# **Basic Guitar Setup Tips**





Compiled by Larry Vigneault. Last updated Sunday, March 29, 2009 07:31 PM



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#### **Foreword**

Perhaps your guitar was playing great when you brought it home from the store, and gradually you noticed that it just didn't feel right anymore. Or, maybe it just never felt right from day one, whatever the case, you know it's time for a tune-up (pun intended). I can usually tell when my guitar needs a bit of tweaking, it starts to feel tedious and tiring to play, albeit in a very subtle way. This page is intended to help you do the basic tasks yourself. I've brought my guitar to lots of techs before for basic setup tasks, and for the most part, none of them ever seemed to get it right. It was always difficult to talk to the person who was actually doing the work, since a lot of places just farm it out to outside sources. What I consider the basic tasks are:

- Adjust the truss rod for proper neck relief.
- Adjust the bridge for proper string height and action.
- Adjust the height of the pickups properly.
- · Adjust the intonation for accuracy.

By no means is this an all encompassing list, but it's a good start for the minor tasks that you can accomplish yourself. If you've never done it, I recommend that you first bring your guitar to an experienced luthier, and have him check and repair the following items as needed. Even if it's a brand new guitar, you'd be amazed at the difference these items can make:

• Regulate the nut. This insures that the strings are the proper height at the first fret. If they're too high, you may experience a slight degree of sharpness in the lower fret region. This is because the string has to travel too great of a distance when you depress a note at the first fret. Not only that, but you will also find it tiresome to play in the lower fret region as well. Most guitars do not come with a properly regulated nut, this is a must do.

Here's what Gibson had to say about the nut slots on their guitars: Nut slots themselves are cut according to the string gauge used. Some good measurements at the first fret for string height are: bass side: 2/64 inch, treble side: 1/64 inch

- . Check for high and low frets, level the frets as needed. Any time frets are leveled, they will need to be re-crowned to insure accurate intonation.
- Check for loose frets, and re-glue any that are found.
- Have the frets polished, this will give them a smooth, silky feel.

Sounds expensive eh? The usual cost for a full guitar setup - regulating the nut, adjusting the truss rod, and setting the action and intonation shouldn't run you over \$35.00. For the fret leveling, crowning, and polishing, my luthier charges a flat rate of \$75. Re-gluing the loose frets will probably run you another \$30 or so flat rate. This should be a one time expense, thereafter, you can do the tweaking yourself and get the guitar playing exactly the way you like it.

Being that I'm primarily an electric guitar player, this page really deals with working on electric guitars, not acoustic. I also don't address the issues with setting up tremolo systems, especially Kahler or Floyd Rose types. I am not responsible for any problems you introduce by working on your own instrument. This is merely intended as a guide to help point you in the right direction. If you don't agree with that, then STOP here! I am by no means a professional at doing this type of work, however I do keep my guitars playing the way I like them to play, and save myself a lot of time and money by doing the type of work outlined below. Any adjustments you make to your instrument, you do at your own risk. These are tried and true techniques that have been in use for many years. With care and caution, you should find this information helpful in assessing and setting up your own instrument.

If you live in the Central MA area and are interested in having your guitar setup or taking guitar lessons, please contact me.

## **Getting Started**

The good news is that you need very few tools to do the work yourself. Stewart MacDonalds is a great source for quality tools. To get started, here's what you should have:

- A capo to act as a 3rd hand when needed.
- A truss rod wrench that fits your particular truss rod.
- An accurate, high quality 6 inch metal ruler with 64's and 32nds increments.
- Small philips head and regular screwdrivers.
- Set of small allen head wrenches.
- Set of feeler gauges, preferable sizes in the range of .009 to .018. I bought mine from an automotive store for about \$7.00

First thing you need to do is to put on a set of new strings in the gauge of choice. It's important to start with a fresh set of strings to insure proper intonation of your instrument. If you change the gauge of strings in the future, you will need to redo the setup on your guitar to accommodate the new strings. Where appropriate, I've tried to include the factory recommended values, as well as any specific information that differs in the way they recommend their guitars are setup.

*Tip:* Always work in a clean, uncluttered area. Be especially cautious, if you drop a tool onto your nice flametop guitar, you will damage the finish. Don't have any items on shelves nearby that can fall and land on your guitar. Always place your guitar on a soft workarea such as a folded up towel or blanket to prevent scratches etc. I can't stress this enough, one wrong move, and you've marred your perfect finish - *pay attention to what you're doing.* If you bring your guitar into a dealer or a luthier for a setup, *always* do a once over with the store or person to make sure that they know there's no dings on the guitar, or at least what the current condition is. That way, if you get the guitar back and there's damage, you can argue the fact credibly. I have a friend who brought his Les Paul to a reputable luthier, and when he picked it up, there was a large damaged area on the back of the guitar that wasn't there when he brought it in. The luthier ended up repairing the damage, though he couldn't remember doing it himself. Accidents happen, and you need to point out the condition of your guitar so that you can come to terms should any damage occur.

For the most part, I've only dealt with Gibson and Fender guitar specifics, however, the basic tasks are common to most guitars with slight variances as to how or where a specific measurement is made. Here's some pointers to other manufacturer's setup guides for their instruments.

Paul Reed Smith (PRS) Rickenbacker Guitars

Guild Guitars - They've changed their site and I was unable to locate a section dedicated to setups (1/17/01)

#### **Truss Rod Adjustment**

You need to have a small bit of relief or clearance in the middle of the fingerboard so that a vibrating string has ample clearance to vibrate freely and naturally. This is achieved by adjusting the truss rod. Most manufacturers will ship a truss rod wrench with the guitar. At any rate, you need to find the correct wrench for your guitar. Gibson guitars commonly use a 5/16 wrench, while Fender's typically use a 3/16 or 3/32 allen head wrench. The directions below apply to guitars with the truss rod adjustment located in the headstock only. Some guitars have the truss rod adjustment located at the end of the fretboard near the pickups. Since I've never done this type of adjustment, I can't give you the details, though the mechanics should be basically the same.

Don't ever force the truss rod if it doesn't move freely, this will most likely only result in damage to your instrument. If the truss rod doesn't move freely, bring it in to an experienced repair-person and have it checked out.

*Tip:* To quickly check whether the truss rod needs adjustment, hold the low E string down at the 1st and 13th frets, then tap the string down at the 6th fret. You should hear a light click as you do this from the string hitting the frets. If you don't hear it, the neck needs more relief. If it's extremely pronounced, then you probably have too much relief.

If there's a plate covering the truss rod, remove it to expose the truss rod. The following is a rough guide for setting the action:

Style of playing	Type of action desired	Relief in inches
Rock & Roll	Medium - Low	0.010
Jazz	Medium - Low	0.013
Acoustic-Electric	Medium - Low	0.013
Classical-Electric	Medium - Low	0.023

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Electric Bass	Medium - Low	0.020	
Electric Dass	iviediuiii - Low	0.020	

In general, this measurement is taken by measuring the distance between the bottom of the string and the top of the 6th fret while holding the string down at the 12th fret and the first fret. This is where the capo comes in handy - put it on the first fret so your hand is free to take the measurement. Using a feeler gauge of the desired height, in this example, 0.010, **hold the low E string down** at the 12th fret (with the capo on the first fret), and measure the distance between the top of the 6th fret and the bottom of the low E string. If the distance is greater than the desired relief, then you need to turn the truss rod clockwise (towards your right) as you're looking down the headstock towards the body of the guitar. If the distance is less than the desired amount, then you need to turn the truss rod counter-clockwise (towards your left) as you're looking down the headstock towards the body of the guitar. The basic rule is:

- Clockwise to tighten for less relief
- Counter-clockwise to loosen for more relief

When making truss rod adjustments, **always work in small increments**, never more than an 1/8th of a turn. If you really have to force the truss rod, or it feels like it won't move, stop immediately and bring it to an experienced repair-person -you may have other problems that need to be resolved. Finally, always check the relief while holding the guitar in playing position. Otherwise, the neck can flex from the weight of the body if it's improperly supported. It's common for the truss rod to take a while to have it's full effect on the neck, so make sure you periodically revisit the relief to insure it's still accurate during the remainder of the setup process. Paul Reed Smith guitars use a double-acting truss rod in post 1992 production guitars. As stated on their web site: "PRS switched over to the double acting truss rod about halfway through the 1992 production year. To determine whether your guitar has this system simply examine the adjusting nut. The single acting rods used a brass adjusting nut threaded onto a steel rod. The double acting truss rod achieves twice the amount of adjustment as the single acting rod with the same amount of movement of the adjusting nut. Do not over-adjust!"

*Tip:* You might want to consider doing this adjustment, and then allowing the guitar to sit overnight and adapt to the change. Then check the next day and make final tweaks before continuing on with the rest of the adjustments. It's also a good idea to check the truss rod adjustment several times during the setup, especially if you dramatically raise the height of the strings at the bridge, just to make sure it's correct.

Other thoughts: There are alternate methods for adjusting the truss rod/neck relief. For example, PRS recommends fretting the 1st fret and the last fret, then making the measurement from the top of the 8th fret. For most guitars, the truss rod really affects the area from the 1st to the 13th fret which is why the measurement is commonly made using the 1st & 12th fret. Try the different methods and see which one works best for you. Personally, I rather like the way PRS recommends doing it, and often, I'll use their method to get the neck close to the desired adjustment. It's something that you'll eventually get a *feel* for when your relief is set correctly, and you won't have to measure, you'll just know by the way the guitar plays.

#### **Specifics for Gibson Guitars**

Here's the actual answer I received from Gibson regarding the truss rod adjustment:

"We don't actually have any published specs for this. It actually is whatever setting works best for the guitar to create minimal buzz and good action." From my own experience, I've found that .010 is a good starting point on my Gibsons. I use .011 - .052 strings on all of my guitars.

#### **Specifics for Fender Guitars**

Fender recommends that you place a capo on at the first fret, and hold down the string at the *last* fret, then measure the distance between the top of the *8th* fret and the bottom of the sixth string.

Neck radius	Relief (at 8th fret)	
7.25"	.012"	
9.5" to 12"	.010"	
15" to 17"	.008"	

<sup>\*</sup> For PRS guitars, visit their website.

#### Adjusting the string height at the bridge

This measurement is taken from the **top** of the 12th fret, to the **bottom** of the string, generally with a small metal ruler. As a starting point, the following heights are factory recommendations:

Specifics for Gibson Guitars - measurement is made at the 12th fret.

Height - Bass side	Height - Treble side
5/64"	3/64"

Specifics for Fender guitars - measurement is made at the 14th fret:

Neck Radius	Height - Bass side	Height - Treble Side
7.25"	5/64"	4/64"
9.5" to 12"	4/64"	4/64"

15" to 17"	4/64"	3/64"	
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The height of the string is generally adjusted by turning small allen head screws in the individual string saddles, or by adjusting the treble and bass side of the bridge. A 64th of an inch seems like a small amount, but when you're talking overall string heights of 3/64 to 5/64, a 64th is a significant change! In general, the rule is that as you go from the high to low strings, there should be a gradual increase in height. If you have a fairly radiused fretboard, your strings should follow the radius of the fretboard. If your string height is seriously out of whack, then start by adjusting the thumbwheels on the bridge if you have a Gibson Tune-A-Matic style bridge, to bring it within the ballpark. Then make the fine adjustments using the individual string saddles. If it's pretty close to begin with, you should be able to make all the adjustments by just tweaking the string saddles. Turning the screws *clockwise* will raise the saddle, *counter-clockwise* will lower it.

Note: If you have any high frets, or problems with your fretboard, you may not be able to achieve the optimum specifications without first having the problem resolved properly.

#### Setting the pickup height

After adjusting the action and string height, it's a good idea to adjust the height of the pickups. If the pickups are too close to the strings, the magnetic field can affect the intonation, especially with single coil pickups, as well as cause undesirable distortion. In addition, a pickup that's too close to the strings can kill your sustain since the strong magnetic field will cause the string to stop vibrating prematurely. Always check the height of the pickup while fretting the string at the highest (last) fret. Measure from the top of the pickup to the bottom of the string. You can also use the pickup height adjustment to balance the the volume and tone of your pickups. For example, if there's too much bottom end, you can lower the bass side of the pickup a bit more to lessen the low end. If you have too much treble, you can lower the treble side, you need to experiment to find the perfect setting. If you set both pickups to the exact same height, the neck pickup will almost always be louder than the bridge pickup. You can balance this by setting the neck pickup a little lower than the bridge pickup. Also, when you have both pickups selected simultaneously, you can adjust the tone by changing the heights of the two pickups so that the mix is more balanced. What it really comes down to is personal preference in tone and output. The specs put forth by the manufacturers are merely starting points to depart from, they're not ironclad settings. If you have humbucking pickups with adjustable pole pieces as well - six adjustable screws on top of the pickup, then you can make fine adjustments for individual strings by tweaking the corresponding screw for a given string. This is a good way to balance out individual string volumes. You should start with all pole pieces screwed down flat against the pickup, and make necessary adjustments from there.

#### **Considerations for Single Coil pickups**

If you are working on single coil pickups, you need to keep the heights lower than humbuckers because the magnets are typically much stronger. Prior to beginning a setup, make sure that the pickups are not too close to the strings, or you'll get misleading string buzzes, and intonation problems. The magnets influence is much stronger on the bass side of the pickup due to the mass of the bass strings, so in general, the bass side of the pickup should be lower than the treble side. It will take some experimentation to arrive at the perfect balance of tone and volume, while still maintaining accurate intonation. Remember, the strong magnets used in single coil pickups can cause sharp intonation if they are positioned too close to the strings.

After you make adjustments, check the tone of your guitar each time, and keep fine tuning it. It may take a while before you arrive at the perfect mix for your preference, but it is achievable. If you get a harsh type of distortion from your guitar, try lowering the pickups a bit to yield a creamier, more natural type of distortion. The key here is to experiment.

#### **Specifics for Gibson Guitars**

Neck Pickup		Bridge Pickup	
	3/32" on bass and treble side	1/16" on bass and treble side	

#### **Specifics for Fender Guitars**

Pickup Height	Bass side	Treble Side
Texas specials	8/64"	6/64"
Vintage Style	6/64"	5/64"
Amer/Mex Std	5/64"	4/64"
Humbuckers	4/64"	4/64"
Lace Sensors	As close as desired, allowing for string vibration	

#### Adjusting the intonation

If you have an adjustable bridge, the final step is to adjust the intonation. Intonation refers to whether or not a note plays sharp or flat from it's intended sound. When you depress a string, you actually stretch it a bit beyond it's unfretted position. This generates a slight sharpness in pitch which is compensated for by adding a slight excess of string length. To check intonation on a given string:

- Play the *harmonic* at the 12th fret, listen closely to the resultant pitch
- Now play the same note by fretting the note at the 12th fret. The two notes should match exactly if the intonation is correct.
- If the fretted note sounds sharp, then adjust the bridge saddle so that it moves back away from the fingerboard.
- If the fretted note sounds flat, then adjust the bridge saddle so that it moves *towards* the fretboard.

The adjustment is really dependent upon your skill, and the accuracy of your ear in determining the pitch between the two notes. Always make the adjustment to the saddle in small increments so you can fine tune the intonation. If you're unable to get the intonation accurate, bring it into a qualified repair-person to determine if you have other problems.

Note: You can also use an accurate tuner to set your intonation rather than doing so by ear. This will typically yield more accurate results. It's best to use a tuner with an analog style needle display, or a strobe tuner which are highly accurate. Thanks to J. Grant Boling for this helpful hint.

One problem I've seen a number of times is where a guitars intonation is set properly, but notes fretted between the 1st and 5th fret sound sharp regardless. This is almost always due to the fact that the nut slots are cut too high. The additional distance required to push the string to the fret is causing the note to be sharp. Bring the guitar in and have the nut regulated properly to resolve this problem.

## **Finding Buzzing Frets**

Here's a cool method I read about in Hideo Kamimoto's book Electric Guitar Setups. You need to have a digital or analog multimeter so that you can measure the resistance as described. You want to have a pair of test leads with a clip built into the end. Also, a capo is handy for holding the strings down in the position where you're getting the buzz.

- Clip one of the leads onto the string that's giving you a buzz, between the nut and a tuner.
- Put the capo at the position where you're getting the buzz. Example: If you get a buzz on the 3rd string when you fret it at the 8th fret, place the capo at the 8th fret of the 3rd string. The multimeter lead would be connected to the 3rd string between the nut and the tuner.
- Sit in your normal playing position, and play to reproduce the buzz. While doing so, hold the other lead from the multimeter on the fret you want to test. Anywhere that the string is buzzing against a fret, it will complete the circuit and you will get a reading. You may find that the string is actually buzzing against several frets. For example, using the previous example, if you put the second lead on the 12th fret of the 3rd string while striking the 3rd string, and you get a reading, then it's buzzing on the 12th fret. Strike the string in your normal playing fashion so's not to introduce false results obviously, if you strike the string really hard, it will vibrate much stronger and buzz against frets it wouldn't normally buzz against.
- Finally, repeat this procedure for each individual string that you're getting buzzing on.

If you are getting buzzing, it could be due to a high fret, and it's possible that just tweaking the bridge saddle for that particular string may be enough to solve the problem. If not, you may want to bring it to a reputable luthier or repair shop and have it investigated further. Here's a couple of excellent links to help you diagnose fret buzzes:

Frets.com Buzz Diagnosis Musical Instrument Makers Forum Buzz Diagnosis

#### **Conditioning The Fretboard**

Check out the tips page for a method of conditioning your fretboard.

**Hot** - Here's a product that I've been using for some time now, and it's absolutely the best fingerboard treatment I've found on the market. I have absolutely no affiliation with the company, I just love the product, and since it's very difficult to find, I've decided to spread the word. The product is Gerlitz GUITAR HONEY.

I haven't found any other product that will remove grime and condition the fingerboard as nicely as GUITAR HONEY. Here's the description from the back of the bottle:

"In my search for the ultimate instrument fingerboard treatment I've discovered a unique blend of exotic oils which, when applied to your instrument's (rosewood, ebony, etc) fingerboard, will enhance the wood's natural character giving it a smooth silky feel, and a lustrous glowing sheen, while protecting against water, sweat, alchohol, and grime in general ... (a benefit towards longer lasting string life as well). GUITAR HONEY is also highly effective in removing resin from violins and other string instruments . Sticky residue & grime from decals, stickers, etc is easily removed with GUITAR HONEY without harm to the instruments finish. REPAIR SHOP PROVEN. The results obtainable with GUITAR HONEY are superior to any other fingerboard oil or treatment available. After several years of research and exclusive use in my repair and custom shop, I've made GUITAR HONEY available to you. I can't think of a sweeter way to treat your fingerboard. ENJOY!"

It comes in a small plastic bottle with a spray applicator containing 2 fluid ounces. Expect to pay about \$6.00 or so for a bottle, however a bottle will last a long time. I only know of one shop in my area that sells it, and it's even difficult to find on the web. Here's where I buy mine, you can call them and ask them to ship it to you.

To order Guitar Honey, or Gerlitz Number 1 polish, visit their website. Both are top notch products!

Gerlitz has a new addition to their product line called Smudge Off. This is an excellent product for keeping your guitar free of grime and fingerprints. It sprays on and wipes off easily leaving a beautiful luster on your guitar. The ease of application makes this product a pleasure to use. Check it out here. Highly recommended.

For further information regarding the setup of your instrument, please visit the following websites: Gibson Musical Instruments

Fender ( also checkout Mr GearHead for more information on Fender, Squiers, DeArmond. )

#### Paul Reed Smith

For further information, I highly recommend the book Electric Guitar Setups, written by Hideo Kamimoto. This book is available through Stewart MacDonald's, along with several other excellent books regarding this subject matter.

If you have a Floyd Rose tremolo, you might find the following sites helpful in setting it up. I've never owned a guitar with a Floyd Rose, so I can't offer much insight into the setup process, but hopefully the information in these pages will be helpful to you:

Site 1 Site 2

#### Additional links to informative musical resources

#### Fender Custom Shop Repair

Custom Shop Custom Care Center Gold Certified for Utah and Nevada www.VegasGuitars.com

Archtop Jazz Guitars
Vintage and new Jazz guitars Rivera and
AER Jazz amps www.guitarsnjazz.com

Cheap Electric Guitars
Browse Our Cheap Electric Guitars
Selection & Save with Become.com. Become.com

If you find any invalid, or outdated links, please send me a note and let me know so I can correct it.

#### Music Knowledge/Instruction



A Guide to Jazz Guitar - jazz guitar lessons, tabs, chords, licks, transcriptions, mp3s and more.

Bob Russell's Guitar Page - Excellent site, some really useful lessons from an excellent player.

Chord Inversion - Enter a chord and see all of the inversions of that chord - cool tool!

Dave Keller - Located in Wichita Kansas, lessons available.

Free Guitar Lessons - Free Guitar Lessons at Crazy Dave's Mad Guitar Licks

Guitar lessons at Free Music Study

Guitar Noise - The online guitar college, free lessons

Jamorama.com - Learn How to Play Guitar | Free Guitar Lessons Signup

Jazz Guitar Instruction - Several links to jazz guitar instruction websites

Jody Fisher - Some excellent instructional material here, check it out.

Learn How To Play Guitar Online - Learn how to play guitar with many free online guitar lessons

Learn to play lead guitar - Guitar player articles and resources

Marc Sabatella's Jazz Primer - Excellent subject matter for the aspiring jazz musician.

Mr Goodchord - Mick Goodrick's site.

Music Made Easy - Crash course in basics of reading music.

MusicTheory.net - Excellent site. Lessons, trainers and helpful utilities. Nicely organized, a must visit.

Online Guitar Course Reviews - Best guitar courses & lessons online reviewed

Ralph Patt's Jazzpage

TabGuitarLessons.com - free guitar downloads and more. Check it out.

Teach Guitar - How to make a living teaching guitar. Advice, resources.

Vision Music - Online lessons, some good jam tracks, but you must now pay a fee to be able to play most of them.



#### Online Resources/Miscellaneous Music Links

Australian Luthiers Supplies - Materials for guitar builders

**Aurora Guitar Strings** 

Big City String - Another site dealing with strings.

Chris Sterbenz - Audio Director for Sticks Of Thunder

Chris Elmore's Guitartips - Lots of playing tips for new learners. Subscription required.

Collect Guitars - When one isn't enough

DTS Technical Service - Top notch amp/electronics repair - amps, effects, keyboards etc. Located in Northampton MA.

Eclectic Earwig Reviews - Music Reviews

Franklin Guitar Straps - The soft strap

Frets.com - An excellent complement to this site! There's lots of great troubleshooting/how-to information here.

Guitars Etc. - Excellent product selection and great to do business with.

Guitar Nuts - lots of interesting articles on gear, wiring etc.

Guitar Specialist - Luthier in NY state. Excellent site with lots of interesting photos of different projects.

Harmony Central - Excellent source for reviews of guitars, amps, effects, as well as a wealth of information on other instruments.

Howard Roberts - My favorite guitarist. Mike Evans has created a great website devoted to Howard, check it out!

Musical Ads - The musicians classified ad site

Musical Instrument Makers Forum - Good resource if you're interested in building your own guitar.

Public Domain Music - A listing of music that has been granted public domain status.

Red Hot Jazz - A history of jazz before 1930

Roadies.com - Roadie profiles and resources, music industry tour personnel source.

The Coolest Jazz Guitar Stuff

Vintage Guitar Online - Lots of great resources and links at this site.

Wegen's Guitar Picks - not your father's pick.

WhatStrings - The guitar string resource.

#### **Amplifier Manufacturers & Speaker Cabinets**

Acoustic Image - Home of the Contra, Clarus, Corus amps.

Alessandro High End Products - Looking for a \$1999.95 twenty foot guitar cable? You can get it here.

Allen Amps - Based on the Fender Blackface amps, has do-it-yourself kits very reasonably priced. Highly rated amps.

Avatar Speakers - very reasonably priced high quality speaker cabinets.

Bad Cat - Designed by Mark Sampson, the original founder of Matchless.

**Bogner Amplification** 

Budda Amplifiers - handcrafted amplifiers

**Bugera Amplifiers** 

Carr Amplifiers - Fender based handbuilt amps

Carvin Amplifiers

Clark Amplification - handbuilt amplifiers

Cicognani Amps

Cornford Amplification

Diamond Amplifiers

Diezel Amplifiers

Divided by 13 - Superb handcrafted amplifiers - the Sonic Difference - these amps rock!

**Doberman Amplifiers** 

Egnater Amps - modular amp.

Electrosonic Amplifiers - Custom built tube guitar amplifiers.

**Eminence Speakers** 

**ENGL** Amplification

Evans Custom Amplifiers - Top-notch solid state amplifiers for jazz guitarists. Nice folks who really care about their customers.

Fargen Amplification - Hand crafted tube guitar amps

Fuchs Audio Technology - Handbuilt amplifiers

Gerhart Amps - "Just plug it in and play"

Goodsell Amplifiers

Guytron Amps - handbuilt amplifiers

Hammond Manufacturing - Transformers and chokes

Hatcher Amps - handbuit amplifiers, parts

Hottie Amplifiers

Hughes & Kettner

ISP Technologies

Kendrick Amplifiers - Handbuilt amps

Leonardo Custom Cabinets - Very popular in the jazz community.

Little Lanilei Amplifiers by Songworks - Ultracool portable tube amplifiers, check em out.

Louis Electric Amplifiers

Mack Amplification - Virtuoso tone without the prima donna price

Marshall Amplifiers

Matchless Amplifiers - The legendary benchmark for boutique amps.

Mercury Magnetics Transformer Upgrades

Mesa Boogie Amplifiers

Orange Amplifiers

PWE Amplification - Painting With Electrons

Peavey Amplifiers

Penn Instrument Company - Handcrafted tube amplifiers.

Pocket Rockit - Headphone amp

Port City Amplification

Quidley Amps - Designed to be dimed

Raezer's Edge - Beautiful, high quality speaker cabinets.

Reason Amplifiers

Redstone Audio - Cabinets designed specifically for archtop guitars.

Reinhardt Amplifiers

Retro-King Amplifiers

Rivera Amplifiers

65 Amplifiers

Sigmund Amplifiers and Guitars - Handmade amps and archtop guitars

Simple Amps Amplification

Skip Simmons Vintage Amp Repair - Expert repair and restoration of vintage tube guitar and harp amps and studio equipment

Soultone Amplifiers

Suhr Amplification/Guitars

Swart Amplifier Company

SWR Sound

Tech-21

**THD Electronics** 

Tone King

Tone Tubby - Speaker Cabinets

Tony Bruno Amplifiers - Listen to the sound samples, guaranteed to make you drool. Great sounding amps.

TopHat - Hand crafted amplifiers

Trillium Amplifiers

Two-Rock Amplification

Ultimate Attenuator - Smooth taper high quality tube attenuation

Victoria Amps - Boutique handcrafted amps.

#### **Guitar Manufacturers**

#### Also see the list of custom archtop manufacturers

Aria Guitars

Artinger Guitars - Custom made guitars

**AXL Guitars** 

Blueberry Guitars - Made by artists for artists

Bolin Guitars - Nice, custom made and production instruments

Brian Moore Guitars - Excellent quality instruments

Carlino Guitars

Collings Guitars

Composite Acoustics

Cordoba Guitars

Bill Crook Custom Guitars

David Thomas McNaught Guitars

DBZ Guitars by Dean B. Zelinsky

**Destroy All Guitars** 

**Duesenberg Guitars** 

**Eastwood Guitars** 

EER Custom Guitars - Quality handmade guitars

Ernie Ball Music-Man

Fender Guitars - Home of the legendary Strat and Telecaster

Framus Guitars

Fretlight Guitars

Gary Kramer Guitars

Gibson Guitars - No explanation required.

Gigliotti Guitars

Godin - New guitar concepts.

Gretsch Guitars

**Grosh Guitars** 

Guild Guitars - Some nice jazz bozes

Hahn Guitars

Hamer Guitars

Ibanez - guitars and accessories.

J. Backlund Designs

Larrivee - fine acoustic guitars.

Lightwave Systems - ElectroAcoustic guitar with optical pickup.

McPherson Guitars:

Exquisite craftsmanship and cutting-edge design. Our handmade guitars feature our revolutionary offset sound hole, innovative bracing, and our state-of-the-art cantilevered neck.

Michael Kelly Guitars - Very reasonably priced instruments

Mike Lull custom guitars

Moog Guitars

New Orleans Guitar Company

Nik Huber Guitars

Noll Guitars Ltd - Repair and custom shop, Cranston RI

Nordstrand Guitars

Normandy Guitars

North American Guitars Handcrafted custom guitars by Hal Hammer (see online artists)

Parker Guitars - High tech modern instruments.

Paul Reed Smith Guitars - The original flamed 10 top.

Reverend Guitars

Rick Kelly Guitars

Ron Kirn Signature Guitars

Sadowsky Guitars - Custom made guitars.

Saint Blues Guitars

Santa Cruz Guitar Company - fine acoustic instruments.

Scott Walker Electric Guitars

Specimen - Custom guitars and amps, quite different, not the usual designs. Expensive.

**Stromberg Guitars** 

Subway Guitars - Hmmm, interesting, different.

Tacoma Guitars - Usa made acoustic instruments.

Taylor - fine acoustic guitars

Tregan Guitars

Vigier Guitars

Vintique

Voyage-Air - Travel guitars

Washburn Guitars - Includes Washburn, SoundTech, Randall, and Oscar Schmidt product lines as well.

Yamaha - guitars, accessories and more.

Zemaitis Guitars

Zion Guitar Technology - quality built instruments.

#### **Pickups**

Joe Barden Pickups

Bare Knuckle Pickups

Bartolini

Bill Lawrence Pickups

Dimarzio Pickups

**EMG** 

Jason Lollar Pickups

Lindy Fralin Pickups

L.R. Baggs

Harmonic Design

Pickup The World - Polymer pickup technology & products

Q-Tuner - high-tech neodymium powered pickups for guitar and bass

Rio Grande Pickups

Seymour Duncan

WB Handwound Pickups

Wolfetone Pickups - Wolfe MacLeod's custom wound pickups. Get the exact sound you're after.



#### **Online Stores/Vendors**

# thetubestore.com

Excellent selection of tubes and excellent service.

Acme Guitar Works - prewired pickup and control assemblies

Archtop.com - Some beautiful vintage archtop guitars for sale \$\$\$\$.

Allparts - Wide variety of parts

Ameritage Carrying Cases

Analog Man Effects Pedals

Barber Electronics - Boutique effects pedals, very high quality.

Big Bends Nut Sauce - Check it out, this is a lubricant for guitar nuts and bridges

Build Your Own Clone - DIY Guitar FX & Electronics

Carl Martin Effects

Cat's-Eye - High quality custom analog effects, excellent customer service

Custom Guitar Gear Effects

Doug's Plugs - These are custom made f-hole plugs for archtop style guitars to help prevent and minimize feedback.

**DHR Music** 

**DLS** Effects

Electro-Harmonix - Effects and tubes

Elixir Cables

Essential Sound - Power cables

FM-Jam

Fine Guitar Consultants - They'll help you find your dream guitar \$\$\$\$

Fractal Audio Systems

Fulltone - Custom effects. Also a great source for schematics to rewire older wahwahs to true bypass, a nice mod.

Gbase - GuitarMall - largest guitar and vintage guitar inventory on the Internet.

Gruhn Vintage Guitars - Nice stuff.

Guitar Armoire - Stands

Guitar Book Shop - Lots of books, a great resource.

Guitar Hangar - Where all the Cool Guitars Hang Out

Hermida Audio - home of the Zendrive, great distortion box

Italia Guitar Straps - Handmade of fine leather in the USA

Jensen Speakers

Just Strings - This is the online place to buy guitar strings. Huge selection, great prices, and excellent service.

Kangaroo Amp Covers - "the next best thing to having your own roadie" - very nice.

Keeley Effects Pedals

Kluson Tuners

Lark Street Music - Vintage guitars

Lava Cable

Legato Guitars - Specializes in jazz guitars. Always has interesting inventory. Service is supposed to be top notch.

Levy's Guitar Straps

Mandolin Brothers - Vintage guitars, appraisals.

Mighty Mite - The original replacement guitar parts company

ModTone Guitar Effects

Music123

Musicians Friend

MusicToyz - Online boutique music store - guitars, amps, pedals and more.

MXR/Jim Dunlop

Neal's Music - Huntington Beach, CA

NeckUp - An interesting, ergonomic accessory that puts the guitar in the correct position when sitting down.

Pedalsnake - One cable carries it all

Pedaltrain Pedal Boards

Perris Leathers Guitar Straps

Premier Guitar Magazine - if you're going to subscribe to only one magazine, this is the one to get

Radial Tonebone - effects manufacturer.



Absolutely the best slides on the planet. Take your slide playing to the next level!

Roni Music - Home of the Amazing Slow Downer transcription software

Sam Ash Music

Same Day Music

**Schecter Guitars** 

Seventh String - Home of Transcribe!, music transcription software.

Standback - Amplifier Stands

Stepmax Tremolo System - A revolutionary concept in guitar tremolos

Stetsbar - Manufacturer of the Stetsbar Pro II retrofit tremolo system

Stewart MacDonalds - Excellent source for parts, books, tools.

Sundazed Music - Reissues of original 60's albums

Sweetwater Music Instruments and Pro Audio

T.C. Electronic

The Perfect Guitar

The Y Strap - An ergonomic guitar strap that alleviates a lot of the discomfort of standing with a guitar. Nice.

Uncle Lou's Classic Guitars - Vintage Guitar dealer. Nice inventory usually. \$\$\$\$

Virtuoso - Premium guitar polish and cleaner, great stuff!

Chuck Levin's Washington Music Center

Way Huge Electronics

WD Music Products - Wide variety of parts

Weber Vintage Speakers - Great source of replacement speakers for those old Fender amps.

Wichita Band - The absolute lowest prices I've found for Gibson instruments. Give Wichita Band a call and speak with Jon Ray. Great place!!

Willcutt Guitars - #1 PRS Dealer in the world

Xotic Effects

ZZYZX Snap Jack

**ZZounds** 

### **Handcrafted Archtop Guitars**

Andersen Stringed Instruments

Benedetto Guitars

Bruce Sexauer Handcrafted Archtops

Buscarino Handcrafted Archtops

Campellone Handcrafted Archtops

Comins Fine Handcrafted Archtops

Decava Guitars - Fine fretted instruments.

Elferink Archtop Guitars

Ellsberry Guitars - Handcrafted archtops by James Ellsberry

Gagnon Guitars

Gary Zimnicki Guitars

**Grimes Guitars** 

Hancock Archtop Guitars

Henry Verri Guitars

Steve Holst

James Mapson Handcrafted Archtops

James R. Baker Archtop Guitars

John Monteleone Handcrafted Guitars

Kevin Pederson Custom Guitars

Kevin Roberts Handcrafted Guitars

Linda Manzer Handcrafted Archtops

Mark Lacey Guitars

Mesrobian Guitars

Ted Megas Archtop Guitars

Tom Bills - Custom Guitars

Schaefer Handcrafted Archtops

Tom Ribbecke Guitars

Victor Baker Guitars

#### **Online Artist Listing**

Please send me your URL if you'd like a link to your music or website

# The Birdz Sessions

32-20 - Blues Duo

Amanda Carr - Talented vocalist with a wide range of styles.

Bob Russell - Excellent Jazz guitarist



The Bridges After 5 - Vancouver's premium retro band, check it out.

Curt Sheller - some excellent information at his web site.

Christian Rover - Transcriptions, teaching materials, interviews, discographies, jazz guitar links, and more

Clay Moore - Jazz Guitarist

Dave Keller - Located in Wichita Kansas. Lessons available.

Dick Onstenk - Excellent jazz guitarist located in the Netherlands. Very tasteful player.

Doug Proper - Jazz Guitarist, owner of the Guitar Specialist

Eric Elias - Multi instrumentalist

Hal Galper - Jazz. Hal Galper shares his years of experience. Some excellent information at his site.

Hal Hammer Jr. Blues Guitarist - check it out.

Jack Grassel - Some great tips here as well.

Jack Zucker - Jazz guitarist.

Jay Tyer - Jazz guitarist.

Jeffrey McFarland-Johnson - Check out Jeffrey's mastery of the Cellektra and more.

Jimmy Bruno - Burning jazz in the Bruno tradition - modern traditional jazz.

Joe Finn - Jazz Guitarist

Joel Mabus - Excellent player and musician. Check him out if you like flat picking guitar.

Jody Fisher - Guitarist, author, and teacher

Joey Goldstein - Guitarist, Bandleader, Composer, Teacher

Kevin Van Sant - Jazz Guitarist, excellent player

Deformative.net - My daughter's web page, check it out!

Mark Kleinhaut - Jazz

Mark Mosley - Jazz & blues guitarist Mark Mosley

Musically Mr M - Some excellent music, lots of different styles. Check it out.

Orpheus Reborn - The contemporary incarnation of the legendary band Orpheus, interesting site with lots of history

Pete Downes Trio - Contemporary jazz with a European influence.

Rick Del Savio - NY based jazz guitarist. Excellent, tasteful player.

Stanley Jordan - The master of two handed tapping technique.

Steve Carter - Solo Jazz Guitarist

Steve Marchena - Electric And Classical guitarist

Ted Vieira - check out Ted's website for excellent online lessons and more.

Tim Berens - Great site

Viola - Eniko Magyar is increasingly recognized as the most promising young violist to have emerged from Hungary in recent years

#### Miscellaneous non-musical links



Dark Passage - Interesting stories of Urban Exploration

Dr Hot - huge assortment of hot sauces, bbq sauces and more.

Modern Ruins Photo Essays - Fascinating, gorgeous photo's by Shaun O'Boyle. Surreal, haunting.

Redbones BBQ - Another great spot here in Mass (Somerville). Also, check out Underbones as well. Great BBQ!

Shield's Up - An excellent resource that shows you how to secure your PC against attacks.

Thinks.Com - Their daily crossword and jigsaw puzzles make this one of my favorite daily stops.

Tweak3D - All kinds of tweaks for maximum performance



Stay tuned (pun intended), more links to come .

Contact Me: GuitarSetup@hotmail.com

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