

RRR:01

RIDDEN, REVIEWED, RATED: IRON HORSE AZURE EXPERT



For a lot of people reading this it may be a surprise to learn that Iron Horse, manufacturers of the global DH phenomenon that both Sam Hill and Sabrina Jonnier rode to gold in Rotorua 2006, also make some very sweet trail bikes. I have been lucky enough to receive an Azure Expert, a 3.5" travel endurance bike that is possibly the most complete 'out of the box' long distance racer on the market.

So why am I prepared to make such a bold statement? Well for starters this bike has an impressive spec list that is matched with an equally impressive price tag. Also, it is full of the same technology that has been used by the Iron Horse DH pilots to completely dominate races around the globe.

The Bike

The heart and sole of the Iron Horse is the "dw-link." This is a patented suspension design from the mind of Dave Weagle, someone that has come to the fore of bicycle design in the last five years. If you haven't heard of Dave Weagle then allow me to indulge in a little background information. He is a physics and kinetic energy whiz that happened to also be obsessed with bicycles. Giving up his college dreams of designing suspension for F1 cars and the necessary move to the U.K for the love of a beautiful woman, Dave set about creating a new bicycle suspension design from the ground up. Not only was the suspension design new, but it was developed from a completely different angle of vehicle dynamics to every other design out there. There was no literature available documenting what

Dave was trying to test and measure so he did the only logical thing, he created his own. But this is a review of the Azure, not of Dave Weagle's mind.

The "dw-link" is not exclusive to Iron Horse, but they were the first company out there to team up with Dave to make the most of its revolutionary design and to help develop it. The Azure is a 3.5" (90mm) travel application of the same design featured in all "dw-link" suspended Iron Horse bikes. The fundamental basis for the "dw-link" design is that the suspension needs to counter Newton's third law of motion, everything has an equal and opposite reaction. In a riding situation this occurs when the bike accelerates. As the bike moves forward the rider's weight moves backwards, compressing the rear suspension. As the suspension compresses, the distance from the rear axle to bottom bracket changes and if this is a significant enough change you get pedal feedback, or suspension bob.

The newer generation of pedal platform shocks helps to counter the suspension compressing under acceleration by including position and speed sensitive compression damping. This means the initial part of low speed compression is heavily damped, reducing suspension movement. The flip side of this is that the suspension is also slow to react to small bumps. The "dw-link" is designed to have supple suspension over small bumps while still countering the rearward movement of the rider's mass. But that is just the half of it. The opposite of accelerating is braking and the small bump response combined with the neutral impact the

brakes have on the suspension travel allow the bike to remain fully active and balanced even under the hardest of braking forces.

More on how it rides to come, first we'll look at the rest of the package. The "dw-link" is nestled in a 6069 chassis and decked out with some truly quality parts. The suspension movement is provided by Fox in the form of a Float R rear shock and a set of Float 100R forks. The driveline features the new Shimano XT Rapidfire shifters, XT derailleurs and Race Face X-Type (external bottom bracket) Evolve XC cranks. The controls are courtesy of Ritchey Pro with 31.8mm diameter low-rise bar and stem. The seat post is a sweet Thomson Elite with a Selle Italia SLR XC saddle on top. Wheels are from DT with 340 Disc hubs front and rear; laced to XM4.1 rims using DT butted black spokes. A Maxxis Crossmark tyre on the front and an Ignitor on the rear provide the grip. Braking is courtesy of a set of Avid Juicy 7 hydros.

As a whole package there isn't much you need to change. Some people may want to change the grips or tyres for their own personal preference, but as a complete off the shelf package there isn't a shortcut anywhere. Even the chain and cassette are quality SRAM units, the pedals are the popular Crank Bros Candy C units and the headset is a FSA Orbit Zero Stack. Nice, very nice.

The Ride

So is the sum of the parts greater than the total? Well I would have to say yes. You can't help but

get excited just looking at the bike with its quality bronze and white finish. Aside from this though, the overall look of the frame tubing is somewhat traditional considering the revolutionary design of the suspension. With a standard shaped front triangle and rear triangle, the low top tube is the only thing slightly remarkable.

Looks aside and moving on to the trail, once the shock pressures were sorted out and I got a chance to put it through its paces I came to realise how stiff a dual suspension bike can be. Thanks to the solid rear triangle with short linkages connecting the two halves of the bike there is minimal flex from the rear end. Tracking through uneven terrain littered with tree roots and ruts the bike steers really well with the rear wheel duly following the front. The new 2007 Float forks are using an upgraded chassis and they are stiffer than ever, making a perfect match for the rear end. See more on the forks in the Fox Float review on page 98.

The suspension is designed to be smooth and responsive over small bumps, ramping up towards the end to remove any possibility of harsh bottom out. Looking at the graph for the leverage ratio the shock gets slightly softer through the initial part of the stroke before levelling out through the middle and then ramping up at the end. This gives the Azure the performance and response felt on the trail. The initially higher leverage ratio counters any suspension squat when you are pushing hard on the

pedals. If you do hit a bump the suspension reacts and softens up making the bike very supple over uneven terrain before stiffening up towards the end of the 90mm of travel.

Thanks to the low top tube, 70.5 degree head angle and 73 degree seat tube the bike has an aggressive stance that just wants to be pushed in to corners. If you keep the weight on the bars and hook into the trail you are rewarded with an exhilarating ride. The bike is very balanced and when it comes to jumps and rollers in the trail you can easily and confidently hit the jump and/or manual through rough terrain without feeling like you going to spear off into the trees. Even climbing isn't to much of an ask on the Azure thanks to the respectable 12.4kg weight and great pedalling efficiency.

Don't be fooled however. The bike has enough suspension movement to take the edge off the bumps, not to soak up massive hits. This is a Endurance XC bike and as such the efficiency of the pedalling is not compromised by long travel. It doesn't take much to use up all the 90mm of travel on offer.

The driveline runs seamlessly and the renewed focus from Shimano on their Rapidfire system has, in my humble opinion, been the biggest step forward since the introduction of the first generation nine speed XTR. With the flexibility to shift the 'trigger' in either direction using either the thumb

or the index finger Shimano has come back from the wilderness of the dual control shifters. The new derailleur works as well as ever and performed completely fault free the entire time. If only they could do something about it smacking the frame...

Overall

The bike is the complete package. It does everything well, doesn't weigh a ton (for what it is), has an amazing spec level and doesn't cost a years wage. The frame is the same as what you get on the range topping Azure World Cup or the entry level Azure Sport and the attention to detail is right up there with any handmade American or European brand.

Some people may consider it a shame that the bike is not equipped with a Fox RP2 or RP23 rear shock, but as the suspension is designed to do the work for the shock, the Azure doesn't need a pedal platform shock. The only real disappointment I had with the whole bike was that the grips felt a bit thin and I could get the Ignitor tyre on the rear to lose traction easily on climbs. Both issues are an easy fix and don't impact on how the bike works and rides.

The engineering behind the bike is daunting but the result is a simple system that works. You can rest assured that as the rider, you will reap the benefits of Dave Weagle's years of obsessing over suspension.

SPEC: IRON HORSE AZURE EXPERT



Frame	3.5" Travel dw-link 6069 aluminium frame, Zero-stack headtube. Fox Float R rear shock
Fork	Fox 32 Float R 100mm, external rebound adjustment
Hubs	f & r: DT Swiss 340 Disc 32H
Rims	DT Swiss XM4.10
Tyres	f: Maxxis CrossMark 2.1 Folding r: Maxxis Ignitor 1.95 Folding
Brakes	Avid Juicy 7 hydraulic disc, 6" rotors
Crankset	Race Face Evolve XC X-Type, 175mm
Derailleurs	Shimano Deore XT
Shifters	Shimano Deore XT Rapidfire
Handlebar	Ritchey Pro Rizer, 31.8mm
Stem	Ritchey Pro V2, 31.8mm
Seat & post	Thomson Elite 27.2mm post, Selle Italia SLR XC, Vanox rails