# developing crankbrother's mallet dh race peda

Photos by Sven Martin & crankbrothers

**IT'S PART OF RACING.** You hear it all the time. You heard it after Aaron Gwin lost his rear brake on the 2012 Leogang World Championship course. You heard it after Greg Minnaar blew up his rear wheel in Ft. William in 2011, costing him a chance for three consecutive wins on one of the World Cup's most physical tracks. You hear it all the time. Shit breaks. It's part of racing.

Competition is not just a battleground for riders. It's also a test ground for technology. In theory, racers break stuff so that we don't have to. In reality, racers are pushing their limits, looking for results in order to earn a prestigious title, next year's contract, or a new sponsor. Testing product is a part of a racer's job, but they also need to win. Manufacturers need athletes to put their engineering theories through the real-world ringer, but they also need them to feel comfortable, confident, and safe enough to push their boundaries at unimaginable speeds.

So how does this process work? And what do the riders and their mechanics think of it? Below is the story of one product's development over the course of last year's race season, followed by the thoughts of some of the racers and mechanics that took part in the development. This isn't a commercial. This is how it really happens.

The day before the 2012 Sea Otter Classic, crankbrothers received an airfreight shipment of 20 prototype pedals. On Sea Otter's opening day, these pedals were delivered along with testing logs and athlete feedback forms to a selection of crankbrothers' sponsored riders in order to help the company re-design a beloved pedal. We were also lucky enough to receive pedal number 17 for total inclusion in this project.

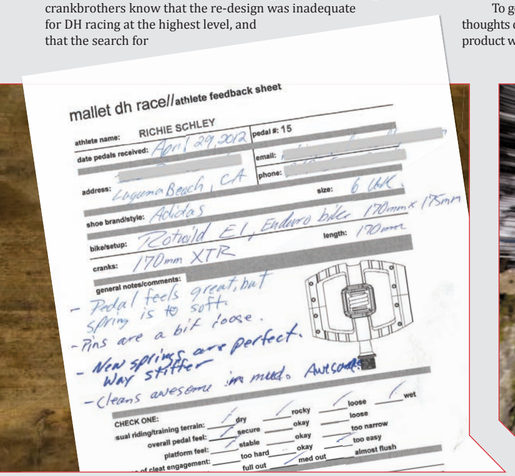
The previous year, crankbrothers had completely redesigned their Mallet pedal. Up to that point, the Mallet was the most popular clipless pedal on the World Cup DH circuit. Pretty much any photo of a clipped-in rider from the World Cup will show crankbrothers' pedals. But with the 2011 re-design, the pedal lost weight through a reduction in material. That reduction yielded a thinner, narrower pedal with a reduced Q-factor. The redesign was made with aggressive all-mountain riding in mind. But for DH racers, it simply wasn't enough pedal.

A few racers used the new Mallet through the 2011 race season, but most stuck with the original Mallet, letting crankbrothers know that the re-design was inadequate for DH racing at the highest level, and that the search for results would keep them aboard the older model until the company developed something that would allow the best riders in the world to push their physical limits.

With that feedback, the pedal company went to work immediately, developing a prototype that would arrive on the eve of Sea Otter, the kick-off to the new race season. During that 2012 race season, crankbrothers worked closely with DH racers to refine the prototype. Small changes were made throughout the race-testing process, but the original prototype yielded three iterations, ultimately resulting in the Mallet DH Race pedal that is available now to everyone. It is similar in shape to the original Mallet: same width, height and Q-factor. But these dimensions were achieved with a pedal body and spindle redesigns that are both lighter and stronger than the popular original. Like the current Mallet and Candy pedals, the Mallet DH Race uses a two-piece body, which allows for more machining to shave weight and make it easier to service. In addition, the two-piece body creates a better press-fit seal for the bearings, eliminating channels for leakage, and therefore increasing bearing life. The new pedal also features a re-designed spindle that is unique to the Mallet DH Race, and tested 50% stronger than the original Mallet spindle. Lastly, the Mallet DH Race has eight height-adjustable traction pins, while the original Mallet only had six fixed pins.

If you look at pictures from the 2012 race season, you'll see the prototype pedal on a significant number of World Cup race bikes. All season, racers and mechanics, along with team managers, product developers and engineers worked together to bring this pedal to the podium. crankbrothers delivered a working prototype that gave riders the confidence needed to attack the tracks, but throughout the year, refinements were made to make it a piece that was not only ready for market, but also gave top riders everything they were looking for at the most important contact point on the bike.

To get more from the riders, we asked some of them about their thoughts during this refinement process, and what it means to develop product while also trying to push both personal and professional limits.

mallet dh race// athlete feedback sheet

athlete name: RICHIE SCHLEY
pedal #: 15
date pedals received: April 29, 2012
email:
address: Laguna Beach, CA
phone:
shoe brand/style: Adidas
size: 6 UK
bike/setup: Rotwild E1 Enduro bike
length: 170mm
cranks: 170mm XTR
general notes/comments:
- Pedal feels great, but spring is to soft.
- Pins are a bit loose.
- New springs are perfect. Way stiffer
- Cleans awesome in mud. Awesome

CHECK ONE:
usual riding/training terrain: dry / rocky / loose / wet
overall pedal feel: secure / okay / loose
platform feel: stable / okay / too narrow
ease of cleat engagement: too hard / okay / too easy
full out / med out / almost flush


**Doug Hatfield – Mechanic, Santa Cruz Syndicate**
As long as I have worked with the Santa Cruz Syndicate, we have been using crankbrothers' pedals. They use the athlete's input to help develop the product.

Steve Peat and Greg Minnaar clip in even in the most extreme muddy World Cup downhills, because they want that added security. The Mallets are excellent at shedding mud, which makes it a very important piece of their equipment on World Cup tracks.

The Mallet pedals have seen some changes and redesigns in the past years, making it more serviceable and lighter, without sacrificing durability. But each time changes in design are made, the pedal needs to retain the same feel. This is where working with the athletes is very important because they are the most sensitive when switching to a new piece of equipment.

**Greg Minnaar – Santa Cruz Syndicate**
Testing is not as easy as it sounds, or as some people make it out. You have to think against the engineer, but also work with them. You have to try to be as neutral as possible, judgement free. Working with crankbrothers has always been a breeze. Our info is taken to the engineering room, put into another prototype, and then ridden again until perfect. Everything can look great on paper, but it is only when taking it on a trail that its weak areas will show. Once you've put some time on the product you'll have a better idea of what you like and what needs to be changed. I try and just ride, forget about the new product and ride the trail how I'd normally ride it.

**Mick Hannah – Hutchinson United Ride**
When I first got them I was excited that they had gone back to a wider platform. Pin placement and security is also really important, and I wanted to see improvement in overall durability. Since there is a lot of pressure on manufacturers to drop weight, strength can be a challenge at times.

When I first got the pedal I was super excited to open the box. New parts still make me feel like a kid at a candy store! The next step was to put them on the bike and see how they felt. Then it was a matter of riding them as much as I could as hard as possible.

Testing is a lot of fun if you're into the mechanical side of riding. Personally, I find it almost impossible to think about the track and the bike at the same time. When I test new product, I have to ride at 80-90% and stick with the same lines.

I also try to time everything when testing new parts. With these pedals, my main goal was to have a pedal that I never had to think about. If I can ride down the hill and never notice my pedals, that's a good pedal.

In testing this pedal, I was looking for good bearings that felt solid and had low friction. The other priority was the balance between the cleat, the pedal, and the fit of the pins to the sole of my shoe.



**Andrew Neethling – Giant**

I personally felt the previous Mallet we used for DH was really good. My main focus when testing the new Mallet DH Race pedal was to get a similar feel to the old pedal, and then improve from there if needed.

First off, I focused on how it felt with my shoes. I also looked at spring tension, or how it felt to unclip and clip back in. I found that the wider platform offered more stability when racing, so that was a must to keep. I compared it to a wide flat pedal that I could clip in to. This is what I felt made the original Mallet so good. Once we got the feeling right, then we started really riding it hard to start testing durability.

**Duncan Riffle – Dirt-Norco**

As a racer, one of our most important jobs, aside from producing results, is to help develop new and existing products. Smart companies rely on the racers to help with feedback, testing, and input on their components because we push products to the limit when we race on them.

When testing, I usually try to change only one thing at a time. For example, I used the same shoes/cleats when changing pedals so that I could properly separate the pedal from the rest of the system. I also use the "try it all" concept. I go back and forth between the new and the old, testing in different circumstances, weather conditions and so on. That way I can properly test the products in every situation, giving me the ability to separate what change I might be feeling in different circumstances.

I have been riding crankbrothers pedals for some time now, and they have always valued this type of testing and feedback from their riders. They understand that it is a crucial part of making their products better and more competitive.

When they stopped producing the original Mallet and replaced it with a smaller profile design, I immediately realized that having a wider profile platform was necessary for racing. Crankbrothers was fast to respond to their racers feedback and began working on the new pedal.

When providing feedback to companies on their product, it is important to remember that withholding opinions does everyone a disservice. Of course, you have to go about it in a professional manner. This is where the process of "constructive criticism" begins in the relationship between a company and an athlete.

So there you have it. Thanks to seasons and hours of hard work from people in all facets of the bike industry, we as riders are able to benefit from the best of the best. We are lucky to be in a stage where the sport is still growing and actively pushing components and that we also have technology readily available to produce them. With brands like crankbrothers and athletes like the ones above, we can all rest assured that just going fast isn't all these pros are doing. They're working hard to create products we'll all enjoy.