

the ToneQuest Report™

The Player's Guide to Ultimate Tone

The Two Fifty Nine



We always maintain a steady flow of gear arriving for review, but sometimes we also employ a fascinating if time-consuming research strategy that involves logging onto eBay, picking a broad category such as "guitar amplifiers," and settling in for as long as it takes

to patiently scroll through every page of listings. Yeah, that's often 50 pages or more, but since we can't possibly think of all the items that might interest us and search for them by name, it's far more revealing and productive to just hunker down and scroll. Rarely do we fail to find something intriguing that would have otherwise been missed, and such was the case on a morning in August when we stumbled on a listing for a 1959 tweed Deluxe. Were we looking for a tweed Deluxe? Nope. Wouldn't have crossed our mind at the time.... We had already reviewed 5E3 reproductions from Fender, Clark and Louis Electric within the past 3 years,



and we have frequently referenced our 1958 Tremolux as being our desert island #1. Isn't a Tremolux just a tweed Deluxe with tremolo in a bigger box? No... not even close. That would be like saying you wanted to date a blonde – any blonde. For the record,

our fixed bias Tremolux possesses a cleaner tone with a bigger, booming voice created by the taller Pro cabinet. The Two Fifty Nine is a completely different animal....

Sporting a February 1959 date code on the tube chart, the '59 had been listed by a seller in Arkansas who turned out to be *Tut Campbell*, formerly a well-known guitar dealer in Atlanta. Still buying and selling gear, Campbell had described the Deluxe as being in original condition with the exception of a replace output transformer – a big old mono block Stancor dating to 1957. Given the otherwise original condition of the Deluxe, which included

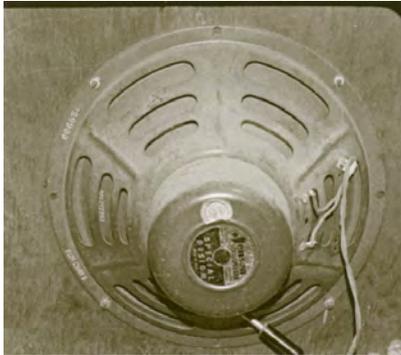
the Jensen P12R, we made Campbell a "best off" below his asking price and scored the amp for \$1,850 shipped. We wouldn't say we stole the Deluxe, but it seemed a fair price of admission for the opportunity to experience and explore still another rare classic and supremely worthy piece of Fender history on your behalf.

The Deluxe arrived with the big Stancor dangling from the chassis despite Campbell's careful packaging. Wasn't his fault, really – in a feeble effort to avoid any additional holes being drilled in the chassis, the fellow who installed the Stancor in the '60s had merely tightened set screws over the small tabs at the base of the heavy tranny, which was designed to be mounted upright – not hanging upside down in a guitar amplifier. Of more concern was the fact that while the amp was lighting up, there was no sound.... Well, we've been here before, so we made a call to God's Country and the Columbus, Indiana domicile of *Terry Dobbs* – Mr. Valco to you. We had already set aside a spare output transformer (Lenco, McHenry, IL) that had been the original replacement installed in our '58 Tremolux when we first received it, replaced with a **Mercury Magnetics** for our June '07 review article. Mr. Valco cheerfully answered his phone and as we explained the situation with the Deluxe he agreed to walk us through the installation of the new replacement – a simple process involving four lead wires being connected to the rectifier and output tube sockets, and the speaker jack. As long as you put the correct wires in the right place, a piece of cake, and we had the new tranny in within 10 minutes. Pilot lamp and all tubes glowing, still no sound.... Valco patiently guided us through a series of diagnostics with the multi-meter and the Deluxe was running on all cylinders, pumping 380 volts. Stumped, and with the hour growing late, we called it a day. Leaving the mysteriously neutered Deluxe chassis on the bench until tomorrow.

Morning came with a whining voice delivering a plaintive wake up call – "It's got to be something stupid and simple...." Inspired by a huge steaming mug of Jamaican High Mountain meth,

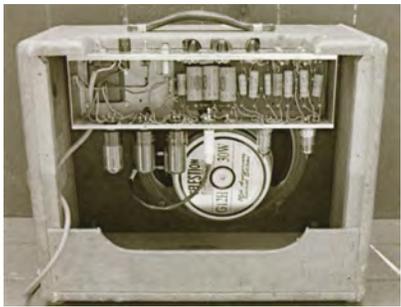


we sat back down at the bench, tilted the innards of the Deluxe chassis forward beneath a bright halogen desk lamp and peered in for answers. We began slowly examining the chassis in sections, looking for broken or dull solder joints, loose or broken wires, while gently pushing and prodding wires and connections with the eraser tip of a #2 pencil as we had seen Jeff Bakos do so often at his bench. After ten minutes or so we were about to give up, when we turned our attention to several places where the circuit was grounded to the chassis adjacent to the volume and tone pots, and damned if a solder joint for one of the uninsulated ground wires hadn't separated from the chassis. No ground, no sound, and as soon as we had restored the solder joint the Two Fifty Nine arose from the dead with a mighty A major roar.



The amp was indeed remarkably well-preserved in all respects, with the typical amber patina of old tweed. The burnished chrome control panel remained bright and clean with no corrosion, the original handle remained intact, and a couple of small ciggie burns on the

edge of the cabinet added a stamp of historic legitimacy to the Deluxe's pedigree. The top half of the Jensen's frame was coated in a fine film of red clay dust from the Delta, and while the cone was in remarkably good shape with no tears, an audible voice coil rub called for a recone. We would send the speaker to Tom Colvin's Speaker Workshop in Ft. Wayne, Indiana, requesting that he leave the original unbroken solder joints for the speaker wires intact if possible.



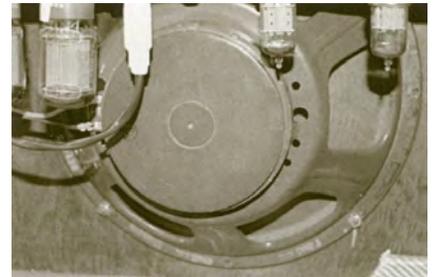
Meanwhile the first order of business was to listen to an assortment of NOS tubes from our stash, and audition no less than a half dozen speakers. Different sets of power tubes and individual preamp tubes will sound surprisingly different, so

we started out with a matched pair of NOS RCA 6V6s, a GE 5Y3 rectifier, and an RCA 12AX7 and 12AY7. From there we subbed in a dozen different RCA, Amperex, Tesla and GE 12AX7s, noting varying levels of brightness, warmth and intensity among them all. For an edgier, more aggressive voice, the GEs and Amperex typically deliver the goods, while RCAs produce a slightly warmer, richer, fuller tone. We also experimented with a 12AT7 and 12AX7 in place of the lower gain 12AY7, and while those tubes ramp up gain and distortion faster and with more intensity than the 12AY7, they seemed like overkill for us. Our Deluxe possesses a tone of gain using the stock 12AY7.

Rather than repeatedly reloading the Deluxe with different

speakers, we used a Bob Burt 1x12 cabinet built from 100-year-old pine for our speaker tests. The original Jensen had never been pulled from our amp, but multiple speaker replacements in an old Fender inevitably cause the speaker mounting screws to loosen in the baffleboard, making speaker swaps unnecessarily clumsy and complicated. When we do run into loose mounting screws, we simply run a few small drops of *Super Glue* around the base of the screw and surrounding wood. Allow to dry and your screws will stay put provided that you don't torque the nuts on the mounting screws like an idiot with a socket wrench. Don't be that guy.

We tested a range of speakers that included a Celestion G12H 70th Anniversary, Colvin-reconed '64 Jensen C12N, Eminence Wizard, Private Jack, Alnico Red Fang, Teas Heat, Screaming Eagle, Red, White & Blues, and Warehouse Green Beret, Veteran 30, Alnico Blackhawk and Alnico Black & Blue. The Alnico speakers generally produce a tighter, smoother, slightly more compressed tone, with a variable emphasis on upper mid-range and treble frequencies, while the speakers with ceramic magnets possess a wider, more open sound. Higher power ratings of 75W-100W offered by the Red, White & Blues, Screaming Eagle and Warehouse Blackhawk typically translate into more graceful handling of bass frequencies, and in a 20 watt Deluxe, zero speaker distortion, for a clean, powerful voice.



Let's cut to the chase with speaker evaluations, shall we? It has become clear to us that even after reviewing a dozen speakers in as much detail as mere words allow in a single article, many of you remain uncertain about which speaker to choose.

No kidding. We would absolutely love to hand you a single magic bullet when it comes to speaker swaps, but here's the dirty little secret about choosing speakers.... The overall character of the amp you will be installing your new speaker in is critical, and to some extent, the type of guitars and pickups you play most often are important, too. Tailoring your sound with the unique gear you play is not a one-size fits-all proposition – you have to invest some thought into the process. Are you going for a classic "scooped" American Fendery tone, or something more British, with a bit of an aggressive edge and upper midrange voice? Are you playing guitars with single coil pickups or humbuckers? Is there a specific, signature tone you are searching for, or are you playing a wide variety of musical styles that requires a broader range of tones? Do you like the more open sound of speakers





with ceramic magnets, or the smoother compression of Alnico? What are you not hearing from your amp and the speaker that's in it now? Do you want a brighter tone, darker, better bass response, or fuller, more prominent mids? Do you want to really drive the speaker and hear it contributing to the overdriven sound

of your amp, or do you want a big, clean tone with no speaker distortion in the mix? The truth is, if you don't know what you want, you are far less likely to get it. On the other hand, nothing is accomplished with paralysis by analysis. To be perfectly honest, there are lots of speakers made by Celestion, Eminence, Warehouse and, if you can wait long enough for them to break in, Jensen, that we could and would be perfectly happy with, but we would also choose them carefully, taking into account all the factors mentioned above. After a couple of days spent swapping speakers, we ultimately concluded that we preferred the '64 C12N for a classic tweed Deluxe tone, and a broken-in Celestion G12H 70th Anniversary for the most mind-altering 18 watt Marshall tone we have ever heard. Seriously. More on that in a minute....

Having split more than a few hairs with our speaker swaps, it was time to start picking nits off of gnats with some output transformer evaluations. We first contacted Dave Allen of Allen Amplification, who also stocks Heyboer transformers built to his specs. We found a variety of appropriate output transformers on Allen's site that offered subtle variations on a stock original Deluxe OT, and we asked Dave to describe the TO26 model we wished to try in the Deluxe:



"The TO26 was intended as a hot rodding upgrade to a stock Deluxe Reverb OT. While maintaining the stock 3-1/8" mounting centers, its fat stack of hotter core steel and multi-tap secondary make it a good choice for builders wanting to maximize

the performance of a pair of 6V6s and who may also want to push the envelope with 6L6/5881s while still being able to clear the speaker in a stock cabinet. There are physical limitations in small amps, so its short low profile is welcome. The orientation of the laminations is also good for low hum pick up from the power transformer. I found that an OT mounted the tall way (like my TO30D) picks up considerably more hum simply due to its orientation to the power transformer, so, shoe-horning a 'tallish' OT into your amp may cause it to pick up hum from the power transformer – not much of an upgrade.

"The TO26's 7K to 8 or 16 ohm rating makes it ideal for a pair of 6V6s as well as 3,500 ohm to 4 or 8 rating for 6L6/5881s. Notice you always have an 8 ohm option with both types of power tubes. An impedance switch could be wired (I use a blackface grounding switch) as a power tube type selector for an 8 ohm speaker to go between 6V6s and 6L6s. The TO26 will typically give slightly more output with 6V6s due to its more efficient low-loss core steel and will keep the bass clean longer for more perceived clean headroom. As it takes the most watts to reproduce the bass, you notice distortion there first, and since Fender-type amps are so bass heavy, you can quickly hit the wall with headroom, so a noticeable increase in clean bass response certainly feels like a more powerful amp with the TO26. It is kind of like you installed a new speaker with a larger ceramic magnet that is more efficient than the old speaker. The amp is a little louder and the bass a little tighter or cleaner.

"There seem to be a lot of 6L6-based 5E3 amps out there now to get a little clean headroom from a circuit normally not known for much of that. The TO26 is a good choice for that type of amp as it will fit typical available chassis and cabinets. It has extra long 12" topcoat leads ready to strip and solder. I would reckon it would handle up to about 30 watts before starting to saturate and compress – plenty of cathode-biased 6L6s. I find that the Heyboer paper stick-wound and interleaved output transformers with premium core steel and heavy core stacks have typically better clarity or definition than 'stock' OTs. Call it fidelity or whatever you want – just clearer distorted and complex tones and better separation of notes in chords, *etc.* I use the TO26 in the Allen Sweet Spot, Accomplice Jr. and Hot Fudge with Nuts amps with excellent results. All of these amps can use either 6V6 or 6L6 power tubes. You know how a 5F6-A or Super Reverb has that huge 4 bolt OT for a pair of 6L6s to get the maximum clean bottom end? That is sort of what the TO26's OT is to a pair of 6V6s. It just doesn't even come close to saturating."

When we informed Dave that we planned to run the Deluxe with 6L6/5881 power tubes as well as 6V6s, he recommended that we try the TO26 since it had been specifically designed for such applications. He also sent a smaller TO20 transformer, described as being designed with a wider 1-1/4" lamination "fat stack" that provides 60% additional core mass than typical 3/4" stack units for improved performance. The TO20 is a direct replacement for Blues Jr. and Princeton Reverb amps, and also suitable for dual EL-84 amps with an 8 ohm load.



Mr. Valco also sent us a replacement 5E3 output transformer he had bought on sale from Clark Amplification a few years ago made for Mike Clark by Magnetics Components in Schiller Park, IL – a company that has been producing transformers since 1943, having been the primary supplier for Valco and various Gibson amps in the '50s and '60s. A call to the company revealed that

the transformer Valco sent was essentially their replacement for a Deluxe Reverb, model #40-18002 without bell ends per Clark's request. We also learned that the company offers a complete range of *Classic Tone* vintage power and output transformers, including a reverse-engineered clone of a '55 Triad 5E3 output tranny, model #18022.

We also contacted Paul Patronete at **Mercury** and requested a **ToneClone** "brown Deluxe" output transformer, since Larry Cragg had provided them with specific measurements from original OT in Neil's '61 tweed Deluxe, confirming that it was indeed a '61-'62 brown Deluxe tranny. With a total of 6 output transformers to listen to, we took the Deluxe to Jeff Bakos, who set up a rig on his bench that enabled us to clip in each transformer and very quickly switch back and forth between them as we played a guitar through the amp. Are we having fun yet? Here's what we heard:



Lenco – An excellent authentic "vintage" vibe for those that prefer the classic, if somewhat murkier sound of a tweed amp being pushed, lots of sag in the low end and a jangly pop in the top. And "old," rather "lo-fi" sound indicative of the '50s era amps.



Magnetics Components Clark Deluxe 18002 – Similar to the Lenco, but stronger and more robust, with a prominent growling character and voice. Thick, wooly and willin' with better treble presence and clear string definition than the Lenco, yet an entirely "vintage" character. This tranny is comparable

to those found in Deluxe amps from the brown era through silverface. Excellent power, punchy and fat with exceptional clarity and tone.



Magnetic Components 5E3 Clone – Percussive and dynamic with a faster attack response than the Clark/Deluxe Reverb version, this transformer was reverse-engineered from an original '55 Deluxe OT. IT imparts an intense, throaty tweed character with enhanced mid and treble presence, remarkable clarity, and an authentic vintage '50s vocal tone with softer bass response and slightly less volume and power than the Deluxe 18002.



chunky rhythms.

Allen/Heyboer TO20 – An interesting variation with a much more modern, percussive dynamic character. The sound was not as heavy and imposing in the vintage style, and with this transformer the Deluxe reminded us of the more refined sound of a Fender Princeton, with excellent dynamic punch for slide and



Allen/Heyboer TO26 – As advertised, the low end held up loud and proud with very little sag and an audibly higher threshold of clean headroom, although beyond 6 on the volume control the Deluxe was still holding nothing back. Overall, this transformer imparts a cleaner, high fidelity tone

with more clarity and stout bass response than a typical stock 5E3 transformer. An excellent choice for enhanced low-end and maximum volume.



Mercury Magnetics brown Deluxe – Immediately recognizable, the **Mercury** displayed a trademark sound that is smooth, exceptionally musical, warm and balanced. Sounding more "high fidelity" than the Lemco or Magnetic Components transformers, but still seductively unruly enough to get yer

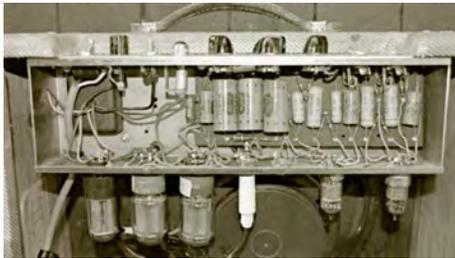
ya-ya's out. Sweet, rich, detailed and sticky.

Now, you may be wondering why we would bother to audition so many output transformers.... How much difference can it make? Well, forty-odd years ago when someone rigged that old Stancor tranny in the Deluxe, the only choice available to most repair shops was whatever was on hand in the scrap pile. Today we can shape the tone and dynamic response of an amp with a variety of "vintage" or more modern, custom transformers that allow us to recapture the original sound and feel of the amp, or



improve upon the original design. Why did Cesar Diaz install output transformers for a Twin Reverb in Stevie's Super Reverb amps, and Bassman transformers in his Vibroverbs? Because the first thing that chokes and overwhelms a smaller output transformer are the bass frequencies, and Cesar wanted Stevie's amps to produce a rock-solid, thundering low end that could handle his massive wound strings. The tone we're celebrating with our '59 Deluxe is quite the opposite.... The raucous sound of the amp teetering on the edge is the key to it's exploding tone, but if you wanted to go in the opposite direction with more headroom and a tighter low end, transformers like the TO26 have been specifically designed for that purpose. We once

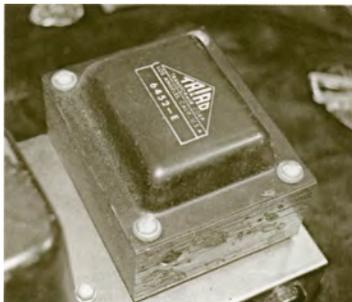
replaced the output transformer in our Pro reverb with a bigger **Mercury ToneClone** Bassman, and the Pro gained a tone of clean headroom and unyielding bottom. Wanna make it even harder still? Use a plug-in diode rectifier in place of the 5AR4 rectifier tube. No saggy britches now. As with so many choices we make in the *Quest* for tone, the final decision comes down to your mission and individual taste, and Jeff agreed that between the Heyboer TO26, both Magnetic Components trannies and the **Mercury** brown Deluxe, the question wasn't which one was "best" – all four were exceptional, but different. Some players would prefer one over another for different reasons described here, but all of them represent stellar examples of just how far we've come since the day that old Stancor tranny was used to put the Two Fifty Nine back into service.



One last detail needed to be addressed.... Could we safely run the Deluxe with 5881s or 6L6s if we preferred that sound over 6V6s? Once again, we asked the

president Mr. Valco for some Hoosier insight:

“The impedance mismatch in this particular amp using the 6L6 is really not a big concern, it won't hurt the amp and will either sound good or it won't. The 6L6s draw 1.8 amps and two 6V6s draw 0.9 amp, so using the 6L6s will add about 1 amp more current draw that the power transformer needs to supply from



the 6.3 volt heater windings. On some small 6V6 amps, using 6L6s can and does cause the power transformer to run hotter because more current equates to more heat. The concern is that the power transformer in the Deluxe, not being a large one to start with, has the extra 1 amp of heater current capacity to safely use

the 6L6s. One way to determine if the power transformer is really stressed out with the 6L6s is to measure the AC heater voltage on pins 2 and 7 on the power tube sockets (or on the pilot lamp) and see if the AC voltage drops significantly from the reading using 6V6s versus 6L6s. It should be a bit over 6.3 volts AC with the 6V6 anyway (since the wall voltage is higher these days than in the early '60s) and with the 6L6s you sure don't want to see a large drop in voltage below 6.3 volts AC. If there is a large drop it means the transformer is having trouble supplying enough current for the 6L6 heaters if given enough time with the 6L6s could damage the power transformer. If the drop is only a few 10th of a volt, and doesn't go below 6.3 AC, then it would indicate that the transformer is supplying the demand for the heater current and should be OK. Most Fender amps used power transformers that could handle some extra current demand.”

And now we arrive at the moment of truth. We've been steadily reeling in a parade of new and classic amps for review in these pages for 12 years now this month – Marshall, Fender, Magnatone, Hiwatt, Vox, Valco, Silvertone, Ampeg, Gibson, Gretsch, Mesa Boogie, Park, Supro, Dickerson, Traynor, Budda, Western Auto, Standel, Dumble, Cornell, Clark, Crate, Divided by 132, Reeves, Bad Cat, Gabriel, Fuchs, Koch, Star, Category 5, 65 Amps, Balls, Bakos, Callaham, Blankenship, Reinhardt, Grammatico, Siegmund, Chicago Blues Box, Roccaforte, Headstrong, Rivera, Mad Professor, Talos, Maven Peal, Reverend, BC Audio, Savage, Goodsell, Fargen, Carol-Ann, DST, Two Rock, Germino, Matchless, Louis Electric, Swart, Demeter, Juke, Aiken, Bluetron, DeArmond, Carr, Victoria, and Dr. Z, with more coming. Lots of amplifiers, multiple models from the same builders, and among the foremost classics – Fender, Marshall, Vox, Hiwatt, Gibson, Ampeg and the entire Valco catalog, we have acquired, optimized and restored dozens of amps considered to be among the most desirable vintage models ever built. In the 20 watt wheelhouse occupied by the Two Fifty Nine, it has no equal by a mile. Game over.



After a lot of back and forth testing with different sets of output tubes, we became hooked on the thundering sound produced by a pair of Philips small-bottle 6L6WGBs. Thanks to Larry Pogreba's talent for scavenging rare tubes (in Montana, no less), we are flush with several outstanding and stout pairs of RCA 6L6s, but the brighter Philips really lit up the Deluxe with a fresh and lively attitude that mirrors the bounce of a newer amp. With the '64 Jensen C12N loaded, the Deluxe spookily nails the tones of Neil Young's rig on Ragged Glory – a “studio” recording cut live with the Deluxe and Old Black in a barn on Young's ranch with Crazy Horse. With the volume backed off to 4-5 a bluesy jangle emerges anchored by solid low end, rich midrange, the sweetest treble tones imaginable, and variable levels of sustain and edgy distortion that can be controlled both by the volume on the guitar and pick attack. The Deluxe does not discriminate between single coils or humbuckers, ravaging both with equal fervor, and the responsive dynamic character of this amp simply is not of this world. Rotating the single tone control sharpens treble without dumping lows or mids, while also subtly increasing gain, as if you were using a boost pedal. A “Y” cord plugged into the Instrument and Microphone inputs enables the two channels to be mixed with great effect. As Neil Young described, bringing the mic input volume up with the instrument volume set between



6-8 gradually deepens the tone while slowly igniting an intense explosion of thicker second order harmonics and distortion as the dynamic character of the amp softens. Pushing the Instrument volume level up into the 8-12 range brings the volume up to a perceived level that exceeds 20 watts, while provoking an angry, pissed-off cascade of astonishingly rich musical distortion as the notes swerve into controlled harmonic feedback.

Switching from the Jensen to the Celestion transforms the Deluxe into the most stunningly toneful 20 watt Marshall you could possibly imagine. To be honest, you probably can't imagine it, because we have never heard anything like this ourselves, even after owning a couple of vintage Marshall PA20s, a rare Lead & Bass head and 1x12 cabinet, and a Balls 2x12 18 watt. We could easily live with either speaker, and the Deluxe also just kills pushing our 8 ohm 4x12 pinstripe cabinet.



For those of you who appreciate a somewhat tamer vibe, we can assure you that the Deluxe loaded with a fine pair of 6V6s is equally mind-altering. The overall sound is a wee bit smaller in girth and less imposing, yet abundantly overflowing with vivid harmonic depth,

a supremely touch-sensitive response, and brilliant combination of fidelity, clarity and bloom. Compared to a black or silverface Deluxe Reverb, the '59 presents a more musically complex soundstage, less harsh, stiff and linear, and it lacks both the sharper treble of a blackface amp, and the scooped midrange character. The tone is rounder and meatier, the treble sweeter and less dominant, with an enhanced 3-D image.



Now, if you're the type that skeptically requires a qualifier to add a stamp of legitimacy to such an over-the-top review, here it is, *Mr. Been There-Done That....*

The Deluxe doesn't and won't spew big clean tones at stage volume. Our '58 Tremolux produces a cleaner tone with a higher threshold of clean headroom by far at comparable volume levels, and the taller tweed cabinet encourages a stronger, cleaner resonant bass and low mid response. The Tremolux is also equipped with a **Mercury ToneClone** Tremolux output transformer, which creates a tone that is less wooly, raucous and indistinct.

The busted-up sound of the Tremolux above 5-6 is gloriously righteous indeed, but with more clarity and less provocative intensity than the Deluxe. Taken in context, what we're suggesting here is that in our experience, the Deluxe has no equal as both a Fender and Marshall style 20 watt rocker (depending on speaker selection), and we'll add "blues" to that description equipped with 6V6s and the Jensen C12N. During our 2-month test period, we also routinely used our Lee Jackson Mr. Springgy reverb, Analogman-modded Boss DD3 digital delay, and a very cool, versatile (and cheap) Flip tube tremolo pedal reviewed here. Can a modern replica of the 5E3 Deluxe deliver the same inspiring tones as the Two Fifty Nine? The closest thing we've heard is the Louis Electric "Buster," but no, magical happy accidents like this Deluxe can't be reproduced today – and that is as it should and shall always be. *Quest forth....*

Resources:

www.allenamps.com, 589-485-6423

www.magneticcomponents.net, 847-671-0633

www.mercurymagnetics.com, 818-998-7791 x105

Terry Dobbs: www.valcoamp.com, 812-342-6684



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