

INSIDE

Live from Pittsboro...
Steve Carr on the evolving state of the custom amp industry and Carr Amplification

7

Our review of the new Carr Impala

8

The Chuck Thornton Interview...

A Maine craftsman and designer's unique take on building better guitars

11

Build it and they will come – the dynamics that drive the custom guitar market

12

Our review of the CP Thornton Improv

13

Cheap thrills from Squier guitars in China...

15

The J Mascis Squier signature Jazzmaster & Mastery bridge

18

Squier Classic Vibe Telecaster Custom

19

Slider's classic Tele pickups & the new JR Kohler Tele saddles

20

The return of Slider from Sydney

23

Kent Armstrong on Rory Gallagher's pickups & innovations for the guitar

27

Our review of the Kent Armstrong '61 Rory Gallagher Strat set

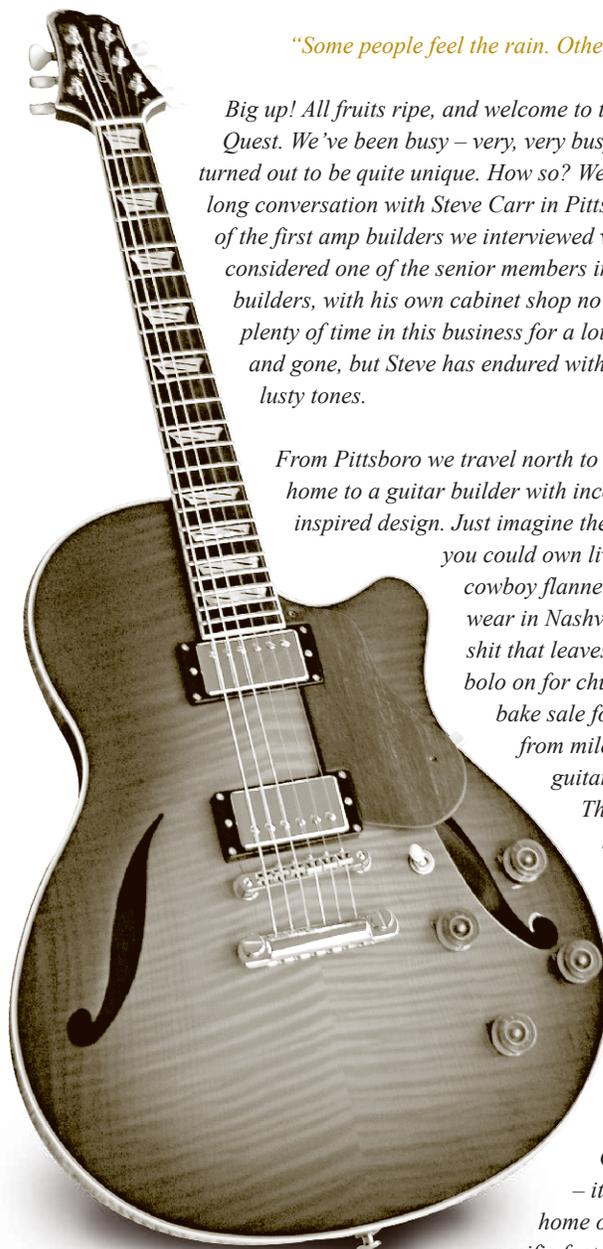
the ToneQuest

The Player's Guide to Ultimate Tone

Report™

\$10.00 US, July-August 2013/VOL.14 NO.9-10

A Summer Tonefest



"Some people feel the rain. Others just get wet." –Bob Marley

Big up! All fruits ripe, and welcome to the hot, hot, hot Summer edition of the Quest. We've been busy – very, very busy on your behalf, and this issue has turned out to be quite unique. How so? Well, it's been a while since we enjoyed a long conversation with Steve Carr in Pittsboro, North Carolina. Steve was one of the first amp builders we interviewed way back in 2001, and he can now be considered one of the senior members in the club of fully tenured custom amp builders, with his own cabinet shop no less. Listen, nearly two decades are plenty of time in this business for a lot of dreams and dreamers to have come and gone, but Steve has endured with creative new designs, fresh ideas, and lusty tones.

From Pittsboro we travel north to Sumner, Maine, another small town home to a guitar builder with incomparable skill and an artist's eye for inspired design. Just imagine the kind of cool flannel shirt collection you could own living in Sumner, Maine... Not the thin cowboy flannel with pearl snap buttons you might wear in Nashville in October, but the really heavy shit that leaves a rash on your neck when you throw a bolo on for church. If there was some kind of annual bake sale for guitar builders where people came from miles around, tasted different builder's guitars and judges awarded prizes, Chuck Thornton would never go home empty handed. Indeed, he has unwittingly created a cult of collectors that just keep buying more of his guitars. Let's call them 'Chuckhounds.' Awooo, Chuckhounds of Sumner... Beyond these two talented fellows, things are gonna get a little bizarre in a good way... To put it plainly, we have discovered Squier guitars – specifically, the ones being made in China. We don't know where in China – it could be as mysterious as the eventual home of Edward Snowden, but there is a specific factory where the Classic Vibe Series and Artist Signature models are built, and wherever that factory

www.tonequest.com

may be, that factory is kicking some serious guitar factory ass. Unless you already own one of the Classic Vibe guitars or the J Mascis Signature Jazzmaster, you have no idea what's going on with Squier. But you are about to. We have even dared to install an elegantly conceived Mastery bridge on the J Mascis that costs nearly half as much as the guitar. Also featured are the new RJ Kohler Tele saddles that magically transformed our Squier Custom Telecaster. Lots of fun, huge bang for yer bucks, and you'll meet both builders.

We close with two interviews with two extraordinary pickup winders on opposite ends of the earth – Rod McQueen, aka 'Slider' in Sydney, Australia, and Kent Armstrong in Vermont. We loaded the Squier Tele with one of Slider's magnificent Tele sets, and our favorite Cray Strat with Kent Armstrong's '61 Rory Gallagher pickups. More pickup reviews from both will also follow in September as we feature our new, new old stock 2010 '59 Historic Les Paul. Yes, we're headed back to 'bursts by popular request.

Now, a Summer Tonefest would not be complete absent a frosty libation, so we'll leave you with our favorite Margarita recipe. Don't you dare sleep on this, even if you don't drink alcohol – just leave out the booze.

Tonefest Margarita

- 1 1/2 cups fresh lime juice
- 1/2 cup fresh lemon juice
- 1/2 cup water
- 1/2 cup sugar
- 2 tablespoons lemon zest (or finely minced peel)
- 2 tablespoons lime zest (or finely minced peel)
- 2 cups good tequila (Patron or El Tesoro silver)
- 1 1/2 cups triple sec

Combine everything but the liquors in a saucepan, bring to a gentle boil, stir until the sugar is dissolved and let cool.

Combine with the tequila and triple sec in a blender, serve over crushed ice. Salt optional. *Quench forth and Enjoy...*

A Return to Pittsboro with Steve Carr

TQR: When you first began building amplifiers in 1998, there weren't that many small custom builders – especially considering the number that exist today. In our first interview in the February 2001 issue of TQR you recounted the days when you first worked in a barn, and how an old Deluxe Reverb inspired the creation of the Slant 6 and Rambler. Fifteen

years later, could you do the same thing today, and in hindsight, would your strategy be any different?



The question of could I succeed if I started today given the current clouding of the market is a tough one to answer, but I feel my approach would be the same. I love vintage amps and wanted to learn from them but not copy them. There are a lot of companies

that make clones now and there were a few back then. My feeling was why try to one up a clone? It would be much more fun and personally rewarding to study the classics then create my own twists and useful features while always simplifying and creating a fun esthetic. Carr amps are not 100% original, but each model has many original ideas, architectures, and component choices. Designing what you personally enjoy and want to use is my number one strategy, along with approaching dealers who carry similar products. This is certainly tougher now as there is so much competition and shops may not be able to take on new brands. You have to stand out through quality, reliability, tone, and integrity (both in business and in service). A teacher once told me 'be a dignified and dignifying person' – he meant personally, but it is great business advice. In 1998 there were not many boutique builders and Matchless, which was the biggest and most well know at the time, had kindly created a world-wide dealer base for me to approach before they went out of business. This left a hole in the market, so I visited and called all the old Matchless dealers,



Finally, getting reviews in magazines and online is very important. When I started I could not seem to get

any magazines interested – I was too small and only had one dealer, so they were not willing to give me a review. A funny thing happened that helped though. I got a call from a guy who said he was a reviewer for Guitar World and he wanted an amp to write about. This was early 1999 – Fantastic! I thought, so I sent a Slant 6V to the address he gave me, which was a pizza place in New Jersey. Odd, but hey, here comes

-continued-

the big time! So a couple months later I call Guitar World to ask how the review is coming, and after telling the story a few times I get connected to the head gear editor. I think you know where this is going – no reviewer by that name, and Guitar World does not share offices with a pizza spot in New Jersey. Their lawyer contacted the ‘reviewer’ at the pizza place and got the Slant 6V back while very clearly letting him know not to impersonate a GW employee again. I was overly trusting, I know, but meanwhile I had a chance to talk to editor Paul Riario a number of times and he agreed to review the Slant 6V. We got a sterling review that put us on the map. Hey, I still trust people and I still like pizza, I just look both ways now.

TQR: Among your earliest models, only the Slant 6V and Rambler remain, while the Hammerhead, El Moto and Imperial have been ‘replaced’ by newer amps like the Artemus, Bloke, Mercury, Sportsman, Viceroy and Impala. A casual observer might conclude that as power and volume requirements have come down, the bigger amps have been replaced with lower-powered amps incorporating master volume and secondary overdrive circuits. How has demand changed in your market and what have you done specifically to meet the changing needs of guitarists?



I personally had gravitated to lower power amps by the time I started Carr Amplifiers. Early on I had a Twin Reverb and a Hiwatt but I could barely get those amps opened up any place I played,

much less at home or at band practice. As you recall, the amps I was most happy with at the beginning were the Deluxe Reverb and a modified 50 watt Marshall with a master volume added. Even then I was thinking a 10 to 15 watt Deluxe or Marshall would be just about right for live use.

The market for high quality American amps did change in the early 2000s with more and more players who only played at home. The feature of a built-in attenuator on the Mercury was in direct response to the needs of these players. Previously anyone would think it crazy to attenuate an 8 watt amp, but 8 watts is really loud at home and much too loud to get power tube overdrive while keeping the peace. The initial Mercury concept – a very low power, full featured amp – came from one of our best US dealers. Eric Cummins of Willcutt Guitars suggested it in early 2002 and at first I thought no one would be willing

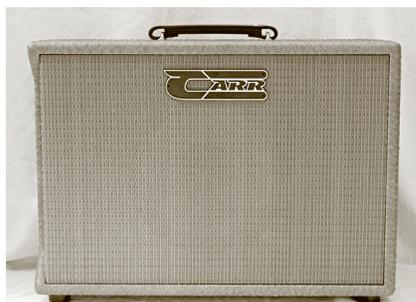
to pay for a premium quality amp that was primarily geared for home use. He had to convince me he could sell it. Eric was 100% correct and the Mercury is still one of our best sellers and perhaps our most commercially successful amp.



There are a real variety of players out there and some want an amp they can play live and very clean. For that you need more power, depending on your

drummer’s control. Plus, a clean amp is a great platform for pedals, and 25 to 50 watts are great for that. You are correct that bigger amps tend not to do as well though. Even with our most powerful amps (the Bloke 48 watts and Impala 44 watts) we keep the cabinet fairly small and portable. This is very important as clubs are smaller and folks want great amps at home that do not take up too much room and look amazing. The home player led the way and created the atmosphere where boutique builders could flourish. Now that small makers are part of the main stream, the gigging musicians are aware of us and they want quality, too. This means amps in the 50 watt range are selling for us. I always want any amp we make, no matter how powerful, to sound great at home and in low volume situations.

TQR: You have mentioned in the past that when you began designing amps, there were a lot of EL-84 Vox types being built such as Matchless, and you seemed to prefer the sound of 6V6 tubes. Explain, please, and how has your taste in tube tone changed or evolved more recently? One of our complaints with the abundance of dual EL-84 amps spawned by the 18 watt Club was that they largely sounded the same with no real EQ, and had two tones – low-volume and clean, which wasn’t very good, and cranked, which was why most people bought them...

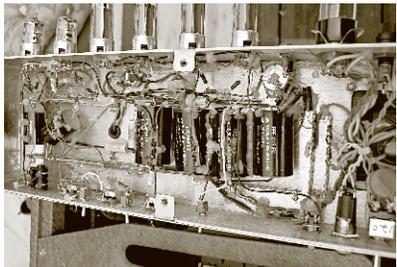


Yes, I like the American sound, but not exclusively. Initially I decided to stay away from EL-84 designs – not that I didn’t like them, but there

were so many folks doing it and I felt I had a lot to explore on the American tube side. 6L6 and 6V6 based tones were

-continued-

most familiar to me and most enjoyable. I love dimensional clean for noodling, but in my recent live band I enjoy using moderate overdrive – something the British side of tube life is great for. Generally I value cleans so much – I want the option of clean tones in any of our amps. Our Artemus EL-84 amp has a huge, fast, clear clean tone, it's wildly dynamic, yet it also has a great crunch when pushed. I tweaked that amp a lot to get clarity while retaining some of the Voxy vibe. Running



the tubes fixed bias and using an input cascade to give me similar gain to an EF86 without microphonics were part of the recipe. I guess it comes

down to me loving the amp when I am done prototyping. I just keep at it till I love it, and that seems to mean dimension and dynamics.

TQR: In addition to developing new models fairly regularly, you embarked on an ambitious project to create your own wood shop and expand on your unique cabinet designs. That seemed particularly ambitious given the fact that Mojotone is pretty much in your neighborhood. Why did you feel it was so important to build your own cabinets, how difficult was it to gear up, and what have you learned about the importance of the cabinet design, materials and construction in the final sound of combo amps?



Getting consistently made cabinets was one of the biggest challenges as we began to make more amps. There are so many little details and they all have to be perfect. When I started, Mojo did not make cabinets and I'm not sure if they even existed yet. I worked with local carpenter friends developing the first Slant 6V cabinets drawing inspiration from the mid '60s Deluxe Reverb. Pine cabinets and floating baffles (speaker baffles only fastened on the left and right so the top and bottom of the board move and vibrate with the speaker) being the central parts. But it was very hard to have them made consistently. Our third cabinet maker, Peter Mather, who now has a great custom cabinet shop in Nashville, actually came here to Pittsboro and initially taught us how to make them. I bought cabinets from him from 2000 until 2003 when we finally took over all production. It took a while to get up to speed and

it was a big investment in tools, space, and manpower, but it was very much worth it. Now Lou Gagliano (head of the cabinet shop) and I can brainstorm fun designs, build them, see how they sound, and deal with any issues in a fast and efficient manner.



Our cabinet shop and the techniques we now use have evolved a ton from what Peter showed us, and we are always learning. As far as tone is concerned, pine seems to just have a warmth and musical depth which complements our electronics. The pine we use is a furniture grade that is super stable and strong. Ply cabinets sound dead to my ear and I suppose that is the appeal for a hi-fi home stereo cab where you do not want coloration. We want all the juice and tonal thickness pine imparts, then you add the dimensional vibe floating baffles give, and man, that's a great sound! It is very important.

TQR: You have also traditionally (but not always) used your own speaker designs in cooperation with Eminence. How much of that is necessitated by a desire to build brand awareness versus tone? It seems as if having so many choices among Eminence, Celestion, Warehouse and Jensen might be more advantageous (but more work).



You are correct – so many speaker choices. I have not listened to everything out there but I have listened to a ton of speakers. I am looking for frequency range – top to bottom clarity without stridency, musicality, and consistent reliability.

These things can be tough to find in one speaker. Some customers will want to take the amp in a certain direction with a speaker change, and that is a fun thing to do. The speakers that come stock though are what I prefer and use. Sometimes we have a speaker that we want to tweak a bit and create more of our own voice and that is when we depart from the stock lineup. Eminence has been an incredible partner in this and we have worked together since 1999.

TQR: What is your best selling model today, and why, do you think? Historically, which has been your most popular amp? What is the amp that gets turned on

-continued-

in your shop most often, and which of the old discontinued models do you miss the most?

We have two best sellers and they run neck and neck in an uncanny way. The Rambler, a dimensional clean Class A 6L6 amp with reverb and tremolo, and the Mercury, a versatile EL-34 amp with Fendery cleans through full power tube overdrive at any volume utilizing a built in attenuator and a 3-position Boost plus reverb. These two amps may be the ultimate home models, while recording and taking pedals very well. You might be surprised how many session players own Ramblers and how many studios own a Mercury. Luckily, in our shop no amp sits for long. We are building for orders so when they are done they are out the door. We do have a shop Viceroy that gets a lot of play and my personal Mercury is here, too. At home I have the prototype Rambler built on a sawed off Slant 6V chassis back in 1999 – that is my main home amp. As to which of the retired jerseys we like the best, that’s a tough one... Dave Quick, head builder has an Imperial and an early El Moto he uses a lot. I think the Imperial may be the one I miss most – it was a beast of a 6L6 class A amp making 60 watts. This amp was actually developed at the request of Scott Coney, who was the live guitarist for George Jones back in 2000.

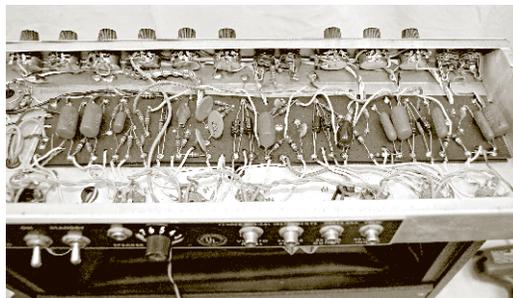
TQR: We have recently observed that vintage tweed amps seem to be influencing the development of new custom models a lot these days. What types of design features might you have borrowed from the old tweed circuits that we aren’t aware of?



The power section of the Rambler owes a lot to the tweed Pro. The Rambler is actually a happy marriage of the blackface Princeton reverb and the tweed Pro. The Sportsman has some tweed

Deluxe touches. The Viceroy too has a bit of tweed Bassman mixed with Mattamp and other things. Each amp has famous ancestors.

TQR: As a builder and designer, what makes the black-face Fender amps sound so good, even 50 years after they were built? By that we mean that they are still working, often with very little restoration, and they remain perfectly suited for these times in terms of tone, while some other vintage amps now sound dated...

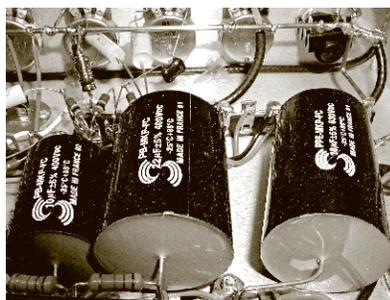


A solidly build hand-wired amp with properly sized

transformers should last as long as rock and roll will – by that I mean forever. There is just not that much to go wrong except electrolytic caps and those are easy to change. The Blackface sound with its scooped midrange has really defined a lot of what we know as the sound of the electric guitar. Thanks Leo! That tone will be sought after as long as electric guitar is.

TQR: You were the first to use Solen ‘space age’ filter caps... You must think they are substantially better, but for the benefit of guitarists in general, why does there seem to be so much difference between the old mustard caps in Marshall amps and the yellow Astrons and blue Sprague caps in vintage Fenders amps, versus modern Illinois, Xicon and F&T caps and others used in manufacturing today? It seems similar to what happened with tubes and pickups...

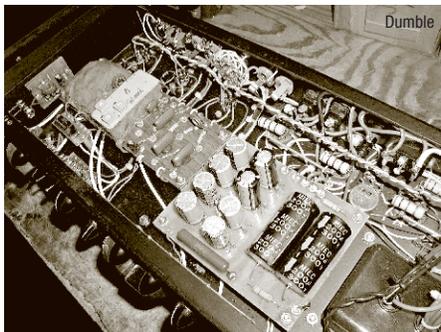
The Solens are pretty amazing – very clear with super fast transients, warm lower mids and rich bass. Perfect for clean amps. The down side is they are very large and expensive – almost triple the cost of a good electrolytic. That said, I have found in some overdrive preamp applications that a really high value, quality electrolytic is nice sounding (as in



the Bloke). There are a lot of cheap electrolytic caps folks use in power supplies and they sound pretty dead and do not respond in an expressive way to the nuances of the guitar.

That’s why I use the Solens as filter caps. You also mention a number of classic coupling (blocking) caps too that are used in between gain stages. We use the Mallory 150M type for coupling. They have the nice mysterious depth of the blue ‘60s Fender caps. I value consistency and reliability, so we use only new production electronic components. Some of the older caps do seem more musical and it may have just been with tube circuits being the standard of the day, a lot of effort was put into the manufacture of the associated electronic components back then. With the takeover of solid state, there

-continued-



was a focus on miniaturizing and trying to get the cheapest possible parts and manufacturing. Cars used to have real metal bumpers – sort of the same

thing. That said, we have had many amazing improvements in components like the Solen caps and ultrafast recovery rectifiers, etc. The trick is to find what sounds and works best to get a great recipe.

TQR: Please don't be too PC here... Were you ever tempted to knock off your own version of a Dumble? A couple of guys made a killing doing that although they never specifically referenced the name – they just stole the look... The thought must have crossed your mind.



I have had customers suggest we do a version of the Dumble but I have not really been that interested in them. A local guy brought me an Overdrive Special to work on back in 2002 and it sounded good, but it did not move

me the way my blackface Deluxe does. Another thing that is important to me is value. Considering our component and labor costs, I feel we offer a very fairly priced amplifier line. People know they get a lot of value when they buy a Carr amp – that is why the majority of our customers own two or three Carr amps.

TQR: Same question about pedals and effects... To what extent have you been tempted to design effects? It hasn't worked for many amp builders.

Pedals are fun and we did briefly produce two all-tube pedals back in early 2011. They were called the Electro Motives – each used five tubes and had a brown Fender-inspired Tremolo with a Clean Boost. To that the RTB added Reverb with a full size spring tank and the DTB added our own Analog Delay circuit. They were wonderful sounding things. They also had a dedicated headphone circuit. We made about fifteen of each but found they were just too time consuming to build.

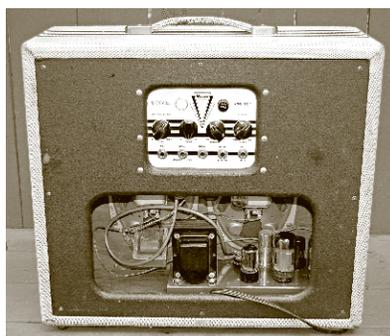
We could build two Rambler amps in less time than it took to make one pedal, so we discontinued them. I would have had to price them at about \$2500 list just to break even. We sure did learn a lot with those. Since then I have considered doing solid state pedals, but tubes are my thing, plus I got some good advice on this from AI, our Spanish importer... *“Carr amps are known as the best tube amps – like Bugatti. Adding solid state pedals would confuse people and dilute the brand.”* AI is wise!

TQR: Are there any vintage amps that might still inspire you to build new models with some features in the circuit specific to certain classic amps? A 25 watt Hiwatt circuit would be interesting...



Lately I have been thinking of variation within our line, collaging some of our own designs, going for lower or higher power, perhaps adding other features and expanding on the

existing themes as the line already covers a ton of ground. From time to time I do look over old schematics particularly of lesser known amps, trolling for funky ideas. This is a lot like writing songs – sometimes it flows and sometimes it doesn't. You jump on it when the ideas are coming and often one circuit idea breeds another. I prototype with a soldering



iron divining rod – take me to the tone! As far as actual models, I'd love to find a schematic for the Marshall 'Pig' Mick Ronson used, made for just half a year in 1967, but it does not seem to exist. Also, funky

Valco, Supro and Silvertone circuits always deserve a look. Pretty fun stuff.

TQR: We have to credit you for building the 44 watt Impala. We were beginning to think that clean headroom was going the way of the dinosaurs... What inspired you to build it when everyone seems to want a 20 watt amp, or 12 watts, even... Aside from power, what makes it unique among your other amps?

The raw concept for the Impala came again from Eric Cum-

-continued-



mins at Willcutt. He suggested the Mercury concept so I wanted his input on what might be needed in the market. Eric felt something based on a Blackface

Bassman with reverb added and an effective master Volume would be very useful to today's guitarists. That seemed like good thinking as a stout clean platform is best for pedals. So I jumped off from there. The Impala is not a copy in any way but it has the inspiration and vibe of the Bassman, which is kind of a direct, take charge type of amp. To that I added a very extended dynamic and frequency range. This thing is just great with pedals and honestly shows you what you are playing, but it is also very musical and has that "I just wanna keep playing" seductive quality, too. The Master Volume is done a little differently in that the pre amp is not super gainy, but you can dial it back and get some nice clean heat on the guitar signal while retaining clarity as you turn it down. There is some pre amp overdrive, but it is more clean aggression. Sort of hard to describe. The Volume control is a dual pot and affects volume between both the first to second gain stage and the second to third. So you have even more gain possible than a Bassman, but you can control it. The reverb is super lush and the entire power supply is very punchy. The Impala will work very well on stage and with the Master, plus with the ability to sound delicate, it is also really great at home. And it dresses up any room – swank!

TQR: What lies ahead Steve? Where do you think the market is headed? How important will your international business remain, and where would you like to go as a designer in the future in terms of new models?



I plan to keep learning and prototyping – that is my favorite thing. We are not a new company, so much of what I place effort in is re-

remaining responsive to our customers and dealers with service and information – sharing our experience and enthusiasm. It is a big part of the job. I hope the market grows and it does seem like there are lots of young guitarists. These days people seem to understand that small companies offer a lot – quality of build and tone, plus real commitment to the product and

the customer. It's all out there now on the Internet. International has been 50% of our business for the last 8 years. It is vital, and I really enjoy meeting and being friends with musicians and dealers around the world. Spreading out has helped smooth economic ups and downs. We are proud to



be a US exporter, and I believe our international business will grow over the next 10 years. There is more and more interest and awareness of Carr Amps overseas and here in the US, yet we not a household name, so we have room to grow. On

the other hand, I am very happy to remain a small company (we have 8 guys). Back in 2007 we had 13 guys and I like 8 better. Each fellow here is 100% and 8 to 10 guys is the perfect company size for quality and easy communication. I do not want to be a manager, so we will stay small. It is hard to say where the market as a whole will go. Many of our customers are in their 50s, but we also have a lot of guys in their 20s in bands. I am hopeful electric guitar and the need for quality, well thought out amps will persist. It is such a fun thing to do and the guitar is such a physical instrument – to me that is a big part of its appeal. I have a bunch of fun ideas I want to explore, some of them may become models, and if they don't, I will still learn a lot as I build them. We have something that works very well here... My job is to remember our history and method, then creatively repeat it.

Impala Review



Hail, hail rock & roll... Hail, hail headroom! Hail, hail the Carr Impala. We were beginning to worry that the sound of the electric guitar had been permanently squeezed into the

relatively narrow sonic space defined by preamp and power tube distortion, not that we have anything against a beautifully busted up, singing, sustaining guitar. We don't, but there is so much more richness to be mined from *all* the sounds a great guitar and amp can make, don't you think? When Steve Carr told us that he had built a 40 watt dual 6L6 amp we were so excited... Excited by the prospect of a full powered amp

-continued-

that can fill a room and a guitar player's head with sound that isn't timid or apologetic, and excited because we knew Carr would add features to make his new little beast as versatile as a less powerful amp with some clever kind of master volume, at least. That's pretty much what he did, packaged in a very cool retro cabinet design that we agree is *swank*.

If you aren't keenly familiar with Carr amps, we can tell you that they typically display an extraordinary fidelity and richness that are not always found in booteek amps. This is no accident – from the first chord we ever strummed through a Carr Rambler at Corner Music in Nashville in 2000, we have always anticipated and admired Carr's talent for building amps with no apparent holes or gaps in their tone. When we read that the Impala had been loosely inspired by the Fender Bassman, we knew we were in for a treat, and now, so are you.

"Oooo, but I could never live with a 40 watt amp... Too loud, the band would never put up with that... The clubs we play are too small... Sound men will be crawling up my ass... My wife would never stand for it... The neighbors will stop speaking to me... The dog will howl... The cat will crap and run away... What about my tinnitus..."



There now. Have we adequately covered all of your petty fears and preconceptions? Good. Now get your mind right and pay attention. Yes, you can

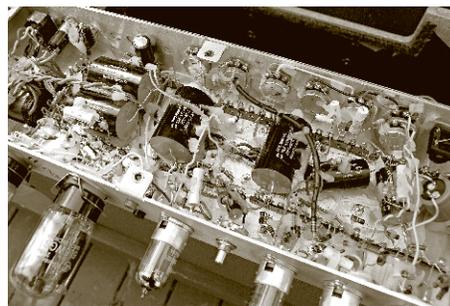
push 40 watts out of the Impala with plenty of clean headroom and lush reverb if that's what you want to do. But, the Impala also produces the most satisfying, amazing overdriven tones in the style of a vintage blackface Fender at variable volume levels simply by setting the Volume control above 1 o'clock and varying the Master Volume level. No need to worry about crushing decibel levels to get your yah-yahs out, mate. And because the Impala can be set clean, or on the edge of getting dirty at moderate volume levels, you can also use your distortion and overdrive pedals with exceptional results. Advancing the midrange control beyond the '68' mark on the panel also increases drive, producing a gradually thicker tone.

Controls couldn't be simpler or more straightforward: Volume, Treble, Mid, Bass, Reverb, Master Volume. You can fully milk the Impala's extremely wide range of clean and distorted tones simply by adjusting the sweep of the Volume control while managing power with the Master. You'll have the entire impressive range of tones fully digested in about a minute. Carr's



a multi-meter.

Seriously people, for us the Impala honors many of the great 40 watt Fender combo amps of the past with modern



enhancements to the circuit that make it an exceptionally versatile performance and recording amp that is

also equally suitable for home jamming. We also think the Impala's cabinet design and covering are utterly classic cool in the style of the actual interior of a vintage Impala and those bench seats that launched a million makeout sessions across the fruited plain. Come to think of it, a lot of those old Impalas actually bore fruit. And so, we'll leave with you this... the last line written in our review notes for the Impala – GLORIOUS 40W VINTAGE FENDER TONES!!! G-L-O-R-I-A!

Quest forth... to

Carr Impala 1x12 combo \$2490, head \$2390

www.carramps.com

C.P. Thornton Improv



This is our third visit with Maine guitar builder Chuck Thornton, and we keep coming back because his guitars are just that good. Well, perhaps 'good' isn't nearly good enough. We find his instruments transcendent, in that they transcend what we normally might consider to be a 'good' guitar. Let's say the man has an eye for design

and hands that can follow through to create true works of playable art and exceptional tone. This time he sent us one of

-continued-

his Improv models – a neck-through semi-hollowbody utilizing internal sound posts and extraordinary mahogany, maple and ebony. We asked Chuck to elaborate on the Improv design and a few other things of interest. Our review follows this interview. Enjoy...

TQR: What was your initial inspiration for the Improv, and what did you want to accomplish with this design that would be unique compared to your other models in terms of construction and tone?



My initial inspiration was one of my clients saying if you were to design a hollowbody I'd be the first to buy it. I mentioned that to another client during a conversation and he said 'me too.' So the first three Improvs I built were single pickup hollowbodies with mahogany bodies and spruce tops with the idea that they would be used primarily for Jazz with the volume and tone backed off to control feedback and give a nice warm, round jazz tone. Another client decided he wanted two humbuckers in his hollowbody with a push-pull pot to put the two pickups out of phase for West Coast Blues, and again by backing the volume and tone off it works really well for that style of music.

The Improv I sent to you for review is a semi-hollowbody with a different construction than the hollowbody. It has integral sound posts under the bridge that are carved from the inside of the top and the inside of the back and both get glued to the through-neck. The sound posts do two things – transmit sound from the top to the back, and keep the top from distorting over time from the pressure of the strings. With this construction method the top doesn't need bracing, which allows me to thin both the top and back out during voicing to get a very vibrant top and back plate. When the top and back are glued to the guitar the integral sound posts are glued to the neck, which dampens these vibrant top and back plates, eliminating feedback. The end result is a fat hollowbody tone without feedback.

TQR: What kinds of materials are used?

The semi-hollowbody Improv is built with either Honduran mahogany back, sides and neck and an eastern maple top, a western maple top, or spruce top. I also build a model with eastern maple back, sides and neck with either an eastern maple top, western maple, or a spruce top. The Improv is a through-neck instrument, which I believe contributes a lot to



its responsiveness, sustain and stability. The neck going through the body allows me to house the pickups in their own cavity like they would be in a solid body, which reduces microphonic feedback instead of being exposed to the open air cavity of a hollowbody. Also, the integral sound posts are glued to the through-neck, which keeps the top and back very stable and allows me to voice them to be very responsive. My goal behind this design was to incorporate the best of both worlds – the sustain and controlled feedback of a solidbody with the harmonic overtones of a hollowbody.



TQR: The neck joint and contoured cutaway at the heel is a really nice touch. How do you accomplish that?

Because the neck is not glued in but a through-neck, it allows me to contour the heel so when playing in the upper register there are no restrictions causing the player to have to adjust his hand to get around the heel.

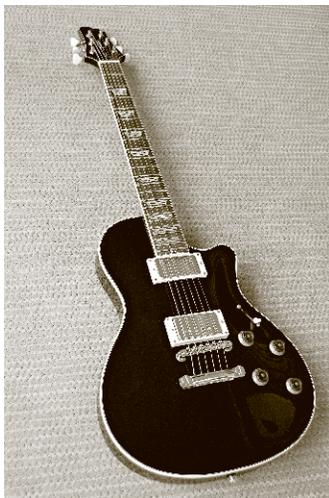
TQR: We would assume that compared to an instrument built in a high-volume, high production environment, you can exercise more control over the wood you select. For example, the maple top on our review guitar reveals a very interesting combination of horizontal figure and underlying vertical grain structure that we don't often see in figured maple tops... Can you describe your process of acquiring, evaluating and selecting wood for bodies, tops, neck and fingerboard?

I stay with the time-tested tone woods. Honduran mahogany for the back, sides and neck has a warm, woody tone while eastern maple for the back, sides and neck has a much more percussive tone. Then the style of music and the overall tone the player is trying to get from the guitar will determine the top wood that is used. I find the eastern maple top to have a little tighter tone and more of an old world look than a western maple top, which I think has a little more rounded tone and a more highly figured, modern look. As far as the combinations of wood, there is no right or wrong – it depends on

-continued-



what the player wants to hear. If the semi-hollowbody Improv is to be used for rock & roll, the mahogany back, sides and neck with an eastern or western maple top with Macassar ebony fingerboard and a stop tailpiece would be fantastic. Or if they want a little more of a percussive tone than a woody tone, an eastern maple back, sides and neck with either the eastern or western maple top and a Brazilian rosewood or Madagascar rosewood fingerboard and a stop tailpiece would also work beautifully. If the player is going to use the guitar primarily for Jazz, West Coast Blues or Western Swing, I would suggest either the mahogany back, sides and neck with a spruce top, Macassar ebony fingerboard and tailpiece, or the eastern maple back, sides and neck with a spruce top and a Brazilian or Madagascar rosewood fingerboard and tailpiece with humbuckers or P-90s.



TQR: How important do you feel the fingerboard material is to the extent that the vibrating strings energize the guitar and create the sustain and resonant frequencies that comprise the tone of the guitar? What qualities do you look for in fingerboard material? “Rosewood” for example, can mean a lot of things...

I think any combinations of wood affects the overall tone of the instrument. But when it comes to fingerboards, I like either Indian ebony or Macassar ebony on a mahogany neck, and Brazilian or Madagascar rosewood on a maple neck. However, I’m not a big fan of Indian rosewood – I’ve found it to be too inconsistent in density and color.

TQR: To what extent does the size, profile and resulting mass of the neck also effect tone, resonance and sustain? What other construction and material factors play a significant role in the sound we ultimately experience?

Because the woods we choose in building guitars have so much effect on the overall tone, so too does the shape of that wood. Some players swear that a larger neck increases sustain and fattens the tone. Other players prefer a smaller neck. I offer three neck profiles to choose from. My standard carve is



a medium C that measures .835 at the first fret to about .910 at the 12th fret. My large neck profile measures .910 at the first fret to about 1.025 at the 12th fret, and I round the fingerboard into the profile instead of leaving the fretboard square, which I find to be very comfortable.

On my Fender style guitars I offer an optional V neck which measures .910 at the first fret to about 1" at the 12th fret. On my solidbody guitars the choice of wood along with the neck profile have a lot to do with the final result in terms of tone. On my semi-hollowbodies not only the choice of wood and neck profiles but how I voice the top and back have a large effect on the tone. Because I carve my tops and backs from solid billets of wood the guitars have a very lively, vibrant and woody tone. Then I tame that liveliness down by using my integral sound posts and pocketing the pickups in their own cavities to reduce unwanted feedback. The end result gives my guitars the sustain of a solidbody with the harmonic content of a hollowbody. I love the Improv because you can turn the volume and tone down for a sweet Jazz tone, Western Swing or a clean Blues tone, or crank it up and let it get as dirty as you want.

TQR: We know that you have experimented extensively with different combinations of hardware – bridges and tailpieces, and pickup combinations for specific models. What have you learned about the importance of trying different types of hardware and pickups in combination to get the desired outcome?



I have tried many different parts and pickups throughout the years on the quest for the finest tone my guitars can produce. I think the

most important thing I’ve learned is not all parts or pickups sound the same in every guitar. The best pickups are the ones that sound best in *your* guitar. Depending on which model I’m building, the pickups that I think sound best in my guitars are WolfeTone Mark II’s, WolfeTone Marshallheads and Lollar low-wind humbuckers. For P-90’s, I like the Zhangbucker Cherrick in the neck and bridge in my Blues Queen, the Cherrick in the neck and Blues 90 in the bridge in my Legend Special or Contoured Legend Special, and Cherrick in the

-continued-

neck and Honk 90 in the bridge for my Legends. I use the Lollar mini humbuckers in my Legend Special, Lollar Vintage T's in my Classic, and Lollar Blackface Strat pickups in my HTL.

TQR: Players have a lot of choices today in considering a custom-built guitar. In your mind, Chuck, what are the key features and factors that make your guitars unique?

Well, the fact that they are unique. I'm not trying to copy someone else's design, I'm just trying to build the finest guitar I can possibly build. I don't buy into the concept that a guitar has to look and sound like a '59 Les Paul or a '57 Strat or a '59 335. I try to build guitars that sound fantastic on their own merits. My hope is that the person buying my guitar loves it because it doesn't sound exactly like someone else's guitar and allows them as an artist to not only create their own playing style, but their own sound as well. After all, if everyone had to sing like Harry Nilsson we would have never heard Bob Dylan! I feel



that I've been paid the highest compliment that any builder could hope for when Walter Becker of Steely Dan purchased three of my guitars this past year. I have so much respect for this man not only because he's an amaz-

ing musician, songwriter and guitarist, but because he didn't play the "I'm a rock star card," – he paid full price for all three guitars because he loves how they play and sound.

TQR: What's ahead? How many guitars will you build in 2013 and do you have any new designs planned?

My partner Richard is now doing the binding, purfling and inlays, which frees me up and allows me to build 45 guitars a year. I build thirteen models now and have a couple more designs I'd like to do along with a bass. In the future I simply hope that more people will buy my guitars on their quest for tone. And please allow me to say 'thank you' to all who have purchased my guitars over the years. I truly cherish the friendships we have developed along the way. **To**

BUILD IT AND...

They Will Come

We have been doing this long enough to observe how some guitarists tend to mentally categorize instruments just by their appearance. Stratocasters and Telecasters conjure a certain



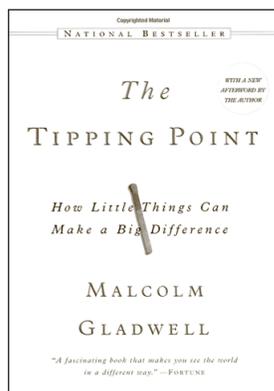
promise of predictability, as can Les Pauls, while SGs seem to have fallen completely out of fashion. All we can say is, go see Derek Trucks. Rickenbackers are an acquired taste, and the same can

be said for just about any Gretsch model, until you see and hear a creative guitarist play one and find yourself muttering, "I have never made one of those sound like that..." We adhere to the theory that great songs and great bands can often make guitars that don't seem so spectacular played at home sound absolutely stunning on a live stage. It's the *music*. Most of us react to and anticipate different styles of guitars based on past experience and personal preferences, and human nature dictates that old habits are hard to break. In many aspects of life we prefer not to leave our comfort zone. Doing so suggests risk, uncertainty, and the possibility for disappointment, kinda like going to your favorite steak house and ordering chicken.



The challenge confronting small, independent guitar builders is based on the same human tendencies... How do you get players who frequently view unfamiliar innovation with

suspicion to consider and embrace a new name inlaid on the headstock of a guitar? Our inbred pack mentality assures us that there is safety in numbers, so what do many of us do once a new guitar has caught our attention? Hop online to see what other people are saying, and if possible, acquire a



sense of how 'popular' this new guitar actually is. In Malcolm Gladwell's book *The Tipping Point*, he explores the phenomena of social epidemics – how ideas, products, messages and ideas spread like viruses within our culture. Essential to the rapid dissemination of new ideas or the acceptance of new products are three types of participants in the viral process – 'connectors,' 'mavens,' and 'salesmen' – people with unique and distinct social skills that

-continued-

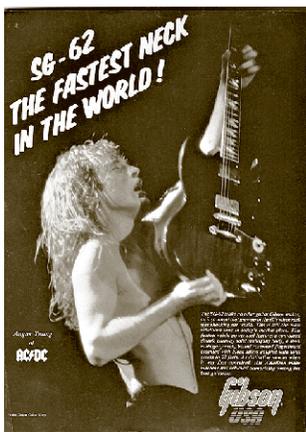
can unwittingly transform simple word-of-mouth communication into epidemics. ‘Connectors’ for example, know lots of people, tend to be gregarious and intensely social. If you happened to build guitars and a ‘connector’ thought highly of your work, he or she would habitually tell anyone interested in guitars about *your* guitars. It’s what they do – the way they operate. They enjoy connecting like-minded people to new ideas, new products and new people.



Malcolm Gladwell

Mavens enjoy acting as information brokers, sharing and trading what they know. If a ‘connector’ and a ‘maven’ both admired the same guitar builder, for example, the connector might introduce you to the brand, while a maven could tell you how to

get the best price. As Gladwell describes, ‘connectors’ are social glue, ‘mavens’ are data banks, and the third group, ‘salesmen,’ possess the skills to persuade us to act. Chances are that you know all three types of people described here, and if you are a working musician, you may even know a single person who possesses the attributes of a communicator, maven *and* salesman. In the music biz, we call these people ‘managers.’



Another aspect in the creation of brand awareness and the success, say, of a guitar company, is the challenge in developing a marketing message or image that is ‘sticky.’ If a guitar builder spends several thousand dollars a month on a full page ad in a guitar magazine, what is he hoping to achieve? Ideally, many thousands of people will see his ad, and a significant number will pause, *read*

the ad, and feel compelled to take further action by logging on to his web site, search for Youtube demos, online product reviews, or locate a local dealer. As you can imagine, for this process to be fully actualized the prospective buyer must remain determined, motivated and focused throughout the complex and time-consuming process of ‘shopping’ a guitar, and the rate of attrition can be high.

The interesting aspect of the guitar world is the shifting emphasis on specific models and styles of construction as an indicator of prowess and style. Why we identify with



specific brands while ignoring others is the by-product of a complex brew of perceptions and interactions that has been studied by marketers for decades. An obvious tactic in the music business is to get a high-profile artist to use your stuff. We know of an amp builder who is white hot in Nashville at the moment, and the fact that a very respected Nashville guitarist swears by

his amps and uses them at the exclusion of all else certainly isn’t hurting sales. The fact that the artist is *paying* for them is all the more compelling... The point is, building a large audience as a guitar or amp builder, a shoe designer, a baker or a carpenter usually comes down to the ability to attract and keep loyal customers who will tell others, who will in turn tell still more, and so on, gradually building an epidemic of brand loyalty within a community, a country, or the world. As the subtitle of Malcolm Gladwell’s book suggests, success is also related to how little things can make a big difference, which is a fine way to introduce Chuck Thornton’s Improv guitar... **To**

The Improv



While guitars in general can rightfully be viewed as functional art forms, not all guitars are built by true artists. It doesn’t take long for even a casual review of Chuck Thornton’s excellent web site photographs to confirm and reveal that he is a very talented artist and builder. Chuck works with a vision that is unique to his instruments alone, without resorting to bizarre or quirky design features that might otherwise limit their appeal. He doesn’t build his

version of a Flying V, for example, although come to think of it, we kinda wish he did... It would be one amazing V, and we’ve been craVing one lately as a model we’ve not danced with much. Let’s see... Unbound mahogany neck, fat frets and a greasy rosewood board, African limba or mahogany body, soap bar P90s or humbuckers... You see, the beauty in working with a solo craftsman is that you can dream, and your dream can come true. That might be the tag line we’d write for Chuck Thornton if he needed one – *crafted in Summer, Maine where dreams come true.*

-continued-



The Improv started out as a fully hollow 'jazz' model, but the transition to a semi-hollowbody with dual humbuckers seems inevitable. The Improv we received for this review made a particularly potent impression because it captures some of the hollowbody character of the old ES-135 we recently acquired, while offering the versatility of a solidbody guitar's reliable resistance to feedback and squeal. The

tone of the Improv is deep and woody, airy and clear, and in the right hands it can also sound threatening and urgent. This guitar is also utterly flawless in terms of its obvious craftsmanship, ergonomics, feel and playability – a featherweight as electric guitars go, yet endowed with a bold and animated character that is entirely suitable for rock & blues. The 15" body and neck feel as if they were custom-fitted for us with a perfectly carved mahogany neck that transitions into the body with sweeping curves that allow full access to the fingerboard while completely avoiding the cumbersome presence of a heel and neck joint. The bound neck, ebony fretboard and 6150 frets are superb in design and execution. *Perfect.* In all respects a true work of art. We could blather on with clever adjectives used to describe Thornton's guitars and the Improv we've been playing here, but then we would begin to ape those *other* guitar reviews you may have been reading in the relentless pursuit of formulaic commercial dreck that sells advertising. Five picks? Why not ten? Truly, seeing is believing, and the next step rests with you.



Best of all, when you work with a builder like Chuck Thornton, you are treated to a hands-on, personal experience in which you are encouraged to choose optional features rather than being given a choice of one. You can select your favorite nitro finish, the wood used for the fingerboard, neck and body, neck shape, pickups and tailpiece design. We urge you to check out the online gallery of photos for examples of

the Improv and other models. It's a very dreamy page.

You should also know that many of Chuck Thornton's clients own several different models, often traveling to Sumner, Maine (population 939) on a guitarcation to personally take delivery from Chuck at his shop. It seems to us that this is how custom guitar building should be done, and we aren't surprised to know that there are individual Thornton freaks that



own many different Thornton guitars. Like Chuck, Juha Ruokangas and Gabriel Currie, among others, there are builders

working today that make it their business to become acquainted with their clients as part of the process of designing and building a guitar that will be theirs for a lifetime. We urge you to allow yourself to dream, make a call to Sumner and Quest forth... **to**

*Price: Starting at \$5350.00, see web site for available options
www.cpthorntonguitars.com, 207.388.3578*

by Fender in China

Cheap Thrills from Squier

Most guitarists are at least vaguely familiar with the Squier name. Perhaps one of your first electric guitars was an '80s Squier copy of a Fender model manufactured in Japan. Ah, but there is more to the Squier story than you might imagine – in fact, a very long history that began with a British violin maker by the very same name...



Jerome Bonaparte "J.B." Squier was a British immigrant and skilled violin maker who moved to Battle Creek, Michigan in the late 19th century. He moved to Boston in 1881, building and repairing violins with his son, Victor Carroll (V.C.) Squier. Today, Squier violins are considered among the best American-made violins in existence, often referred to as "the American Stradivarius."

Squier eventually began making violin strings in the early 1900s, expanding to include banjo and guitar strings as these instruments gained popularity. During the 1950s the V.C. Squier String Company was supplying Leo Fender with guitar strings, and in 1963 the Squier company became an official OEM supplier for Fender Musical Instruments. Fender bought the V.C. Squier string company in early 1965, shortly before the sale of Fender to CBS in May 1965. The Squier name was dropped when the string business was re-branded under the Fender name, only to surface again in 1982 as an import brand for electric guitars made in Japan.

-continued-



Today the earliest Squier 'JV' models (Japanese Vintage) are highly sought after and collectable, having been built briefly during

1982-83. From 1983-85 a new series of Squier instruments was produced with '70s features including a Stratocaster, Telecaster and Precision Bass, as well as three Bullet models featuring Stratocaster body shapes with Telecaster necks and three single-coil or dual-humbucking pickups. A split-pickup bass with Telecaster-style headstock was also produced.

The Squier Standard Series was launched in the mid-80s with a focus on original vintage models with updated features. The Squier II Stratocaster with a new tremolo design was introduced, and the heavy metal HM Series featuring pointy headstocks and bizarre (for Fender) finishes. The HM series died with metal, but the Squier Standard Series continued throughout the early 1990s, evolving into a new generation of Squier models.



From 1996-98 Squier developed the Affinity and Pro Tone/Vista series of guitars and basses, which produced one particularly popular new model – the Jagmaster.

The Affinity Series

also followed the Squier tradition of offering high-quality yet inexpensive entry-level instruments for beginners, culminating in the successful Strat Pak and Bass Pak guitar/amp/accessory packages.



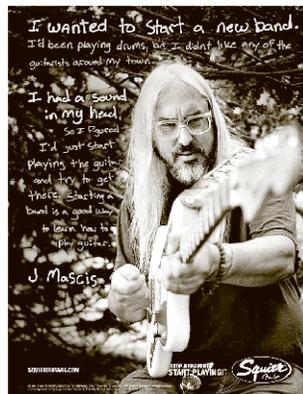
In 2000 the forgettable Squier Showmaster Series was introduced in an effort to attract younger players tuning down to C, including a 7-string Showmaster. In 2002, Series 24 single cutaway Squier models appeared in another effort to further diversify the Squier line, but lackluster sales confirmed that the Squier brand was and should remain focused on offering affordable Fender-style guitars.

The limited edition Affinity series followed, including a butterscotch blonde Telecaster and 2-tone sunburst Stratocaster, and new colors like Metallic Red and Metallic Blue. Deluxe models with figured tops and black-and-chrome Standard Series guitars were launched, along with two Telecaster Custom models. In 2004 Squier unveiled an upgraded Jagmaster II and the Squier '51 – a budget guitar that combined '51 Precision Bass cosmetics, a Stratocaster body shape and tinted Telecaster neck. The Master Series appeared in 2005 – five models with dual humbucking pickups, while Fender Custom Shop master builders also designed two Master Series Squier models, the M-80 and Esprit.



In 2007 Squier fully returned to its Fender heritage with the expanded Vintage Modified Series of guitars and basses, followed by the relatively

new Classic Vibe Series, while continuing to focus on the development of Artist Signature models. While Squier may have existed as a 'budget' line lurking below the more expensive Fender instruments, it has also remained extremely innovative and adventurous for over 30 years.



Well, it was only a few months ago, but we don't remember exactly when or why we first found the Squier J Mascis Jazzmaster online. But find it we did, and a couple of high-resolution pictures had us drooling like an unleashed hound dog at a Louisiana pig roast. Now, when we buy guitars online, we don't like to depend on a stock image

copied from the Fender web site, and some dealers wisely take the time to show pictures of the actual guitar being sold, like Dave's Guitar Shop. Two were in stock, so we sent Dave an e-mail and asked him to pick the Jazzmaster with the best weight and darkest, greasiest rosewood fingerboard, which turned out to be the one pictured on his site. Olympic white with a gold anodized metal pickguard, the Mascis Jazzmaster was \$499 with gig bag. Sold.

Before we get into the details of our Squier epiphany, perhaps we should address a potentially sticky issue by way of a pointed question... Are you too proud to play a Squier? The reasons why some players might hesitate to play a Squier are obvious.

-continued-



Some may not believe in buying a guitar made in China, despite the fact that they own plenty of other electronic devices made there, like cell phones, home stereos, and appliances. Still, there are probably guitar players who feel that buying a Chinese-made guitar somehow undermines domestic manufacturing in America.

Maybe you have no particular economic or ethical bias against buying a guitar made in China, but you just can't imagine the quality and workmanship being to up to your standards... Keep reading.

And then of course there are some folks that just can't, couldn't, and won't strap on a guitar made in China because a Fender ain't a Fender unless it says Fender on the headstock, and a Squier ain't a Fender. These guys may be chasing logo tone as much as anything else, and no matter how good a guitar may look, feel, sound and play, playing something with Squier on the peghead just doesn't square with their self image.

While we are not swayed by any of the reasons listed here, we do understand the biases that might prevent you from seriously considering a Squier made in China. All we can say is that the global landscape of guitar building in terms of quality and value has changed dramatically in just the past few years, as our reviews here vividly confirm. So yank the rip cord on your mind, let it billow open wide, and Enjoy...

J Mascis

Signature Jazzmaster



The most perplexing fact about the Squier J Mascis Jazzmaster is that it really didn't have to be this good, which is to say that Squier could have settled for building something not quite so spectacular with few complaints. After all, what do you expect for \$499? These days, you can expect a lot.

Granted, the online photos we unearthed on bing.com got to

us first, potentially beckoning with the effectiveness of a slick sports car photo shoot. The potential risk/reward was also compelling, but we still couldn't anticipate the surprise we would experience when we unzipped the Squier gig bag for the first time. Some new guitars just look too contrived, and production guitars can often appear generic, cold and lifeless. These first impressions are subtle, but lasting. On style points alone, the Squier Jazzmaster simply captures the appearance of a modern classic, with an enduring appeal that screams 'play me.' And you will.



The J Mascis is made with a basswood body, and our

experience with the basswood Japanese reissue Stratocasters left us with the opinion that it is an excellent wood for solid-body guitars. After all, what's so special about alder? Viewed for decades by western loggers as a 'weed tree,' alder grows as much as 15 feet in five years and it is extremely workable in terms of accepting stains and finish, and resisting splitting when used to make furniture. Leo Fender chose it to replace swamp ash because it was cheap and plentiful. Basswood is an exceptional choice for solidbody guitar building, yet still considered inferior by the usual grunts who have no idea what they are talking about. Now you know better.



We immediately noted that the Mascis wasn't on the heavy side, weighing 8.2 pounds, which is fine for a big offset body Jazzmaster, and the same weight as the Fano mahogany offset guitar reviewed here in April 2013. But it was the neck on the Mascis that truly freaked us out. Carved with a very ample and pleasing C shape uncommon to Fender guitars in general, the solid maple neck is finished in a

warm, vintage amber *satin* tint, and while we don't care about such things, there is flame and a subtle translucent 3-D quality visible in the maple grain. The back of the headstock also features a J Mascis signature.

The rosewood slab fingerboard prompted more howls of glee. Dark and smooth as French roast Jamaican Blue Mountain, we have seen inferior rosewood fingerboards passed off as

-continued-

Custom Shop stock on more than one guitar we have bought in the past. The fingerboard on the Mascis is as good as it gets, and far better than what you'll find on a lot of \$2800 custom guitars today. But wait, there's more... Take a look at those fat jumbo frets! We didn't get these on the Mexican, Japanese and USA Jazzmasters we bought for the February 2007 TQR Jazzmaster issue, but we got them on the Squier, and it plays like a dream, easily capable of big string bends should you wanna. In all respects, the neck seals the deal on the Mascis.



The Alnico III pickups in the Mascis are referred to as 'Jazzmaster' pickups in the official Squier specs, but when we lifted the covers we saw P90s lurking beneath, clearly made with adjustable screw polepieces and two Alnico bar magnets

beneath the fat coil. Call them what you will (we'll stick with P90s), they actually sound very, very good with a punchy, aggressive character played through an overdriven amp, and beautiful, lush clean tones. All three pickup positions really possess a unique voice – bright with the presence and attitude of a Telecaster in the bridge, jangly and sweet with both pickups combined, and that utterly classic Fender neck pickup tone that is so vocal and rich, huge on the bottom, slightly scooped in the mids with glassy, liquid treble tones. The tidy wiring harness beneath the pickguard reveals miniature 1 meg pots and slider switches, and the preset rhythm setting with thumb wheel volume and tone controls on the upper bout is jazzy and warm.



You will also notice a Gibson-style tune-o-matic bridge. Very cool and functional with the Fender tremolo, we ultimately replaced it with a Mastery bridge that costs nearly as much as the guitar, but don't feel that you must lose the tune-o-matic by any means. It works well. We also replaced the stock tremolo with a Fender locking Jazzmaster unit, but again, not because there is anything inherently

wrong with the stock tremolo as is. They appear to be made of the same brass and steel, and both worked very well with no tuning problems. Replacing the tremolo is cheap and easy, while installing the Mastery on this guitar requires the body to be modified as we will soon describe.

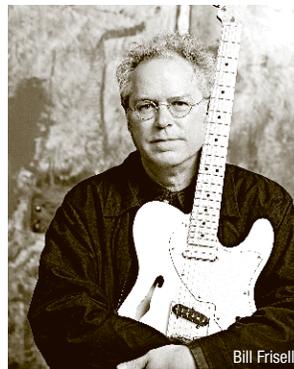


The poly finish on the Mascis is flawless, the tuners work perfectly, and this guitar simply looks, feels, plays and sounds like a far more expensive model. In fact, a certain veteran guitarist who visited us in Decatur recently exclaimed, "It's like a Custom Shop guitar!" Still, this is a tone quest, so we experimented with an exceptional enhancement. The Mastery bridge designed and built by luthier John Woodland

has become the default replacement upgrade for dedicated offset guitar players, and we thought you'd like to hear his story:

TQR: Can you describe your background, experience and specific areas of interest that led you to designing replacement bridges? We assume you saw a need for a better design made with superior materials for many different guitar models, but what inspired you to follow through on that vision?

I grew up in a rural part of Minnesota and guitars were just something that I always had around me as my extended family was pretty musical. Initially, I apprenticed under a Minneapolis luthier named Roger Benedict for four years, mostly building during that time. I've been repairing guitars professionally for 22 years now but haven't repaired much the last five as Mastery Bridge has since taken over most of my time.



I initially designed the original "Offset" Mastery for the musicians I was repairing for. Nels Cline was one of the first to use and tour with early prototypes during the spring/summer Wilco tours of 2008. He introduced it to Bill Frisell, Lee Ranaldo and Thurston Moore and the bridge went through a lot of real-world abuse by

those guys early on. Nels called me at one point during that time and said "you really need to offer this to other people!" So, we made a small batch and my friend put up a website. Within the first week we were inundated with orders and since then we've gained two patents and have grown quite a bit, but the philosophy of the business hasn't changed. We make a high quality American-made part in small batches and our only advertising has been word-of-mouth.

-continued-

TQR: In our experience, it seems that there is a great deal of variation in what is otherwise described as ‘brass,’ ‘steel,’ and other alloys used to manufacture bridges and saddles, with equally variable results in terms of tone and resonance. How have you approached the selection of materials you use for Mastery bridges?



We initially went back and forth with a lot of different saddle materials

and narrowed it down to the brass we use and plate them with a unique hard-chrome plating. The saddle plating is really key to how our bridge functions with a vibrato and is unlike any other guitar bridge on the market. Hard-chrome plating is expensive to manufacture versus decorative chrome, which is a reason why it hasn't been used before on other bridges, but the saddle design of our bridge is more of a factor sonically than the saddle material.

A standard six-saddle bridge has about 18 lbs of string tension bearing down on each individual saddle whereas our bridge has around 50 lbs of tension on each saddle. This is the biggest factor on why our bridges sound the way they do. Our Offset bridge features a patented mounting post system where the posts fit the diameter of the body thimbles, which along with our saddles, transfers more string energy to the body of the instrument. This said, I really think guitars are very eclectic experiences and unique to the individual. I've never been one to try and make my customers think there's some magic “mojo” or something cliché like that when describing our bridges. For our Tele bridge I just put an image of a moon and a sun on our website to differentiate between our plain brass and hard-chrome plated brass options. I have a lot of respect for the user of my product and their ears, so I generally like to refer customers to user experiences when it comes to how our bridges sound versus making any sort of claims as to what exactly your guitar will sound like after installing a Mastery Bridge. It wasn't about having a marriage of function and “tone” when designing the first Offset bridge, it was about having a marriage of function and form.

TQR: We would describe your bridge designs as elegantly functional... How long did it take for you to arrive at the specific designs that are produced now? Do you have plans for new designs in the future?

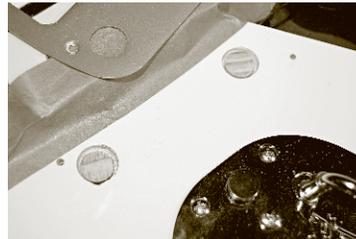
We prototyped and field tested the first Offset bridges with Wilco and Sonic Youth for eight months before releasing it. It worked well as they're really the extreme when it comes to



how those guitars are used. Bill Frisell and luthier J.W. Black were the ones who really encouraged me to use the saddle design on a vintage-style Tele baseplate and I'm glad they did. It's really a great bridge and it's been pretty successful for us. I released a version for Rickenbacker guitars last year and am working on a vintage Tele plate with tabs in the back like our original Offset bridge for

people with Bigsby B5's and a standard Tele bridge footprint. Our M1 bridge is really popular with people that have the B5 kit. There are a lot of different things I want to make looking forward. I really like my job, it's been very rewarding being able to help guitarists out all over the world and I've made a lot of friends along the way.

Installing the Mastery Bridge



Installing the Mastery bridge in the J Mascis Squier model is a straightforward process for anyone possessing a drill press and a familiarity with tools. The

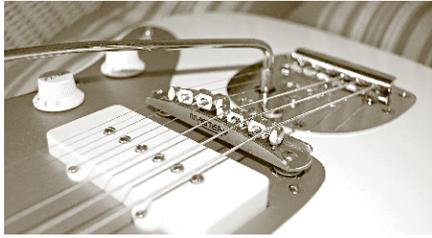
existing holes for the bridge studs in the body must be drilled out to 1/2 inch in diameter, filled with tight-fitting hardwood dowels, and the dowels drilled to seat the 3/8 inch mounting posts for the Mastery bridge. A drill press makes the entire operation fast and easy. On the other hand, accurately and neatly drilling a 1/2 inch dowel with a 3/8 inch Forstner bit using a hand-held drill is a bold commando operation, as the margin for error is slim indeed. Keeping a hand-held drill precisely plum with the guitar body and centered within the dowel as you are chewing through wood is not easy, but we managed to succeed after a few false starts. However, we strongly suggest you hunt down a friend with a drill press or an experienced repair shop rather than employing the free-hand method we used if you are planning on fitting a Mastery



bridge to the J Mascis Model.

Of course, the payoff is the Mastery bridge itself. The first time we saw it online we found the design and

-continued-



precise nature of the workmanship just stunning, worthy of display in the Smithsonian. It allows exceptionally

precise height adjustment and intonation with a super-smooth glide path for the strings, and it enhances sustain, resonance and harmonic overtones dramatically. The M1 Mastery Bridge fits all new, used and vintage American made Fender guitars. The M2 Mastery Bridge is the same bridge as the M1, but it comes with an additional set of larger mounting posts required for most Japanese made guitars. Again, the Squier J Mascis model is unique because it is equipped with a tune-o-matic bridge and studs. Most Mastery conversions will not require modifications to the guitar. Check out the Mastery web site for specs and detailed information on the Telecaster bridge and baseplate, and the M5 for Rickenbackers. Simply put, the Mastery bridge is one of the most brilliantly conceived practical enhancements ever made for the electric guitar. M1 Mastery bridge \$165.00, M2 \$175.00. See web site for more details, specs and info on Tele and Rick bridges. 

www.masterybridge.com

Telecaster Custom

Squier Classic Vibe



Inspired by our experience with the Squier J Mascis, we trolled other Squier models online, focusing on the Classic Vibe Series Telecaster and Stratocaster models. We finally whittled our choices down to two guitars – the Classic Vibe ‘50s Telecaster with maple neck and a blonde pine body, and the 3-tone Telecaster Custom built with a bound alder body, maple neck and rosewood fingerboard. The pine ‘50s Tele was hard to resist, but we ultimately chose the Telecaster Custom – a model we have always admired but never owned.

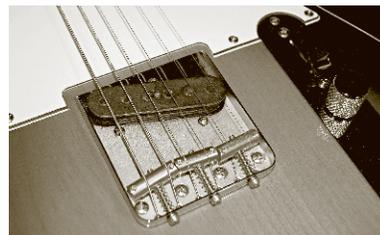
We acquired our Squier Tele online from Litz Music in Pensacola, Florida where actual pictures and the weight of their guitars in stock are posted. Price: \$399 shipped with no case or gig bag. When you think about it (and you will), it’s hard to

believe that guitars of this quality can be shipped from China and sold for \$399.00.



We unpacked the Telecaster Custom with more

smiles... Unlike the J Mascis Squier that had been set up by the guys at Dave’s Guitar Shop (and the set up was perfect), the Tele arrived with super low action and light strings, but once again we were stunned by the craftsmanship and overall appearance of this Squier. The 2-piece bound alder body is painted in a righteous 3-tone burst with a barely detectable center seam on the top and back. The grain is flawlessly matched and the guitar weighs 7.4 pounds. Like the J Mascis, the maple neck features an amber (gloss) tint, subtle flame figure on the rounded shoulders, and the neck shape is a healthy C with a nicely rounded feel that almost suggests a slight V at the back. The rosewood fingerboard is streaky and dark, and it benefited from a quick lube with a lemon oil polish cloth. The frets are ‘medium jumbo’ although not as massive as those on the Mascis, the neck was dead straight, the frets expertly dressed and polished, and like the J Mascis, the fingerboard edges feel slightly rounded off or ‘rolled,’ which is also hard to believe at this price. The rosewood fingerboard is the thinner ‘vener’ style found on vintage Fender instruments beginning in 1963. We also noted full-size Alpha pots and the cavities beneath the pickguard were entirely covered in black shielding paint.



The vintage-style pickups are bright, a little thin and forgettable. Having anticipated this, we would replace them with a stout ‘50s set from Slider

in Melbourne. The steel threaded saddles would also go, replaced with the exceptional Tele saddles made by JR Kohler. We received three sets of saddles made with copper, brass, and steel for evaluation, and believe it or not we have now become converts to the practice of mixing different alloys in one guitar. Never thought that would happen, but it did with the Squier. We asked Bob Kohler to explain how he became involved in designing and manufacturing saddles. It is an interesting and far out trip...

TQR: What’s your background, Bob?

-continued-



I was a trumpet player in high school in Washington, D.C. and when the Beatles came on TV that was it for me. I sold the

trumpet, bought a guitar, and I eventually got in a band with some guys that were older than me, and we had lots of gigs. I put myself through college playing in bands, and since I wasn't going to get a job with my degree, I joined a bandmate and we did the Big Daddy circuit in Florida. We ran into Joey Dee and he made Starlites out of us, playing "Shout" and "Peppermint Twist." We went to Vegas with Joey and played Dick Clark's annual show at the Flamingo in November and



December every year. Joey got fired for putting \$4,000 of gambling debt on Dick's room, but he kept us and we toured with the Dick Clark Caravan of Stars. I got to play tambourine for Bo Diddley, since they wouldn't let anyone else play guitar with him. Of all the stars I met, Bo

was the coolest guy. We played a game of pick up basketball with him one hot afternoon and he came to the show wearing the same sweaty clothes. The coolest. By 1979 I was getting tired of the music scene – they had us wearing these goofy outfits, disco was coming on and since I had saved some money I took a year off when I was 30 and began studying magic. I bought a lot of magic books, and I started hooking up with some guys at a magic shop, but I was really looking for a mentor. I wandered into a bar one day where four really world-class slight of hand musicians were working and I met my first mentor, Darwin Ortiz. But the guy that really changed my life was Bob Sheets. I had been around show business in Las Vegas long enough to know the difference between real pros, and Bob was an amazing magician and entertainer. That was it for me, and within a couple of years I was making six figures doing close-up magic. I wound up working for the Democratic party doing a lot of conventions and different functions. Tip O'Neill liked my act so much he offered me his hooker – it was just like the days of the Roman empire minus the tickle feather. I also did a lot of magic shows for the corporate world, and that's what I was doing up until 9/11.

I still had my old '66 ES-345 from the Las Vegas days wired mono that I played at home, and being a Tele nut now, it's



ROB SHEETS

I had a '69 Tele for years when I was playing and I hated it. I also found a mint '54 Strat that was posted for sale on a cork

bulletin board in a laundromat for \$250.00, and I hated it too, at the time. Anyway, I got back into playing guitar, went down to Guitar Center and bought a Blues Junior amp, and I started hanging around Cowtown guitars in Las Vegas. I met a great Tele player there by the name of Johnny Isaacs who turned me on to the real sound of the Telecaster, and I was hooked.

bulletin board in a laundromat for \$250.00, and I hated it too, at the time. Anyway, I got back into playing guitar, went down to Guitar Center and bought a Blues Junior amp, and I started hanging around Cowtown guitars in Las Vegas. I met a great Tele player there by the name of Johnny Isaacs who turned me on to the real sound of the Telecaster, and I was hooked.

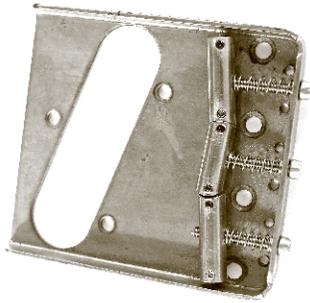


The idea of making Tele saddles began when I was putting a partscaster guitar together. I had bought a Gretsch 6120 and the metal bridge that was

on it didn't match the radius of the fretboard, and I thought, "Well this is stupid." Poking around on the Gretsch forum I found out about a guy named Tim Harmon who makes correct bridges for Gretsch guitars called Tru-Arc Bridgeworks. He had also gone to the trouble of testing different alloys for the bridge material, using things like brass, aluminum, stainless steel and copper. So I got this Tru-Arc bridge for my Gretsch and of course it played so much better because the radius of the bridge was right. Tim had also told me to get the copper bridge, and suddenly the tone of the guitar and the harmonics just blew me away. I showed it to my buddy Johnny Isaacs and *he* was blown away, and we started talking about how we should make some Tele saddles.

Well, because of my magic business I have worked with a CNC shop for years, so I met with their head engineer, and explained to him that I wanted to make Tele saddles that would interlock on the ends, because my experience with that Gretsch bridge and the way bridges are made for violins had convinced me that a solid bridge was where the secret ju-ju was coming from. We took measurements from a few saddles, and once we got the interlocking part right we started looking at the metal we wanted to use. I had the head guy at the CNC shop contact some metallurgists working in the aerospace industry and they gave us three recommendations. Now, because of the kind of work they do for the defense industry, my CNC shop has to do a lot of military spec testing. One of the things they do is Rockwell testing for hardness in metals. All the brass saddles we tested from Fender and other companies were completely different in terms of hardness

-continued-



– all over the place, and hardness has everything to do with whether string vibrations are sustaining or being dampened by the saddle. We knew that 100% copper was too soft, so we added some hardener to it. We tweaked the brass, cold rolled steel is cold rolled

steel, and we also offer stainless. And you know, we hand someone a guitar with these saddles and all it usually takes is one or two chords and they go, “Whoa!”

TQR: That was my experience, and it seems as if you almost have to try all three – steel, brass and copper. They all sound different and seem to respond differently on different guitars. The copper sounded great on our Nocaster, but on the Squier Custom Tele we liked the steel, with brass on the top. That was the magical combination on that guitar.

I have had the same experience. I liked the steel saddles best on one of my Teles, and when I finished another parts guitar recently I put the steel saddles on based on the sound of the other guitar. Then I started thinking about it, and because I’m a tinkerer I couldn’t help myself. I put the brass saddles on the new guitar and I liked that sound the best on that guitar. So when people ask me which saddles to get I don’t know what to tell them, except maybe they should get them all!



After testing all three saddles kits with the Squier Custom Tele we settled on steel for the E-A and D-G strings and a brass saddle for B-E. We would have been fine with all brass, but the steel saddles imparted a different tone with dimension, clarity and bold sustain on the wound strings that made the Squier sound huge and open, with all the nasal compression that can plague a Telecaster completely gone. The B and E

strings seemed too sharp with the steel saddle, but brass was perfect. The Kohler brass saddles are an excellent, all-purpose choice for most Teles, but those of you with an alder body and slab board Tele might want to consider the steel saddles. The Kohler copper saddles are also very cool, imparting a smooth, silkiness to your tone that is very spatial and complex. Best of all, the Kohler saddles sets are very reasonably priced at \$69.99 plus shipping.

Of course, Slider’s pickups play a big role in the wide open



sound of the Custom Tele, too. Measuring 7.17K/neck and 7.77K/bridge, they produce a big sound that seems perfectly balanced for achieving a classic Telecaster voice that will work equally well with swamp ash

bodies and maple fingerboards, or alder and rosewood. The full character of the bridge pickup is extraordinary from E to E string – clear, bold and deep with a percussive response to pick attack and tremendous sustain and chime. This guitar sounds so good that the presence of the Squier decal on the headstock would leave you deeply conflicted. Slider’s neck pickup does what we want from a Tele neck, producing a lush and liquid semi-hollow acoustic tone that matches the bridge perfectly for rhythms, and the tone for soloing is captivating in its woody voice and character.



We should note that the wiring channel for the bridge pickup was too narrow to push both of the larger cloth covered wires for the Slider pickup through to the control cavity, but a

quick reaming with our hand tool opened the channel up in two minutes. Just so you know...

Yes, it does seem a little counter-intuitive to play a \$400 guitar that actually plays so well and sounds so gloriously good, but we do not exaggerate in describing our fondness for this Squier Custom Telecaster. Add a great set of pickups, Kohler saddles, and you might even manage to forget how little you paid as you come to believe that a \$400 guitar actually can sound this good. Believe it, and Quest forth... 

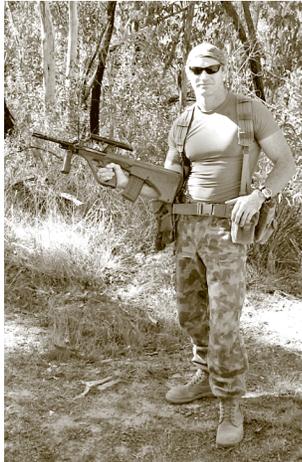
<http://jrkohler.com>

The Return of Slider

TQR: For those who may have missed our first conversation, can you briefly describe where you are located and your background – specifically, how you came to be a pickup winder?

Firstly, thanks for having me back, it’s been a very exciting

-continued-



couple of years since we last spoke at length. I'm in the southern suburbs of Sydney, Australia but I grew up much further south in Victoria on a small rural property. I learnt all things mechanical and electrical, like how to weld, solder and all kinds of building and mechanical repair. On leaving school I joined the Army Special Forces and did a stint as a radio operator which got me some good electronics training and repair

skills early on. Interestingly, I was always a keen modeler and it has been the skills and attention to detail that I learnt through scale modeling that have really helped me in many areas throughout life. I have always had guitars and I guess my interest in pickups came from wanting to own some of this mystical vintage tone that we associate with old instruments, specifically Fender and Gibson guitars.

TQR: You have only just more recently begun to wind humbucking pickups... Can you describe the process of research and development you followed in developing your humbucking set? What types of pickups did you have access to for evaluation, and how did you evaluate, develop and select the specific materials used? (Magnets, wire, baseplate, pole piece screws, covers).

Actually I have been building and developing my "faux" PAF Humbuckers since I started making pickups, however throughout the earlier development period they were only available "in house" and tested with friends and a couple of local artists. As for the R & D process, there is plenty of historical and anecdotal evidence as to how the original Patent Applied For (PAF) and Patent Number Gibson Humbuckers were constructed, that was always my starting point.



With any genuine speciality area, all good operators or true innovators end up designing and construction the majority of their equipment and materials. If you use and do what is available to everybody you end up with a very similar result and I'm not looking to only equal what's already available. As a broad overview, humbuckers by their very design are more complex than say, Fender single coils, like a Strat pick-



up. This lends itself to the myriad or Humbucker varieties and also explains why it has been so difficult to accurately capture the elusive "PAF" tone. As an example, humbuckers have a more convoluted process of directing the magnetic flux from a horizontally orientated North – South bar magnet to a vertically charged non-permanent pole or slug piece. This is very inefficient when compared to the simple and direct way a single coil projects it's flux pool directly up to the string. Suffice to say that starting with a very accurate replication of the original 1959 PAF M-55 pattern "long" bar magnet is required to work through this magnetic re-direction process. If you begin with a smaller M-56 bar in say, A2, which is only half the magnetic power of A5, you are already headed for under-defined and muddy sounding results. When you add all the potential variations in other key component areas like frame specifications and material, spacer bars, coil wire, winding patterns and output, not to mention missing things like using real Cellulose Acetate Butyrate (CAB) bobbins you are going to be way off target at the end of the process.

TQR: There seems to be a lot of conflicting information about the specific types of Alnico magnets used on the original humbuckers, with claims of Alnico II, III and V originally used. What have you used and why?



This is a very interesting point. Here's my opinion on AlNiCo and vintage pickups. The '50s was the height of the Atomic Testing Era and the Cold War, and cobalt, the Co bit in AlNiCo was in high demand

for military and scientific applications. Constantly developing new technologies competed for cobalt – things like the new coatings used in the high temperature areas of jet combustion chambers, for example. These developments made competition for cobalt strong and supplies short. The AlNiCo that was available 60 years ago was significantly less consistent and certainly not available in the current array of AlNiCo blends we see today.

In the late '50 small companies like Gibson and Fender would have likely ordered generic AlNiCo bars and rods to a given size. To say that in the 1950's Gibson (or Fender for that matter) specified, ordered or used A5, A8, A3 or A2 is highly unlikely, as they just weren't commercially available, at least not branded as we recognize AlNiCo today. Many original patents and blueprints I have observed make no mention of "grade" and only specify the use of "AlNiCo bar or rod" In the many original vintage pickups I have repaired and

-continued-

examined, I have observed large variations in magnetic gauss (strength) and on more than one occasion, dissimilar dimensions and grades of AlNiCo being used, sometimes within the one pickup. This all leads me to strongly believe that in the early days of electric guitar manufacture things were a real “cottage style” industry and in many cases they just took what materials they could get. Today we have ample cobalt and very well controlled AlNiCo available in variants from A1-A12. This was certainly not the case 60 years ago, so to say a true vintage PAF must use a certain grade of AlNiCo is false. For my extreme vintage reproduction sets where I match exactly the AlNiCo I have observed in actual vintage pickups, I generally use A5 and specially under charge it (vintage charge) to replicate the gauss performance that I have found on the best sounding original late ‘50s sets, but that’s all I am willing to say about that!

TQR: How did you go about determining the number of turns for the neck and bridge pickups?



Again the historical information is available and I have documented all my repair work on original sets, including accurately weighing the complete coil bobbins, and any non-functioning coils I have had to remove get weighed down to the .005 oz. This allows for a very accurate measurement of the exact amount of wire originally used. From there,

this is where the artisan factor comes into play. Experience allows me to hand-wind my humbucker bobbins with a very machine-like layering pattern, or introduce any degree of variation via scatterwinding. “Bursting” or mis-matching the output between coils within a given pickup as well as neck and bridge balance is all part of the equation for a great vintage PAF.

As important is the ability to vary the actual tension or how tightly the coil is built during the winding process. With hand winding you can achieve far greater tension over machines as the coil wire is applied to the bobbin. This is a huge component of the performance of the pickup as it determines the coil density. Nothing can approach the “feel” of the most delicate



and amazing mechanical construction machine ever to be created, the human hand!

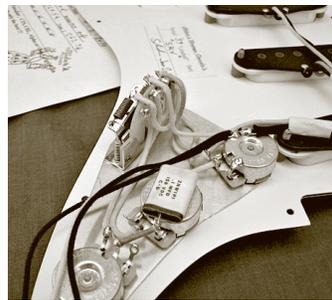
A winding machine is “dumb” and to prevent constant breaking of the very delicate coil wire as it is fed onto the bobbins, the tension must be set well

below the minimum breaking point of the wire. This leads to a “loose” coil that contains a larger amount of voids and air. That’s why commercial pickups need to be wax potted to death to prevent microphonic feedback from all the loose wires flapping about within the coils. A good “airy and articulate” PAF needs “dry” coils, meaning a very tight, well-built coil stack that can handle volumes and gain without feedback or complaint all without wax potting. So in 25 words or less, there are lots of humbuckers available but if you are looking for true vintage PAF tone, any mention of wax or potting, however it’s dressed up, is a big red flag.



On another note, original Golden era, pre ‘65 Strat and Tele pickups were built on hand-fed winding machines or scatterwound, an automated machine just can’t create the coil tension and layering pattern critical to achieving a true vintage single coil tone. So for your readers, if they want anything approaching genuine vintage tones a simple litmus test is, were my pickups built by the traditional hand guided or scatterwound methods? If not you just can’t expect “that” tone...

TQR: Your covers are very consistent with the overall look of your pickups – quite authentic. What can you tell us about them specifically?



Ha, that’s the modeling experience kicking in again. I spent years perfecting aging and weathering techniques to make very realistic scale models and I have expanded on these to include my guitar parts.

I do a lot of fully loaded Strat guards and Tele control plates, etc. and I really enjoy getting every detail exactly right. That includes the stuff you can’t see, like star washer bite marks around the pot shafts on the underside of a Strat guard. With my humbucker covers I use nickel (not brass) and do each one by hand. Consistency comes from attention to detail and one single craftsman, start to finish.

I include the nickel silver frame and poles in the aging process, not only for aesthetic reasons, but the surface condition with build ups and verdigris, etc. can potentially affect the magnetic and electrical relationships.

-continued-

TQR: Turning to the Tele set, have any of your specs or materials changed since we last reviewed your Telecaster pickups? What can you tell us about the set we have here for review in particular?



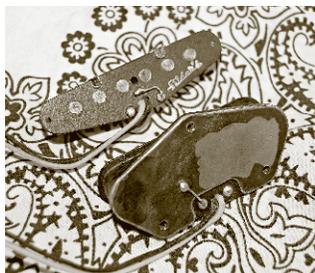
The set you have there is my standard '52 set. From the very outset my Tele re-creations have been aimed at a very accurate replication of the original article. My number one design goal was to capture the best tones that vintage Tele's

have to offer while removing the two biggest complaints, a brassy/icy bridge and the muddy neck response. I like to keep things simple and as such I offer two basic Tele options:

- 1/ Nocaster/'52 set
- 2/ Post '55 Staggered bridge pole sets.

Since we last discussed Tele sets I have added quite a few small but important materials options. Things like the early zinc and later copper plated bridge base plates as well as the very original raw tin and steel options. Over the past year I have had an increasing amount of vintage Tele pickups sent in for repair and I have continued to find small details that can be added to my sets, even things as seemingly insignificant as hidden internal masking tape insulation. I ensure every aspect is correct, even things like the hidden tape receives the exact placement and dimensions right down to the torn off serrated ends.

TQR: Again, the aging process for this Tele set is remarkable – your trademark, perhaps in terms of their authentic visual appeal. Without giving away any secrets, how do you do it?



There are no short cuts to achieving accurate and realistic aesthetic presentation. Firstly knowing what you are trying to replicate is paramount, handling and documenting multiple originals is the best starting point. The processes that

one applies to the various parts and materials to achieve any aging or relic effect is almost always self taught as there are no classes to take. The commonly available information about how to age parts is largely ineffective and at best unconvincing, the best aging processes are certainly some of the most closely guarded. To do parts aging well means I do everything myself, aged parts need to be consistently inconsistent. The

very best guitar parts are produced like the dishes of a great chef, you can't follow a recipe, it's about timing, feel and that individual "je ne sais quoi" that can't easily be learnt and certainly not achieved in a factory.

TQR: What's ahead? Do you have any other new designs in the works?

I am always looking for additional original and NOS parts to incorporate into my work. Presently I am revisiting the "supporting architecture" for my pickups, things like wiring harnesses, capacitors, nitro coatings and even old wax formulations. Let's just say I'm enjoying going "back to the future." ^{to}

sliderspickups@bigpond.com

Next month: Slider's humbuckers reviewed in our new, new old stock 2010 '59 Historic Les Paul. Get out the Kleenex...

ToneQuest Kent Armstrong



Kent Armstrong's path in the music industry was paved by his famous father Dan, creator of the acrylic Ampeg guitars bearing his name, while Kent was still attending high school and working at his

father's shop on La Guardia Place in Greenwich Village. In 1970 Dan headed west to work with Neil Diamond, leaving young Kent to briefly fend for himself until Dan offered a fellow by the name of Bill Lawrence a job at the shop. Kent continued to learn more about pickups working with Bill, and when Dan decided to move to London in 1971, Kent followed. Bill Lawrence ventured out on his own, hiring a young assistant by the name of Larry DiMarzio. It's a small world.

In England Kent began doing pickup repairs and rewinds while also operating a courier service with his motorcycle to supplement his income. By 1979 he had become established full-time as a very skilled and innovative pickup winder creating designs such as his bobbin-less pickups embedded in epoxy. While he had made a humbucking pickup to fit the original rout in Robbie Robertson's Telecaster back in New York, his first production design was the Z+ pickup used in early Schecter guitars played by Pete Townshend. Over the years Kent has worked with countless guitarists and many

-continued-

different guitar companies on a range of pickups so unique and diverse that to fully describe them would require an entire book devoted to his work. Today, Kent's pickups are available through WD Music Products and include the Archtop Series, Custom, Icon, Chaos, Flat top, Hot Rod, M Series, Vintage, Split Tube and Rory Gallagher Series, as well as pre-wired pickguard assemblies. Among the many guitarists Kent has worked with, one was the legendary Rory Gallagher. When we spoke with Kent from his home in Vermont, the Rory story seemed like a good place to start. Enjoy...



One time long, long ago in a land far, far away, Rory Gallagher used to call me up from the late '80s to the early '90s – I never met him – but we talked for hours and hours about various things we could do for rewinds...

TQR: Was this because his pickups had stopped working or he wanted them rewound for a different sound?

Both. He was a great experimenter. Generally the Burns and the lipstick pickups had stopped working, but I was looking at the invoices for the work I had done recently and we had done a couple of experimental sets of studio Strat sets for him. These pickups had a switched low impedance tap. Most recording desks (mixing boards) like to see an input signal around 500K ohms. So we designed this set that was good for normal everyday gigging use at high impedance, and you could throw a switch for low impedance. As I said, we would talk for hours and hours about these things.

TQR: Did you get a sense of what he was chasing specifically?

In the recording environment he was looking for that classic Stratocaster sound, but without driving the studio engineers crazy because his pickups were overdriving the mixing board.

TQR: How did this culminate in the Rory sets you build now?



Rory's brother Donal and his nephew Daniel contacted me about recreating the pickups in Rory's 1961 Stratocaster. The relationship between Rory and I was more than a decade long and it just made sense that I recreate his

pickups. At the same time, we decided that other players who admired Rory's style and tone might be interested in the other pickups he had in his main stage instruments. So my son Aaron and I traveled to London and met Daniel, who picked out the seven guitars Rory had used most often and we set out to reproduce their sound. His most famous 1961 Strat had



two mid '70s Fender pickups in it and an early DiMarzio FS1 in the bridge. Some of the other guitars had original pickups – the '66 Telecaster and the '59 Esquire I looked at were pretty much

standard with the exception of the added neck pickup in the Esquire. He had a Fender Music Master with custom pickups, a Gretsch Corvette and a Gibson Melody Maker with a humbucker in it. As I said, he was quite an experimenter. I must have spoken to him for hundreds of hours. I had a headset for the phone, so I would just carry on working while we talked, but my wife would always complain about the phone bill.

TQR: How many Rory sets are you building?

There are seven in all. For example, with his '58 Stratocaster that he used for recording, we do one set with Alnico 3 magnets for an 'older' vintage sound and another with Alnico



5 magnets for a tone more reminiscent to when the pickups were brand new. The '61 had the Fender '70s neck and middle pickups and the Dimarzio bridge pickup, so that set will sound very different from the '58 set, because the '58 Stratocaster had all balanced hot single coil pickups.

As a point of contrast, Pete Townshend was really into the Z+ pickups he used for the Schecter guitars he was playing in the early '80s. He loved the Schecter guitars from that period. I never met him, but every time he bought another Schecter



his tech Alan Rogan would call and ask for another set of Z+ pickups. I also rewound one of the pickups on Brian May's guitar because it was dead. I never saw the guitar – he just sent me the pickup, but I am familiar with it. It is wired so that all the pickups are in series, and when you throw the switch they are out of phase. He had

-continued-

used six giant slider switches for his guitar, and I think he got the idea from Burns, but you could never fit all of that into a Stratocaster. It's not complicated to do, but I designed a 4-pole on/off/on/ switch and WD now makes a pickguard that will fit your Stratocaster to give you that Brian May sound.

TQR: What other things have you cooked up?



I do all sorts of weird things, like hexaphonic and quadraphonic pickups... This will blow your mind. When you play one string on a guitar it sounds pretty good. Two strings sound pretty good, but

by the time you play a full chord it's kind of muffled, and when you play six strings at once why isn't it six times louder? It's because of the amount of phase cancellation that's happening with six strings competing for the same amount of space.

TQR: And it's even more noticeable with overwound coils...



Even worse. The graunching that's going on is just horrible. I call that graunch. So now imagine having six independent humbuckers with a 7-pin canon, the 7th pin being the common ground,

and six live signals coming out of the instrument and putting that into something special to control it. It's like the delta of a river flowing backwards. The Kramer Ripley guitars did something similar but they completely missed the plot. They put six volume controls on the guitar and blended them all in the guitar, so it still all came out crashing and bashing through the output jack. But now take those six pure signals and put them into a desk (mixer) with a 7-pin canon. Imagine being able to shape the tone of each string individually. You could make this guitar sound like a Les Paul, a Rickenbacker, a Strat... It's a matter of the shape of the signal. You could put an effect on each string individually... You have a humbucking coil for each string inside a standard Gibson cover. In fact, you may have heard one of these systems for years without ever knowing about it. Dave Stewart of the Eurythmics has a Telecaster with six coils at the bridge and a small manual floor mixing system that he's been using since the '80s.



TQR: Why isn't this more widely known?

Why should it be? We spent a lot of money on this system. We developed it between 1979 and 1982 and took it out to the world, and everyone said it was far too advanced, way too complicated. Seriously? Plugging it in and playing it is too complicated?

TQR: That's strange because during that time Gibson launched the Artist Series equipped with those Moog circuit boards and active pickups. That didn't work out so well, did it?

Same with the Roland, but that was a MIDI trigger, not the same thing at all. We actually built an auto-panning stereo computer. You plug it in and you had 15 degrees – 7 degrees left, 7 degrees right with zero in the center for each string, and you could rotate it at any speed you wanted. And we built a quadraphonic system... You could rotate it around the room backwards, or put your low E string in one amp and the other five through another.

TQR: The only thing that caught on to some degree like that were the stereo Gretsch pickups that enabled you to split the top and bottom three strings through separate amps...

Oh, I build stereo pickups for people all the time. I make them for 6, 7, 8 and 10 strings, and some people want a 2/4 split. Generally when someone calls me up I give them ideas. They tell me what they want to do and I tell them how they can do it. You can actually run a stereo jack out and add a switch that allows you to go back to mono if you want to.

TQR: You've done a lot with pickups and magnets as well.



Yes, but I don't do anything with rare earth magnets. Rare earth is expensive, and it's weird. It just doesn't sound right. Have you ever heard a powered speaker? Gibson built little

amps with powered speakers and those things sounded so good. I had an AC30 with Celestion Alnico speakers and another AC30 with ceramics and while the circuits in both amps

-continued-

were identical, those two amps sounded completely different. Alnico just seems to have more depth, clarity and warmth.

TQR: Have you used ceramic magnets for pickups at all? Larry Cragg told us that he used to switch the Alnico magnets in Carlos Santana's guitars to ceramic for more sustain.

For the most part I have only used ceramic magnets in bass pickups. I built a special set for a guitar player in New Jersey, and the Z+ pickups were ceramic, but that's it. I use Alnico 3 or 5 for guitar pickups.

TQR: How much have the wire and magnets changed over the years you have been doing this?



were playing 40 years ago.

TQR: What are your thoughts on pickup covers?

Let me explain why people used to take the covers off their humbucking pickups and rave about the extra power and tone they heard. It didn't have anything to do with the construction of the cover or the material, it had to do with the six slug polepieces being covered. When people took the covers off, their screw polepieces would be sitting up high, so they would screw them down lower and raise the entire pickup and both coils closer to the strings, putting the slug polepieces into play. It all adds up.

TQR: With pickups that have adjustable polepieces, is it better to raise the entire pickup and get the coil(s) closer to the strings rather than just raising the polepieces higher?

You are far better off getting the entire coil closer to the strings, even if it requires a pickup like a P90 to be shimmed. It's all physics and science. Pardon me for saying so, but I don't claim to take the pubic hairs of virgins and mix them with epoxy for this incredible tone. It's about science. I have never hyped my work. If my pickups don't sell themselves then I'm not making a good product.

TQR: What's your take on potting?

Not at all, really. If you equated the guitar industry to others historically we are still building the Model T today. People are largely still playing the same guitar models today that they



It's essential if you don't want microphonic feedback or squeal. It's essential, but it has no bearing on the sound of the pickup. It simply solves a problem.

TQR: So there is no art to it...

Oh, no, there certainly is an art to it – a pure scientific art. You have got to know what you are doing. I have actually taken pickups

that have been sent to me, mainly old Japanese pickups, and you can plug the pickups straight into an amplifier and sing right into them. Wow, I've got this new microphone! A new microphone that is called a pickup. It's not a black magic art, you're just shielding for a lot of things – microphonic feedback, screaming and noise – RF noise, and then there is the hum factor.

TQR: I have read that squealing is caused by any rigid parts of the pickups being in contact with the coil.



No, any type of metal that can oscillate within a magnetic field will generate an electrical current which is induced into the coils and transmitted to the amplifier. The cover, polepieces, any metal objects that are capable of shifting and vibrating. Even when we're finished hot waxing the coils on one of our conventional humbuckers, we then dip it into hot wax and lock the cover on as well.

TQR: So if someone calls and insists on an unpotted pickup you won't do it?

I will never tell a customer no, but I will tell them what can happen and if it does, don't blame us.

TQR: Do you have a favorite pickup in terms of pure tone?

It has to be a P90. I have a 1949 Gibson ES-125 with the original P90 in it and I just love it. I used to have a 1954 Les Paul Junior and it was one of the major things in my life that inspired me.

TQR: What's coming down the road? There seem to be no shortage of things for you to think about, Kent...

-continued-



We're going to work on the Pete Townshend thing, and I want to get in touch with Brian May and see if he would like to help get this new switch idea going. I would also like to get the hexaphonic project going, and I think over the next year we are going to launch a new tremolo system for Stratocasters. Imagine a tremolo system where you can put one string on, tune it, then put

all the other strings on and the first string still stays in tune. Or doing double and triple bends and all the other strings remain in tune. We have even designed an OEM top mount version and you don't have to carve up half of the guitar. We had one slight problem where we couldn't quite get it to go completely back to zero, and last week I thought about and we cracked it.

I also have an idea about how to crack the problem of noise canceling with single coils without changing the sound. It is a box that you plug into the size of a pedal and when you do, the hum will be gone without changing the tone at all. Do you know where hum canceling comes from? RCA discovered it by pure accident back in the '20s and '30s. An engineer was told to wire a second transformer into a radio and he wired it in backwards by accident. Those old radios used to hum like crazy, but this one was dead quiet. I got my idea from the RAF. Back in the '70s they put a microphone in the cockpit of a jet aircraft, because those planes are incredibly noisy. They sampled the noise, inverted it 180 degrees and stuck it into the pilot's helmet. The pilot controls the amount of volume, and it phase cancels out all the noise from the engines. I'm adapting the same system for the guitar industry.

Kent Armstrong

Rory Gallagher Pickups

"What is it like to be the best guitarist in the world?"
 "I dunno, ask Rory Gallagher." – Jimi Hendrix

It has been 18 years since Rory Gallagher passed, yet his music survives as a testament to his brilliant talent. We have



all read about various legendary guitars having been analyzed and measured for the purpose of creating accurate reproductions, but Kent Armstrong's journey to Ireland to study the



pickups on Gallagher's guitars seems to go well beyond the usual call of duty. If anyone has bothered to study the pickups on the remaining Hendrix Strats, Clapton's '63 ES335, Brownie and Blackie, Jimmy Page's original '59 Telecaster, or Beck's Oxblood Les Paul from Blow by Blow, we entirely missed it. Cudos to Kent for digging deep. It seems to us that mega-dollar 'tribute'

guitars should include custom-wound pickups created from a painstaking analysis of the pickups in the guitar being recreated... Hello?

We installed the '61 Rory Gallagher set in our favorite Robert Cray Strat. We did not rewire it to mimic the master volume and master tone set up in Gallagher's famous beater, but our slab board hardtail Cray Stratocaster is such a great, great guitar that we really didn't feel handicapped by leaving the wiring unchanged. Granted, we did not have access to Gallagher's original AC30, tweed Twin or Bassman, but listening to his recordings and watching video footage leaves plenty of clues to the character of his sound with the '61 Strat. You are welcome to judge for yourself, but we would describe it as raw, sharp and aggressive, more in the style of Jimmie Vaughan's primitive tone than Stevie's. Closer to Robert Cray's, even, although the



playing styles are worlds apart. Armstrong's 'Rory' pickups capture the same raw, snarling vocal character on display in Gallagher's recordings – a far, far cry from the 'Texas' tone that drove everyone to play Strats in the

'80s. All of us hear a tone in our head that is different, thankfully, and Rory Gallagher was definitely channeling voices from his past that we sadly cannot ask him to describe now. However, Gallagher shed some light on his tone in an excellent interview by Jas Obrecht that you can read online at: <http://jasobrecht.com>. In the interview Gallagher commented that because of the age of his '61 Strat and the sweat in it, the tone is a lot dirtier and raunchier than the usual Strat – almost like an SG or a very raw Tele. We agree, and we can also verify that Kent Armstrong managed to build the '61 Rory set with that same character – raw, stripped down and edgy. Very different from the usual custom shop Strat set, we even heard a bit of Lowell George in them. As far as we're concerned, mission accomplished! **TO**

Next month: Kent Armstrong humbuckers

www.kentarmstrong.com
www.wdmusic.com, 877-WDMUSIC

ToneQuest



Acquire Your Personal Copy of the 1999-2013 TOR Archives **STILL ON SALE!**

Imagine having a PDF file of every issue of TQR on CD, including a searchable issue-by-issue index for your future reference and enjoyment. Acquiring the ToneQuest Archives is now more affordable than ever, priced at just \$299.00 when you order by September 15, 2013. Order today and you'll also receive a free ToneQuest guitar strap with your CD. Order your personal copy of the ToneQuest Archives today by clicking the Order Back Issues selection on the main menu at www.tonequest.com, or call us toll-free at 1-877-MAX-TONE (629-8663). Don't delay - order your CD archive today!

the ToneQuest Report™

Editor/Publisher David Wilson
Associate Publisher Liz Medley
Graphic Design Rick Johnson

EDITORIAL BOARD

Analogman	Billy F. Gibbons ZZ Top	Greg Martin The Kentucky Headhunters
Tom Anderson Tom Anderson GuitarWorks	Joe Glaser Glaser Instruments	Richard McDonald VP Mktg, Fender Musical Instruments
Mark Baier Victoria Amplifiers	Tom Guerra Mambo Sons	Joe Mloganoski Co-Founder K&M Analog Designs
Jeff Bakos Bakos AmpWorks	Johnny Hiland	Todd Money Manager Gibson Repair & Restoration
Dick Boak CF Martin & Co.	Gregg Hopkins Vintage Amp Restoration	Justin Norvell Sr. Mktg Mgr, Fender Guitars
Joe Bonamassa	Mark Johnson Delta Moon	James Pennebaker Artist Relations, Fender Musical Instruments, Nashville
Phil Brown	Phil Jones Gruhn Guitars	Riverhorse
Dan Butler Butler Custom Sound	Mark Karan Bob Weir & Ratdog	Tommy Shannon Double Trouble
Don Butler The Toneman	Robert Keeley Robert Keeley Electronics	Todd Sharp Nashville Amp Service
Steve Carr Carr Amplifiers	Gordon Kennedy	Tim Shaw Fender Musical Instruments Corp.
Erick Coleman Stewart-MacDonald	Ernest King Gibson Custom Shop	Randall C. Smith Designer & President, Mesa/Boogie Ltd.
Larry Cragg Neil Young	Chris Kinman Kinman Alvin Pickups	John Sprung American Guitar Center
Jol Dantzig Jol Dantzig Guitar Design	Mike Kropotkin KCA NOS Tubes	Peter Stroud
Ronnie Earl	Sonny Landreth	Buddy Whittington John Mayall & The Bluesbreakers
Dan Erlewine Stewart-MacDonald	Albert Lee	Greg V Los Angeles
Larry Fishman Fishman Transducers	Adrian Legg	Lou Vito
Bill Finnegan Klon Centaur	Dave Malone The Radiators	Mike Voltz R&D / Product Development, Gibson Memphis
Lindy Fralin	Jimbo Mathus	
Peter Frampton	Shane Nicholas Sr. Mktg Mgr, Fender Guitar Amplifiers	
Greg Germino Germino Amplification	René Martinez The Guitar Whiz	

The ToneQuest Report™ (ISSN 1525-3392) is published monthly by Mountainview Publishing LLC, P.O. Box 717 Decatur, GA. 30031-0717, 1-877-MAX-TONE, email: tonequest1@aol.com. Periodicals Postage Paid at Decatur, GA and at Additional Mailing Offices. Postmaster: Send address changes to: The ToneQuest Report™, PO Box 717, Decatur, GA. 30031-0717. The annual subscription fee for The ToneQuest Report™ is \$89 per year for 10 issues. International subscribers please add US \$40. Please remit payment in U.S. funds only. VISA, MasterCard and American Express accepted. The ToneQuest Report™ is published solely for the benefit of its subscribers. Copyright © 2013 by Mountainview Publishing LLC. All rights reserved. No part of this newsletter may be reproduced in any form or incorporated into any information retrieval system without the written permission of the copyright holder. Please forward all subscription requests, comments, questions and other inquiries to the above address or contact the publisher at tonequest1@aol.com. Opinions expressed in The ToneQuest Report™ are not necessarily those of this publication. Mention of specific products, services or technical advice does not constitute an endorsement. Readers are advised to exercise extreme caution in handling electronic devices and musical instruments.