natural to a certain extent, so that the music doesn’t lose its credibility and acoustic feel.

Here are a couple of tips to help you make the most of your acoustic productions.

DECIDE ON YOUR APPROACH

Acoustic music can be very diverse in its forms - it can range from a singer/songwriter type of production to a full live band with horns and strings. To be able to get the most of the session, you first have to take into account what it is you're going for sonically.

If you're recording a more modern acoustic song with a pop quality to it, you may need to record strictly to a click track and try to get the takes to be as tight as possible to allow you to add additional elements over the acoustic instruments. This will also mean that probably the instruments are going to have to be tracked one at a time to get as much separation and detail as possible.

If you're going with a more folk kind of approach, you may need to record more loosely with the artists performing together and playing either without a click track or very loosely around it, by giving the click cue only to the drummer, for example. This will give the track a lot more "live" feel often in exchange for precision and separation.

Once you've decided what's the best way to record, make sure that everyone involved is informed of the way things are going to roll in the session.

PREPARATION FOR TRACKING

Before tracking, make sure that you're setting the mood right in the room, to get the musicians feeling really good. Everyone likes a nice feeling room that smells nice, has good mood lighting that gets the creative parts of the brain going.

A very important step in making sure that the session is a success is setting the room temperature - acoustic instruments are very sensitive to unstable temperatures and moisture levels.

If you need to heat the room up or cool it down, do it well before the session, so that all the factors are as stable as they can be to avoid intonation and tuning issues. Recording acoustic instruments can really become a nightmare if the circumstances are bad.

Other than the room, you need to check for intonation issues on fretted instruments and adjust the tuning if it needs to be done - often acoustic guitars and basses won't have adjustable bridge saddles which means that you'll have to "average out" the tuning between the lowest and highest notes the player will be using.

What this means is you'll have to tune the instrument in such a way that the tuning, while not ideal, will be usable when playing chords in all positions of the neck rather than it being perfect in the lower frets and horribly out of tune in the higher ones. Also make sure that acoustic guitars have new strings - there won't be much you can do to fix that later.

Tuning drums is also very important in acoustic music, as usually you'll be using the recorded signal without adding in layers of samples. Try to tune the drums to the key of the music to make everything gel better in the mix.

It doesn't mean that the kick and snare need to be tuned to the root note - it means that you should try to avoid tuning the drums to the notes that are definitely outside of the key. Usually it's not very hard to do and it yields good results.

MICROPHONE PLACEMENT

Acoustic music presents a real challenge in the sense that the instruments themselves really define the final sound, but you have to try to capture it in the best way possible to balance realism with precision.

When miking drums, you have to decide if you want to close mic everything or go with a more old-school approach of trying to capture the whole kit with only a few microphones.

Basically, if you have a nice sounding room and a drummer that can play consistently, using less mics will make you get a great natural drum sound easily and quickly. If you feel that you'll need to micro-manage the tracks afterwards, close miking everything would seem like a safer bet.

When tracking acoustic guitars, try to find the best microphone for the room and the instrument so that you get a nice and even result.

If you're tracking in a bright room with a bright guitar, try a darker mic to get less of the string clank and more of the note definition - JZ Vintage series would be a really nice choice here.

If you're tracking a duller guitar, the Black Hole series would help you get that extra clarity.

If you're after really tight and precise tones, a small diaphragm condenser mic will be a great choice, like the JZ Bat series.

JZ Microphones
BH-1S Black Hole

A good rule of thumb for miking acoustic instruments - the further you back off from the source, the more natural it'll sound.

Try to find the best balance between the dry sound of the instrument and the room tone, which will become more apparent when backing away from the source. Keep in mind that what sounds a little too roomy in solo will likely not sound too roomy at all once it's put in the mix alongside other instruments.

MIXING

When mixing acoustic music, try to be as neutral as possible. As acoustic instruments have a very defined sound of their own, everyone knows what they sound like in real life, as with electric guitars and synths almost any artistic tone might work, as they're supposed to sound more "fake".

EQ moves should usually be broader to keep the original sonic character intact, apart from notching out some nasty resonances. The same goes for other effects - in this case, less is more.

Of course, if there’s one effect that's indispensable in acoustic music, it's reverb. Setting up a good reverb and sending every element of the mix to it can really help you bring everything together by creating a nice and wide ambience.

Getting basic balances, filtering out what's not necessary EQ-wise and compression should get you all the way through the mixing process. Don't overdo it.

Acoustic music will almost always benefit from a “less is more” approach - great source tones and performances will get you much further than any mix processing ever will.

Follow these pointers when setting up your next session and you'll be well on your way to great sounding acoustic productions!

3.2

Pop Production Tips

Pop music, whether you like it or not, has always been at the forefront of production with vocals that sound crystal clear and perfect, melodies that stick in your head for days and impeccable mixes.

Everyone loves a good pop track and while it may seem easy to produce one, it actually takes way more work than one might imagine. Here are a couple of pop production tips.

WRITE A HOOK

Nothing, absolutely nothing in pop music is more important than the hook. If there's no hook, the song will never ever go on the map, no matter how well it's produced or mixed.

A hook is an element that sticks in the back of your mind, it's what keeps ringing in your head after the song is over. Usually the hook is either a vocal part or a melody that's performed otherwise that's really memorable.

Examples of songs with great hooks are N'Sync - Bye Bye Bye, Spice Girls - Wannabe, Katy Perry - California Gurls, Michael Jackson - Billie Jean, Ellie Goulding - On My Mind, Carly Rae Jepsen - Call Me Maybe and many others.

Each of these songs have hooks throughout them to make you not being able to get them out of your head. Keep in mind that the more hooks you can write, the better the song will probably do - the best songs have a few of them to keep you interested.

It also needs to be said that keeping it simple is also the key to success - almost all hooks are dead simple, yet they happen in the perfect spot. You don't even have to necessarily understand the lyrics for a hook to work - a good hook is a good hook universally (think of Gangnam Style or Despacito).

KEEP IT SIMPLE

Pop productions are about only having the elements that really need to be there for a specific function. Clean, tight melodies and good tone choices will go a long way. It's not like a rock production where it's more about the feel - pop is more about extreme polish and perfection.

Keeping it simple also applies to writing lyrics - have a clear vision what the song is going to be about and stick to the core idea without deviating from it.

If you have something more to tell, leave it to a different song. Make sure that every word has its place and that everything is clear, precise and to the point.

Keeping it simple will also help you keep the song short enough to be accepted by the major radio stations once it goes public. Nobody wants a 6 minute long pop song - leave it to the progressive rock artists.

FOCUS ON THE VOCALS

Vocals are the most important thing in a pop production, so they have to be absolutely spotless. Make sure that all of the edits are tight, all of the tuning has been done correctly without any artifacts. Also, never let any tiny little word or phrase fly if it's not perfectly clear. Every single thing must be as good as it can be - often more time goes into the vocal production than the production of the entire track the vocals will sit on top of.

When tracking, make sure that the vocalist is properly isolated so that the microphone picks up as little room tone as possible. Great mics for pop vocal production would be the JZ Black Hole series for a more sparkly tone and Vintage series for a more midrangey tones, with the former being the more obvious choice. Clean takes are very important, as you'll be compressing and EQing them quite heavily sometimes to get that hyper-polished vocal tones.

In order to make the vocals have that pop quality, make sure that you double or triple up on the choruses and add as much harmonies as necessary to make it huge. Then EQ out the boomy and harsh frequencies and compress the vocals until they’re really stable.

After that, if you want to add some air, you can use a multi-band compressor to compress the whole vocal range and raise the top end a bit - this will add a layer of airiness and smoothness you hear on your favorite pop records. Don't forget to de-ess the vocals before adding any air, as the sibilance can get a little out of hand that way.

ADD GIMMICKS

Pop music has always pushed the envelope of funny things and catchphrases that get put into the song at the perfect timing.

Imagine Taylor Swift's “We Are Never Ever Getting Back Together” - before going to the last chorus there's a part where she is talking on the phone to her friend and saying that she's never getting back together with that somebody - it's a simple thing that sounds so fresh and interesting.

Kesha is famous for overdubbing phrases with an obviously nasal tones - it might sound a little too gimmicky and weird, but it gets the job done well.

Pop producers are usually the ones that try to pioneer different production techniques - like when Cher came out with the obviously blown-out Auto Tuned vocals in “Believe”, it instantly created a trend that's still alive and going strong almost 20 years later.

Don't be afraid to ever try out interesting sounds, even if they sound pretty dumb at first - who knows, it may just be the next trend.

Also try to stay on top of what production trends are hot right now - usually it’ll be the instrumentation that defines the era of production. Pop productions from the late 90's and early 2000's featured a lot of funky basses and acoustic guitars. Productions of around 2010 featured a lot of distorted synths, the sound of 2015 was a saxophone playing a melody in the background. Keeping up with the trends will help you be more relevant.

There’s so much planning and strategy that goes into making a pop production that you really can get bogged down when trying to come up with the best version of a track.

Be quick though, as the pop trends are changing rapidly and what's hot today will be old news a week from now. Whoever said that pop is easy has never tried to produce a track themselves.

3.3

Rock Production Tips

Making a banging rock production isn't a small task, especially in the rock scene of today when the standards are set higher than ever - rock has to sound hard and energetic, but at the same time it needs the polish and smoothness of a top level pop production.

Here are a few tips to help you through the process of creating a production that has a great balance of power and polish.

PREPRODUCTION

There’s just no way around it - a good sounding production starts with a good arrangement. To make sure that everything sounds great once it's done, it's always very helpful to do preproduction ahead of time.

Preproduction is a demo version of the song, where every part is recorded to hear how everything fits together and to spot any potential problems.

To save time, usually the drums are programmed in this stage. It also makes it really easy to change beats around, if something is too dense or sparse.

Do try to capture the best takes and tones you can though, as you'll be able to use some of them in the final production. Just because you're making a demo doesn't mean that you have to skimp on performance - change the strings on your instruments and play as well as you can.

There will definitely be times when there's nothing you can do to beat the preproduction takes on certain things - in this case you'll be glad you did them right.

Once you've done the preproduction, you can start re-recording the takes for real, replacing the demo tracks one by one.

INSTRUMENT SETUP

Getting a great sounding track means not only mixing it well but also recording good takes with an instrument that's set up well. The difference between a well-tuned instrument and a bad one is worth everything, as there’s nothing you can do to salvage a poor source tone.

For guitars this means taking them to a professional to get them set up. This might mean leveling the frets, setting the neck relief correctly, setting the string height, checking the electronics and setting the guitar up with the appropriate strings for the neck scale and tuning to make sure that everything can be intonated well.

Nothing sounds worse than a guitar that can't hold in tune, especially when playing chords. Sure, there are ways to work around intonation issues when tracking, but it takes way more time and effort than getting the instrument set up to spec.

Setting up drums correctly is also a great feat that not everyone is capable of. Usually it pays massive dividends to have a drum technician come in and set the drums up with the appropriate heads and tune them to your preference.

It's a good idea to show the drum tech what sounds you are going for so that they can have a clear goal in mind when tuning. Good sounding drums will basically make your productions come to life and you'll find that you can get better results with less effort.

Don't skimp on cymbals - rent them if you have to, but don't record cheap and crappy cymbals just because it's all the drummer has. Cymbals can single-handedly make or break a drum sound. There's not much you can do (besides replacing) to make dull, short cymbals sound wide, long and lush. Do it right the first time.

MIC PLACEMENT

When placing mics, keep in mind the sounds you’re going for. For a modern rock mix you'll need everything to be relatively solid and precise, yet heavy. When miking drums, make sure that you capture every shell individually, placing the mics close and utilizing the proximity boost that will give you. This will help you get a more fat sound while increasing the signal to bleed ratio, because the cymbals will usually be loud and proud in a rock mix.

Have spot mics for the hi-hat and ride cymbals, so that you can control the level of articulation the song needs. Usually you can get great results by miking the overheads with a spaced pair of small-diaphragm condenser mics.

Kick drums can usually benefit from at least two mics - kick in and kick out - to capture as much attack and as much body as possible, with the option to blend the two later. Room mics are also a must, as they’ll add air, weight and width to the drum mix, especially when compressed heavily - always try to capture the room, even if it's a small space.

Guitar miking techniques tend to be quite simple - a nice cab close-miked with a dynamic mic around the spot where the dust cap meets the cone should yield great results.

If the tone comes out a little too dull, try moving the mic closer to the center of the speaker and vice versa if the tone is too harsh.

JZ HH1 mic is especially designed for this application and will give you a great modern guitar tone with much less need for EQ.

JZ Microphones HH1

MIXING TIPS

When mixing a rock track, make sure to make the drums huge - every drum should sound rich, long and fat. This can be achieved by getting a great balance between the direct mics and the rooms and compressing all of them together with a nice release setting that lets all the elements move and breathe together with the tempo and the groove of the song.

Sometimes you'll need to enhance the drum mix with samples to make everything extra powerful and over the top (Chris Lord-Alge does this all the time!), so don't be afraid to do it if it needs to be done. Having a nice reverb on the snare and toms will further help add size and dimension.

Bass usually can benefit from a little bit of distortion or harmonic saturation to make it really big and punchy. Don't be afraid to limit the bass quite a bit to make it very stable and prominent in all frequencies.

When mixing guitars, try to make them thick in the low mids, so that they carry the energy of the mix. Sweep around the 3.4 to 4.2 kHz area to check if you need to remove any harsh frequencies (usually you will) - this will add to the overall width of the guitars. Be sure to leave room for the bass in the lows, so a little high-passing can be beneficial if the tracks are heavy in the low-end.

Rock vocals usually tend to need quite a bit of compression and limiting to help them compete against the wall of guitars and drums, so don't hesitate when compressing them.

The only thing that you need to look out for is the compression bringing out the sibilant frequencies a lot, so you'll probably need to de-ess the vocals afterwards.

SPECIAL PRODUCTION EFFECTS

Modern rock mixes often have extra layers of special effects added for greater impact and smoother transitions between parts.

Try out adding bass drops, booms, explosions, sweeps and other things to your productions if you feel that the part calls for it. Be subtle, though - you're not making a Michael Bay movie!

3.4

Metal Production Tips

Metal has become one of the most elaborate music genres production-wise during the last 10 years, as producers are finding ways of cramming more power, punch and density into the limited amount of space and headroom of an audio file.

Producing great sounding modern metal is no small task at all - it requires everyone involved to be at their best at all times. Here are a few pointers to start off your next modern metal project.

PREPRODUCTION

Modern metal is one of those genres that needs to be done right for it to sound the way it's expected. There can be no loose ends, no weak hits or notes and it needs to sound as perfect as possible all the way through. This is where preproduction comes in - you make a rough version of the track to see what works together and what needs to be improved before you actually track anything to be released.

In this phase the drums will usually be programmed to accommodate any tempo changes and to make small changes to the patterns a lot less painful. It's also a great idea to program the bass parts using a synth or a virtual bass instrument - not because the bass player might not be able to play them, but just as a tuning reference.

Modern metal players tune their guitars so low that sometimes it's hard to spot slight tuning issues if there’s no tone of reference. With fake drums and bass you'll know that everything is perfectly in tune and in time.

Do try to get the preproduction takes as good as possible, as you might find them useful later. It's not uncommon to use lead guitar tracks from the preproduction phase, because there’s no reason to redo them.

KNOW YOUR LIMITATION

In order to make the best roadmap of the recording, you should know the limitations present and be honest with your clients about what's possible and what isn't.

For example, if your clients are expecting an exceptionally tight and grindy bass tone, they should have an instrument that can deliver the tones at all, a good supply of fresh strings and their playing technique in check. If any of these things are missing from the equation, they must understand that the results will most likely be less than stellar.

Drummers have to understand that modern metal productions do employ the use of drum samples and often the drums will still have to be edited, no matter how well they think they've performed the parts.

If the goal is a machine-like tightness and consistency, most likely the drums will be layered with samples after being gridlocked. Of course, these things have to be ran past the musicians to avoid arguments along the way.

Guitarists will also probably have to track smaller sections at a time to ensure that every single hit is perfect. Sometimes you'll run into parts that just don't sound tight enough if the band has two guitar players - in this case you'll have to make one of the guitar players track both parts to make everything really precise. This might prove to be a real mental struggle for the other guy, so let them know beforehand that these situations may come up.

MICROPHONE PLACEMENT

Knowing that the goal is to make everything sound as precise as possible, you'll need to do a lot of close miking on the drums - have a mic for each tom, two mics for the kick (kick in and out) and two mics for the snare (top and bottom).

Make sure to close mic the hi-hat, ride and china cymbals, so that you can bring out every nuance that the player is putting into the performance - ride patterns, china hits and snare ghost notes are usually the typical suspects that will need volume automation rides to bring out every detail through the wall of distorted guitars and bass.

Capture the room mics as well, as they'll help inject width, sustain and life into the tight and dry close miked tracks.

Guitar miking in its essence is nothing too special when it comes to metal tones - just make the guitar player play a "tone riff" while you are moving the mic around the speaker cabinet looking for the best place to put it.

A "tone riff" is a part of the song that sounds big and powerful and that's easy to judge a guitar tone by - you'll know when you hear one! A good starting point, as always, is to have the mic pointing at the spot where the dust cap meets the speaker cone. JZ GTR-1 is an excellent choice for metal guitars, because it has a voicing that's very well suited for modern tones.

Don't be afraid of using amp simulators for guitar and bass tones - digital technology has become so good that it's only a matter of taste whether you like the tones or not, as it has nothing to do with sound quality anymore.

Plugins, POD units, Kempers and Axe-FX units are all popular choices of modern metal producers. Basically, a great performance tracked on a great instrument will sound good on through almost anything.

TRACKING TECHNIQUES

When it comes to drums, it's no secret that often drummers will want to achieve the almost impossible regarding the kick drum patterns. In order to make their dreams a reality without sacrificing the drum sounds, use a kick pad - it replaces the kick drum and records only trigger splats for easier editing afterwards, as there will be no unusable kick drum bleed in the other microphones. This way you can edit the kick drum patterns as needed without any limitations.

Guitarists and bassists often will benefit from a tracking technique called “riff building” - what this means is that any riff will have to be tracked as a whole and after that individual hits will be tracked separately to help “build” the most perfect version of the riff.

This will help you achieve the most amazing guitar parts that would not be humanly possible otherwise. Metal is a genre that often prefers perfection over realism, so there's no shame in putting in the extra work.

As metal guitars often will have staccato parts with quick rests, you need to make sure that the pauses between hits are as perfectly clean as possible. To achieve the necessary level of perfection, you’ll probably need to dampen the strings beyond the nut on the guitar headstock, as well as the part of the strings that's between the body and the tailpiece.

If the guitar is equipped with a floating tremolo system, be sure to mute the springs inside the back cavity. Masking tape and small foam pieces will do the job perfectly.

MIXING TECHNIQUES

Metal is not too different when it comes to mixing, but there are some specifics to it. No matter if you're using drum samples or not, be sure to check if the kick drum isn't to flubby on the fast double-bass parts (usually it will be) - in this case automate a small EQ shelf to bring down the low end of the kick by a couple of dB during those parts.

Don't be afraid to use software clippers on drums to get that extra loudness and headroom. Drums can also benefit from a parallel compression bus - this is an FX send that you route all of your shells to and that you compress to death to bring out the sustain of the close miked drums. Blend this in with the dry drums in a subtle way to make everything bigger.

Bass guitar is one of the most important elements of a metal mix and a huge element of the final guitar sound - splitting the bass DI track into two tracks and treating them differently is a good way to get a great bass tone.

Make one of the tracks your "low" track, cutting everything above 250-400 Hz, and limit that to create a solid low end. Filter anything below 205-400 Hz on the other track and use some kind of distortion on that (amp sims work great for this).

Now you have two tracks that make up a bass sound without sacrificing tone. Compress them together in a bus and you've got yourself a pretty great bass tone.

Guitars usually can benefit from a slight EQ dip in the 3.2 to 4.6 kHz region, to get rid of some unnecessary harshness, as well as using multiband compression on the low end to control the boominess that occurs during palm-muted parts.

There's a lot that goes into a modern metal mix - it's a harsh, abrasive music that has to sound polished, yet raw and powerful.

Use these tips to get a great balance of all of these qualities for that crushing heavy mix!

3.5

Taking Your Tracking Sessions To The Next Level

It seems that working in the modern world of audio is forcing us to wear more and more hats at the same time as the days go by. Records have to be made in a shorter amount of time without sacrificing quality, and it has to be quality work. This means that the tracking sessions have to be very efficient and bulletproof, so that there are no setbacks.

Here are a couple of things you can do to prepare yourself and your studio for an intense tracking session to achieve the best results with the least amount of stress.

MAKE TRACKING TEMPLATES

Tracking templates are a huge time saver, as they'll let you set up a tracking session for your DAW in seconds.

This template can be as elaborate as you prefer, as long as your hardware allows it. When making the template, first you have to determine what tracks you'll most definitely use. For a rock song it'll probably be a drum kit, a bass guitar, at least a couple of guitars and vocals.

Be sure to anticipate the most expansive setup in your template, so that you always have enough tracks for your drums (you can delete the unnecessary ones if the kit is smaller) - a standard rock song might need a pair of overheads, a couple of spot mics for the cymbals, a couple of room tracks and spot mics for kick, snare and toms.

Make these tracks, name them correctly and assign your hardware inputs to them - this will be the most time consuming part of the setup, but the upside is that you'll have to do it once.

Make the other tracks that you might need and make a few extra tracks for each instrument, so that you don't have to waste time when tracking. When you've covered the tracks for all of the instruments you might need, route them to buses, so that you have easy control over guitars, bass and drums on a single fader.

Include some basic panning and processing in the template as well, so that the material does not sound too raw - this will make it easier for everybody involved to "feel" the song better.

This kind of template will let you simply input the tempo of the song and start tracking right away, without the annoying technical things getting in the way.

EDIT AS YOU GO

Once you've tracked a part and everybody has signed off on it, be sure to tighten up things that are a little off - this will make it way easier to work on the next instrument in line for tracking, as there will be less rough spots that could throw other players off.

Good editing skills will also come in handy when a take that has a perfect emotional feel is ruined by timing that's a little too loose - this happens to vocals and guitar solo parts most often.

If you get such a take, cut and slip or stretch the timing a little bit and you're done. The same goes for slight intonation problems - there's really no need to re-record the take if that one little note can be edited to perfection and the musicians are in a time crunch and/or on a tight budget.

This approach will also mean that once you're finished tracking, your material will be 95% edited and ready for the mixing stage. There will be no wondering what it'll sound like after editing or if there will be any undesirable effects caused by the edits.

Of course, editing isn't a substitute for trying your absolute best to capture the perfect take, but sometimes you have to move on and not obsess over the absolute "purity" of the original recording.

BE READY TO ADD PRODUCTION

Tracking time can get very intense creatively, and musicians might come up with many different ideas for how the song should sound.

You as a producer have to be ready to try out even the most stupid sounding, experimental stuff in order to make your clients happy or to settle a theoretical argument among the musicians about what might sound the best.

Keep some virtual instrument libraries handy just in case you need to add a piano line or a synth, or possibly sample in a percussion instrument or even replace the real drums with a programmed beat to give the song the impact that it needs. Know the sounds you have available and be ready to fire them up any minute.

Sample packs of loops, drops, explosions and risers will also serve you good, in case you need to add something to emphasize a transition, for example.

The bottom line is - be ready at all times and be quick. Ideas are fresh and hot only for a limited time.

MIX AS YOU GO

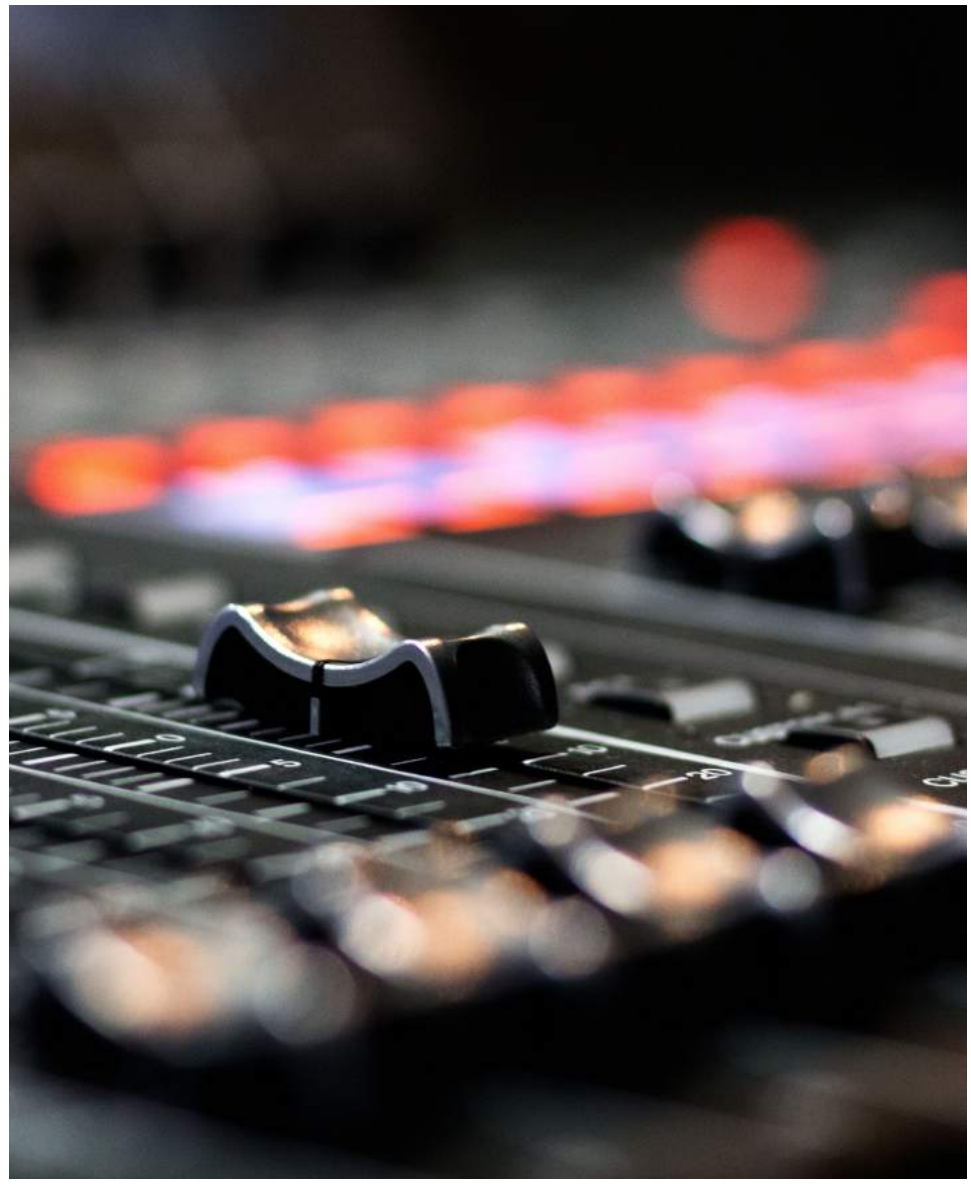
Building off of the tracking template, do basic mixing as you go along. This will not only make your job easier, as everything gets balanced and tweaked, but it'll also keep the musicians excited and stoked to be working on something that sounds great even at the tracking phase.

Keeping musicians excited is probably the best thing you could do in a tracking session, as their excitement will keep them sharp and committed. It's a lot easier to spot a fishy take or a tone that's not good if the backing track sounds great. Having the tracking mix sound balanced will really help you tailor your tones, as you're not having to imagine what the tone will actually sound like when all the other instruments are mixed.

Get things as close as you can as fast as you can - this will make you go by your gut instincts and save you a lot of guesswork down the line. You can always fine tune the small stuff afterwards.

If you're the one who's mixing the track, you've made a great mix prep session for yourself. If someone else is mixing it, you've made a great reference tracking mix for them to listen to when getting familiar with the project. Either way, you're saving time and that's very valuable.

Tracking is a process that really benefits from a great session organization, so be ready to accommodate any needs your clients might have. If you can pull everything off quickly and efficiently, you'll be the hero of the day!



3.6

Audio Editing Tips

There's no denying that musicians should be able to play their parts perfectly, if they've come to the studio to record, but there will always be times when you need to tighten things up or make some kind of creative edits.

In the modern world of audio production editing is a skill that is required for the majority of projects - in fact, one of the best way to make money quickly is to offer editing services online, as studios and producers always need good edits that are done quickly.

Here are a couple of tips for fast and efficient audio editing.

LISTEN WITH YOUR EYES

Yes, this might seem counter-intuitive as the general rule usually is to listen with your ears, but editing audio is more of a mechanical task that does not need much creativity. Sure, some edits will require you to listen to them carefully, but most of them won't.

After editing audio for a while you will develop the skills to “see” what's going on in the waveforms. You’ll be able to distinguish different drum hits, as snares, kicks and toms have very different waveform signatures, you’ll even be able to see different elements of vocals.

These skills will help you to not listen to each and every edit you do - the common practice is to divide the track into sections, work through each section and then play it back to check for any rough spots - this saves tons of time and keeps your head more clear.

SERVE THE SONG

There are many ways you can edit a song. You can “grid” it, which is a “take no prisoners” approach to editing that requires every beat and note to be basically quantized to the tempo, or you can edit more freely, just tightening the downbeats and “strong” notes, leaving everything in between as it is.

Different types of projects will require different approaches, so before you start, talk this through with the client.

If it's a modern pop or metal production, chances are you might need to grid it to get that “over the top”, almost inhuman feel. If it's a rock or alternative rock song, it may benefit from a more natural swing, for example.

Always try to serve the song. Some technical imperfections may actually be necessary to make the song work, given the right genre. A Foo Fighters song would sound silly with drums that are quantized to machine-like perfection, where a band like Fear Factory would sound silly without them.

CHOOSE THE RIGHT TOOL

Modern DAWs have a lot of ways you can edit audio. It all depends on the instrument you're editing and what the end goal is. Choosing the right tools will make sure that the edits are smooth and undetectable.

If you want to time-align drums, usually slip editing is the cleanest way to go about it. Slip editing is basically cutting the audio files at certain points, sliding around the audio files within the event and crossfading the cut. This method doesn't create gaps between the cuts, as the events aren't being moved, just the audio within them. Automatic "beat detective" style editing also works well, you just have to keep an eye on the crossfades to make sure that there are no gaps between events.

Time stretching multiple drum tracks at once may lead to phase problems, as each single track might be processed a little differently. Time stretching or "warping" works very well on single tracks, such as vocals, acoustic guitars, strings and so on.

Be careful with stretching though - it might create weird artefacts. You can usually choose from a couple different stretching algorithms - audition them and choose the best one for the task at hand.

Not all vocal tuning software sounds the same. Try as many of them as you can if you plan to buy one. Melodyne and Auto Tune have very different signatures they put on the sound, but both are excellent for tuning vocals and other instruments.

COMPILE BEFORE YOU EDIT

Music usually has parts that repeat at some time - don't forget this if you find a part that's a little too sloppy to fix elegantly. Chances are that if you go fishing, you'll find another part like that somewhere else in the song - one of them will probably be better than others. Just fly in the better part and it'll sound better than trying to edit a train wreck.

The same idea goes for single drum hits, guitar notes or vocal parts. If you find a weak snare hit, just fly in a different one from a similar part. Sometimes vocalists will flub certain words or sounds - they can probably be found somewhere else.

EDIT CORRECTLY

In order to make undetectable edits, you need to preserve the natural sound of the instrument you're editing, otherwise you'll be left with obviously fake sounding tracks.

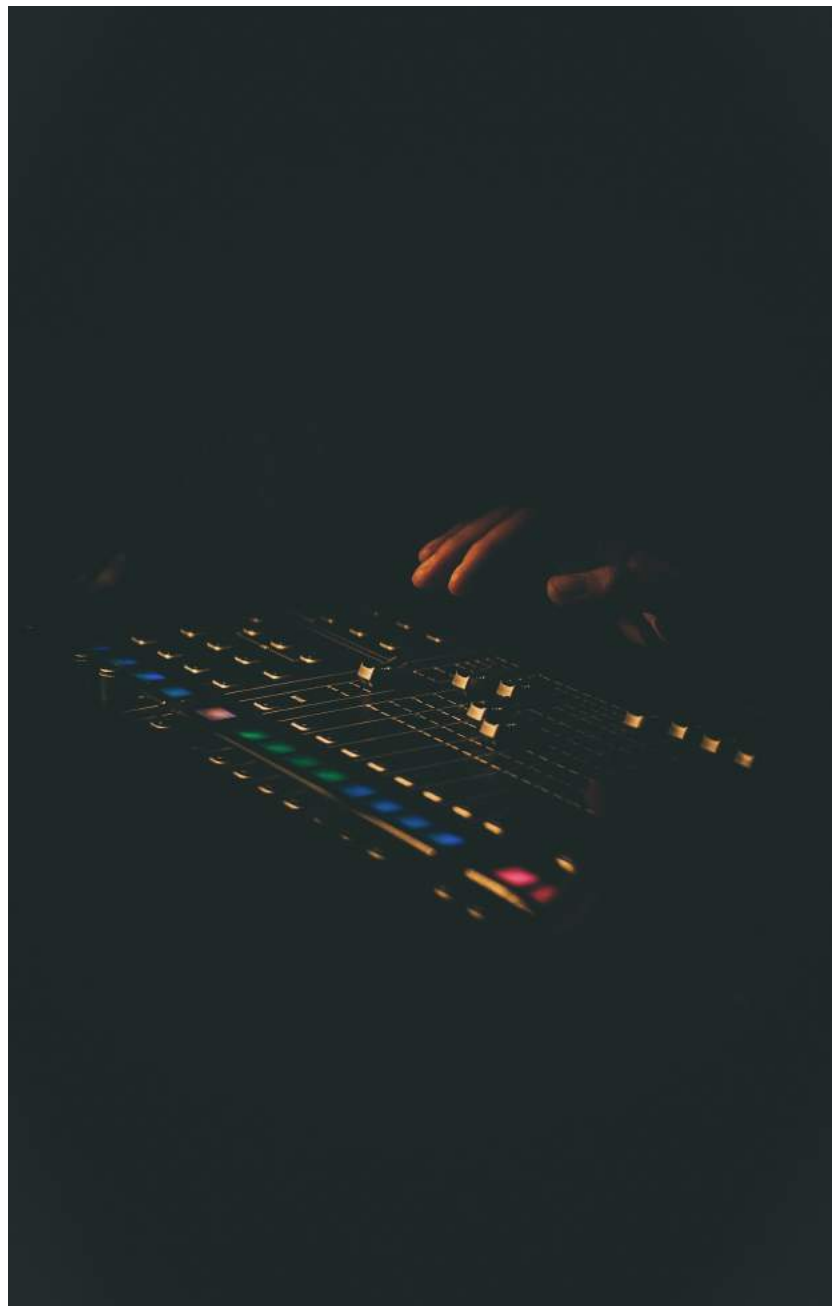
When tuning vocals, tune only the straight notes and leave the transitions natural to avoid that 2000's Cher style auto-tune artefacts.

When stretching vocals, remember that some sounds actually have to start before the beat - this is where you need to really listen to the edits. We as humans are very tuned to the human voice and can easily detect unnatural artefacts when we hear them.

Don't cut out all the noise - sometimes you'll need to clean up the noise that occurs between the notes. This is very common for vocals (breaths and mouth noises) and guitars and basses (string and electrical noise).

It may be vary tempting to just cut everything before and after the notes, but a much better solution is to just turn those parts down really quiet. Say, like -18 dB, for example. This will effectively get rid of the noises and breaths, but won't make the track sound artificial.

Don't just assume that everything should be edited, though. Sometimes the mistakes have to be left in, if the musicians are great. Serve the client and the song, practice editing to work quickly and cleanly, and you'll get a lot of work coming your way.



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Making Your Productions Larger Than Life

We all can appreciate a nice, clean, natural recording with all its flaws adding a nice human character to the overall tone of the song. There’s a time and place for every kind of production, and sometimes you just need to make everything bigger than everything else without worrying about realism too much.

Producers like Chris Lord-Alge, Mutt Lange and Joey Sturgis, for example, are famously known for creating sounds that don’t always sound natural or even human at all, but it all serves the purpose of entertainment. It's just like watching an action or a sci-fi movie - knowing that what you see is not real doesn't really take away the excitement, as you’re immersed in the awesomeness of the moment.

Here are a couple of things you can do to augment the reality of your own productions.

VOCAL LAYERING

The first thing that any listener will identify the song by is the vocal production, because we as humans are naturally tuned to the sound of our voices. Vocal production is the one thing that even the least musical person in the world can enjoy and feel, even without any technical or musical understanding of what's going on, so it's a great place to start.

Layering vocals has been a popular way to accentuate certain parts or phrases of the performance. Rappers use doubling or tripling to “hype” certain words to give them extra aggressiveness, pop and rock vocalists double their tracks to give the vocals a certain “thicker tone” and help them cut through the mix and metal vocalists do it for all of the reasons mentioned before and also to compete with all of the loud, distorted instruments banging away in complete chaos.

Vocal layering doesn’t have to stop at double-tracking. You can triple-track the vocals and spread the doubles out in the stereo field to make the singer sound huge. A trick that Mutt Lange is known for is actually layering airy whispers on top of long, sustained notes to give the vocals that 80's-90's glam rock sound (Def Leppard is an excellent example).

Getting huge backing vocals has never been easier than now - even if the singer can't sing multi-part harmonies, you can always use pitch correction software to modify the existing parts to create new harmony layers and make everything more rich.

Layering the vocals and backing vocals with synth parts played in unison can be a nice way to create extra depth and tension. Overdubbing parts with vocal lines an octave higher or lower can also be useful when a little more size is required.

RIFF BUILDING

This approach is made popular by Joey Sturgis, who uses it to create very effortless sounding guitar and bass parts that wouldn’t be possible to play that cleanly if performed in whole takes. This approach is rather slow, but it leaves you with the best possible version of the performance that overcomes all the physical and mechanical aspects of playing the instruments.

Riff building is based on playing the riff as a whole and then assessing each note individually and replacing the weaker hits with better ones that are tracked separately on a click track. Once you've tracked a good hit, you cut and paste it into the riff.

After replacing all the hits you want, your riff will sound flawless, without any extra noises, tuning issues, unnecessary pauses or finger noises. It has to be said, that this works when tracking DI guitars and reamping them later once the takes are comped.

There's also an even more extreme approach to producing guitars called the "Mutt Lange method" - it basically means recording each note of each chord onto a separate track, tuning the notes to perfection, then recombining them to get the most pitch-perfect and ideal sounding chord you can imagine. This also allows you to define how loud each note of the chord should be.

If you're after an unbelievably tight performance, this is the way to go. Be sure that the artist's budgets are large enough to accommodate the extra time needed to track this way.

BASS LAYERING

Sometimes a great sounding bass guitar is just not enough to make the mix explode out of the speakers. A great way to make the bass super huge and solid is to add a layer of programmed low-end.

This, of course, takes extra time, but layering a sine wave to the bass performance can make the low end of a real bass guitar seem as solid as if it was a synth, while keeping the feel natural in the top end with the natural string clank.

Sometimes, depending on the part, you can even get away with layering the synth bass an octave lower than the real bass.

Be sure to check the phase relationship between the real bass and the sub track to ensure that you're not making things weird. These tricks sound obvious and terrible if not executed correctly.

DRUM SAMPLES

Drum samples can be used in many different ways to make the drums sound larger than life. You can make the drummer sound like he's hitting way harder by replacing or layering the real drums with samples.

If you need extra room sounds, you can trigger just those to augment the real drums and make the snare sound like it's recorded in a huge hangar, for example. Room samples sound way more natural than just feeding the dry drums into a reverb unit.

Sometimes you'll need to replace the drums with obviously fake sounding single-shot samples to make a certain effect. A lot of rock productions feature fake-sounding drums that are squashed and crushed beyond what microphone tracks could be - this creates a certain vibe that's almost superhero or comic like.

Kane and Kevin Churko are famous for making these kind of drum sounds and they sound awesome for the productions they do.

SPECIAL EFFECTS

Just like in the movies, you can add special effects to your productions to make certain parts transition better or hit harder.

Layering explosions, hits, bangs and drops can really emphasize the beginning of parts that need that extra emotional impact. Risers, sweeps and reverse swells can help you bring the energy up in preparation for those explosions.

When layering these effects, go by your gut instincts - listen through the song once and try to feel out where they should go. Don't go too far, as too much of a good thing can lead to a cheesy and annoying production.

These are just some of the things you can do to bring a little of that “movie magic” into your tracks. Sure, they take up more time, but the results will be much larger than life, if that's what the project needs.

by JZ Microphones