

The ToneQuest Report, Sept. 2000: Andy Marshall & THD Electronics, Ltd.

Andy Marshall was one of the first amp designers and builders to recreate the vaunted tweed Bassman, and his Hotplate attenuators are now widely considered to be the gold standard among players who know...If there was a professional society for Tonefreaks, Andy would easily qualify as a founding member: In future issues, Todd Sharp will review many of THD's current products, and Andy will be a regular contributor on one of our favorite subjects – great bargain amps – beginning with the Supro Thunderbolt.

TQR: Andy, how did you get started dabbling with amps and electronics? Were you a guitar player first?

Yes, I was in a preparatory program at the Peabody Conservatory in Baltimore when I was 6 and they determined that I was unquestionable suited to play the slide trombone! I wanted to play the guitar, and my father is one of the best, most natural musicians that I've ever known – Truly an astounding jazz-standards player. When I decided that guitar was really it for me, I wanted an electric guitar and my father said he'd buy me an acoustic, but if I wanted an electric I'd have to buy it myself – difficult for a 6 year old. My father had taught me how to solder, and one of my brothers (Stephen St. Croix, now on of the editors of Mix Magazine) was making color organs at the time – remember those things in the 60's where you plugged lamps and your speakers into it and it made all the lamps blink in time with the music? I soldered a bunch of those to make enough money to buy my first electric guitar. I couldn't afford an amp, so I plugged it into the stereo, which sounded like crap, so with my father's help I built my own amp. I guess I was about 7 at that time. I found an old Stromberg-Carlson mono hi-fi amp with two 6V6's, a 5Y3 and two 12AX7's. Now, that sure sounds like a tweed Deluxe to me. I converted that old amp to sort of a blackface Deluxe circuit without reverb. We had a copy of Jack Darr's book *Electric Guitar Amplifier Repair*. It was printed in '63 or something like that, and it had schematics for some old Fenders in it. Piece by piece I converted the circuit of the Stromberg, listening to it every time I changed something, over and over again. So in addition to it being a lot of fun, I began to learn what the circuit does sonically. I did that sort of thing repeatedly. Later I bought a couple of amps and when they didn't do what I wanted them to I'd modify them, but I never considered doing it for a living.

TQR: That's quite a story for a 7 year old.

We had a machine shop in the basement – my father designed his own medical equipment and he had a couple of patents, so we were encouraged to build things, and we had a lot of what we needed – pots, transformers, milling machines, resistors, transistors... I guess a lot of kids are told “You can't do that, don't try this, you'll fail,” etc., but I was never told anything like that. I was told, “Don't blow yourself up, electrocute yourself, or get your arm caught in a lathe,” and I was shown how not to seriously hurt myself, and I was encouraged to pursue my ideas, thoughts, and dreams.

TQR: Were you actively playing guitar as you were growing up as well?

Yes, all the time. I was in and out of lots of bands in high school and junior high. One of my junior-high bands had a song on the soundtrack of John Water's film "Desperate Living!" I ended up in university engineering in a recording studio, and a lot of guys would come in to record and their amps sounded so terrible that I'd say, "Damn, I can't record that," and they would ask, "Well, can't you fix it in the mix?" Well, of course you can't fix it in the mix, and I developed a lot of experience fixing those amps. By then I'd played in Top 40 bands, did lots of session work, engineering and producing, and when I graduated from college I didn't really know what I wanted to do – certainly not get a *job*. I did a stint as the software manager for a small local Seattle software company (not THAT one, of course.) So after considering a lot of things I decided to build guitar amps.

TQR: Bravo. You were doing something you loved to do.

One of them, but there are a lot of things I enjoy doing that interest me. I'm not a monomaniac – I don't live for this. This happens to be what I make my living at, but I try not to be too myopic about it. In 1985 I came off the road with a Top 40 band and went looking for something better than my 61 Blonde Bassman, and I failed to find anything. Nothing I could find sounded as good as my Bassman. I played a Jim Kelly amp that was in the neighborhood, but it wasn't exactly me, and I thought, "if no one is making an amp that sounds as good as a '61 Bassman, something's wrong." That was the impetus that got me started, but I didn't want to start at the low or middle range – who wants to take on Hartley Peavey or Bill Schultz at Fender? I certainly didn't! I looked up at the top end and Boogie was about the only thing out there – Dumble was doing his thing but he wasn't a force – Boogie actually was a force at the time, but I thought there was still some room at the top. I knew how to build a good amp – something I could believe in. But I also really respect people like Hartley Peavey for being able to put something on the market like the Classic 30. There is an art to building something that's really affordable. On the other end of the spectrum, if you can't make a \$10,000 amp that sounds good, there's something wrong with you. But making a \$3,000 amp that sounds really, really good – that's still a bit of a challenge. In 1985-86 I was looking at the most expensive amps in the world being \$1,800, and of course now, that's midrange.

TQR: But how much of an improvement can you really make on all of the classic designs that have come before? A lot has been tried, but it still seems that relatively few have withstood the test of time.

One of the things I did was take the variation out of it – the variation in manufacturing. Maybe you feel that the 1970 small-box JMP 50 is the best sounding amp for you. Fine, go get 6 of them. Put the same identically rated, matched tubes in them and you'll still have six dramatically different sounding amps.

TQR: Why? Plus or minus 20% specs?

Yes, because of the broad tolerance in parts, and to some extent it was the variation in the components. But the other issue, and this is a big one, is the fact that these amps were point-to-point wired. You take a great sounding blackface Deluxe, grab one of the wires coming from the board to the pot, move it a half an inch to the left and you've got a different sounding amp. Now, how are you going to make a consistent sounding amp like that? One way to do it, as Hiwatt did, is to use a jig – the wires were pre-bent before they ever put them in the chassis and they were very consistent. Howard Dumble does the same thing – you look inside a Dumble and it's a work of art. It's like an original Hiwatt, where everything is exactly a certain way. Short of that, you go with a circuit board. I don't buy the theory that circuit boards can't sound as good as point-to-point amps. If they're designed correctly they can sound every bit as good – it's the proximity of the traces to each other (or wires, in a point-to-point amp) and the proximity and orientation of the components to each other, and understanding the interaction that occurs due to capacitance and inductance will help you know how the amp is going to sound. A lot of experimentation is involved as well. If you can build a circuit board amplifier that sounds right, and you're using close enough tolerance parts – 1% - 5% - understanding which parts need to be tight tolerance and which don't, then they will all sound the same. That's what we tried to do. On the other hand, most people lay out circuit boards for convenience, and so that the machines can insert the parts easily. This is *my* theory, but there are people who will argue with me 'til the cows come home that I'm full of shit.

TQR: What did you first build at THD?

We started with the tweed Bassman. Because no one pays you to do R&D (and we would have had about 2 years of research and development prior to getting an amp out on the market) what do you do? Restorations and repairs. And we had so many requests to restore old Bassman amps that we thought, OK, maybe this is where we should start.

TQR: When was this?

Late '87. At that time Gerald Weber (Kendrick) was a customer of ours and he wanted to buy an amp. I told him, "Great, we're back-ordered about 9 months." He said, "Nine months? God, if the amp business is that good, maybe I should start building amps." At the time he had a meat wholesaling business, I believe. I asked him if he knew anything about electronics, and he said, "No, but how hard can it be to copy a Bassman like you did?" Then he started calling me every week or so asking me, "Where do you buy capacitors, where do you buy transformers? How do you know what kind of potentiometers to use? What's the difference between a power and an output transformer – can't you use the same thing for both?" I said, "Yeah, try it, go for it." He was always very nice, and he created Kendrick amps as a result of all of that dialogue.

TQR: How many reissue Bassman amps did you build?

Between '87 and '91 or '92, about 700.

TQR: What did they sell for?

\$1799 – something like that, then we started adding options. We did and still do things differently from other manufacturers. Among the things that we did...the circuit board material we used was twice as thick as everyone else's, and the copper plating was four times as thick to make the amp more reliable. What happens when you take piece of metal and bend it back and forth a lot? One of the reasons why circuit board amps fail or become noisy is because the board flexes over time, and copper becomes fatigued and crystallizes. Making our boards twice as thick helped, and having mounting screws every 2 inches reduced flex. I can take a typical Marshall reissue and flex it with my finger a 1/2 inch. In our amplifiers you can't flex the board a tenth of a millimeter.

TQR: It's a manufacturing cost issue, right?

Exactly. The empty circuit boards in our amps probably cost us \$22 rather than \$9...I wanted our customers to be required to do nothing but change the tubes in an amp during 30 years of heavy use.

TQR: So you built these 700 amps and what happened with THD at that point?

I've got Gerald barking up my tailpipe, Fender is doing reissues, Crate is doing tweed, and it seemed as if everybody with a soldering iron is building amps. Our biggest L.A. dealer, Make n' Music, had been selling 10-15 amps a month, and now in 1991-92 they were selling 2. When I asked them what happened, they said, well, perhaps everyone who wanted a \$2,000 Bassman has one – or at least the majority of them. So I asked our dealers, "What *can* you sell?" Their answer was, "If you could make a Plexi Marshall that sounds really right, you could sell the hell out of them." So I went to Andy Brauer's shop where they had dozens and dozens of Plexi Marshalls and JMPs and asked them if they had an absolute favorite 50W amp. "Oh, yeah" they said, but it belongs to one of our employees, Dave Friedman (now owner of Rack Systems in North Hollywood). It sounds like nothing we've ever heard. So I ultimately borrowed that amp, and I'd fly down every month to *Make n' Music* with Dave's amp and our prototype and we'd work on getting it right. Dave's Marshall was not 100% stock. It had either been changed a little bit or they had used some components that were slightly different at the factory, but it was basically a '69 small box JMP and it sounded pretty much like the tone on the first Van Halen album all on its own – just spectacular. We made a new circuit board based on what we learned and observed with that amp and sold the hell out of them. Over the next 5 years we built and sold 700 or so of those.

TQR: Can you describe what was so special about the sound of that amp you used for your prototype?

It had more musical character, and the harmonic overtones sounded like they just belonged with the note you were playing. You know, with some amps you can really hear minor and major thirds within the harmonic texture that's created. This one was like that, it just did it a little bit better, and I think we succeeded in accomplishing what we set out to do very well. Then we came out with the *THD Hot Plate* and all hell broke loose

because they are much more profitable to build than amps, and they're more affordable, so we shifted everyone to building *Hot Plates*. We were back ordered nine months with orders for years, and a couple of years ago we addressed that and now we're building a couple of hundred a month. We've figured out how to build things correctly and consistently, which was never really a problem – building *enough of them* was the problem. So having addressed those production issues, we can now go back to building amps.

TQR: What did you do to turn the corner on the back order problem?

I brought some consultants in and basically asked somebody with real production management experience how you do this. You have to be able to pay them, mind you...

TQR: Give us a simple explanation of what the Hot Plate does and why someone would want it.

It's a power attenuator that operates between the amp and the speaker, so you can set the amp for whatever level of distortion, dynamic compression, and dynamic response that you want, assuming that your amp can do that. If your amp does not distort the way you want – if it doesn't have the dynamic response you want, the Hot Plate won't help you get it. But assuming that you're essentially happy with the way your amp sounds, the Hot Plate will allow you to get that sound at a lower volume. I'd be lying if I said that you can't tell the difference, but down to -12dB of attenuation, which takes a 100W Marshall down to 7.5W, you'd be hard-pressed to tell the difference. Take it down to -16dB and it will sound a little flat.

TQR: So this is an effective solution to running a 50W amp on "3" with a Tube Screamer, which is always detectable and never really pleasing to hear, or believable...

Yes, you're using your output transformer, your output tubes – you're using a certain amount of power and throwing it away as heat. But it is reactive in the sense that the amp still thinks it's seeing a speaker. Secondly, we compensate for what's called the Fletcher-Munson Curve – the signature response curve that describes the response of the human ear. That is, the louder the sound, the more sensitive the ear is to treble and bass, and less sensitive to midrange. The quieter the sound, the less sensitive it is to treble and bass, which we assume happens because at lower volumes you're trying to hear a human voice. This is why you have a loudness control on your hi-fi. The loudness control brings up the treble and bass at lower volumes and the same thing occurs with the Hot Plate. Pretty simple.

TQR: The Hot Plate is manufactured to accommodate all of the most common speaker configurations in regard to the ohm load, correct?

Exactly – we make them in 5 different impedances, and part of the reason the Hot Plate sounds better is that every component in it – every capacitor, every resistor, every inductor is specified for the particular impedance of each unit. So, there is a 2Ω Hot

Plate for 4x10 Bassmans and Super Reverbs, a 2.7 for 3x10 Bandmasters, the Victoria 3X10 and the Fender Vibro-King, a 4Ω for Twins, piggyback Bassmans and Dual Showman amps, an 8Ω for full-stacks and Vox Ac-30s. People have asked us why we don't just make a switchable unit, but to do that would be so expensive that it would put them out of reach of most players. Most people can get by with one or perhaps two.

TQR: Let's talk about the Yellow Jackets.

Well, there's a lot more going on here than simply slamming an EL-84 power tube into what was a 6L6 or EL34 tube socket. In essence, these are not just adapters that move the pins around. We drop the plate voltage by 100 volts, so if your Twin has a plate voltage of 480, the EL-84 sees 380. We also drop the screen voltage 100 volts, and it's a consistent drop – we're not using resistors, we're using Zener diodes. There are 12 components inside the Yellow Jackets and there is a lot going on inside, including the generation of a lot of heat, which is why they're made of fiberglass.

TQR: What ever prompted you to do this? Seems like a crazy idea.

One of our employees was really fond of 6V6 amplifiers. There was a real problem getting good 6V6's for a while, and EL84's are in the right order of magnitude in terms of size and voltage and current to replace the 6V6. This employee asked me if we could just make an EL84 adapter for a 6V6 amp. So I started thinking about it, and we went through about 12 series of prototypes before we got it to work. Then we realized that we could do the same thing with 6L6 amps, and before we knew it, we had 4 different versions of the Yellow Jacket prior to developing the current design that works with everything but the 7591 tube (typically found in some Ampeg amps). Initially, I thought we might sell perhaps 20 a month, and even though we did this on a whim and haven't marketed them, they seem to have really taken off.

TQR: Can you describe the resulting improvement in tone that occurs with the Yellow Jackets?

It depends on the amp. In some amps, such as the Silverface Fender Princeton Reverb, the only real difference that you notice initially is that you get a bit more gain. On the other hand, you put them in a 50W Hiwatt, and the difference is night and day. Suddenly this barking thing that wants to eat your leg off acquires the smoothest, sweetest overdrive and touch-sensitive dynamic, like a spectacular vintage Vox AC15. To get that from a Hiwatt is really dramatic.

TQR: Are there any amps in particular that generate more inquiries about the Yellow Jackets?

Yes, the Fender Hot Rod series. People seem to like the amps, but they aren't thrilled with their dynamic response.

TQR: So you're building the Type "O" amplifier now at THD...where did the name come from?

"Type O" was a marketing decision. We got tired of the term "reissue," and in spite of the fact that it's essentially a Marshall Plexi, we didn't want to call it a Plexi anymore simply because of the association. Now, everybody jumps the channels of our Plexi and a Marshall Plexi. Why jumper the 2 channels? Because the bright channel is way too bright to use, and the normal channel is way too dull on our amp and the original Plexi. We've actually had people who were unfamiliar with the genre comment that they couldn't buy our amp because of their inherent characteristic in these amps. So to get around that we decided to build our amp internally jumpered. And since it didn't look like a Plexi and we wanted to get away from that image, we decided to call it a "Type O." The other part behind that was that we added a switch to enable the user to switch from a Reactive-Rectifier that was initially designed for our first Bassman – it feels like a tube rectifier – to a solid state rectifier. When we first produced the Bassman there were no 5AR4 rectifiers available anywhere, although someone was importing a Russian 5Y3 and re-labeling them 5AR4's, and they would last about 2 days, so we designed the reactive rectifier to address that supply problem.

TQR: May we assume that you consider yourself to be a committed Tonefreak...

Yes, for a number of reasons. I envision a sort of feed back loop...you have a musical idea in your mind, and if you practice enough you don't really need to think about what you're doing anymore – your fingers can pretty much do what your brain is thinking. But if the contour of the neck on your guitar isn't right for you – if the contour of the body isn't right, if the finish feels tacky and your arm is sticking to it, if the pickups don't respond dynamically the way you want them to, if the cord you're using to the amp is crappy, or if it's too good, if your speakers are harsh, or just wrong, if the tube sockets are dirty, if the pots are bad...if anything in that loop that comes back to your ear is not right, then you don't play as well because of it. My goal isn't *just* tone – my goal is making myself and the people who use our products to be able to express what they're feeling and what they're playing as well as they possibly can. Tone is an integral and critically important component in expressing yourself musically. I see it as a means to an end, and not as an end in itself. And a lot of what I'm talking about are things that the listener may not even notice. It's related to what I like to refer to as *feel*. You may not think you hear a difference – except that now, you're playing better. This is a problem I have with a lot of the tone-modeled amplifiers that I've played. A lot of them sound great – they've modeled the sound, but they haven't modeled the way you *get* the sound. Dynamically, you lose a lot because the amp isn't hearing all of the subtle things you can do with pick attack, for example. I don't think anything sounds as wonderful as a good guitar through a good guitar cord and a good amp. And it doesn't have to be a 100W Marshall – go get yourself a Maestro GA2 or even a Gibsonette is a cool little amp – 6V6's, but they're not push/pull, they're parallel – a very unusual design but a great sounding little amp.

TQR: Let's talk about the built-in Variac control you developed for The Type O.

It's not all that unique actually. The amp has multiple primaries on the transformer so it can be switched to the voltages of many different countries, and because of the way the switches work out, there is also a setting on the switch for 140 volts. Now, if you set the amp to "see" 140 volts but you only give it 120, it's very similar to setting it at 120 and giving it 105, so it's very similar to running a Variac. Some people claim that Variacs are dangerous to amplifiers, but it isn't the Variac that's dangerous, it's the hand on the Variac. An actual Variac is an adjustable transformer that, when it sees 120V it can be adjusted anywhere from zero to about 145V. In his first interview – the first big one I guess he did for *Guitar Player*, Eddie Van Halen said that to get that sound he ran his amp on a Variac and he turned it up to 140V. He later corrected himself and said that he set it at 95V. But by then a whole lot of people had already blown up their amps because what they did increases the voltage to the tubes, the filter caps – everything, and that usually results in something getting fried. Turning the voltage down just a bit – down to 105V – 95V, even down to 90V won't hurt anything, but it will reduce the power of the amp and it changes the bias setting a little bit. As the tubes cool down with lower voltages it gives the amp a little different sound. It's an educated guess that what the majority of what one is hearing using a Variac is the result of the output transformer not saturating. If you take a 100W amp and Variac it down, you're only going to get about 60W out of it, meaning you'll get somewhat more subtle harmonics out of it because when the tubes distort, they'll create much more complex harmonics than the output transformer would be capable of passing if it were distorting instead. Once again, this is educated guess, not gospel, and it's very subtle.

TQR: But why is this potentially important to me as a guitarist? It must be important, and significantly so, or you wouldn't have done it.

It's a different *feel* as much as a different *sound*. The amp can become more bouncy, more dynamic, and harmonics that don't quite catch at full voltage suddenly become more discernible because the output transformer isn't squishing them. Tubes are generating those harmonics all the time, but because you've lowered the amount of power you're putting into the transformer, more of the harmonics are getting through. Also, you're reducing speaker distortion to some extent, and speaker distortion tends to smear the notes and subtle harmonics.

TQR: Another unique feature of the Type O is the fact that it can be biased to run on so many different power and preamp tubes, ranging from 6L6, EL34, 5881, 6550, KT88, KT90, and KT100 power tubes to 12AX7, 12AT7, 12AU7, 12AY7 and 12AZ7 preamps. That really expands your ability to shape the tone of the amp, doesn't it?

Exactly, but again, not to detract from what we've done, almost any amp can use any of the 12AX7 series tubes. Not everybody talks about being able to use them, but you can run any of those in most amps with subtle differences. The thing that allows you to change output tubes at will is related to the screen and grid resistor values we use, the impedance curve of the primary side of the output transformer, and the very wide range of our bias controls. Part of the reason was to give people a pallet of options, and the

other reason was because from one year to the next, you can't always be sure about the availability of good tubes.

TQR: Is this concept something that could be applied to other amplifiers?

Yes, you can to some extent, but you have to be very careful with that because different tubes draw different levels of current which could damage the original power transformer – there is some flexibility, but not a lot. And I'm not sure what the point would be in changing the power transformer in an amp that you already like to accommodate a range of different output tubes.

TQR: Andy, what's the lead time on acquiring a Type O and how much do they cost?

The current wait is 6-8 months. The head alone is \$1999.00 and on the high-end the V-front 4X10 is \$2815.00. We can also do custom coverings – we actually had a guy send us some skins to do 2 heads in green leather that looked amazing. We're also working very hard to get the wait down to 4-6 weeks.

TQR: Lifetime warranty?

No, it's 2 years – a lifetime warranty basically makes no sense because eventually we're all going to stop doing this. You can go the Dumble route and say that it's guaranteed from life but I'm the only one who can fix it, but then you could wait 2 years to get it fixed. If you talked to the few people who have had something break on one of our amps they would tell you that we've fixed things for free beyond the warranty, but a lifetime warranty is smoke and mirrors as far as I'm concerned.

TQR: When did you start building speakers?

We made our first and only speaker driver in 1988 and we'll never do that again – that was a horrible nightmare. Celestion now makes all of our speakers for us to their specs and we modify them. We weaken the magnets on some models, because as you've probably noticed, a lot of speakers sound really hard and cold when they are brand new and a couple of months down the road they sound a lot better. So we tried to figure out what happens to a speaker as it ages – the edge of the cone and the spider itself soften slightly, so we've developed a chemical process to accomplish that. It's really quite simple and it doesn't take long to do.

TQR: Which Celestions are you using?

Our Longhorn 12 is a Classic 80 and we love it. It's like a Vintage 30 but the bottom end isn't quite as woofy and the upper mid-range is clearer. Vintage 30's can get a little mushy when you hit them hard. The Longhorn 10 is a Celestion G10L35 – a spectacular sounding speaker – full, clear bottom end, sweet, clear highs, slightly scooped out midrange and none of that typical buzzy high end that people associate with Celestions. We also offer the Cotswold 10, which is a Celestion Vintage 10. By itself, I find this

speaker to be a little limited – not many highs and lows, but what they do offer is an incredibly dirty, British midrange that is very useful in combination with other speakers.

TQR: You don't dabble with Bulldogs at all?

No – I know people who love them, but I've never heard them in a situation where they really grabbed me, and talk about expensive – my God!

TQR: Let's not forget about the THD Reactive Rectifier...

We've emulated the resistance, capacitance, and inductance of a 5AR4, 5U4, or 5Y3 rectifier tube in a package using a solid state diode. It's a box 1" high, 1" wide and 2" long with 2 screws sticking out of it and 3 wires, and it mounts directly to the amp chassis and replaces a solid state rectifier, giving you the sag, or power supply compression that you get with a tube rectifier.

TQR: Well, the debate rages on about the effect on tone or lack thereof that different rectifier tubes can have on an amp. We've observed some noticeable differences in what occurs with Chinese rectifiers vs. American and Euro tubes. Any comment?

The fact that a Chinese 5AR4 will sound different than a U.S. or European 5AR4 is telling you one thing – the Chinese tube isn't really a 5AR4 – it may be labeled as such, but it is not. 5AR4 is a specification that dictates that the plate will be capable of handling this much current, it will have this impedance and this capacitance between the plate and the cathode. The cathode will draw this much current, it will have this much inductance in the filament, etc., etc. If the tube is made to that spec, it will sound the same, period. But there have been countless 5Y3's that somebody has labeled 5AR4's and they're not going to sound right at all. Lots and lots of 5U4's from China were also labeled 5AR4.

TQR: Back to the Reactive Rectifier – what do you hear from your customers after they install these?

Usually they are trying to solve a problem, like the guy who called yesterday who had bought a reissue Fender Vibroverb that had a solid state rectifier. He had read the article with Mark Baier in your publication and wanted to know about FREDS. Well, FREDS aren't going to give you sag – they will eliminate the switching of the diodes, but why eliminate something that you can't hear and that won't affect the sound? FREDS don't sag. If you want the sound of a tube rectifier get the Reactive Rectifier. It gives you more compression when you play harder, tends to sweeten things a little bit and makes the amp bounce a little better, sonically.

TQR: Andy, what type of amps prompts the most inquiries about the Reactive Rectifier?

A lot of Marshall 50W and 100W amps, actually. Guys that think they just sound too hard. Silver and blackface Twins, reissue amps, Peavey Classic 50's – all kinds of things.

TQR: Why did manufacturers choose silicon diodes in the first place?

Well, they will give you more power, and in some cases it may have simply been a matter of space in the chassis. If they wanted to add power...you'll notice a trend in Fender amps from the 40's through the 70's that every new model progressively became louder and louder.

TQR: They were trying to eliminate the very thing that so many layers covet in vintage Fender amps today – overdriven tone and distortion.

Can you imagine someone in 1958 playing a flame-top Les Paul, plugging it into a tweed Bassman and turning it up to 10? They'd have been arrested, I'm sure. We don't hear about many people doing that kind of thing.

TQR: what's ahead for THD?

A slew of smaller amplifiers in the 12W – 30W range. Probably a little 4W head. A number of different amplifiers in which you can buy the head and move it to a combo amp. We decided to do this because so many customers have bought a Plexi and later want to move the head into a combo, or perhaps go back and forth. Lots of other stuff – too many to mention – splitters for running multiple amps, different buffer products for Piezo pickups...by the way, all of those new low-powered amps I mentioned will have built-in Hot Plates. Possibly some new stereo amps with true stereo reverb and tremolo – full pan. They will be horrifically expensive because they will cost more than 2 separate amps, but nothing sounds quite like it...