Cutaway Guitar Magazine
Interview to ThunderTomate founder Roberto 'Tomate'
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http://www.cutawayguitarmagazine.com
info@cutawayguitarmagazine.com

The world of the guitar wouldn't be the same without the effects. Its history and, probably, music would have followed different paths from those followed up to now. Effects – as happens with guitars or amps- have identified musical styles and have personalised the sound of guitarists that have made up the history of the guitar. At present, there are numerous effect formats: analog, digital, multi-effects… In this issue of Guitarcutaway we wanted to look at the most traditional and, surely for most guitarists, the most tempting aspect of those effects: boutique pedals. That is why we got in touch with Roberto, who, under the ThunderTomate brand name, has achieved his own niche in the market and won the respect and admiration of the most demanding musicians in our field.

When, how and why did you start to be interested in the world of guitar?

It was in the late 80s, when I was thirteen or fourteen years old. Someone –I think it was my sister- had left a Spanish guitar lying around in the house and I started with the first open chords. At that time, I was obsessed with The Who and, of course, it was impossible to imitate Pete Townshend with such an instrument, so shortly afterwards I managed to get an appallingly bad-quality electric guitar, which, in turn, I soon changed for something easier to use.

I still remember the first time I picked up an electric guitar. Being used to nylon strings, I thought I was going to cut myself as I moved my fingers over those extremely fine strings. Luckily, I went to school with a friend who also belonged to that world so I wasn't too lost.

Afterwards –I suppose- you started to become interested in the world of effects. How did this change come about?

When I was a child, when I used to go to my local shop to buy strings, I always went past the pedals stand. Most of them were old MXR and BOSS. Eventually, one day I asked the shop assistant if I could try some of them out. Very soon, my guitar was connected to a Rocktek, a chorus and a BOSS analog delay. I thought it was fantastic. I was really impressed. I couldn't believe that the sounds I was hearing were coming from my fingers.

How did you get interested in the technical side of effects?

I had always been interested in electronics. Before discovering effect pedals in their musical dimension, they had already attracted my attention from a technical point of view. Then, I hadn't enough knowledge to be able to understand how they worked. I tried, though. I remember that when I was a kid, I broke a CryBaby wah trying to work out what the function of the coil was in the circuit. In the end, I wasn't able to make it work again. I felt like an idiot because I had spent two months' pocket money on that thing.

Tell us about your training? Are you self-taught? What knowledge did you have to start with and what have you had to learn since then?

To a certain extent, I am self-taught, but not completely. Luckily, I studied Electronics. First, I did five years of occupational training and then I studied Engineering. Thanks to that, I gained all the essential knowledge which would be really useful later on. Later I had to learn about other subjects that are not taught at school or at university but which are just as necessary. At University, nobody explains to you how a vacuum valve works, for example. You have to learn that kind of thing on your own.

I started working with pedals years before the Internet became so popular, so the main problem was getting information. You had to get magazines specialised in electronics where the odd audio circuit appeared from time to time, or even buy some assembly kit that was vaguely related to the issue. Some of the knowledge I gained in those years was thanks to trial and error.

What was your first job, whether it was professional or not, related to effects?

My first “non-professional” pedal was assembled in the early 90s. It was a simple booster with a transistor. It didn’t have a footswitch because it was impossible to get them then so I made the bypass by using a hand-activated lever switch. I haven’t a clue what happened to that booster but it didn’t work badly. Everybody thought that it increased the amp power because it made it sound louder without touching the volume control, so they thought that it was a great invention.

When did you realise that you could start working professionally in this?

When, finally, in the late 90s I started navigating on the web and I discovered what people such as Mike Piera (Analogman) were doing in the U.S.A. At that moment I thought: “O.K. I know how to do that”. I saw clearly that I could go for it and do it professionally. I must admit, though, that at that moment I had a clearer idea of the technical aspects than of the business side.

When and how did ThunderTomate appear?

It was in 2001. At that time I was repairing guitar amps in a business I was a partner in. I had the idea of making the most of that little business infrastructure to start manufacturing the line of effect pedals I had been turning over in my mind. It took me some time to find suppliers for all the necessary components: boxes and pedal switchboards were more difficult to get hold of then.

I decided on the name ThunderTomate –it’s something I ‘m often asked about- after several days trying to find a brand name for the pedals. In the end, I had a long list of possible brand names, all of them rather dull, like, for instance, “fx.tron” and things like that. Horrible. I couldn’t carry on wasting my time, so I said to myself “To hell with this.” I crumpled up the list, took another sheet and I drew a tomato with a lightning bolt going through it, and I thought “That’s it, ThunderTomate, you can’t spend your whole life thinking about it. Finished.”

What new contribution did the ThunderTomate pedals make to what was already on the market?

Today, if you don’t offer something new, you’ll never get your own niche in the effects market. Some years ago things were different. You could work really well just manufacturing copies of vintage pedals. Many of us in the effects business started that way but now the situation has changed.

In the place where I design the pedals, right next to the measuring devices, I have my guitar and an amp. Once the technical aspects have been solved, I start to modify and adjust the circuits based on the sound I have in my head for that particular pedal. That’s why I need to hear them. Every time I make the slightest modification or adjustment in a circuit, I connect the guitar again

and spend a few minutes playing. That's the way I check whether each modification, which in principle is technically correct, produces a real improvement. If I'm not sure, I let a little time pass and try it again.

It's curious how small changes, which are of little importance from a technical point of view, produce important subjective changes when you connect the guitar. During the design stage I spend more time playing the guitar than doing anything else. It's an obsession of mine.

Using this technique, I make sure that the pedal sounds like I wanted it to in the first place. This way of designing the pedals is really our trademark and what makes us different, and is even more important than the fact that our products are hand-made or the quality of the materials. When a pedal is conceived in this way, what makes it different from the rest is obvious from the very start. We have costumers who buy every single new ThunderTomate product we put on the market directly, without trying them out first, because they just know it will sound good.

For some time now it seems that there has been a rise in the amount of craftsmanship in the world of the guitar. There are more and more boutique amps and pedals. What do you think the reason is?

It's due to the fall in the quality offered by the big brand names, which have withdrawn from the upper ranges of the market, and now dominate the mid and mid-low ranges, much more profitable economically now that production takes place on a large scale in Asia. Nowadays, if you want a quality product, you very probably have to search around a lot.

In fact, I think it's great because it has left a gap in the market that can be filled by a lot of small manufacturers that take care to offer a quality product and besides, can offer it at a competitive price.

At one time effects emulators seemed to be gaining more and more followers every day. However, there now seems to be a reversal of this trend. What is it that analog pedals give to the sound that means that even the most advanced technology has been unable to replace them?

It's true that in the late 80s and the first half of the 90s digital multi-effects and systems based on rack became popular. Since the mid-90s, the opposite has been the case. Most guitarists have gone back to using analogical pedals.

It's not by chance that, subjectively, the sound of analog effects is usually defined using terms like "warm" and "organic" whereas digital effects are considered to be "sterile" and "cold". This bad name was earned in the 90s.

The "warm" sound of the analog units is usually associated with the use of filters that clip the response in high-pitched sounds, a technical limitation that is particularly noticeable in the delays. The "organic" quality, more difficult to define, is usually associated with the signal degradation. Sometimes, the way in which the original signal is modified is the result of different factors that interact with the guitar signal but do not always do so in a way that is easy to predict.

The fact that digital technology allows us to overcome these "limitations" is just what has earned it the reputation of being a sterile, predictable sound and on occasions, metallic and cold.

What are the advantages that boutique effects have when comparing them to the analog effects manufactured by the big brand names?

The world of "boutique" is quite complex. It's difficult to give a simple answer. What's more there are effects manufactured by big brand names that work very well and effects produced by boutique manufacturers that are a fiasco, especially from a technical point of view.

I suppose that the main difference comes from the attention a small manufacturer can pay to all the stages of the development of the product, the direct contact with the customer and a focus more orientated towards personal realization through the quality of the products rather than focusing on economic profit.

One obvious advantage, which seems to be decisive in making many guitarists opt for boutique pedals, is the True Bypass. What is it? What are its advantages? Has it got any disadvantages?

“True Bypass” is a switching system which leaves the guitar completely disconnected from the effect when the pedal is deactivated. It’s the most similar thing possible to physically withdrawing the effect pedal from the chain.

Other switching systems use buffers and jfet transistors or even electro-mechanical commutators which only commutate the output of the effect. In both cases the guitar signal is modified. A clear example is the classic wah- wah pedals. The loss in tone associated with these pedals doesn’t occur when a true bypass commutation is used.

The disadvantage of true bypass in comparison to commutation using buffers (as in Boss pedals) is that it can’t compensate the loss of signal in the cable. A pedal with a buffer eliminates the losses of signal in the metres of cable which are between it and the input of the amp, a pedal with true bypass doesn’t. In systems with a complex wiring the true bypass can also cause problems. It’s not all good.

Why do you think the big brand names and the so-called classic pedals didn’t use True Bypass?

Commutation using true bypass is expensive, especially from the point of view of mass production, so nowadays, most manufacturers use a commutation system which is purely electronic.

In the classic effects, the use of electromagnetic commutation was common, but commutating only the output of the signal so that the guitar was connected to the effect input even when it was deactivated. At that time, few people were worried about the losses in tone in the pedals. However, by current standards, some of those pedals would be impossible to sell.

As you said, when several True Bypass pedals are connected in the same chain, a loss in signal can occur - less high-pitched sounds and less volume. There are people who think that by placing a pedal with a buffer at the beginning of the chain, the problem is solved. There are also specific pedals for this. How can the problem of tone loss be solved? What advantages and disadvantages for the sound does including a buffer have?

When we use only true bypass pedals and a considerable length of cable, the problem of tone loss arises. Normally, the sound becomes dull. In these cases the solution consists of placing a buffer as a first pedal in the chain of effects. It’s important that the rest of the effects should have low output impedance, which is what compensates the losses in the cables.

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It’s interesting to highlight that the classic fuzz pedals react badly when they have a buffer placed at their input. This kind of pedals need the high impedance of the guitar’s pick-up connected to its output.

Generally speaking, it's a good idea to use a buffer when long lengths of cable are used. It depends on the quality of the cable, but six or eight meters could be considered a long length.The best option is to use only true bypass pedals with low output impedance and to place a single buffer at the input of the pedalboard.

Could that problem be solved by means of a booster?

Partly, it could. A booster is aimed at raising the signal of the guitar, but if we adjust the volume control so that has no gain it could work as a buffer. Anyway, a buffer would have to be made very carefully so that it interfered as little as possible in the sound of the guitar. In a traditional booster these levels of refinement are not usually reached.

Often the guitarist is forced to introduce some non-True bypass pedal in the chain because that effect doesn't exist with True bypass. How much does the inclusion of one or more non-True bypass pedals influence the final result? Are there certain effects that are impossible to manufacture with True bypass? Why are there no True Bypass noise gates or equalizers?

The inclusion of a pedal without true bypass doubtlessly influences the tone of the guitar. But, as I said before, it is possible that it could even have a positive influence in some cases by compensating for the losses in the cable.

Any effect pedal can be true bypass – there are no limitations in that respect. In the cases in which the input signal is mono and the output is stereo, the type of commutator required is a bit special although, in principle, any pedal can be a true bypass pedal.

The fact that most noise gates and equalizers that are found on the market are not true bypass is because very few boutique manufacturers have developed this kind of pedals.

Another question that usually comes up in forums is about how to order the pedals. Which is the correct way? Are there any alternatives to that established order?

There is a logical order that usually obtains good results. But it's not a dogma. When experimenting, it could be useful to begin with the following configuration:

1. Wah Wah / Autowah / Envelope filters / Phaser
2. Compressor / Expansor
3. Overdrive / Distortion / Fuzz
4. Equalizers
5. Harmonizers
6. Chorus / Flanger / Tremolo
7. Noise gates
8. Delay / Reverb

The Phaser is also a pedal that can often be found in block 6 instead of block 1.

Another question that all guitarists ask themselves at some point is: where is it best to put the effects, IN, LOOP…? I suppose it would depend on the type of effect. What does it depend on?

If an amp with an effects loop is used, the most common thing is to arrange the distortion effects, booster, overdrive, compressors and wah at the amp input, whereas the equalization effect could go in the loop, as could the modulation effects and the delay. If you want to use a booster to increase the volume in the solos when working with a saturated amp, then it should go in the loop.

Many amps, especially old ones, do not have an effects loop. In that case, is it a big problem to place all the pedals at the IN?

Certain effects, such as delays and some modulation effects can sound really bad arranged before a saturated amp. In those cases it's a real problem. Questions such as: "How do I connect an analogical delay to my saturated jcm800?" are difficult to answer.

Let's talk about your creations. How many models have you made up to now?

I don't know, really. About forty or fifty different models. It sounds like a lot but some of them were produced in small quantities (ten items) or were exclusive models even. There are about 1500 ThunderTomate pedals in total around the world and I personally assembled the electronics by hand from the first one to the last one.

Which are the ones you are most proud of?

I'm proud of all of them, of course, but there are some which are very special ones such as "The Cow" fuzz. It had a very good fuzz sound and interacted really well with the volume of the guitar. I also consider the Analog Delay to be especially good and finally, the Overdrive. This overdrive is incredibly transparent; it's a totally new concept and it will take some time to get it onto the market (I'm not referring to the Overdrive +, which is based on the "tubescreamer").

What ThunderTomate effects should not be missing from any guitarist's effects chain?

The Overdrive, the Distortion and the V3 Treble Booster would suit most guitarists very well. Besides, these are two pedals which have no equivalents in other brands.

What are your next challenges?

To export, to move the market out of Spain. I did it some years ago and now it's time to do it again - on another scale, though. We are also working on a few new models of pedals and some other projects that are driving us crazy.

What are the novelties for the coming year?

In 2009 we are going to focus on exporting and completing the range of pedals. The Analog Chorus and a silicon fuzz similar to "The Cow" will be available soon.

What is the profile of a ThunderTomate customer?

There is a wide profile although it is usually a guitarist –professional or not- with quite a few years of experience, who has an established set of equipment and quite a classical sound. We are not really into the compulsive buying market –you know the GAS and all that- although I'm sure it would be more profitable.

Among your costumers there are people such as…

There is a bit of everything: Phil Hilborne, Frank Rohles, Jose de Castro "JOPI", Antonio Bernardini, etc. Really, all our costumers are equally important, regardless of whether they are more or less well-known.

Is the amateur more demanding than the professional?

It's a cliché to say that the professional is usually more worried about reliability and the amateur about the sound. On some occasions, the amateur is the more demanding customer because he has more time and predisposition to calmly analyze all the aspects of tone of his equipment. They usually end up being as obsessed with it as I am.