



I've gotten over feeling like I need to be defensive about it, because I can explain it through my own experience so much better than anyone has ever been able to con-

vince me that there is a difference. There isn't. But component choice is *vital*. Every part, every wire, is a tone control, and it's easy to louse it up on a circuit board or point to point, and it's probably easier to louse it up on a circuit board. If it doesn't bloom – that's the magic – and if it doesn't have the bloom, why bother? If you build a reissue of a classic and put it up against the old one and it doesn't sound as good, that's what people are buying it for, so how can you overlook that? It may spec out the same on paper, but now we're back to the Celestion deal. Specs alone count for so little. Bloom doesn't show up on a scope, you know? I'm telling you – component selection is *super vital*, and you have to get that shit right. A circuit board can enable you to do amazing things that you can't do with point to point, because you can't get point to point to be consistent enough. You can get little interactive feedback loops in a printed circuit board that enable you to line up the harmonics just right, and they will always come out exactly right, but you can't do that with point to point. You'll get variations in point to point – “Oh, this is the magic one...”

TQR: Exactly – the magic Marshall, the magic Super...

Yeah, statistically, you could see it in the Fenders. All the ones I used to repair. There were the great Super Reverbs, the ordinary ones, and the doggy ones, right? You could work on them forever and never really change the inherent virtue of each one. The harmonics would line up on some of them so right, others would be pretty good but not magic, and others just sounded not so good all of the time.

TQR: Did you ever determine what was really behind that variation?

Yes, and I hate to tease you – I'm sounding like a bullshit artist, I know – but we did figure it out, and we came across it during the development of the prototypes for the Rectifier Series. We were trying to figure out why this one amp had harmonics that lined up so right when the others didn't, and we spent four months until we figured it out. Then it all made sense. Technically, it shouldn't make any difference, but it does. It's in the power supply, and that's all I can say for now.

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ANALOG • MAN

Analog Man is not your average gear freak. He has a degree in computer science and he worked in Japan for a year as a software engineer, where he was introduced to the vintage guitar market in Japan, which was still developing in the U.S. in the mid 80's. When he returned to the States, he began selling and collecting vintage guitars, which evolved into his interest in vintage effects. Mike has established an excellent reputation as an expert on guitar effects of all kinds. He sells many of the most highly regarded new effects being made today, and he is well-known for his work in modifying new and reissue effects to vintage specs, such as his Tube Screamer 808 and TS9 mods. His web site is filled with fascinating discussions of vintage effects, and the following interview is probably one you'll want to read twice.

TQR: When did you start selling guitars, Mike?

During the mid 80's here in the northeast. At that time, the export market to Japan was very strong, while the market in the U.S. hadn't really developed yet. It's my understanding that the major US vintage guitar dealer at the time would fax their stock list to Japanese dealers before they ever offered the guitars for sale over here. They would make deals with the Japanese dealers for lots of guitars at one time and ship them over.

TQR: Are you still interested in guitars today, or has your interest fully evolved into effects?

Oh, I probably have 20 or 30 guitars – nothing extremely rare – and when I get bored with a guitar, I'll sell it and acquire something else. I try to keep at least one very good example of every vintage effect that I can these days. That way I can keep them on hand for comparison or reference as needed. When I helped Foxrox develop the Captain Coconut, I lined up every vintage Univibe and Univibe clone ever made, and I hooked them up to a switching box so that I could listen to each one and evaluate them together.

TQR: What kind of amp do you use for that type of evaluation?

It depends on what I'm testing. I have a 1969 Marshall 100W that's the best for anything in the Hendrix realm, or any kind of fuzzes. I also have a blackface Deluxe Reverb that I like to use for things like Tube Screamers, because a lot of players use Tube Screamers with a Strat and a Fender amp that's sort of bright. I usually use one of those two amps for checking out pedals.

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TQR: What did you start out doing and how did your work with pedals evolve?



Well, the Tube Screamers really got me going, and they still keep me busy. I think I was the first person to do the TS 808 mods on later pedals, improving the sound with truly 100% TS 808 specs. There were actually a couple of Ibanez pedals that came before the TS 808 – the Overdrive and Overdrive II. The

Overdrive was really sort of a fuzzy overdrive/distortion, and the Overdrive II was a little less fuzzy, but I would consider it to be more of a distortion pedal than an overdrive. The Tube Screamer 808 was introduced in 1979, I believe, and that one has the classic sound and used one single dual op-amp chip. The other overdrive pedals I mentioned started out without any chips. They used several transistors, and then they went to two op-amp chips in the basic circuit that was used in all of the later models.

TQR: What makes the TS808 so highly prized?



It's a little smoother and less harsh than the later models. I guess they just got it really right with the first one, and everything they've done since just hasn't quite lived up to the original. The TS9 uses the same printed circuit board, but they changed a few components on it, most notably the chip, and the vintage sound of the TS808 is not quite there.

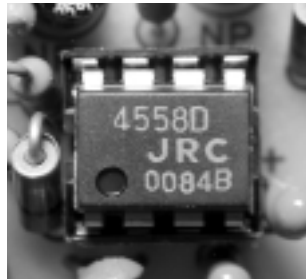
TQR: So regarding the TS808 mods that you do, players have a choice between the 808 or the 'brown' mod...

The brown option is still a 100% 808 circuit. The only difference is that I use carbon comp resistors for the brown version, which weren't used in the originals, and they warm up the tone of the pedal more than the standard 808.

TQR: So you won't have to back the tone control down so far to cut that harsh high end.

Yeah, some guys have to run that tone control way down to get that trashy high end out of the signal.

TQR: We were looking at several TS808 auctions on eBay today and we noticed that people were referring to the JRC4558D op-amp chip. Is that the TS808 chip?



Yes, that's the Japanese chip, but there was also a Malaysian 4558 chip used in the TS 808 that some people actually prefer. It was a Texas Instruments chip. The early TS9's also used the JRC Japanese chip, and they will almost

always have the black serial number sticker, as opposed to the silver label on the later pedals.

TQR: So that's why people refer to the 'black label' TS9.

Right, although on eBay, it's just as likely that somebody took a bottom plate off of an old compressor and put it on a reissue TS9. I've had dozens of supposedly original Tube Screamers that were sent to me for modification, and they were reissues on closer examination. More than half of them were from eBay, and a lot of people just don't know that they aren't originals, especially after they've passed through several hands.

TQR: We've also noticed that there are mod kits being sold for TS9's.

Since I started doing this, several people have begun selling kits. I do ship kits overseas because of the high cost of shipping



a pedal back and forth, but I also have had probably a dozen pedals here where

people bought

kits and installed them unsuccessfully.

Some of the workmanship is

unbelievable. It's not that difficult to pull a chip out of a board if you have the right tools, but you can also do a lot of damage with a Radio Shack soldering iron and a pair of pliers. I've seen it all (laughs).

TQR: Solder is not a connector...

Right, there needs to be something there to keep it together.

TQR: What do you use for the chips when you do your mods?

I use the JRC4558 chip. I bought thousands of them when I was over in Japan, so I have a good supply.

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TQR: What can you expect to hear from a modified TS9 compared to the original or reissues?

A beginning player may not notice anything if they are using a Gorilla amp and a cheap guitar. But if your playing has progressed to a point where there is a good interaction between you and your guitar, you'll notice that it sounds less like a pedal. It lets more of the natural character of the guitar through, more dynamics, and the subtleties of good guitar tone.

TQR: Harmonics...

Harmonics are a *huge* thing with effects pedals. I can tell in one second with a fuzz pedal whether it's good or not simply by scratching on the strings and listening to the harmonics that are produced. Some fuzzes are really flat, and you won't hear any harmonics at all. The thing about the Tube Screamer is that it should let all of the harmonics through. One thing that the Tube Screamer is really good for is live performances. People say they are mid-range heavy, and on stage you really need that midrange boost to cut through the mix.



TQR: If someone wanted to send you a TS9, what's the cost for your modification?

With the brown mod and shipping, it's \$50.00.

TQR: What should someone pay for an original TS808 or TS9, in your experience?

I can buy an original TS808 for \$300 and still make a profit on it because of the demand for them. With TS9's, you shouldn't pay more than \$200 for one.

TQR: Have you ever seen a Super Tube Screamer?

I have one here now, and they seem to have been distributed in Europe rather than the States.

TQR: How do they differ from the other models?

They have an additional active mid range tone circuit, and it's a really good sound. There was another Japanese domestic market version made in the mid 80's by Maxon called the ST01 that has the exact same circuit board as the Super Tube



Screamer, and you could probably find one much cheaper.

TQR: We bought a new TS7 which we reported on, and when we A/B'd it with a TS808 and a TS9, we didn't find that much difference – it was noticeable, but not huge...

I'm sure that the TS7's are quite consistent, but if you had, say, five TS 808's, you could find maybe three sounded significantly better than the TS7, one that was the same and another that didn't sound as good. The TS808's were not that consistent.

TQR: Was there a lot of variation with effects from different production runs?

There was a lot of variation in certain effects and less with others. If I open up a TS9, just by looking at the chip I can pretty much tell what it's going to sound like, and it's going to be consistent with other TS9's that have that particular chip. With a Fuzz Face, you can look at it all day, but until you plug it in, you won't know whether it will sound miraculous or totally flatulent. If just one of the two transistors is a little weak, it can make all of the difference in the world. It's such a simple circuit, that the two transistors are really crucial.

TQR: César Diaz has told us that to really do it right, he has to sort through every batch of germanium transistors he gets to find the good ones.



Exactly – I'm one of his dealers, and sometimes he won't even ship them until he has a really good batch of transistors. For example, I returned a batch of 27 transistors last week that were technically

the same part, but they were totally useless in a Fuzz Face circuit. They had much higher leakage than what I had been using, the gain was all over the place, and I just had to send them back.

TQR: How much variation is there in vintage Wahs? The discussion on Wahs that is on your web site is fascinating.

All Wahs have pretty much the exact same circuit. The main

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differences are in the inductors, of course, the capacitors, the two transistors, and the potentiometer makes a big difference. The pots that they used in the originals had a very unique taper

“Although Dynacoms are very good, the Ross is even better.”

to them. When you are actually using an old wah, like with Eric Clapton in *Cream* when he did that really fast rocking sound, you don't have to actually rock the pedal through it's entire travel with those old pots. There's a sweet spot in them, and you can't really clean those old pots once the conductive path becomes worn out.

TQR: What do you use as a replacement?

The Teese Rock Pot 2. They seem to last forever.

TQR: Do you sell parts for people who want to refurbish their own vintage wahs?

I used to sell everything from the inductor, to a replacement circuit board, a potentiometer, to a true bypass switch, which is a nice thing to do with a Wah, because they often tend to suck the high end from your tone when they're off. The reason is that it's basically adding a capacitor to ground, which rolls off high end. Some people don't mind, but for people who want a clean sound, the bypass switch is a good solution. The parts I sold from the Teese Real McCoy are no longer available on the aftermarket, unfortunately, since Geoffrey Teese has decided to only sell his parts in his Wahs.

TQR: Would installing a true bypass in a vintage wah devalue it?

I don't think so, but it wouldn't be a bad idea to keep the original switch.

TQR: Let's talk about Captain Coconut...

Dave Fox of Foxrox was the first person who actually came out with a clone of the Univibe, which were always very hard to find. So Dave took one and reversed engineered it, and he was selling them through *Guitar Player* magazine ads, and Bob Bradshaw at Custom Audio, but after awhile he stopped, and several other people came out with them. Dave wanted to get back into that, and he's also an expert on the Fuzz Face, since he was the first to reintroduce them when he worked with Crest Audio. He kept wondering why his paycheck from Crest also had something related to Dallas Music on it, which was the company that originally produced the Fuzz Face, and he found out that it was the same company. Anyway, he discovered that they had a bunch of old Trem Faces put away that didn't work,

so he fixed them and started selling them. Then he started reproducing Fuzz Faces with the silicon circuit. This was about the time that Dunlop started to sell Fuzz Faces without any prior rights to the name, so they reached an agreement that Dunlop would make the Fuzz Faces, and Crest would stick to the Pro Audio business. So that's how Dave Fox got into the Univibe and the Fuzz Face. Dave got into the Octavia because his company was working with people who ran Tycobrahe, the original manufacturer. They sent him the schematics for the Octavia, and a new old stock Octavia, so he was able to study those.

TQR: The Captain Coconut is a 3 in 1 pedal – an Octavia, Univibe and Fuzz Face in one...

Right, and we don't stock them, so you can order one and depending on the number of orders we have, delivery can take from one to four weeks.

TQR: What other kinds of pedal modifications do you offer?



Probably the second most popular mod that I do is the MXR Dynacomp Ross compressor mod. I got my hands on a factory schematic for the Ross and reverse engineered it, and again, like so many other things, I found that they had taken a very good sounding MXR pedal and made it better. They added various capacitors to stabilize the circuit, and that really helps with a compressor, because it has a lot of work to do to keep the signal nice and steady. The Ross is really steady, and although Dynacoms are very good, the Ross is even better. The Dynacomp reissues made by Dunlop today aren't as good as the originals because they changed several component values, so I change a few things on the reissues to make them sound and behave like a Ross. That mod is about \$75, and I change all of the transistors to the same ones that were in the Ross, and I add all of the additional capacitors that stabilize the circuit. It's basically 100% Ross specs. I also make my own version of the Ross that I call the Compressor, because some of the features of the Dunlop Dynacomp are really terrible, like the jacks. They tend to jam really bad, and they don't make very good contact. It's also really difficult to add true bypass to the Dynacomp. So my model has an LED, true bypass, and very good jacks.

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TQR: I noticed that you offer a hundred or so used effects on your web site, and when you add the new pedals, it's closer to two hundred.

People always try to sell me things that I'm not interested in, because I'm really only interested in things I would want to own myself. I try to keep only high quality effects on my site – products that I can stand behind.

TQR: Well, I see Fulltones, and essentially all of the desirable old and new pedals, including all of the Diaz stuff. If you were to put together your idea of the guitarist's essential pedal board, what would it be?

That's a really good question. I'd have to start with the Ross compressor, and a Teese RMC Wah. I have all of the old Wahs but I'd probably go with a Teese just because they're so reliable.

TQR: What do they sell for?



We sell them for \$175 to \$285, and there are four models with various adjustments and components. Then I'd go to a TS 808 pedal – probably a modified TS9 into a germanium Fuzz Face – either an original, or a modified reissue would be just fine. Then my Analog Man chorus pedal...

TQR: How is it different from the old light blue Boss CE2 chorus pedal?

It's kind of similar to the older Boss chorus pedal, but the sweep on it is different – the oscillation is much nicer and the sweep is deeper. Also, the speed can get much higher, for the fast Leslie sounds.

TQR: When you say your chorus is similar to the older Boss pedals, how far back are we going?

I'd say the early 80's. After that, they lost their sweet sound because they kept adding additional knobs and features. My chorus is \$225 with a stereo option available for an additional \$50.

TQR: OK, we've got the Ross compressor into the Teese RMC Wah, into the modded TS9, into the Analog Man chorus or perhaps an old blue Boss chorus... What's next?



I'd have to add a delay, and delays are a little tough... Probably something like a Boss analog DM2 or an Ibanez AD9 – a nice, small, warm analog delay.

TQR: Do you modify the Boss digital delays – the DD5?

Yeah, I have a really cool mod for those, because they have a reverse mode of up to 2 seconds of delay time, and it takes these discrete chunks of sound and plays them backwards. The problem is that when you're in reverse mode, you're also hearing what you're playing forwards, along with it.

TQR: The DD3 is the same without as many bells and whistles?

Yeah, it may even sound a little better than the DD5, it just doesn't have the tap tempo and reverse mode. Anyway, the mod that I do on the DD5 allows you to play in reverse mode and hear the backwards sound without hearing whatever you're playing simultaneously with that.

TQR: The Pedal Train seems to me to be one of the hottest deals going for anyone who needs a pedal board.

I agree. For the money, you really can't beat it.

TQR: What are your thoughts on the chain of effects – in what order should they be hooked up?

Basically, there are a few pedals that want to be first in your chain to work correctly, one of which is the Fuzz Face. It wants to see the pickup on the guitar so that the clean up factor works, where you can back off the volume of your guitar and clean up the tone. The Wah is another one that should be in the front, followed by compression, overdrive and distortion pedals. Dave Fox has recently come up with a wah mod (a small add-on circuit board) that can be installed in your wah so you can run it in front of a fuzzface and the fuzzface will still sound good. Next in your chain could be compression, though it can go before the



other pedals. Then overdrive and distortion pedals. After those, you get into your modulation effects like chorus and flange. Normally you want to put echo, delay or reverb at the end of the chain, and there is another type of pedal that is commonly used,

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and the more pedals you have the more useful it is. I'm talking about things that are 'clean boost' pedals like the Z Vex Super Hard On, the Diaz Texas Ranger, or the Klon Centaur, and you can put those at the beginning or the end of the chain. A lot of people will ask this question, and then put everything together exactly that way. But the reality of it is, there really are no rules, and you should try a lot of different combinations, because you can stumble on some really cool things. A Voodoo Lab power supply isn't a bad idea, either.



TQR: How do you keep up with all of the pedals that are out there?

It's tough, but I talk to a lot of people, and I usually hear the buzz about specific things that are making the rounds. It's really strange how things can sway perceptions and market values. For example, when Way Huge was in business, they weren't that popular, but then after they stopped making effects, all of a sudden they were 'nice to have' pedals going for crazy money. In the past two years there seem to be double the number of effects manufacturers, and there must be twenty different variations on the Tube Screamer, but I still haven't heard one that I liked better than a real Tube Screamer.

TQR: We've always felt that aside from pickups, you can waste a tremendous amount of money searching for the perfect effects.

Yeah, I don't really sell people too hard on specific products, but I do feel that if you buy the best, in the long run you'll save yourself a lot of time and money.

TQR: What's ahead for you, Mike?

I have taken my COMPROSSOR further, and now offer it as a combo two-in-one compressor pedal. The other side is an improved version of the Dan Armstrong Orange squeezer – a great sounding pedal used on countless hits in the 70's but a nightmare to actually use. They plugged into your guitar jack and had no controls except an on/off switch. My Bi-compressor has the Ross clone on the left and the orange squeezer clone on the right, each with their own separate volume knobs. I also added an attack time trim pot for the Ross compressor so



people can dial in the attack for either more legato or harder attacks. I also make a stand alone Squeezer for people who just want that effect.

Dave Fox and I were also thinking about an analog delay, but the bucket brigade chips are SO expensive to allow more than a few hundred milliseconds of delay... we are still searching! Dave is also working on an analog-digital hybrid flanger that will have some unique features. After I get my compressors up to speed, I will work on a series of passive switch boxes and true bypass/loop boxes which are very handy to have. I made one that works just like the two separate boxes that Eric Johnson uses, and it is simple and useful.

TQR: Was there anything like a 'golden era' for Boss pedals?

Yeah, I think the first versions of the pedals from the early 80's that were made in Japan were very, very good, and they issued a huge number of different pedals that only lasted for a few years during that time – analog delays, the SP1 Spectrum fixed frequency filter, the Roland Jet phasers, Fuzz Wah's... Some of the other early Roland pedals were very good.

TQR: How long does it take generally to get a pedal modded?

You'll often get it back within a week via priority mail. Other things like the Fuzz Face or the Boss DD5 will take longer. Wahs... if there are mechanical issues, they can take longer, so anywhere from a few days to a few weeks.

TQR: What's your take on alkaline vs. carbon batteries?

Alkaline batteries are OK for most things except fuzz pedals, or a really simple early pedal like the Dallas Rangemaster. In those pedals, the battery really becomes an integral part of the circuit, and not only will it sound different with a carbon battery, but you'll get more volume from a carbon battery in those pedals.

TQR: Who are some of the artists you work with?

I've been working with Kenny Wayne Shepherd since 1998, and I've been working with Tony Iommi's guitar tech, Mike Clement, hunting down some vintage effects. I just shipped him three Roland SDD3000 delays – two for Tony and one for Jeff Beck. Eric Johnson – I've been trying to find good versions of pedals that he uses, like the silicon Fuzz Face and AC powered Chandler tube driver. I've also been working with Jim Weider quite a lot. He's using a prototype of my stereo chorus and we've been working on dialing in a Fuzz Face to use his with his Telecaster, and also my 1969

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Marshall 100W amp for clean sounds. He had never used Marshalls before, but he loves using it for clean tones and blending it with his other amps. Jim ended up using my Marshall

mixed into nearly all of the songs on his new CD, along with my Fuzz Face on a few tracks. The amp was de-tubed to 50W and used with my '73 4x12 bottom with original greenbacks. Greg Martin and I have been working on some things. In the past, he hasn't used many pedals – he's been strictly a Les Paul into a Marshall guy, but he's getting into different effects now. Oh, and Jimmy Herring is another guy I have to mention – *The Allman Brothers*, Phil Lesh – he's another good guy to work with, and he's using our Tube Screamers. And I should mention Scott Henderson, as well. He uses a very complex set up with a Bradshaw switching system, and he just loves the Tube Screamer mods we've done, in fact, he sold his old original TS 808 and TS9's. AJ Dunning from the *Verve Pipe* just put out a new CD and will be touring with my chorus and Captain Coconut, and I also customized an old Multivox Full Rotor for him for use with an external speed control pedal.

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Who's Playing What?

When it comes to your sound and your chops, how much does the size of your wallet really matter? Can spending heavy dough make you feel, sound, and play better, or will your physical and spiritual limitations as a guitarist remain, even after you've run down every piece of gear that carries a gonzo price tag? If gear doesn't really matter, why is there so much of it, and why is there so much of it in your crib? Well, let's answer these questions by digging into a few very cool tools belonging to some experienced and successful guitarists who have had ample time to ponder these very questions. Sometimes, just looking at pro rigs can encourage you to explore new territory, and we can think of no better way to 'review' gear than by considering what some top guitarists are using today.

Here's an inspiring shot of Peter Stroud at the Fox Theatre with his vintage Squire Strat... We caught Peter during a Don Henley sound check, and since Atlanta is Peter's home, he was able to bring out one of his personal favorites for the gig. Playing with both Henley and Sheryl Crow, Peter has also



been lavished with plenty of Gibson and Fender guitars, nevertheless, he still loves his old Squire, and the fact that it was cheap *and* it's been with him for years makes it all the more lovable. Peter's vintage Trini

Lopez 335 was his main guitar when he was touring with

Seattle guitarist and songwriter Pete Droge, and he still brings it out often. It sounds great, he didn't have to throw down \$3,000 for it, and nobody else plays one. We think that's a good thing, and you too can find great deals on Squires and Trini Lopez signature 335's. In fact, we don't know why Trini's haven't caught on in the vintage market, but for now, they are obtainable for around \$1,200 - \$1,600, and that's a great deal on a very toneful 60's 335. Why they can't get the sound of those old pickups today is a mystery... And then there's Peter's fire sale G&L that he calls the Fender Ferrari... rescued from a music store fire and heavily roasted, Peter salvaged it, threw a Bigsby palm pedal on it and replaced

the pickups with Duncan Seth Lovers (note the bridge pickup being reversed for a mellower tone). It's a dirt cheap tool that Peter lovingly customized for a very unusual purpose. There are very few guitarists using palm pedals these days, and the sound of one in the right hands is magical. Peter also plays a Telecaster that features a unique B bender that was designed by his guitar tech with Don Henley, Richard Bowden.

Other guitars include a Fender Telesonic, a reissue Tele Custom, a reissue Les Paul burst, and a Les Paul Black Beauty with AlNiCo pickups. And for you vintage gear hounds, let us not forget the *other* guitarist in Don Henley's band, Frank Simes. Here he is playing his personal Number 1 – an original vintage '59 'relic.'

Despite the fact that he has been sent plenty of amps to audition over the past several years, Peter's rig has remained basically unchanged... a Silverface '68 Super Reverb with Eminence 10's, a vintage Marshall 50W combo, and a '71 Marshall 50W head that he's had for years, all toned down as needed with a couple



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