

Designer Profile; Steve Carr of Carr Amplification

By Charlie Kittleson ©2003 All Rights Reserved

Steve Carr of Carr Amplification has a very popular line of guitar amps used by artists and studio musicians around the world. We recently interviewed and profiled Steve and talked about his background, amps and design philosophy.

VTV: When did you first get interested in guitars and amps? Did you play in bands? Tell us about them.

SC: As long as I can remember I have had a curiosity about how things work, especially machines. I joined my first band the summer before my freshman year in high school. We weren't very good but once you start - you can't stop.

Guitar gear and most especially tube amplifiers fascinated me. I did not start working on them till I was in my late 20s after I befriended the best amp tech in Chapel Hill NC. Things proceeded fairly quickly from there due to an insatiable yearning to understand and build my own amplifiers. I have been in around 15 bands over the years - nearly all of them original music with a few national CD releases (The Emperors of Ice Cream 1992 and Stratocruser 2000). Currently I am in two groups: The Breaks and The X-Rayons. I play mostly rock though I have been in a few jazz groups.

VTV: What is your education and work experience in electronics?

SC: I went to Purdue University for Aerospace Engineering after high school and much later I returned to school at the age of 30 for Physics (University of North Carolina) after a 10-year effort to succeed as a recording artist. My main source of money was waiting tables at fine restaurants - the electronics I learned mostly on my own - reading old texts from the 30s, 40s, and 50s plus a lot of trial and error. I ran a small side business repairing and modifying guitar amps for a

number of years before I started Carr Amplifiers in the fall of 1998.

VTV: When and where did you start Carr Amplifiers? What was your first amp design?

SC: The business grew out of my home repair and mod shop in Chapel Hill NC. I think of the company starting with the first amp sale, which was in December of 1998 to Indoor Storm in Raleigh NC. They took a risk and bought the first two Slant 6V amplifiers (my first model). In January Eddie Berman, head salesman at Indoor Storm, sold one of them and in a lot of ways I could not believe it - It was a dream coming true and I have felt that same way with every subsequent sale. We have shipped just over 1000 amplifiers as of this month. I feel very fortunate.

VTV: What is your basic design philosophy? Are your circuits unique in any way?

SC: I believe in simplicity, real world features, rugged 40s era hand wiring, and a mix of classic 50s and bleeding edge modern aerospace components. We make 5 models and each has certain classic guitar amp inspirations.

That said, we do not make clones of older designs. I try to identify elements I like in the great amps of the past, then take a step forward. The most unique aspects of our designs have to do with the ways these different classic circuit ideas are combined and in some ways my interpretation of what those circuits imply. The way the amps make music and the interactive feel they have

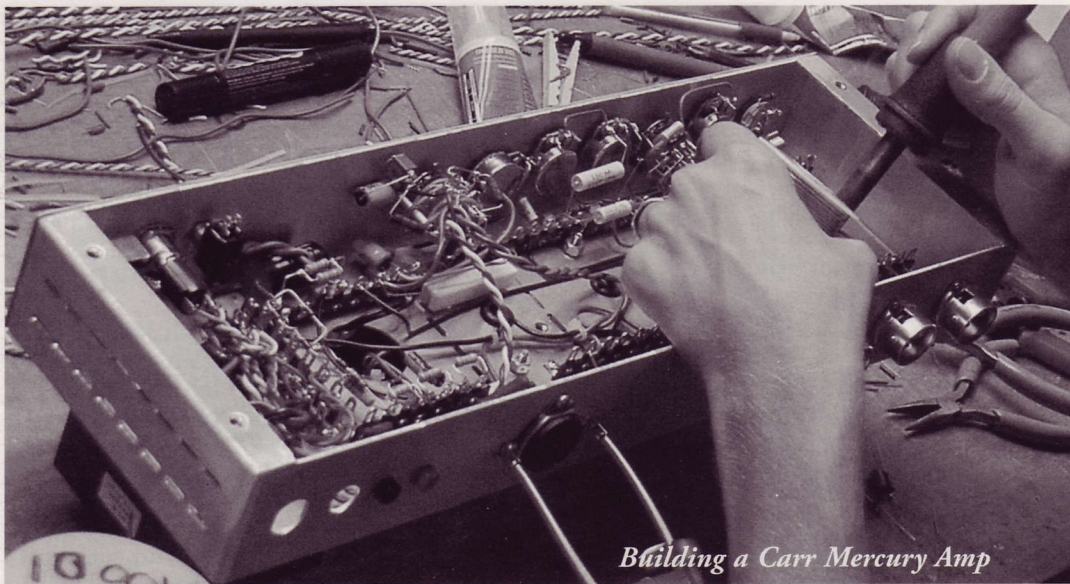
with the player are the final judges for each design effort.

VTV: How do you determine which transformers to use? Are they proprietary designs?

SC: I usually have primary impedance in mind as I start prototyping a new amp based on output tube type and voltages. Then I discuss it with our transformer manufacturer's head designer, Bill Manousos at TMI in Chicago, and get a few different prototype transformers. Each is wired into the circuit and evaluated for tone and feel. After I determine the best transformer, we have them produced. Each of the 5 models uses proprietary



Steve Carr
Holding a Mercury
Amp



Building a Carr Mercury Amp

SC: This is a great question. Ultimately I am driven by my own personal musical taste. I do think about customer comments and what I believe people want but the final decision is guided by the music I have enjoyed throughout my life.

A very large record collection and long experience with fine guitar amps grounds me in classic guitar tones! When it sounds right - you know.

power, output, and choke designs.

VTV: *Why are you using aluminum chassis in your amps?*

SC: Three reasons: electrical conductivity, it's a non-magnetic material, and weight savings (I don't have roadies!)

VTV: *What is the advantage of using Solen Poly caps in the power supply? What about HEXFREDs, are they really better than tube rectification?*

SC: It is interesting to remember that after the first gain stage the actual signal from the guitar ends and copies of it are made with increased voltage as you go from stage to stage in the amp. After that first stage you are essentially listening to the amps power supply which is the medium the copies are made of. Once you understand that, the importance of the power supply becomes clear. I have found the Solen Poly caps yield much faster transients, more open sound, and a warmer overall vibe with better feel than the typical electrolytic cap. They are more expensive and larger, but the sonic rewards are very worth it. Also they will not need to be replaced like electrolytic caps, whose lifespan can be as short as 10 years, depending on brand.

Also, we are using new technology Ultra Fast Recovery rectifiers on all the models except the Slant 6V (which uses a 5AR4 tube rectifier in tribute to the Blackface Deluxe). These rectifiers sound great and are without the grain and haze people have come to associate with run of the mill silicon rectifiers. I don't think of them as better than tube rectifiers but as sonic equals with greater speed and current capacity. There are other circuit elements in our amplifiers that partially mimic tube rectifier sag to add the nice bounce you get with tubes but without reliability liability.

VTV: *How do you determine what good tone is?*

VTV: *Besides the Rambler amp, what are some of your other amplifier models and what applications would you recommend them for?*

SC: We currently make 5 amp models ranging from 8 to 80 watt output. The Mercury Compact 1-12 combo with an 8 watt single ended fixed bias Class A KT-66 power tube. The Mercury has a lush reverb and a 3 position Boost yielding tones from classic 60's American to British rock. A 4 position built in attenuator lets you choose from 8, 2, 1/2, or 1/10th watt output to the speaker. The Mercury is great for late night home playing, all studio work, and moderate volume live shows. I use mine in a 5-piece band on the 2 watt setting at practice and then I give 'em the full 8 when we play out!

The Hammerhead (1-12, 2-10, 2-12 combos) is designed for early output tube overdrive using 2 EL-34s in a 25 watt push-pull cathode bias class A design with zero negative feedback. Mixing some vintage roots, the super-simple Hammerhead can go from tweedish clean to power tube crunch at medium sized club volumes. The controls are Volume, 4 position Impact (treble and upper mid emphasis), Master Volume, and 4 position Grip (preamp gain).

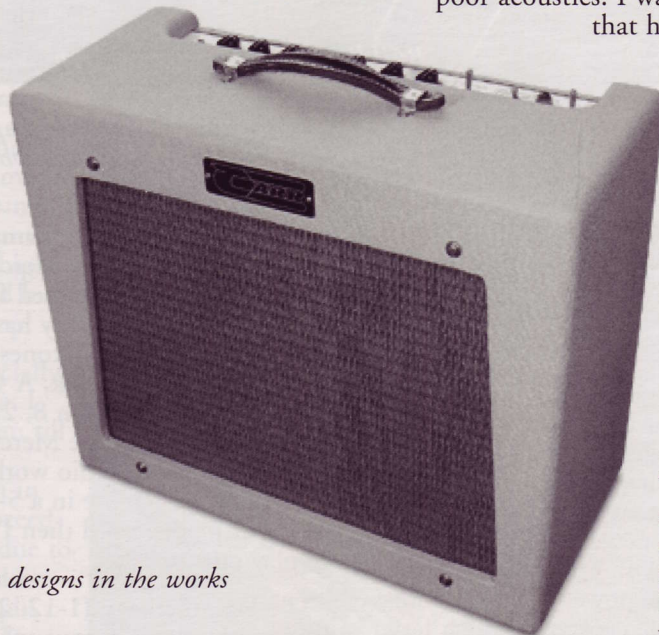
The Slant 6V (1-12, 2-12, 2-10, 1-15 combos and head) is a 40 watt 4 6V6 amp with one pair of 6V6s running cathode bias (smooth sustain and midrange thickness) and the other pair running Fixed bias (punch and headroom). Two selectable half power settings using either pair of tubes. The Slant 6V has two footswitchable independent channels - clean with reverb and Overdrive with two selectable gain settings. The 6V is at home with virtually any kind of music and on any stage. For the power hungry we make a double power version of the Slant 6V with 6L6 tubes putting out 80 watts in full power.

The Imperial (2-12, 1-15 or head) is the bigger brother of the Rambler, sporting 4 6L6s for 60 watts Pentode, 28 watts Triode Class A cathode bias and no negative feed back. It sounds very similar to the Rambler and also has a footswitchable variable boost.

VTV: *Who are some well-known players that use Carr amps (which amps do they use and who do they play with)?*

SC: CoCo Montoya (Solo artist), double power Slant 6V, Nils Lofgren (Bruce Springsteen + tons of session and solo work), double power Slant 6V. Buddy Miller (Emmylou Harris, Buddy and Julie Miller), Hammerhead. Mitch Easter (Lets Active and studio producer), Slant 6V and a Mercury. Michael Landau (massive session player) Slant 6V, Rambler, Mercury. Mark Goldenburg (Jackson Browne + session work), Rambler. Chris Leuzinger (Garth Brooks, session producer), Rambler, Danny Flowers (Nashville songwriter/session musician), Rambler, Slant 6V. Michael Thompson (huge session list), Slant 6V. Rick Miller (Southern Culture On The Skids), Slant 6V. Will McFarlane (Bonnie Raitt, Muscle Shoals session player), Rambler. Tony King (Brooks and Dunn), Slant 6V. Tom Anderson (Tom Anderson Guitar Works), Mercury.

Carr Rambler Amplifier



VTV: *Do you have any new designs in the works these days?*

SC: We are always coming up with new ideas to try. It is a long process though, developing a new model. Many great ideas on paper do not always sound they way you hope they will. So a lot of building and listening goes into each design.

I hesitate to offer my current projects because I am not sure if they will pan out just yet. That said, I hope to have a model based on multi channel Mercury technology in a 50-watt platform ready in a year or so - who knows, it may evolve into a bass amp - so I don't want to say too much!

VTV: *The boutique guitar amp business is getting a bit crowded these days. What do you think sets Carr amps apart from the other builders?*

SC: One early decision that has served us very well is to learn from the great designs of the past but not to copy them. I believe when people think of Carr Amplifiers they think of our amps as unique. Our amps are new

tools for creating the tones of the future, extending our sonic traditions without being bound to them.

More concretely, we are using cutting edge components and laborious construction techniques few companies are willing to invest in. Finally, we spend a great deal of time on the aesthetics of each model. I believe they should be as pleasing to look at as they are to play.

Mini-Review of a Carr Rambler Amp by CK

For a number of years, I played in a six-piece jump-blues band in the Mendocino and Lake County, California area called the Blues Factor. The venues in this area were varied, but most had small stages and poor acoustics. I was searching for a versatile amp

that had exceptional tone, was light, sounded good and could get loud when necessary. I tried a number of old Fender amps including a Black-Faced 1969 Pro-Reverb Fender, Deluxe Reverbs, Mesa Boogies and a few others. They all did their thing well, but I was looking for something different.

The Carr Rambler is a 28 watt self-bias PP 6L6 amp that converts to a 14 watt triode amp with the flick of a switch. There is also an excellent reverb and a real tube-based tremolo circuit for added sweetness. The amp is completely hand-assembled and uses point-to-point wiring throughout. The amp also uses no electrolytics in the

power supply. Instead, it has large Solen film caps to improve sonics and long-term reliability.

When I brought the Rambler to a band rehearsal, everyone in the band loved the tone, even our female lead vocalist! I play a custom Strat with Van Zandt Blues pickups as well as a Guild Starfire IV. These guitars both sounded musical and tuneful in the Rambler. The Rambler comes standard with a Kingpin 60 (Eminence) 12 inch speaker as well as other speaker combinations.

The Rambler is a versatile, light and great sounding amp that can rock out, play sweet blues leads, smooth jazz chords and just about everything in between. Sell your Deluxe Reverb! The Rambler can do what it does and more!