# Adventures in Bedroom Electric Guitar:

A Guide to Electric Guitar Home Studio Recordings & Amp Tone Sound

By

The Tone Dig

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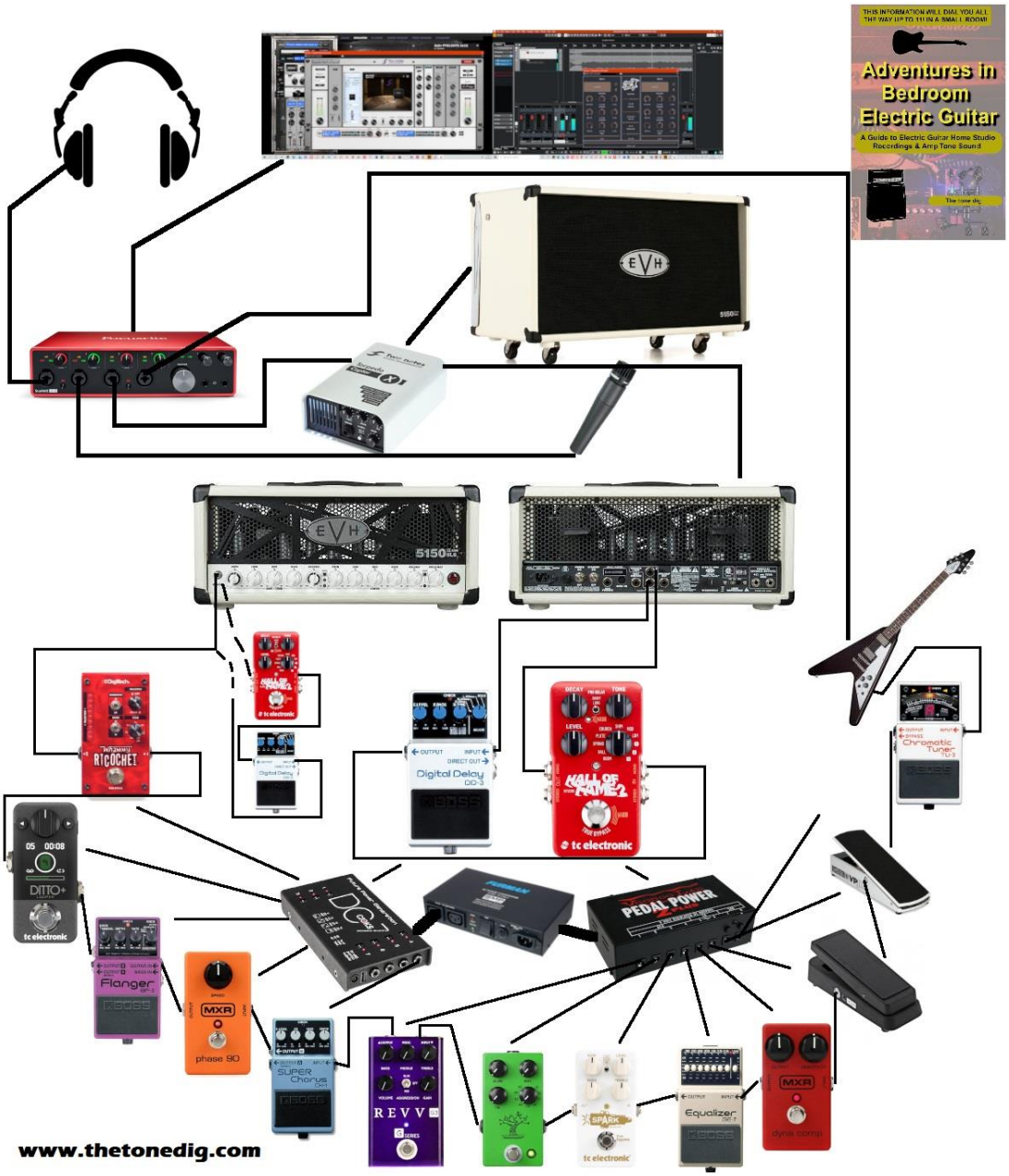
www.thetonedig.com




This could be you.

# Acknowledgments

Thanks to my family, who encouraged me to write this book during the Covid 19 lockdown periods intermittent between 2020-2021. The music scene changed but hopefully not forever. At this time of writing, live gigs worldwide have paused, but with new albums out, many artists have been working hard at home. I hope I have joined them in trying to make the most of it. This book is for them. Their tips have helped it to become the handbook that it aspires to be.

Rock on.

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# Preface

Thank you for taking the time to read this. The cost of this book will be paid back to you in full with all your future purchases of any guitar-related equipment because what you will learn next **will save you wasting money**.

If you are buying any electric guitar-related equipment, you should make the wise choice of getting hold of some good advice before you do. This book will do all that for you, so at the very least, you ask can ask the questions you need to.

**You don’t need to play guitar to use this book.** You can quickly learn everything in this book and not touch a guitar.

Those in the music business would do well to make sure other guitarists or anyone interested in guitar recording add this book to their reading list. *It gets the guitarist and sound engineer on the same page when it comes to technical details*.

At the very least, you will read tips that will get you going in the direction of finally getting that tone you have been chasing for years since you heard it.

We don’t claim to be the only way or that our way is the right way. It is, however, a way that can work for everybody for any genre at any budget.

Glancing at the table of contents, you can probably tell this book will cover a broad span of points regarding modern electric guitars and recording. Electric guitarists must come to terms with sound engineering in some capacity, more so than acoustic guitarists because electrical amplification is essential to electric guitar. In contrast, acoustic doesn’t require it; although acoustic *pickups* and microphone recording acoustic guitar are commonplace, electric guitar without electricity is the same as a system turned off. It has an interesting twangy sound that surprises many people when they first play electric guitar. Should that metallic resonance be there when they play? Yes, it should is the answer, and it will never go away because that’s the environmental physics of you hitting strings. However, that is not the sound you want to hear, and won’t either unless you turn on your rig with some electrical power.

The amplification of the guitar signal produces volumes that mask that pick plucking sound out. You’ll still hear it. Anyone else a few feet away probably won’t if your amp volume is up. If plucking on electric guitars not plugged in is your thing, get a hollow body electric guitar instead of a solid body, like a Gretsch. They sound best unplugged, which is suitable for practicing. If you liked that tip, you should like this book.

This book will go through little details and subtle equipment adjustments to fine-tune your tone for professional use. We will only be going into detail with the elements of electric guitar tone that matter. Basically, what constitutes the *guitar rig*, not a drum rig or vocal rig, but a guitar rig. Therefore this book is not a sound engineer's dictionary, and it is not a guide to sound engineering every instrument at a mixing desk. That's a good thing because we get to focus only on guitar, and we can omit many things we don't have to understand or in-depth to get the tones we want. So we concentrate and specialize only on the things that matter to the guitarist.

We won't be telling you how you should perform on stage. We won't provide you with a pathway for you and your band to make it big. That is for other manuals and books. This book is about electric guitar rigs and how to use them, including mixing desks and during live shows, but only in the guitar context and especially for small room recording.

Some concepts might help with other instrument recordings, such as with our chapters on microphones, audio interfaces, and DAWs (Digital Audio Workstation). Also, we shall not be going into detail about how to wire up internal guitar electronics, customizing your guitars, building an amp, modding an amp, modding a guitar, or repairing a broken guitar or a guitar with problems. That is for another book. However, when it comes to guitar gear you can get in a shop, this book is all about what you can do with it,

especially integration. We provide you with options so you can make an informed choice based on a plan.

Hopefully, you are now clear about what this book will and won't be. Great. We are on the same page, literally.

## How to read this book

Read through everything once. You will come away knowing a manual. After that, you can dip in and out of it as a reference book for life. This handbook will also help sound engineers understand electric guitar better and meet expectations for recording and live venues.

I won't say that electric guitar is not complex because it can get complicated, but the way to get through that is a combination of having goals and getting lessons when you hit walls. We all hit walls, we all need lessons, we all learn all the time. That goes just as much for sound engineering as learning to play guitar.

This handbook will help you to become part of the electric guitar player you want to be by learning lots of things in one place about electric guitar and gear that all modern electric guitarists should know.

We also understand that guitar is by no means a cheap hobby, and we don't expect you to spend ridiculous sums of money chasing tones you can do a bit cheaper and a little more easily another way. You will learn about that big-ticket gear in this book and about alternative affordable ways to obtain similar tones for less financial outlay.

This book makes the modern state of knowledge about these matters accessible to you in one volume. The quicker you learn these things, the more time you can spend learning riffs, playing, finding what works, mixing, recording, and even doing it all live if you intend.

There is no such thing as the ultimate guitar guru or definitive manual. You got to pick what matters for yourself and work on it. We hope that even advanced guitarists can gain from this book and dialing right into that pocket a bit better by applying what they learn here.

**Timetables**

I highly recommend you consider a timetable for your guitar-related projects as this component is a consistent contender for something all achievers in guitar have done to great success. A timetable means that not only will you have time devoted from your day to guitar, but that block of time will be sub-divided into things you should get done.

A timetable should be diversified into lessons, reading, theory, playing, recording, etc. For example, on Friday, you can have an hour of three twenty-minute sections on tone experimenting, some guitar lessons (say metronome timekeeping rhythm work), and recording a song you want to play for fun. You can start today by adding a chapter of this book to a timetable per day. You will even be able to predict the day you finish this book and on that day know what this book promises

you can learn. Planning is how the best guitarists become the best. A considerable percentage of guitarists plan and achieve their goals. We will not go into what guitar lessons you need, but if you have the technical side down, then getting lessons is the next step to merging the two worlds into your guitar playing to get better. A tip I can give you for learning any instrument (or learning anything for that matter) has to do with a concept called *Deep Learning*. It has its foundation in the neurology of natural myelin development to speed up transmissions in the brain. Since 2010, this has been the main breakthrough in new ways to learn an instrument (or anything, as we said). Check it out.

The key to learning guitar requires the brain to rest and strengthen neural pathways after practice. That may be surprising, but guitarists learn that the brain absorbs learning by physically changing on a micro-level by your repetition and deep focus. Many neurological micro-changes add up to macro changes, and you can be sure that a good guitar player has those changes.

You rest by not repeating what you did for a while and doing something else—then going back to it again. So, for example, if you are in guitar lessons and resting, you can spend that time reading this book.

As you read this book, you undoubtedly will have at least a few different things you will want to do, including learning more. Add these to new schedules as

you find them. Blogging or diary keeping is also another great way to make progress in electric guitar.

So the idea here is that by becoming acquainted with the main aspects of electric guitar gear the way we lay it out, you can then get on with learning to play your guitar and enjoy it all much quicker and better.

You don’t want to waste time. You want to focus on practicing. You understand that you will not sound good until you have rested enough between periods of moderately intensive training—a deep coaching technique that has an eventual payoff. So while you don’t need to get guitar lessons as you read this book, having this book in addition to getting lessons is an even more powerful way to achieve your goals. Every guitarist who plays guitar for years, or even decades, and then decides to get lessons says the same thing – “I learned more in a week than I did in a whole year”. That sums the importance of getting lessons.

Even though I said you don’t need a guitar to learn from the book, it would be better if you started now along with it. The problem with starting electric guitar is that you need two weeks of developing calluses on your fingers before you can even try to do some larger string bends, chord shapes, and just basic fretting correctly. The key to building these right away is slides. Just slide along a string with a finger and then switch to another and do it again. Then, finally, do all the strings with all the fingers. Never press hard but only just enough for the string to barely touch the fret. It

doesn’t matter if you can’t play. Anyone can slide. Eventually, you will feel soreness. Stop. Now you need recovery for the calluses to build. You can usually play the next day again or, if not, then every other day. Even professional guitarists who take extended breaks (which can be a good thing and usually is) need to go back and do this all over again. However, they usually know how to do string bends, so incorporate them into slides to developing calluses quicker.

We will still need to address some things about guitar playing, especially for beginners, as we need to cover some primary conditions to help us with the technical side of things. For example, you will also need to have some physical dexterity developed to play the electric guitar. Practicing is all the aerobics you need to get into the same cycles of deep intensity and rest for repair. You will develop two noticeable things with your hands. The first are calluses on the tips of your fingers, as we mentioned. The second is when you start with chords. Your finger stretching will start to span frets you didn’t think possible. You will be able to play many chords that require stretching four-fingers across several frets eventually. So why are we talking about this? It has to do with judging equipment. If you aren’t there yet in your playing, wait before judging your gear! That advice will save you money (buying the same thing twice after selling the first one a year ago or less). We have all been there. Trust me, it happens.

For example, *palm-muting* is a prevalent technique of using the strumming hand’s meaty side against the

strings to dampen a note into more of a thump. You won’t hear that *chug* from amplifiers designed around handling that sort of tone if you can’t palm-mute well. So don’t judge the gear until you can play better. That advice will save you from getting rid of gear you should have kept. This includes pedals, strings, amps, the lot.

Don’t worry if you can’t palm-mute well. Players who can palm-mute well still need to consider the sound engineering side to make the chug sound good. You take on this task by tackling it from two directions. Lessons training you to palm-mute combined with knowledge like this book’s tips on what gear and dialing-in you need to get you there. We shall give you some tips anyway because everyone wants to chug.

An 80s palm-muted chug requires several things to converge.

Bridge humbucker: Bridge gives the best position for a chug. Single coils are much harder to control here, so go with humbuckers if you can. Nearly all active humbuckers will do it. The majority of passive humbuckers also, but ones designed for higher gain are better. Some distortion is needed. You don't need much.

Move palm and alter the pressure: You experiment with moving your palm's flesh into different positions around the bridge area up and down, left and right, in and out with variable pressure (very important).

Pick location: Strike the string in different positions along the string for each new palm change position (very important).

It’s about all three axes for palm and picking. In most cases, placing the palm on the bridge itself usually gets you the correct horizontal access position and the vertical one to cover any string. Pressure is the axis you have to work on with gentle increments, not big changes, to find that palm mute tone you want.

Picking is primarily dependent on horizontal location along the string. How hard you strike depends on the tone you want. If you are doing this right, your palm will be in a fixed location, adjusting pressure and your picking fingers moving back and forth along a string and up and down across the strings. That’s the range you need to find palm muting sweet picking spots.

Accurate rhythm (perfecting it).

Find a load of different tones through minor adjustments in your palm and picking. If you can't hear big changes with minor adjustments, then increase volume. When you have sufficient volume saturation with some gain, and you do this, you can hear micro changes. When you chug (repeat), these micro variations add up to a macro tone for each strike. That is how you can find lots of different chug tones on the same guitar with the same amp settings.

So that’s some tips on palm muting to get you started there.

For now, think of awkward fretting hand chord shapes as something you can overcome by challenging head-on what is difficult for you to shape and adding them into a practice schedule. You can easily recognize which ones you need to focus on because you almost certainly don't feel like you want to play them, yet they frequently occur in many songs. So get into them somehow and make time for them. Even within a few weeks, the brain's neural pathways and physical training improve. You will become comfortable with them that way like second nature, and this goes on forever as you learn more ways in which notes can be achieved on guitar. In the guitar world, you may hear the phrase 'keeping your chops up.' It usually means maintaining how well you fret and strum by practice.

Guitar playing is in your head. Today we know that neurology can explain how guitar players learn to do what they do physically. For example, holding the strangest finger contortions with ease for a chord is just a matter of repetition, hand aerobics, and the brain doing its neural pathway engineering.

In guitar, there is plenty to find something for your brain to shout out no! That's a good sign you should try learning it. The body's hands reject it. You probably need it.

We slow it all down, going through a focused plan of motions, resting, returning to it after neural myelin growth, and trying it again. Sometimes this is also called *muscle memory* by guitarists. The actual muscle

getting the work out is the brain's neural wiring on this task. This goes for everything in guitar, from learning a song to building speed and complexity. They are a gradual process of lots of micro-changes adding up to macro changes, as we said. So yes, an entire song means your brain needs to change in some fundamental physical way. Not just in your mind, but organic changes. A good frame of mind for deep learning is to push through barriers with your brain. Tell yourself you are pushing through. It's your brain first, and then everything else responds after.

Nobody puts on a guitar and plays at their peak every day, all day. That's a fantasy reserved for the few. We all need *warming up* before we begin to sound in some way acceptable. Even the top guitarists may warm up for hours before the gig.

Sound varies because the environment influences the tone, and it is not easy for guitarists to be precisely the same for every take. While guitarists can vary playing the same song, you can still get it *tight*, meaning as close to exactly repeating everything, the better for your band and the sound engineer. A quick tip here is that even if you play a genre or type of music nobody likes, you will still be considered a good band if you play tight together.

Some guitarists gig all year, and maybe they did something worthy of a live release that year. The best live take or best live gig is chosen from an extensive selection because all guitarists vary in how they sound

on any given day. There is also a possibility of taking individual songs from different gigs, but there will be more variation in sound.

The whole band can vary in sound on any given day. The more we work to help constrain variations, the more we tighten our sound together as a band. A studio recording setup is one way to help constrain variations, tighten up this sound, and have the most control you possibly can over your tone and final mix. Hopefully, this explains why the sound from live albums sounds so very different from the studio albums.

There is absolutely no reason why variation doesn't also translate to your sound and tone. If you record yourself, you will sound different from your live performance. Some professional bands have their sound engineers work with the house sound system engineers to re-create their sound live. A poor sound engineer can easily wipe out a band's perfect performance. So as a guitarist, it would be best if you learned how to cooperate with your band and sound engineers. You got to get your social skills in order as you will be entrusting part of your tone to others from time to time. Sound engineers are your friend, not the enemy. It is amazing how many guitarists strike up a bad social interaction with their techs, and the quality of their end sound will not be the best the tech can make it.

So again, the big moral of the story here is not to judge gear until you improve your playing. A guitarist who has put in the effort at lessons and training can turn a budget guitar and budget gear into something sounding like far more than it's worth. In September 2021, Josh Homme, from Queens of the Stone Age, revealed that the top-secret amp that he uses for recordings was nothing more than a solid-state 1980s Peavey Decade practice combo. Here is a picture of one from the manual.


**This is it. Josh Homme's Holy Grail amp. A Peavey Decade. Songs for the Deaf and many other classic QOTSA songs were done using this budget combo.**

## What gear to start with or advance on?

To begin, you need some gear. Next, you should know about GAS (gear acquisition syndrome). The guitar is addictive, and buying equipment just as much so. That probably has something to do with how the guitar is excellent therapy. You don’t have to be Jimi Hendrix to benefit from the results. It takes you away from the world for a while and even a little holiday from yourself. So you are going to be wanting more gear, and it is addictive. At least if you are going to have an addiction, you will still have the stuff after you use it, and it won’t be going down the toilet. Anyway, with GAS, too many pedals, too many guitars, amps, cabs, too many watts, and not enough know-how to put it all together coherently and create a plan for future improvements. This book will help you understand how to plan some pathways for your lead or rhythm guitar tone hunting and performing, putting your GAS to good use.

Keith Richards from The Rolling Stones often says there is much to learn from going back to the acoustic wood. Hollow body classic and acoustic guitars never grow old and history beyond what this book could even comprehend or cover. Having one wood around is a good idea, even for electric guitarists. It would help if you got that feeling. The reason is that this is where many guitar riffs have their origins. Then the electric guitar is brought out, and the same riff is played on it

and modified. I wouldn’t bring this up unless I haven’t heard many respectable guitarists like Mark Knopfler from Dire Straits say this. It is part of why MTV unplugged sessions were so popular as many bands had initially figured out many of their songs on acoustic. Let me put this another way. It seems that successful electric guitarists seem to have incorporated at least a little time with acoustic woods into their guitar time. It isn’t that hard to do when you start to come to terms with electric guitar. You will find you can translate some things over with a bit of practice. Then there is another reason why we should suggest an acoustic in with your electric guitar collection. Even the most avid guitar fan of heavier genres will find acoustic on their favorite albums either in an entire song or part. It doesn’t matter what the genre is. Acoustic and classical guitar happen.

An acoustic with steel strings, or if you want to play Spanish guitar, consider a classical guitar with nylon strings. You don’t have to have one with electronics or an acoustic amplifier. You don’t have to spend a lot of money here. Just a hollow body acoustic guitar that stays in tune and that you can pick up and play without plugging anything in. It will become a practice guitar you can quickly turn to if you want to try and recall some passages you want to learn. Even electric guitarists practice their electric guitar work on acoustic guitars from time to time. Like alternating what you are learning, sometimes picking up and putting away the acoustic guitar a few days a month while playing and

learning electric is acceptable as any good way to learn both instruments. Anyway, we shall not discuss acoustic guitars anymore just to say you really should consider an acoustic for reasons like this.

Hitting the one-hour-per-day mark playing guitar is not an unreasonable goal to timetable towards if you are serious about playing guitar. Professionals obviously can do much more than this, but around an hour for many of us will be more than we need to ensure success. It will not be an hour of repetition, however. It will be an hour divided into planned subsections that last at most 30 minutes each and 15 minutes on average. If you timetable towards learning one hour per day like this, I think you have an excellent basis to springboard from and achieve any guitar-related goal you want. Planning helps. It will get you out of any situation that seems to be going nowhere, which is familiar with electric guitar. You can translate this to many other things in life. When you have progressed far in learning and training, playing all day long like many professionals becomes accessible.

## Electricity is dangerous

The electric guitarist has a most critical consideration from the onset—safety with electricity. I think we can all accept this is something we want to get right. *Power conditioning* is an excellent practice even if you hear the complaint that it is just a fancy power strip with a fuse that trips if it senses a surge. Power conditioning also involves some filtering out of power irregularities.

You may hear the terms dirty power and clean power. Dirty power is unconditioned power, and clean power is conditioned power. It is done with a professional power strip, some of which are rack-mounted.


**Protect your gear or risk electrical surges destroying everything. Floor power strip on the left and rack power strip on the right. Furman made both.**

Electric guitar equipment is so sensitive that it picks up electrical hum *noise*, especially from non-professional power outlets (plugging your gear directly into home electrical sockets). A power surge can blow your amp and entire pedalboard. Anything with sensitive circuits along the surge path is vulnerable. It would help if you thought hard about getting some power conditioning units before buying expensive electrical guitar equipment. You can start with a power strip on the floor with surge protection and then buy a professional one used by musicians specifically to reduce guitar-related humming issues.

Too much equipment and gear have been returned to the shop because of noise and hum when it is the same

common problem of not conditioning power sources effectively. Even if this turns out not to be the problem, it is still beneficial, and you have lost nothing investing in this insurance that also cleans up your sound.

A good quality surge protector strip is a good start and better than nothing. Get one and plug all of your gear into that one unit. Do not plug anything else from the rig to another power outlet or risk losing the conditioned power. Everything from the one power source is how it’s done.

The power conditioning introduces a single step between the power socket and your rig to help solve hum problems. The better the power conditioner, the more silent your system will be allowing for guitar tones to get through without any unwanted noise. Why? Because amplifiers amplify everything, including what you don’t want!

Get rid of your problems at the source, or your problems get amplified instead of your good rocking tones. Some rigs may hum if there is a lot of distortion. Put your strumming hand on the strings. If the hum goes away, then this is normal. If not, then power conditioning is probably the issue. There are situations where some amps and pedals will hum. Usually, when volume and gain dials are up high. We will talk about this later, but if you can’t live with it, you may need to use a noise gate. Usually, when you play, the noise will not be there if it is normal noise. The bottom line is certainly we don’t want it in a recording.

Sometimes you may have to use a computer system and USB connection to your rig. That brings in the possibility of hum also from the computer even if the computer is also conditioned. There are USB power conditioning units, but a well-designed sound engineering workstation usually stops all hum and creates absolute silence. In the end, many guitarists might not go this far as to condition their computer's power and instead rely on a professional sound engineer's system to record without any artifacts. You will find that there are other reasons to use a professional service because high-end microphones or other gear is too expensive for most guitarists at home.

Professionals often use a portable, rugged case rack system with several slots and a mounted power conditioner in the rack. They tend to double as *flight cases* for touring bands. You must check the voltage type from country to country, and you must switch your gear over to the correct voltage or risk destroying your gear. If you tour a lot, then write a prominent note on the voltage on the pedalboard and amp and stick it there for all to see. There are advanced power supply units out there that are variable for any voltage but can be expensive. This book will help you factor in defeating unwanted hum into your sound systems.

*Active pickups* have a small 9v battery replaceable inside the guitar cavity by unscrewing carefully crafted coverings for internal access from the rear of the guitar. *EMG*s are popular actives for high-gain guitar playing, and they require a 9V battery. That is all the

electricity any guitar will have internally. Using *passive pickups* means no electricity at all. Electric guitars don’t electrocute you but happen to make good conductors for lethal voltages.

Scientifically all you are doing as a guitarist is causing string vibrations. Those vibrations carry frequencies to the guitar pickups. Just vibrations transformed into weak electromagnetic signals. Since the electric guitar does not require external powering, it can produce electromagnetic signals from these pickups (wound magnets) located in the middle of the guitar body close to the strumming hand. The pickup ‘picks up’ strings resonating frequencies filtered and sent through a guitar cable line output. This *line out* goes into a *line in* of an amp or pedal. The signal is processed into sound (our tone) by a guitar amplifier and speaker cabinet combination or pedals or a digital system.

Don’t worry too much about the terminology we use in this preface. We are going to go over everything in more detail later. Traditionally a *quarter-inch jack* plugged into the bottom of an electric guitar is connected to a cable, sending a weak *electromagnetic* signal to an amplifier’s *pre-amp* section for *gain* staging into a *power section*. That energy can be used to move parts of a speaker in a cabinet, pushing air outwards as sound frequencies we can hear.

If we have a pedalboard, then this goes between the guitar output and the amp's input.

The electric guitar can get loud. It is not uncommon for some 100W guitar amplifiers to be played at high volumes for specific types of power stage distortion sounds heard in some high-gain metal songs. 100W is a lot of amplified power. I mean a lot. Uncomfortably so. Most of us will never need a 100W.

The amplifier sends a signal down the speaker cable, and the speakers convert that signal into a stream of energy that physically moves speakers by vibrating them. This movement vibrates volumes of air passing through the speakers, filtering the sounds to produce the saturated tones of satisfying electric guitar.

So it is the amplifier that we should treat with extra care when it comes to electricity. It is not uncommon to find professional bands playing relatively safe away from electricity by using wireless transmitters. It also allows them more freedom to roam. However, pedalboards require electricity to operate, so the guitarist may have to contact electricity by engaging footswitches. So be aware that there will probably be electrical power leads on the ground, especially where electric guitars are concerned.

The guitar pickups are passive for the most part meaning no battery is required. The electrical danger comes from elsewhere, such as touching exposed power. A qualified tech needs to check the damage to electric guitar equipment, such as the amp, before turning it on again. Amplifiers hold residual charges inside their components. So even unplugged, they can

still cause a shock at lethal voltages. A 100W unplugged and opened is a dangerous system that requires expert care, although even lower wattages can deliver lethal electrical discharge. Amp techs have ways to drain the excess charges from the system before handling the circuits inside. Lethal voltages are in both *solid-state* digital amps and tube amps that have *vacuum tubes/valves* inside.

The point is not to fear electric guitar rigs but to understand how to be safe with them. Read the manual's warning sections. Do read them for guitar gear. You will learn a lot there.

Most tube amp owners will change pre-amp tubes by taking them out of an unplugged amp case with the access panel or hood unscrewed and removed. You should not need to take the amp apart or go near the amp circuitry and guts for tube changes.

Tube failure is statistical mainly. A set of tubes from the same assembly line, coming off simultaneously, can have one failing in a few months and the other in a few decades, even if the amp is handled with the best care.

The amp chassis compartmentalizes the circuits away from where you change the pre-amp tubes. Modern amps are designed this way. Very old amps might not, so be careful with vintage gear. You can change pre-amp tubes yourself. However, you might not change the power amp tubes without a bias change that depends on your amp. You may need an amp tech to bias your amp after a power amp tube change. Consult

your manual or look it up to learn if your amp requires power tube biasing.

You can investigate the components of absolutely any guitar amplifier in existence by looking at each brand and model online. Use keywords like *inside amp* or *open amp* and *amp circuits*.

Pedalboards require power, so it is crucial to be powered safely with a reliable, protected system. The power conditioner we mentioned helps do this and so should be involved with your pedalboard. This book will *advise against daisy-chaining power cables* to power multiple devices such as a chain of pedals. Instead, we recommend using individual power cables wired into an isolated power block that often fits under your pedalboard. It would be best if you powered such a block using your surge-protected power conditioning strip here. This system is almost a failsafe way to remove unwanted hum. Just this advice alone can easily have a guitarist playing through a setup costing a few hundred sounding instantly better than a guitarist playing with noise and hum through equipment valued ten times more.

**A typical low-budget daisy-chain power supply is sure to make your pedalboard hum with noise with the pedals start adding up.**


**MXR iso-brick. Typical power supply for guitar pedals using discreet connections for each pedal. Make sure you are not buying a low-budget daisy chain in a box. Check if the power is isolated or not.**

When in doubt about electrical gear, always get your gear to a tech. Your local guitar tech will be invaluable here. Nearly every big town has someone who is always fixing guitar equipment. A lot of gear you buy will need some adjustment, possibly right at the start and most certainly later. Let someone else deal with the electronic repairs and fixing your guitar until you learn what a well-setup system is.

The common cause of guitar-related electric shocks probably comes from guitarists putting their hands into open electrical gear, touching gear incorrectly wired (grounded), or using damaged equipment. Storms can damage equipment. Drop the guitar if someone throws

water or liquid at you and makes contact with you or equipment. Yes, drop it, do not lower it onto the ground making contact with the water; luthiers can work miracles fixing guitars like you won’t even notice the difference. Suppose you use a strap, hands instantly off the guitar, and try to slide out quickly by bending over or unclipping. Stand back. Don’t go near anything again until the power has been turned off on the whole stage. Liquids on your gear are a big problem. Sometimes this can’t be avoided, but your response is the same. Stand away and power down immediately.

Microphones are notorious for electrocutions, some fatal. Make sure that everything is in working order to avoids shocks. Many singers leave the microphone on the stand and don’t touch it. If they must touch the equipment, like a mic, they use the back of their hand, not your palm and fingers, to check it. When you grab a faulty microphone, the shock can cause your hand to tighten around it even more.

Playing in the rain is perilous and a poorly designed outdoor event. Many outdoor events play wireless with equipment well back from the front and sheltered in case of rain. Nobody should expect you to play in treacherous conditions.

Guitar headstocks are notorious for knocking things over and breaking at the same time. So don’t put drinks on top of the gear. The problem is made even more dangerous because there are string wires on the

headstock running down the length of your guitar. These are what conduit the lethal voltage very quickly to your body.

So the point of all that is to explain how guitarists get electrocuted. It is not playing any guitar that does that. It is coming into contact with an open power source that transmits it or equipment getting wet or damaged.

An awareness of power safety is essential, and even if many guitar techs have gotten away with a zap here and there, it is better safe than sorry. Even Les Paul, the electric guitar inventor, found himself in the hospital and recovering for a year after putting his hand into an open radio transmission unit while still holding his guitar.

In most cases reading the manuals correctly (meaning before you use equipment) gets you out of many problems. I have a folder on my drive full of only manuals with notes about all my gear. You will need something like this as it is easy to forget settings.

Don’t rely on others not to adjust the dials on your gear. It happens, and you need your notes to put everything back the way you had it. Label equipment if you must. For those with phone cameras, take pictures, upload, label, and store. Your dialing-in will sometimes be 20+ dials to contend with a well-populated pedalboard.

May I suggest a technique that you can start doing now? And in fact, we all can if we aren’t already. It is not uncommon for guitarists to sit down and doodle out

a rig on paper with lines running to shapes and drawing labeled with an amp name and other lines to pedals and speakers with little notes to the side of each. These rough schematics are a great aid to help you learn things you want to remember, see how you can chain it all up, what cables you need, what inputs and outputs, power, etc. It would help if you got into sketching out ideas like this, especially before you buy anything. It can reveal things to you that you have not have thought of before. Once you find something like this, you realize how invaluable this method is. So please do use your pencil and paper to sketch out your ideas and rig designs. These are essential tools, just as much as your guitar is.

Also, when buying gear, consider dimensions and weight. Time and time again, we find that the amp head doesn't sit on the cabinet the way we hoped or on the shelf we prepared. Same with introducing a new pedal to a pedalboard or putting a power brick underneath. Measure your stuff out. Also, note the weight of gear, especially *combos*. If you have to lug a combo around, make sure it is a weight you can handle. Some combos are extremely heavy and much heavier than they look.

I do not promise to turn you into a guitar virtuoso, but I do promise to give you a modern take on how to achieve your tonal goals with more knowledge than you need to get there.

If you have a problem understanding anything that follows in this handbook, skip ahead and go back to it later. You will usually find things covered more than once from different angles.

You don’t get through writing a book like this one without making some mistakes. Those are mine and mine alone. Finding and correcting mistakes is a big part of guitar sound engineering, and if you spot them and change them, you are already moving in a good direction.

At the end of this book is an electric guitar bedroom DAW schematic. You can glance at that image a few times on your journey to understand what a bedroom rig may contain. You can customize each component.

Happy playing. It is **your electric guitar.**