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Marching orders - battling for access on army land

Waking up to the dangers of concussion

BIKE TEST

DOWN-COUNTRY DEMONS

Minimal bikes built for maximum fun

GROUP TEST

BEST CRANKS

8 of the latest on test



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Pete Archer on Stake Pass in the snowy Lakes. Photographer: Tristan Tinn



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Engaging grey matter as well as gearing... Andy Barlow tells us how, p70

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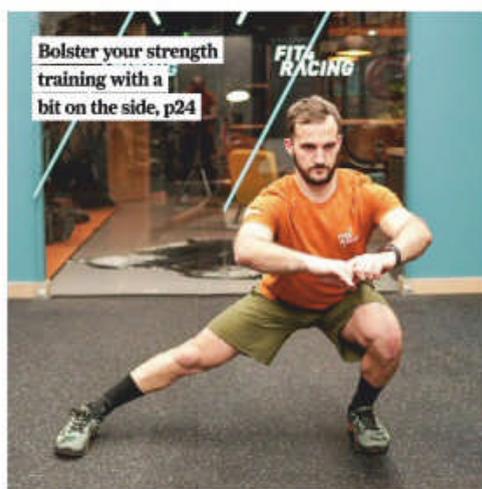
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GT rider and YouTube sensation Wyn Masters tells us about his favourite trail, back home in New Zealand

Concussion discussion

Mitigating the effects of head injuries

Crashing is part of mountain biking, right? So given the (Sophie's) choice, would you rather snap a collarbone or suffer a bit of a knock to the head? Most of us would take a broken helmet over a broken bone, wouldn't we? Yet concussions are potentially very serious, even life-changing injuries that can easily be swept under the rug if not treated seriously.

I know this all too well – I've had at least two serious concussions while mountain biking and while the last big one was 20 years ago, it involved vomiting, memory loss and hospitalisation. As a result – and I'm not sure whether this is a cumulative effect, or solely down to one impact – I regularly find it difficult to find words when talking. I'm sure there are many, many of you out there who have had head injuries and brushed them off as minor, and even carried on riding. We're a resilient bunch, and we like to get up and back in the saddle when we're knocked down, when it can be the worst thing to do. More research is being done into concussions in mountain biking, and the EWS is one of the organisations leading this charge.

With better understanding we should be able to read the signs and recognise the symptoms better, which helps prevent further damage and improve recovery. Laura Bailey has been finding out more about the EWS study this month, and you can read about it on page 28.



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Danny

Editor, **mbr**



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Big picture

Scott battles the four inches of fresh, windblown snow in between Ben Ledi's summit and Mullach Bhuide on the way down to Bealach nan Corp (The Pass of the Dead) as the wind whips the -4°C air temperature down to a slightly frostier -12°C. Even with nine layers up top, we would struggle to feel our hands for the duration, but it was worth it to ride off a proper hill and to end up happily broken by the time we got back to the start point.

Pete Scullion





Big picture

Crisp, dry trails on the first day of December are a rare treat indeed, but one we enjoyed at the back end of 2020 while testing this month's two down-country contenders. It's hard to beat the feeling of zipping along some buff singletrack with the trees blurring at the edges of your peripheral vision and the cold air scorching your lungs. The beauty of the modern down-country bike is that you get minimal inertia, maximum return for your efforts, but the modern geometry lets you peel off the groomers and tackle some spicy off-piste along the way. Read the test on p96.

Roo Fowler



The Buzz

Edited by **Jamie Darlow**

GEAR

RIDES

FAST & FIT

INSPIRATION

GET STARTED

MARCHING ORDERS

Mountain bikers could still be banned from swathes of prime singletrack in Hampshire, following a MOD by-laws review

Mountain bikers probably won't get the permitted access to singletrack they were hoping for on military land around Aldershot, Hampshire, following a review into access due out in February. Thousands of riders use the heath and forest land around Aldershot and its network of trails every week, but riding singletrack has technically been prohibited under existing rules. Now though, a long-awaited by-law review by the Defence Infrastructure Organisation (DIO), which manages land for the MOD, is on the cusp of publication and looks to confirm access to fire roads alone.

"We're hoping to go live with public consultation on that review at the end of the month, if not the start of february," says James Nevitt from the

DIO. By the time you read this then, the review should be in full swing and open to scrutiny from mountain bikers. Will it give riders official permission to ride singletrack trails? "The policy hasn't changed," Nevitt said, indicating that singletrack will still be off-limits to all users.

There are also concerns it's becoming increasingly difficult to ride at famous hotspots like Tunnel Hill and Ash Ranges, thanks to the actions of the MOD, which has reduced land access over the past five years. That's the view of local residents' group Trails Action Group (TAG), which has watched the land thousands of mountain bikers, walkers, runners and horse riders enjoy become incrementally fenced off and parking removed from key locations.

In 2018, an area of around 1,000 acres called Long Valley (officially called Training area B4x by the MOD) was fenced off, with just five access points created. Then in 2020, the 160 acres at Porridge Pots (Training area G2) was locked away with just two gated access points installed, and in March of that year Ash Ranges (Range Complex) had all public access removed without consultation. The existing by-laws require the land to be shared with the general public when no training is taking place.

TRAIL ACTION GROUP

"We're calling for a protection of access," explains TAG chair Simon Brown. "We want that access retained and to remove the discrimination that



Riders on MOD land look likely to remain barred from singletrack

says: you can run or walk down the singletrack, but you're not allowed to ride a bike down it. Cyclists are also being singled out." The DIO denies that mountain bikers are being unfairly discriminated against, and that anyone in breach of the by-laws – dog walkers, horse riders, mountain bikers – would be treated the same.

"We're looking at strategic links to make access easier for walkers, cyclists, mountain bikers," says Mark Sumner from the DIO. "We've designated a route around Pirbright Ranges that's not on existing public rights, called the Pirbright Great loop, it's a commemoration of 100 years since the Great War.

"We are also looking at a new route around Ash Ranges. The first work has just been carried out – resurfacing to make it more accessible for wheelchair users, walkers, cyclists. That's going to be a three-to-four-year process."

Recent years have seen an assault on public access rights





REMOVE THE DISCRIMINATION THAT SAYS: YOU CAN RUN OR WALK BUT YOU'RE NOT ALLOWED TO RIDE A BIKE

While we welcome more trails and better access to the countryside for all user groups, wide, well-surfaced, multi-user paths do not make interesting mountain bike trails.

LAND REFORMS

TAG's greatest fear is that the new review will unjustly prohibit mountain biking altogether except on fire roads, and eventually all land access will be lost within 10 years at current rates, according to Simon Brown from TAG.

We've yet to see any details of the by-law review, meaning it could offer something genuinely useful to

mountain bikers. And if it doesn't? "The bottom line is that if it's not to our liking, we can bury the consultation in responses," Simon says. "We'd rather have a cooperative, collaborative world because we know that it works better.

It knows this because last summer the group ran a survey to find out just how many people used the land, what they did there and whether they knew an access change was coming. The responses were staggering.

"Every week there are about 50,000 hours of recreation out there," Mike Gilderdale from TAG says. "That's just from people responding to our

campaign. Nearly 11,000 people took part in the survey and we had 8,000 comments telling us that they consider it a safe place to be, they respect the military, and just how important it is for their mental health." Simon Brown adds: "We're in uncharted waters because we've never seen this before. There are close to 12,500 acres, most of which remains open and that is going to garner public interest."

The army prides itself in planning for the worst and hoping for the best. The hope here is that the by-laws review will recognise mountain bikers as legitimate users of the current singletrack trails that have been used for decades. If it doesn't then the plan is to let our voices be heard – those of us with an interest in land access for mountain bikers, no matter where we live and ride, need to help out and comment on the changes. Follow TAG at byelawsreview.com for more information.

DUTCH COURAGE

Bike brand Instinctiv is pinning it all on a gearbox bike with a difference

Fitting a gearbox to a bike is not a new idea; Honda created a huge stir with its RN01 DH bike in 2004, while more recently Zerode, Nicolai, Cavalerie and Deviate have all produced machines using Pinion's system. But in our minds the modern Pinion-equipped bikes we tried were all held back by the twist-grip gear change design, which limited the appeal of the ingenious gearbox it controlled.

Step forward Instinctiv, a small bike brand from The Netherlands with a new range of gearbox bikes, and crucially a trigger unit to make shifting a more natural affair. Couple that with a carbon frame design that's made from seven per cent recycled material (you've got to start somewhere), with a bespoke chain tensioner adorning the Pinion gearbox, and you have a gearbox bike we could really fall in love with.

Called the M-series, there are three bikes in the new range: the M7 with 27.5in wheels and 150mm travel and a 160mm fork, the M9 with 29in wheels, 140mm travel and a 150mm fork, and the M97 mullet bike with 150mm travel front and rear. They all use the same Horst Link suspension design, with a system of rockers and linkages to keep the frame compact, Instinctiv says, delivering a bike with a progressive feel.

The system of linkages brings the shock shaft alarmingly close to the linkage but Instinctiv says there's enough space. "We took into account enough tolerances, with at least three to four millimetres space," says Andreas Knol from Instinctiv. The compact design does limit the bike to just a few shocks though – the layout doesn't allow enough space for any Öhlins shocks, for example, while there are just two options from Fox: the DPX2 and Float X.

"We made it a compact design because we were totally focused on

creating a bike that's as confident as possible," Andreas says. "With the gearbox, you add weight but you put it where it should be on a bike – the platform should be the same philosophy then, low and compact."

It's the shifting you really want to hear about though. Instinctiv has specced a Pinion gearbox, a system we've tried many times in the past and found exciting and bedeviling in equal measure. It's a great idea, ditching the delicate derailleur and replacing it with gears inside a sealed box can only be good for reliability, while improving the ratio of unsprung to sprung mass is guaranteed to have any suspension

design tracking the ground better.

But there are some downsides to a conventional Pinion set-up, like the fact you have to change gear by twisting a collar on the inside of your grip – in the past we've found it awkward to use, in fact it's been something of a deal breaker for gearbox bikes.

"We had the same frustration," says Andreas. The solution was to build Instinctiv's own trigger shifter with help from German brand Cinq Innovations. "First we went hydraulic and that didn't work well enough. Then we tried electronic and that was promising and really working well, but we decided to put it on hold as it forces people to get batteries and switch to electric shifting, so we just settled on purely mechanical."

The new shifter works with two cables, each attached to a separate shifter lever. Move the first lever and it'll pull the cable to shift up a gear, move the second and it'll drop your chain

M-Series bikes are listed at £6,200 on the Instinctiv site, but you'll need to add on 20 per cent UK VAT to take it to £7,440

SHIFTING FEELS SIMILAR TO A REGULAR DRIVETRAIN SO YOU WILL FEEL AT HOME



Bikes weigh from 14.9kg to 15.1kg – about 600-900g heavier than they would be with a conventional drivetrain, Instinctiv estimates

Full carbon frame made from seven per cent recycled automotive carbon-fibres from Germany, internal cable routing

Fox Float 36 fork in either Performance Elite or Factory Series, with a Fox Float DPX2 EVOL shock, either Performance Elite or Factory Series

Two Pinion gearbox options: the C1.9XR with 568 per cent range, or C1.12 gearbox with 600 per cent. Choose from the Pinion DS2 grip shifter or the Instinctiv trigger shifter



Pinion system hides internals from mud and offers a suspension-friendly redistribution of weight

down one, while they both retract via a spring back into the shifter box when released.

“Ergonomically it feels similar to a regular drivetrain, so you will feel at home,” Andreas says. “It’s different from a derailleur system in that it requires exactly the same force to move up or down the cassette. It’s also a heavier action, but it’s also

more instant compared to a derailleur – that takes time.”

Just like with any Pinion gearbox system, you can’t shift under load, something Andreas admits takes a bit of getting used to. But it’s easy to learn compared with a grip-shift set-up, he says, and thanks to the bespoke trigger shifter, you know immediately which paddle to press.

What about the bike then? The Instinctiv range has been built specifically for a gearbox, meaning there’s no option to run a conventional drivetrain if you like the look of the bike but not the shifting concept. The bikes in question boast full carbon frames, internal cable routing and decent claimed geometry. The head angle is 64.1°-64.5° across the range, the chainstays are relatively short at 430mm, and the wheelbase on a size large is 1,254mm. There are three sizes to pick from, with the size large sitting in the middle and delivering 481-486mm

reach depending on wheel size – about the same as a Specialized Enduro in S4 size then.

It’s a progressive bike in terms of suspension characteristics, Andreas says, similar to the Enduro, while there are no tokens added to the shock. All the bikes in the range have the same shock fitted, although this wasn’t always the case.

“In the first prototype, we did have a different shock on the M9 that meant it was less plush,” Andreas says. “Then we decided to change the linkage to use the same shock, so in a way it now feels the same, only it has 10mm less travel.”

Instinctiv has just begun its second production batch of 50 frames, and currently there’s availability on the site. If you want to demo a bike, you can currently only do so in Amsterdam or Switzerland, which isn’t hugely helpful right now, but there are plans to bring demo bikes to festivals around Europe when possible.

HOT STUFF

WHAT WE'RE EXCITED ABOUT THIS MONTH

*MOST
WANTED*

EXT ERA FORK £1,590

There have been lofty claims and gushing reviews for the new EXT ERA fork. But is it all hype to justify the equally lofty asking price, or is the ERA really so disruptive that we need to recalibrate our expectations? Before we can answer that, let's take a closer look at what the ERA is not... and that's unique.

Sure, there are two positive air chambers and a self-equalising negative chamber, but Öhlins currently uses a triple-chamber air spring in the RFX 36. And Specialized had one before that too – anyone remember the short-lived Future Shock E150 dual-crown fork? In terms of the chassis, it's a conventional fork with 36mm stanchions (upper tubes). The crown/steerer interface is pretty unique though, the crown extends up the base of

the steerer to increase stiffness, but externally that's about all that sets it apart. At the opposite end of the chassis, the ERA uses a standard 15mm thru-axle, with none of the fancy self-centring features that come on the latest Fox 36 and 38.

In terms of damping, the EXT ERA boasts independent high and low-speed compression adjustment with low-speed rebound at the base of the same leg, so nothing out of the ordinary here either. Travel options are what you'd expect too: 140, 150, 160 and 170mm. And to keep things simple this dedicated 29er fork is only available in the most popular 44mm offset.

Ride the ERA however, and it's apparent that EXT has combined all of the above ingredients in a unique way, while adding some



Standard 15mm bolt-thru axle and 44mm offset



Extended fork crown boosts stiffness



Stanchions keep things conventional with a 36mm diameter



Rebound adjuster sits under right leg



secret sauce to create its own unique suspension flavour. Thanks to the HS3 hybrid spring design that also has an integrated coil spring, the ERA is incredibly supple off the top, so traction is never in short supply. And unlike most modern forks, the range of damping adjustment is very usable, so you'll never find yourself at end-range adjustment, unless of course you genuinely are a physical outlier.

Baseline settings get you off to a great start, but the real beauty of the ERA is the ability to easily manipulate the spring curve. Sure, it's a pain having two positive air chambers rather than just one, but so is fitting volume spacers, and they don't offer anything like the same degree of spring curve

manipulation – the interplay of the two positive chambers having the biggest impact on mid-stroke support. Is there too much adjustment for the majority of riders? Probably. But then, the ERA was never designed as a fork for the masses or mass production.

We're still not sure if it lives up to the hype, but for the first mountain bike fork from a brand that specialises in shocks, EXT has hit the ground running with the smoothest, most controlled landing. So if it is ultimate performance and control you desire, and you get just as much satisfaction tweaking suspension settings as smashing out runs, the EXT ERA should be your most wanted. It's certainly ours. mojo.co.uk



BOMB SQUAD

The Specialized Trail-Series Alpha Jacket has a fluffy Polartec liner to keep you warm on properly cold days. Designed as a mid-layer, bomber-style jacket, it has side pockets and zips at the rear for extra venting and ease of movement. **£190, specialized.com**



SWITCH SADDLE

Mondraker's in-house brand OnOff Components makes a dropper post called the Pija. It's available in a 200mm drop, features a replaceable sealed cartridge, internal routing and a remote lever that runs on bearings not bushings. **€199.95, onoffcomponents.com**



RIDE TO ROAM

The Race Face Roam Knee uses a plastic TPU skid plate, backed by an energy-absorbing D30 foam pad. There's also a layer made from Kydex, a really tough plastic that should protect your knee from the sharpest rocks. Open-back design, six sizes. **£124.95, silverfish-uk.com**



DAY OF THE JACKAL

Lazer's new Jackal MIPS Helmet looks the business, with extended rear coverage, a visor that lifts high enough to stash your goggles underneath, grippy goggle platform at the rear, multiple vents, and a GoPro mount designed to break away in a crash. **£149.99, freewheel.co.uk**



HOT OFF THE PRESS

Orbea has a lustrous new finish available on its top-end Oiz, Alma, Orca OMX and Rise bikes. Called Carbon View, there's no need for a paint layer so it's 80-100g lighter. It's available in matt or gloss when personalising a bike through the brand's MyO customisation programme. **orbea.com**



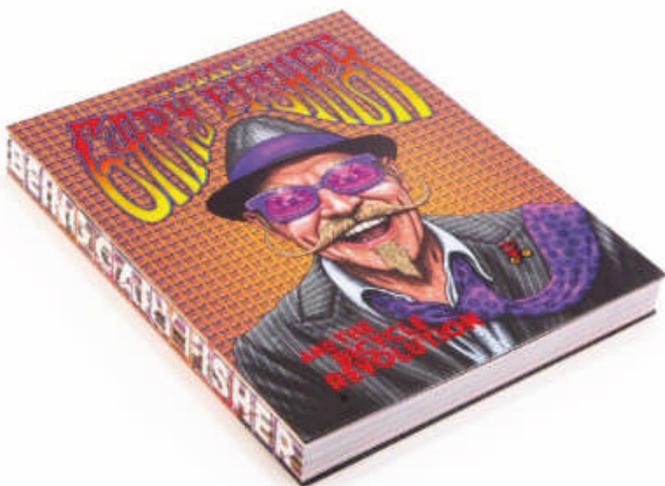
AIR HOSE

The SKS Airflex Explorer pump is simple but gets everything right – the internal extendable hose grips your valve easily, while the body is made from aluminium and polycarbonate, meaning it's both flexible and hard-wearing in the right places. **£34.99, zyrofisher.co.uk**



HOOLIGAN HOOPS

Built for e-bike use, WTB's new HTZ rim is designed as an affordable and heavy-duty option for e-bikes and enduro racers. It has an increased wall thickness of 25-30 per cent over WTB's KOM Tough enduro rim. Comes 23, 25, 27, 30 or 35mm internal width. **\$99.95, wtb.com**



PAPERBACK RIDER

It's been a wild ride for mtb pioneer, racer, designer and legend Gary Fisher, and you can read all about it in his new autobiography. It's not all about bikes either; according to co-writer Guy Kesteven, those are the boring bits. **\$39.99, trekbikes.com**



TOOTH FAIRY

Wolf Tooth has developed an angle headset that lets you slacken your bike out by 1°. Called the GeoShift Performance Angle Headset, the bearings are aligned with the fork steerer to minimise wear and creaking. Made in the US from 6061 alloy. **£105, wolftoothcomponents.com**

SHOTGUN MTB TOW ROPE £55

Shotgun started out making a little bike seat that mounts to the top tube of your bike, letting your toddler get a taste of mountain biking by riding shotgun. Kids grow up fast though, pretty soon they're on their own bikes, loving the descents and moaning on the climbs. Shotgun has grown too then, it's next product a tow rope to get them to the top, maximising the downhill time and minimising tantrums. In our experience, kids are happy to ride all day long provided you keep them topped up with Haribo, but not when they have to ride uphill, making the tow rope spot on.

It'll tow other things too. Not your car out of an icy ditch, but perhaps a regular bike from, dare I say it, an e-bike. The Tow Rope is load rated to 225kg, so in theory you get two of them and string them together like you're a gang of climbers, bringing e-bike ease to everyone (except the sucker at the front).

The Tow Rope is 1.7m long but its stretchy nature means it expands to 3.3m under load and helps even our power surges and make the ride smoother. The idea is you loop one end round your saddle and the other round the stem so the kiddo can ditch it easily.
kidsrideshotgun.co.uk

Shotgun's tow rope is kind to your kids' legs... and your ears



YORKSHIRE BEST

The UK's largest county is home to a wide variety of riding; with so much to choose from, we've selected five of our favourites (restrictions permitting)

TODMORDEN, WEST YORKSHIRE 24.8km (15.4 miles)

West Yorkshire, best Yorkshire? That's up for debate but what isn't up for debate is how good the riding is in the West Riding. This route starts in Todmorden where the trails and landscape lean heavily on an industrial past and present. Singletrack is made of millstone slabs rather than dirt, and tracks lead off to the wind farms that dot the horizon. The topographical creases in this part of the South Pennines are deep, so the climbs are steep but that does mean they are over with quickly and the descents lose altitude at a similar rate, so there's rarely a dull moment.

GPS download bit.ly/TodmordenRide

CLEVELAND HILLS, NORTH YORKSHIRE MOORS

56.1km (34.9 miles)

Home to the renowned 'Ard Moors Enduro race, the North York Moors sit at the northern edge of the county, stretching from Whitby on the east coast to Thirsk in the west. Rising sharply from the surrounding flat lands, the NYM is a varied environment that has a very different feel to much of the rest of Yorkshire. Woodland clings to the sides of the valley that cut through the high plateau that forms the bulk of the park, farmland fills the lower slopes and the top is dominated by the heather-covered moorland. This ride takes you through all of this, with views over to Middlesbrough thrown in for good measure.

GPS download bit.ly/NYMRide





LANGSTROTHDALE, YORKSHIRE DALES 57.6km (36 miles)

The Yorkshire Dales is probably what most people think of when they think of God's Own County, thanks chiefly to the packaging of a well-known brand of tea. Close-cropped grass fields framed between white limestone walls and picture-postcard villages, it's easy to think of The Dales as a quaint and gentle place. Which is why this ride is anything but. At 58km with 1,557m of ascent, it'll require some Yorkshire grit but it's well worth the effort. Starting in Horton in Ribblesdale, home of the truly tough Three Peaks cyclo-cross race, you'll quickly be up hill, down dale and round the fell.

GPS download bit.ly/Langstrothdale

UPPER NIDDERDALE, NORTH YORKS. 36.6km (22.8 miles)

This route sits just outside the Yorkshire Dales National Park and has its own unique flavour. This is a ride through a landscape that swaps small village niceties for wide open spaces and a feeling of rugged isolation – on a good day you'll feel like you're riding on the top of the world. On a not so good day it can feel bleak and bracing. Despite the rather unwelcoming sound of Scar House Reservoir, the area is also home to the curiously named Jenny Twigg and her Daughter Tib, a pair of large wind-sculpted rocks.

GPS download bit.ly/Nidderdale



CUT GATE, SOUTH YORKSHIRE

46.1km (28.6 miles)

Derbyshire dominates the Peak District but this border raider ride starts in South Yorkshire before crossing county lines. Starting at Langsett reservoir, there's a steady climb out over Midhope Moors on the much-loved Cut Gate trail before doing a hot lap of Ladybower reservoir. Normally out-and-back rides can feel a bit of a chore but Cut Gate rides so well in both directions you won't mind one bit. Pick your days for this ride, though, Cut Gate has some sensitive sections that are best avoided if the weather has been rotten, check twitter.com/KoftheP for trail conditions.

GPS download bit.ly/CutGateRes

GETTING SIDEWAYS

Give classic bodyweight exercises a twist to maximise ride-specific strength



Riding isn't just about moving front to back, like most exercises in the gym – think squats and deadlifts. And while squats and deadlifts should form the basis of your strength development off the bike, we also need to move in ways that better represent the shapes we actually pull on the bike.

Sticking to movements in the sagittal plane (front to back) can lead to imbalances and also inhibit on-bike improvement. That is why we must include the other major planes of motion – frontal (side to side) and transverse (rotational) – in our training. Imagine the positions and stresses you are under when riding, very few of those involve only one plane of motion. By training all planes, you will build true three-dimensional ability and improve overall function to help you ride better.

Let's take a look at four multi-dimensional movements that provide great crossover for riding. You can add these to your training easily and without any equipment.

THE COACH

Jonny Thompson is head coach for Fit4Racing, an online fitness programme for mtb riders. Once a forensic scientist, Jonny has devoted the last 10 years to coaching athletes, from Paralympians to world number one enduro racers. His main focus with the Fit4Racing team is developing and delivering fitness programmes to pro and amateur riders. Training the likes of Adam Brayton, Jonny also sends digital programmes to riders all over the world, many of whom ride professionally.



THE COSSACK SQUAT



This is one of our favourite movements for increasing hip and ankle mobility. The key when performing cossack squats is to drop your bum back as you lower it, while pulling your chest up high. Once comfortable, you can increase the range of motion by pushing your knee as far forward as possible, making sure it is pointing the same direction as your toes. Adding a little weight in your hands is fine, but isn't necessary unless you are training at a high level or don't have access to heavier, weighted movements.

HOW TO TRAIN THE COURTESY SQUAT

Regardless of ability level, you should be able to perform the cossack squats as described. The depth and quality of position is key to improvement, not the total number of reps per set.

Alternate between sides for 10-12 reps slow and controlled, or try a 20-30 second hold in the bottom position each side.

ARCHER PUSH-UP

This push-up variation puts emphasis on loading one side more than the other. Get into the regular push-up position then extend one arm at 90 degrees to your torso. This is a great movement as it helps develop both rotational strength and mobility, while providing the opportunity to identify any side-to-side imbalance.

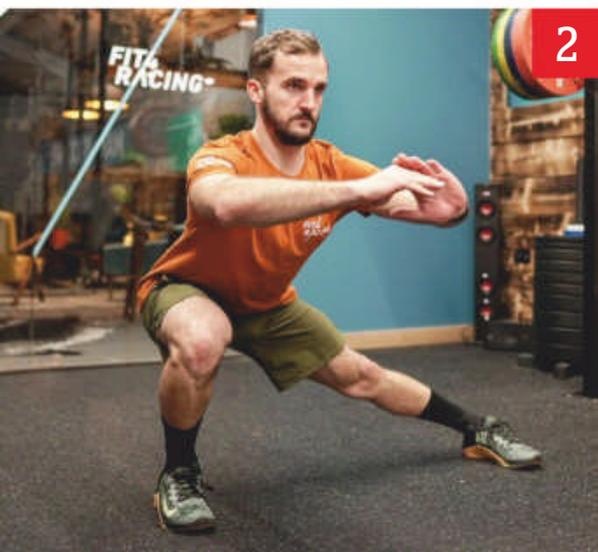
HOW TO TRAIN THE ARCHER PUSH-UP

You will get the most benefit from archer push-ups by moving from one side to the other in a slow, controlled movement. Don't be tempted to add speed until you are confident in the movement. Complete three to five sets of as many reps as possible, starting on your weak side first. Rest one to two minutes between sets.

BEGINNERS Four to six reps on knees.

INTERMEDIATE Four to six reps on toes.

ADVANCED 12+ reps on toes.



CURTSY SQUAT

This movement will help you corner like a boss. Much like the front-foot position of the cossack squat but the reaching leg extends behind and across you as far as you can manage.

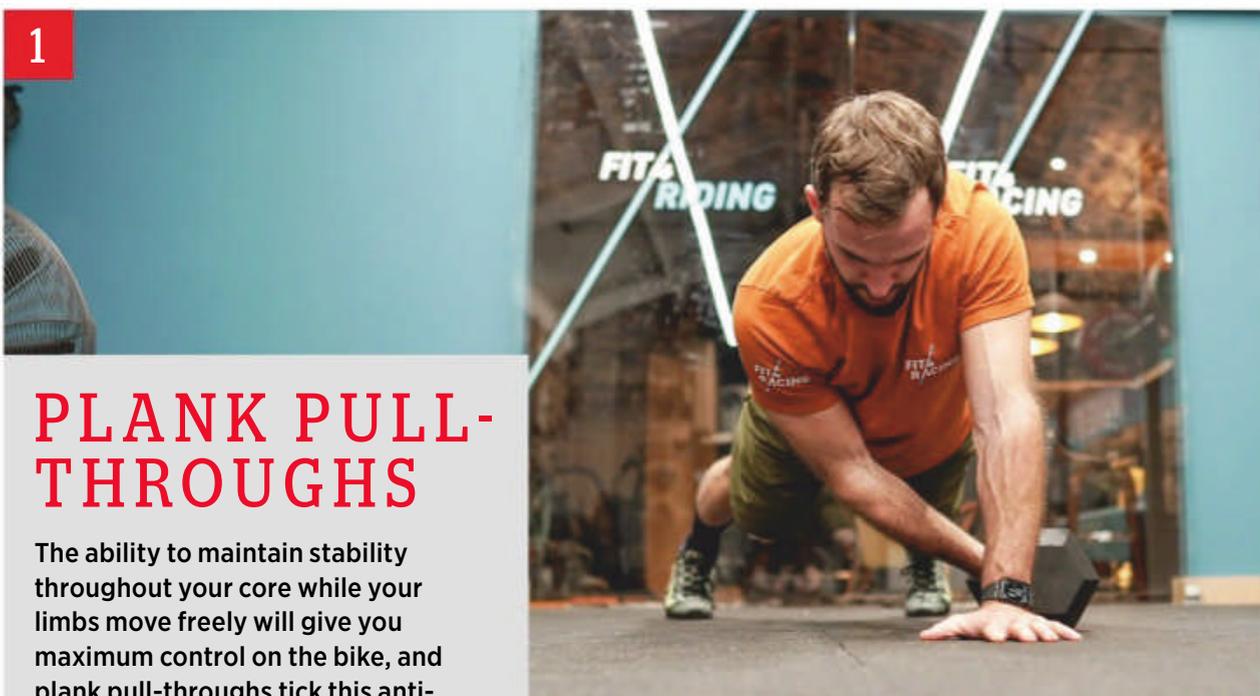
HOW TO TRAIN THE CURTSY SQUAT

The curtsy squat adds a lot of rotation through your pelvis, lower abdomen and knee, so start gently, and only increase the range of motion as you begin to feel more comfortable.

BEGINNERS Three rounds of 12, alternating with 60-90 seconds rest between rounds.

INTERMEDIATE Three to five rounds of six-10 reps left side, rest for 60 seconds, six-10 reps right side. Rest for 60-90 seconds between rounds.

ADVANCED Five rounds of 10-12 reps left side, rest for 60 seconds, repeat on right side, rest 60 for seconds.



PLANK PULL-THROUGHS

The ability to maintain stability throughout your core while your limbs move freely will give you maximum control on the bike, and plank pull-throughs tick this anti-rotation box perfectly. Get on the floor in a push-up plank position then drag a weight underneath your torso; repeat in the opposite direction. Although a weight is needed to advance the exercise, a rucksack with some books will suffice.

HOW TO TRAIN PLANK PULL-THROUGH

Complete three sets for time, 30 seconds to start then build to one minute. Rest one to two minutes between sets.

BEGINNER Start with a cloth or mat that slides easily on the floor to get used to the movement.

INTERMEDIATE While maintaining good form, progress the exercise by gradually increasing the weight moved.

ADVANCED Lift the opposite leg to the hand doing the dragging for the ultimate core workout.

NEXT MONTH
Mini workouts for maximum gains. Don't let limited time impede your progress

DANNY HART SQUARED

Double downhill world champ Danny Hart talks about that winning run at Champèry, the move to Cube and training in lockdown

Britain's only double mountain bike world champion is on the move. It's been a badly kept secret, but German brand Cube snaffled Danny Hart's signature, in turn picking up one of the most skilful racers on the downhill scene.

The Redcar man is known to excel when the going gets steep, slippery and gnarly, and his World Champs-winning run from Champèry where the youngster annihilated the competition by 12 seconds in the pissing rain and had the commentators blowing a gasket, is now part of mountain bike folklor.

We know you had other offers, so what made you choose Cube?

Well, to start with, Cube was really up for signing me. So, I visited the brand and saw the scale of it; the factory, all the testing and R&D and I met the engineering team. I was really impressed. It's a huge company and now has a refined downhill bike and is ready to try and get some podiums and hopefully some wins. We all felt we could do that together.

And how's the Two15 downhill bike going?

It's great. The production bike is a 29er, but the Cube team made me a mullet set-up with a 27.5in rear wheel. This is the set-up I've been racing for two years and I wanted to continue with what I knew. Even with the aluminium rear stays (which will be carbon soon), the bike is super-light, and I've felt right at home straight away.

I'm still on the Fox recommended settings at the moment as we've not done any proper testing yet, but the suspension is working well and I know I can be fast on this bike.

Do you do anything special to your race bikes in terms of set-up?

I don't think so. I have a narrower bar than most at 760mm, and then little things like running my cleats all the way back to get my heels down on the steps. It's hard to say whether your

suspension is wildly different from everyone else's as we never get to ride other people's bikes, but my aim is always to just get it working as well as I can against the clock.

I obviously tried a 29er a while back, but I prefer the way the mullet bike reacts at my height. It feels like it gets in and out of corners quicker so I can carry more exit speed and then you've still got the bigger wheel roll-over advantage on the front that makes it feel a bit calmer and more stable to focus ahead.

Last year was a weird season with Covid interrupting everything and a very short window of DH races...

Yeah, it was strange and I got a bit caught out by the goalposts changing all the time. Obviously, we hope things get back to normal, but we don't know what's going to happen yet, so I'm trying to be ready for anything as soon as things change. It's a case of being well trained, race-ready and just on it all the time and able to react.

I'm looking forward to getting back to the front of the pack if I can, and seeing how the new bike handles all the tracks I've ridden before. I think it feels exceptional, so it will be interesting to see if we can find some time on the hill. Snowshoe at the end of the season is going to be a good one as I really found the flow there and had one of my favourite wins there in 2019 where it all just seemed to click in place.

And how's the training looking, with Covid closing all UK bike parks and DH tracks at the minute?

Well, yeah that's a challenge. I need bike time to be competitive and also need to do a suspension tuning camp with Fox, so we're just looking at options to go to Europe in February. Through UK Cycling and being an Elite GB athlete, I have exemption to travel and work and we're able to work it out.

Many people's favourite mountain bike memory of all time was your



“I VISITED THE BRAND AND SAW THE SCALE OF IT. I WAS IMPRESSED”

Worlds-winning run in Champèry with a 12-second advantage – is that still a favourite race run for you?

Yeah, it is. It didn't even feel like a race run at the time, though, to be honest. It was just one of those freaky times where the weather throws a cat among the pigeons and you do what you can. Everything goes out of the window so you just kind of ride down the hill as best you can. I didn't realise how well my run was going or what everyone else had felt like on the track, so I was just winging it really – that's why I ended up doing the whip at the bottom for a bit of fun.

We don't see as many Danny Hart whips as we used to these days, do you have plans for a mini-series or video projects where we just see you ripping and jumping?

First and foremost, I'm a racer and I love it. I'm focused on that, so all my eggs are in one basket, and it doesn't leave much time. Maybe at a later date after all the racing has calmed down that could be something I'd do just for fun, we'll have to see.



GET STARTED ON...

UNDERSTANDING CONCUSSION

Concussion is tricky to diagnose but should never be ignored; EWS's new pocketbook is a great way to educate yourself

Concussion. It's the elephant in the room when it comes to mountain biking. We've all got used to taking a tumble every now and then, enduring scrapes, broken bones and peals of mocking laughter from our so-called-friends. We're not so used to talking about concussion, though. Until relatively recently, this type of brain injury was cloaked in mystery, while most of us who suffered a blow to the head would think nothing of riding again the next day.

Now though, with more research detailing the damaging effects of concussion, we all need to get better at spotting it and taking the right action.

WHAT IS CONCUSSION?

The brain is very complex and every brain injury is different; as such, confusion over definitions and terminology still exists even today.

"IT TOOK ME THE BEST PART OF TWO YEARS TO RECOVER FROM"

In 2017, the Concussion in Sport Group Consensus Statement released a unified definition, describing it as a "traumatic brain injury induced by biomechanical forces". It can be caused by a bump, blow, or jolt to the head or by a hit to the body and doesn't have to involve a loss of consciousness. Some symptoms may appear right away, while others may not show up for days or weeks after the concussion.

Sometimes, the injury makes it hard for people to recognise, so diagnosis isn't simple, with symptoms varying from person to person. And because

all brain injuries are different, so is concussion recovery. Most people with mild injuries recover fully, but it can take time. Some symptoms can last for days, weeks, or longer. Those who have had a concussion in the past are also at risk of having another one and may find that it takes longer to recover if they do.

Katy Curd, former 4X world champion and elite downhill rider, has spoken openly about the effect a series of concussions had on her. "It's such a serious injury yet so invisible and so varied. From killer headaches, to not being able to process thoughts into words, loss of eyesight, memory loss, to severe depression." For Katy it was so much more than a bang to the head and a headache. "It has been by far my biggest injury to date and took me the best part of two years to fully recover from and a crazy amount of intense rehab to get there".



Acting tough after a crash might save face but it won't save your head

HOW BIG A PROBLEM IS IT ANYWAY?

Just how many instances are there of concussion across our sport? The truthful answer is we have no accurate idea. Research into concussion, particularly in mountain biking, is incredibly scarce. However, there are some positive steps being made. In 2019, the Enduro World Series released findings from the largest ever medical study in mountain biking, looking at injuries and rider health across the professional EWS field, and a second arm looking at rider health from a mix of elite athletes, amateur racers and recreational riders. “We’ve been in charge of the creation of this discipline [enduro]; now we’ve got a chance as an independent body to do what we want and actually have an evidence-based approach to the sport’s development, and for all riders,” says Chris Ball, one of the study’s authors.

Just 0.6 per cent of riders competing in the 10 EWS rounds in 2017/18 suffered a concussion, while four per cent of respondents riding just for fun experienced one – and half of those reported significant reoccurrences.

The results seem fairly positive, but do they paint a true picture? Harrison Brown is the CEO of Headcheck Health, a software company providing digital health tools to sport organisations that enable them to execute and monitor concussion protocols.

“The bigger problem is the recreational space. I feel a little nervous. Probably the most concussions in the world are received by cyclists, just because of the sheer number of people who ride bikes and fall off them.”

So how can we go about making an improvement to our understanding and handling of concussion across the spectrum of cycling?

NEW PROTOCOLS

Concussion returned to the sports pages back in December 2020, when a group of former rugby internationals, including England’s World Cup winner Steve Thompson, announced they were planning legal action against the game’s authorities, alleging they were negligent over the brain injuries that the players suffered.

Less than a week later, the UCI released a new concussion-specific protocol that will apply to all disciplines. The protocol recognises the challenges to our sport, including the length of time it can take to get to injured riders, and sets out steps to make improvements. These include the need to increase training among non-healthcare professionals to diagnose and identify concussion, return-to-race recommendations following a concussion, and compulsory notification of instances in competition.

CONCUSSION RED FLAGS

- Loss of consciousness/deteriorating conscious state
- Lying motionless on the ground
- Confusion/unusual behaviour change
- Increasing confusion or irritability
- Severe or increasing headache
- Severe neck pain/tenderness*
- Repeated vomiting
- Double-vision
- Seizure or convulsion
- Weakness, tingling or burning in the arms or legs

*NB: if a neck injury is suspected, the rider should only be removed by a healthcare professional

Taken from the EWS Concussion Pocket Guide – check out bit.ly/ConcussionEWS for the full rundown, and how to return safely to riding afterwards

USING RIDERS’ VOICES

The new protocol takes a step towards improving behaviours in competitive circles, but how can we reach out to those of us who just ride for fun, or for commuting? For Chris Ball, the responsibility is shared but should be driven from the top. “Everyone has a part to play, the culture and tone needs to be set by the sporting bodies and then reinforced by the general population.”

Riders such as Martin Maes and Katy Winton have both missed races due to team or personal decisions following concussions. “It’s one thing a group like us [EWS] saying this stuff”, say Chris, “but when a sporting idol like Martin Maes or Katy Winton is seen dealing with our advice and carrying it out, that has a cascading effect through the riding population.”

A stand-out finding flagged up by Chris following the study was a lack of tools to support riders’ knowledge. “There’s no education out there at all,” he says. Off the back of this, the EWS produced a Concussion Pocket Guide, outlining symptoms, red flags and what to do if you suspect you’ve sustained a concussion. “It’s a general awareness shift that’s needed. A real simplification of what you do when it happens. People don’t necessarily have the time, care or wish to really become an expert in an area. We all love bike riding because it’s a very free sport in its field of play and its boundaries. We need to simplify it and not risk overly legislating and taking away the good stuff in the process.”

SO WHERE NOW?

For Harrison, implementation and enforcement of protocols is key to avoiding troubles down the line. “That’s what the lawsuits are about, it’s negligence lawsuits,” he says. “It’s because you said something, you said you were going to do it and you didn’t do it.”

For Chris, it’s a focus on us as riders taking ownership for ourselves, “There needs to be a general understanding that it’s an outdoor sport that will always take a level of self-care, self-reporting and self-awareness,” he says.

And for Katy: “It’s essential we as riders and athletes spread awareness about the severity of concussion, show the rehab process, show the in-depth process it takes to come back from such an injury and show that taking time out of the sport is a must and not deemed as a weakness but something essential that could save your life.”

Citation: D Palmer, G Florida-James, C Ball. Enduro World Series (EWS) Mountain biking injuries: A two-year prospective study of 2010 riders. *International Journal of Sports Medicine*. DOI: 10.1055/a-1320-1116



First rides

SWINGING A LEG OVER WHAT'S HOT THIS MONTH

SANTA CRUZ NOMAD CC X01 RSV

£7,799 / 27.5in / santacruz bicycles.com

NEED TO KNOW

- Mild facelift for the iconic Nomad
- Subtle re-profiling of the head tube and BB area with crisp edges and sharp creases
- Reach goes up on largest three sizes and seat tubes get shorter
- Proportional chainstays to keep weight balance constant across the size range
- Keeps the 27.5in wheels and 170mm travel of the old model
- Six model range starts at £4,499 for the Nomad C R

Does the latest edition of the Nomad stray from its siblings' impeccable rep? We find out...

The Santa Cruz Nomad needs no introduction, so apologies for being really annoying and giving one anyway. Launched in 2005 with a hunchback, hydroformed alloy frame, it originally came under the all-mountain banner. In 2010 the first carbon Nomad was introduced, followed in 2014 by the third iteration with much more modern geometry and – shock, horror – 27.5in wheels. By that point, the Nomad had become the desktop wallpaper bike for a generation in the same way that the Ferrari F40 was the poster car of the late Eighties. It sold like hot cakes, and and pedalled so well you could actually justify being totally over-biked.

Finally, three years ago the Nomad 4 was released, and with it a wholesale change of chassis design and suspension kinematics that, after several small, incremental steps, represented a genuine leap in performance. That lower link-driven shock, first used on the V10, got rid of the old VPP 'hammock' effect where the suspension would settle into the mid-stroke, and it brought more consistent performance, simpler set-up and better tunability. The performance gains from moving the shock were transformative. When we last tested the Nomad in 2018 we absolutely loved it, rating it 9/10 and pronouncing it was the 'best Santa Cruz suspension bike to date'.

So to now, and the new Nomad 5. Guess what? When the recipe is as successful as that, you don't mess with the ingredients. Against my best guess, Santa Cruz has not turned it into a mullet bike, it has merely gone in and adjusted

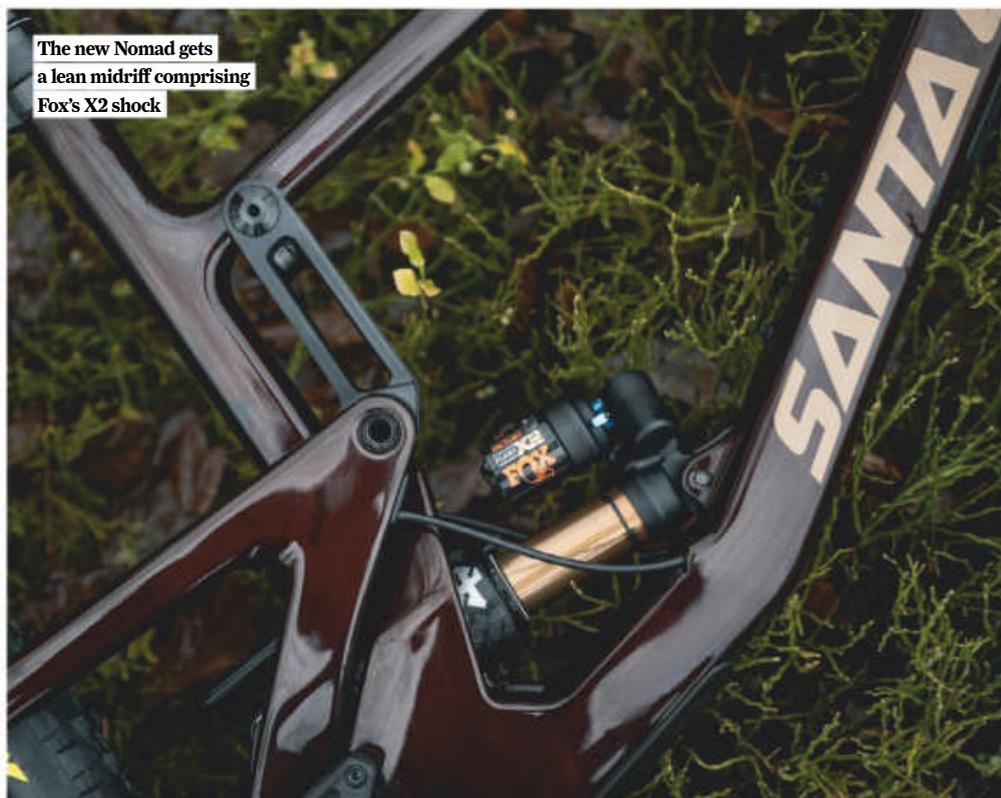
the seasoning, which might not spark heated debate in the comments like the last one, but it makes perfect sense from a business perspective. That doesn't mean that the new Nomad hasn't evolved – the sizing has been stretched (which was one of our few complaints on the previous bike), there's now a twin-upright swingarm to stiffen up the back end and a reskin using the latest design language unveiled earlier this year on the 5010. That means crisp edges and striking creases, with a carved out web behind the head tube and an origami fold across the belly of the shock tunnel.

Also carried over from the 5010 and the Hightower are proportional chainstays, where by changing the position of the lower link relative to the BB, the rear centre length can be altered without going to the expense of making different swingarms. The benefits are that front and rear wheels both grow further apart from the BB as you move up the size range, so your weight distribution remains relatively consistent on the bike no matter how tall you are. For the record, rear centre measurements range from 425mm to 440mm in 5mm increments, while the reach grows in 25mm steps from 425mm to 500mm. Before we move on, it's also worth noting that the seat tubes are now significantly shorter on every frame size, with longer dropper posts filling the gap.

Just like the previous Nomad, the frame is coil-shock friendly, both in terms of kinematics and clearance through the shock tunnel. In fact there's a no-cost coil option on all but the two entry-level models. Santa Cruz has tweaked the leverage curve too, using a longer stroke shock to reduce the average rate through the travel compared to the v4 Nomad, coupled with a little more progression for the last 15-20mm of travel.

The cable routing has been brought in line with the other bikes in the range and now runs cleanly whether you ride with your front brake on the left or the right. Reinforcements have been made to the integrated frame protection, with the underbelly armour and pick-up pads being supplemented by a further section beneath the chainstay yoke and the ribbed protector now enveloping the entire chainstay just behind the chainring.

You still get a flip-chip at the rear shock eyelet, giving 4mm of BB height



The new Nomad gets a lean midriff comprising Fox's X2 shock



adjustment and 0.3° of head and seat-angle variation as well as increasing suspension progression slightly. I left it in the high setting for this first ride in South Wales, as I never felt the need to go lower or slacker for the long, steady climbs and steep, natural enduro tracks. Perhaps for bike park terrain, where pedalling is unnecessary, I'd consider

the low position.

This CC X01 model comes with a Fox 38 Factory fork, Fox Float X2 shock, X01 Eagle drivetrain and Reserve carbon wheels for £7,799, although if you opt for alloy hoops you can make a healthy £1,200 saving and still enjoy some of the best suspension on the market. Other components of note are the chunky Burgtec stem (40mm on all sizes), Maxxis Assegai/Minion DHR II tyre combo with sticky Maxx Grip compound up front and EXO+ casing (Double Down on coil-equipped bikes), superlative, ultra-adjustable Fox Float X2 shock.

As always, going some way to mitigate the high price tag is the enviable rider support package, including a lifetime warranty for the frame and wheels and free lifetime bearing replacements.

HOW IT RIDES

If you've read our review of the Nomad v4 from a couple of years ago, you'll know how much we loved that bike. It was one of those guilt-free enduro bikes that was completely at home blasting an alpine descent, but scarily efficient climbing back up for another run. If the

Nomad had a party trick, it wasn't how much roost you could generate drifting into a turn, or how easy it was to manual – although it could do both those things at will – it was how efficiently you could pedal back to the top of the hill.

The new Nomad picks up where the old bike left off, but with a noticeably more spacious riding position. I measured our bike at 479mm reach, a touch more than the geometry chart claims, and around 20mm more than the old size large. Interestingly the head tube is much longer than on the old bike, some 20mm on the large, and while this felt out of place on the short travel 5010, it never jarred on the Nomad. Perhaps a result of the steeper terrain it's likely to encounter. Either way, I was surprised that such a big change, affecting a major contact point, would go under the radar when riding.

If the previous Nomad defied logic on the climbs, the new one seems accomplished if not exactly mind-blowing. I have a hunch this is not the fault of the Nomad itself, but more that other enduro bikes have caught up in the balance between bump absorption and pedalling efficiency. And the fact

Longer head tube but the 40mm Burgtec stem didn't need slamming





Elation sought and found amid the doldrums of a third national lockdown



New internal routing system offers clean lines regardless of brake set-up



Geometry tweaks with Allen key-operated flip-chip

The Nomad was scarily efficient climbing up for another run

that it comes with a sticky Maxx Grip compound Assegai up front that leeches itself to the ground, with every knob literally needing peeling off the dirt in search of forward progress. Yes, the extra grip is welcome for alpine trips, but here in the UK, the extra rolling resistance can be soul-destroying if you're not supremely fit.

There's more pedal mush and bob than I remember, too. Nothing that can't be cured by a quick flick of the compression switch on the Fox Float X2 shock, but I don't remember ever feeling the need to do that on the old bike in either coil or air guise.

Even with the growth in reach and stack, agility remains a Nomad highlight. Changes of direction are available on

tap, and there's acres of room to move around the bike and shift your weight balance, without getting tangled up in the back wheel. Was I slashing turns, popping out of turns and throwing shapes down every trail like it said I would in the press release? Not exactly, mostly because I was too focused on maintaining my hard won momentum in the face of that extra drag from the front tyre.

Square-edge bumps and roots can still trip up the suspension a touch, and my feet got shifted a couple of times on the pedals on rougher sections, but mostly the suspension feels utterly composed. The Float X2 shock gives masterly control in both directions, feeling supple on minor trail ripples but pillow-y deep on big hits and harsh landings. You can tune it in a myriad of ways too, more than I had the time to try, but initial sag set-up is actually easier than most Santa Cruz's because the O-ring is not concealed by the shock tunnel.

If the old Nomad heralded the start of Santa Cruz's phenomenally strong current line-up, so the new Nomad builds on that success in a subtle way.

It has better sizing, more consistent handling for different height riders and perfectly polished detailing. There's no doubt it's a great bike, but the question I kept asking myself on the long climb up a steep Welsh hillside was, 'who is going to buy this bike?' My gut feeling is that the goalposts have moved at this travel and price point in the last couple of years. Riders have either got used to 29in wheels, or they're moving on to e-bikes. If you only ride park, with access to a shuttle or chairlift, then happy days. But how many of us do that? My biggest concern with the Nomad then, is nothing to do with performance, but that it will get lost the wilderness.

Danny Milner

mbr 1ST IMPRESSION



HIGHS

Fun with a capital 'F'. Still pedals much better than it has any right. Improved sizing and geo.



LOWS

Draggy front tyre if you don't have the luxury of gradient and an uplift.

SPECIFICATION

Frame Carbon CC, 170mm travel (168mm measured)

Shock Fox Float X2 Factory

Fork Fox 38 Float Factory, 170mm travel

Wheels Reserve 30 Carbon wheels, Maxxis Assegai/Minion DHR II 27.5x2.5/2.4in tyres

Drivetrain SRAM X1 Eagle Carbon crank, 32t, 170mm, SRAM X01 Eagle 12-speed shifter and X01 r-mech

Brakes SRAM Code RSC, four-piston, 200mm

Components Burgtec Enduro stem 40mm, Santa Cruz Carbon bar 800mm, KS Lev Integra dropper post 175mm, WTB Silverado Team saddle

Weight 14.15kg (31.19lb)

Sizes S, M, L, XL

GEOMETRY

(HIGH SETTING)

Size ridden L

Rider height 5ft 10in

Head angle 63.9°

Seat angle 69°

Effective SA 77.9°

BB height 345mm

Chainstay 435mm

Front centre 817mm

Wheelbase 1,252mm

Top tube 608mm

Reach 479mm

Down tube 735mm

CANYON STOIC 4

£1,649 / 29in / canyon.com

NEED TO KNOW

- Alloy hardcore hardtail, with a 140mm fork and 29er wheels on the biggest sizes, 27.5in on the smallest
- Keen geometry for descending, with a slack head angle and long wheelbase
- Aggressive components: super-tacky tyres, powerful brakes, RockShox Pike fork
- Short chainstays to appeal to the jibbers and jumpers
- Amazing spread of sizes, from XXS to XL

The new Stoic is a hardcore hardtail with aggro components and geometry, and sizes galore

The Stoic is an entirely new bike from Canyon, a hardtail with a 140mm fork, 29in wheels, components to drool over and a decently slack geometry... very much *à la mode* for these bike-hungry times, then. Demand has been sky high for hardtails for nearly a year now with most of our favourites out of stock, so it's a propitious start for the new bike, and its chances of selling out fast are pretty high. If you want one, don't wait.

There are three Stoics to choose from and they all get the same frame, tyres and wheels. This makes your decision pretty simple then, it comes down to the drivetrain and suspension fork you can best afford. The rolling stock in question is the Schwalbe Magic Mary and Hans Dampf tyre combo, Alex DP30 rims and Shimano hubs.

The Stoic 4 I rode leads the range and now costs £1,649, after Canyon lopped £150 off the price even before the bikes had hit the shops – well, landed on the home page. This bags you a SRAM NX Eagle drivetrain and RockShox Pike Select RC fork. Step down the range and the Stoic 3 costs £1,199, you lose the Pike and get a RockShox Recon RL instead, and SRAM SX Eagle drivetrain. Finally, at the bottom of the price spectrum is the Stoic 2, which features a Shimano Deore 11-speed drivetrain and air-sprung SR Suntour fork – and at £799 it looks like a brilliant package.

The Stoic's frame has been designed to take a beating, Canyon says, made

from tough 6061 alloy rather than lighter and more exotic metal. The fact that 6061 is relatively affordable probably helped it make that choice too. That frame gets subjected to the same in-house Category 4 testing the Strive enduro bike is exposed to, meaning Canyon expects this bike to be put through the wringer. It has the biggest size range of any Canyon bike, from XXS to XL, so it should fit anyone from 4ft 10in to 6ft 6in (1.49m to 2m) in height, further broadening its appeal. To accommodate that huge spread of sizes, the Stoic uses 29in wheels on the M-XL bikes, and 27.5in wheels on the XXS-S sizes.

The frame looks great, with a top tube that runs right from the head tube to the rear dropouts, giving the bike a sleek racing line and miles of standover height too. Meanwhile, the seat tube is welded onto the front of the BB shell, not the centre, letting Canyon keep the chainstays short while still allowing space for up to 2.6in tyres on the 29er version. Naturally, you get internal gear cable routing – it exits from a huge port at the bottom of the down tube, which

The Stoic's frame is designed to take a beating



Short chainstays and generous tyre clearance is a winning combo



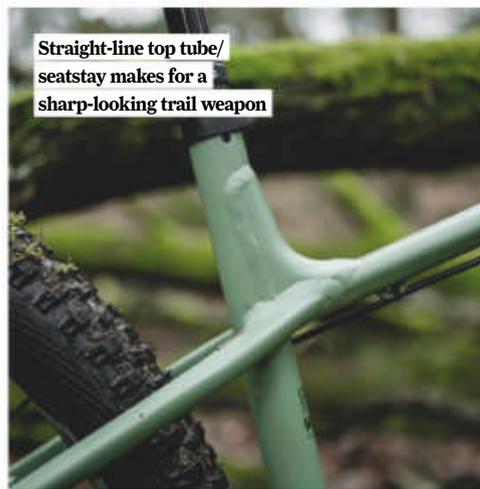




Canyon's Stoic keeps its composure when the going gets rough



Oversized gear cable port means servicing should be a cinch



Straight-line top tube/seatstay makes for a sharp-looking trail weapon



In-house cockpit with short stem and wide bars offers high level of control

should make servicing easy. The round plastic bung between the bottle bosses that I took at first to be some clever water bottle magnet, in fact turned out to be a zip-tie port, designed to stop any cable rattle. The idea came from Canyon's road bikes, and the brand says it's less faff and simpler than foam tubes. The brake routing is fully external, with the hose running centrally underneath the top tube so you can put the levers either side without compromising the look.

HOW IT RIDES

It's the fork and tyres that perform suspension duties on a hardtail, so bike brands better get these right. Let's start with the fork. Canyon has it spot on with the Pike Select RC, it's tight and solid and a perfect match – the Stoic feels comfy on small, chattery stuff, and the little bit of stiction I felt from the off disappeared by the end of my first ride. Canyon opted for the shorter 42mm offset crown on the 29er version I rode, to increase the steering stability and make the most of the slack 64° head angle. There's good support too, although I pumped the air spring up slightly harder than I'd usually have it to

stop any sensation of pitching forward on the steepest trails. Naturally, this meant I couldn't get the last 10-15mm of travel, but it massively increased the confidence I felt. I also jacked the stem up as high as it would go on the fork's steerer to get the right fit.

Canyon has also got the tyres dead right – the Magic Mary/Hans Dampf combination is ideal for UK riding. The 2.35in width seems diminutive on paper, but in the gloom of a UK winter these tyres slice into the trail and provide great dollops of grip, all without being pingy. That last point is particularly important on a hardtail, where the back end is more prone to being shot out of line. The Addix soft rubber simply kills it here, damping the trail down and cutting out some of the rowdiness a hardtail typically brings. Thank goodness too for the powerful SRAM Guide T brakes – Canyon has specced a big 200mm rotor at the front of the bike to put all that tyre traction to use.

To judge the Stoic on its components then, it's a bike built for speed on the steepest, gnarliest trails. Take it there and you won't be disappointed. It's fun thanks to the short back end, while the slack head angle and long wheelbase

– together with the wide bar and short stem – gives you great control. I found it a pretty comfortable place to be, for a hardtail, and the silent ride added to the feeling of a high-quality build.

It could be better though, the bottom bracket is a shade too high and gives away some of your stability when descending. A way round this problem could be to fit your own 27.5in wheel to the back end, dropping the BB height by approximately 10mm and slicing a little off the head angle. In my mind, the Stoic fulfills its brief though – it's not as accomplished on singletrack as the Whyte's 905, our hardtail benchmark bike, but it has a broad appeal and an attractive price point.

Jamie Darlow

mbr 1ST IMPRESSION



HIGHS

Great component choice for tearing up the descents, and good riding position to attack the trails. Beautiful frame finish.



LOWS

The BB could be lower.

SPECIFICATION

Frame 6061 aluminium

Fork RockShox Pike Select RC, 140mm travel

Wheels Shimano MT400 hubs, Alex DP30 rims, Schwalbe Magic Mary/Hans Dampf 29x2.35in tyres

Drivetrain SRAM Descendant 6k chainset, SRAM NX r-mech and 11-speed shifter, SRAM NX 11-50t cassette

Brakes SRAM Guide T, 200/180mm

Components Canyon G5 780mm bar, Canyon G5 40mm stem, Canyon Iridium 170mm post, Canyon Velo saddle

Sizes XXS-XL

Weight 13.98kg (30.82lb)

GEOMETRY

Size ridden L

Head angle 64.5°

Seat angle 73.6°

Effective seat angle 75.1°

BB height 315mm

Chainstay 429mm

Front centre 791mm

Wheelbase 1,220mm

Down tube 754mm

Top tube 650mm

Reach 480mm



EVIL WRECKONING GX

€6,499.99 / 29in / evil-bikes.com

NEED TO KNOW

- The latest Wreckoning boasts 166mm of travel and gets a steep seat angle
- Frames available in four sizes with longer reach measurements, water bottle bosses, fully internal cable routing, built-in chain device and squidgy chainstay silencer
- Full UD carbon frame with alloy dog-bone Delta links that flip to drop the BB height by 9mm while slackening the head angle by 0.6°
- Available in three build options, all featuring RockShox Zeb Ultimate forks

The new Wreckoning's enduro-ready but let it off the leash and you'll soon forget the time

Evil's introduction to the new Wreckoning sums it up perfectly: "Up, down, and upside-down, the Wreckoning doesn't care which way it's going. It just gets there fast in classic, low-down dirty Evil style."

So rather than being aimed purely at stopping clocks, the Wreckoning is chuckable and livelier than most 29er enduro race bikes, even if you have no intention of ever doing a flip, well, at least not on purpose. The action-packed ride of this 166mm-travel 29er stems from a steeper 64.7° head angle, rampy suspension and tight 430mm chainstays. Its balanced response gives it a swagger that encourages more interaction with the trail than any long-travel 29er has any right to.

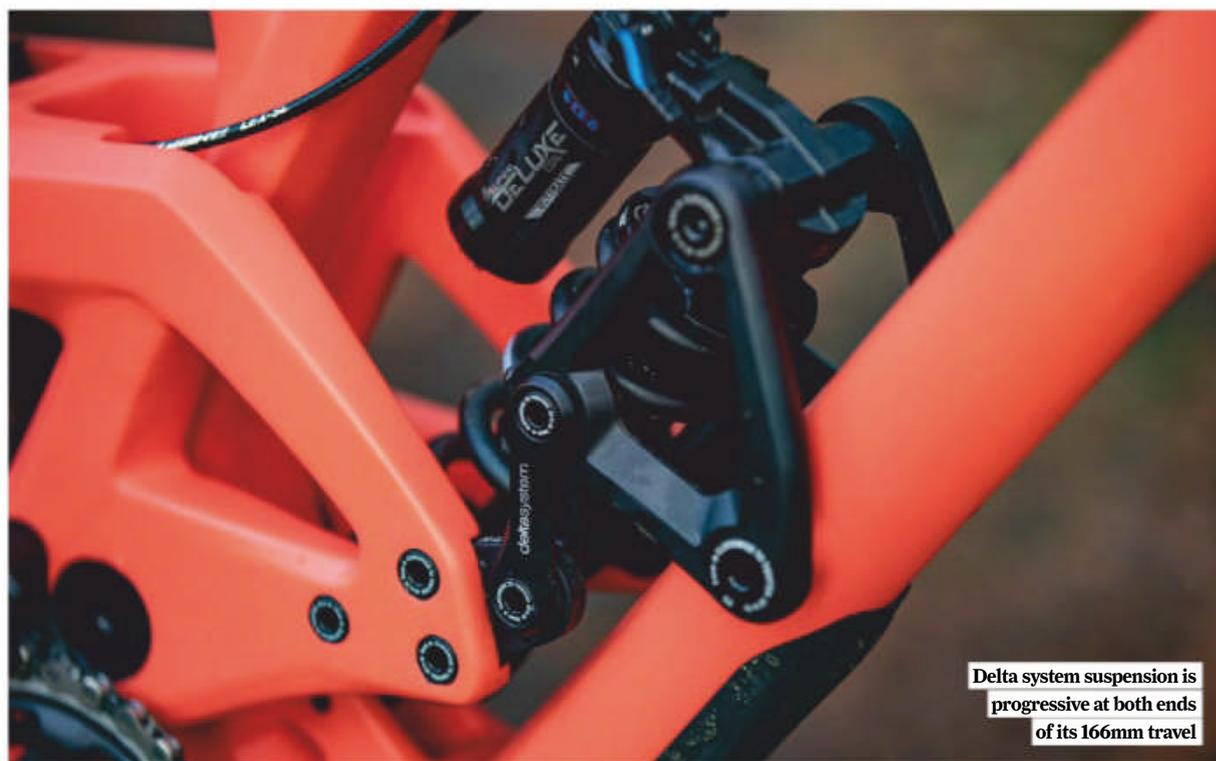
So what's new about version three? Like all of the new Evils, the uni-directional carbon frame looks like it's been hitting the gym hard; the resulting profile is toned and more chiselled than before. With updated geometry and sizing, the V3 chassis now has Super Boost spacing with a 157mm rear axle, providing a wider spoke bracing angle for improved wheel strength. At the opposite end of the one-piece carbon swingarm, the width and size of the main pivot has also been increased to add stiffness and improve mud clearance. Each frame size has been stretched by about 20mm too, so the XL should now fit six-foot-plus riders and all sizes have a steeper 76.5° seat angle, which the old version was crying out for.

Evil's Delta System suspension remains and looks complex, but break it down into its component parts and it's a single pivot with a linkage-actuated shock; the pivot is just above the 32t chainring and threaded BB. The linkage configuration gives a dual-progressive leverage curve that generates good support at sag for pedalling and traction, then flattens to aid tracking, before ramping again to prevent harsh bottom-outs.

In terms of the build, the new frame uses a trunnion-mount RockShox Super Deluxe coil shock with Ultimate-level damping. It runs on sealed bearings throughout, equalling less friction in bump response and superior grip and tracking. In fact, Evil prioritises suspension performance at every level, so the same top-tier RockShox Zeb Ultimate fork that you get on the £8k AXS build also comes on the entry-level GX bike. With 170mm of travel and 44mm offset, this stiff 38mm-stanchioned fork is silky smooth and controlled, the proportions perfectly matching Evil's seriously bulbous head tube.

Industry Nine Enduro wheels are high quality with a broad rubber-splaying 30.5mm internal width for the Maxxis tyres, where the Hydra rear hub engages almost instantaneously. This freewheel is so loud, though, I found it obnoxious pushing back up tracks as well as going down them.

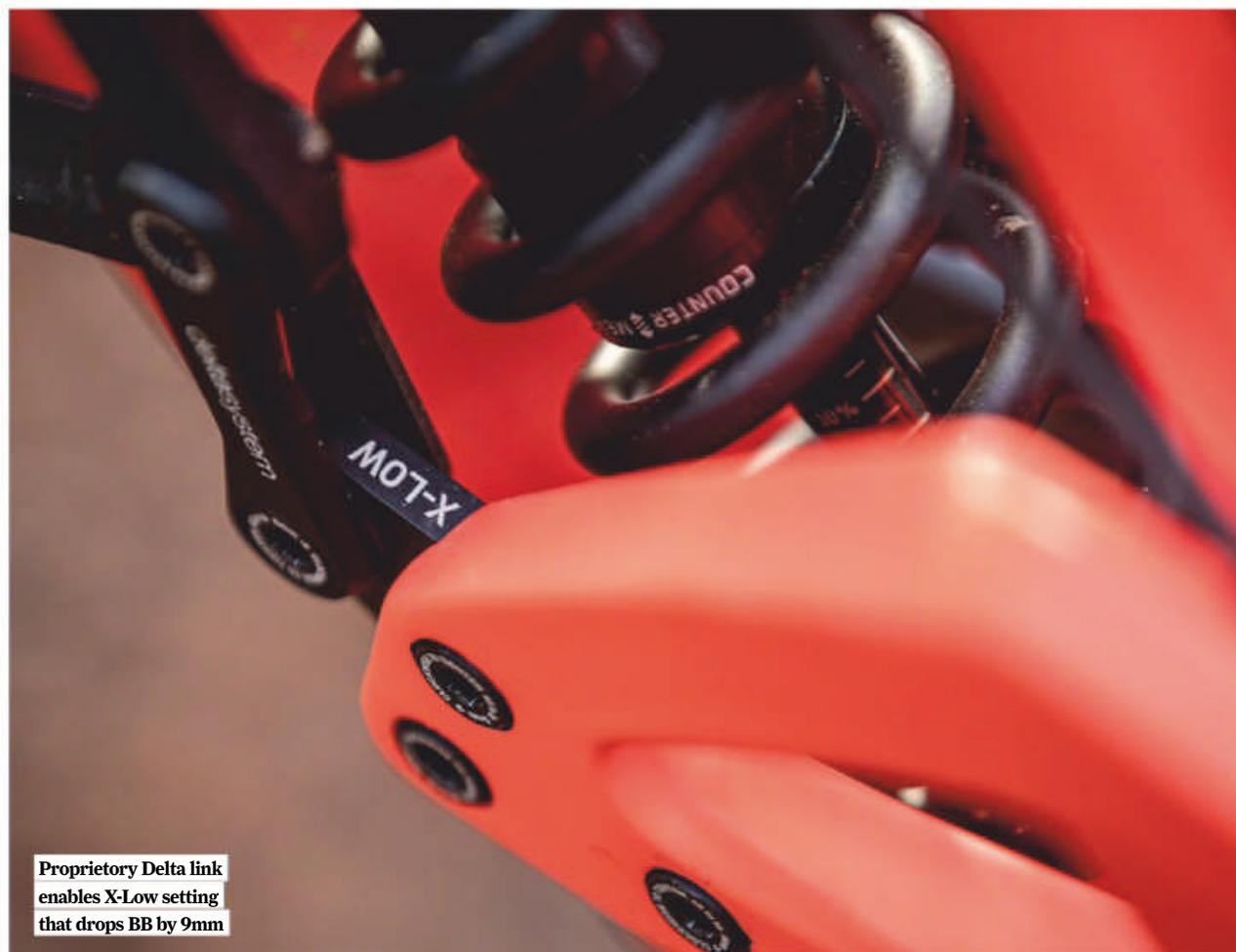
SRAM's G2 four-piston brakes have sufficient power and lever adjustment, but aren't as DH-oriented or solid



Delta system suspension is progressive at both ends of its 166mm travel



The Wreckoning gets after any trail you throw at it and then begs for more



Proprietary Delta link enables X-Low setting that drops BB by 9mm



Beefy RockShox Zeb fork is well matched to the stout head tube



SRAM G2 RS brakes are less-heavy duty than the Wreckoning requires

The Wreckoning comes over like a puppy

as Codes, plus the (smaller) 180mm rear rotor is under-powered when you consider how hard you can push this bike. Same goes for the Minion DHF 2.3in rear tyre in skimpy EXO casing. This bike needs a Double Down casing tyre or EXO+ at the very minimum.

HOW IT RIDES

Set the Wreckoning in the 'X-Low' geometry setting and it's still agile at slower speeds; simply swivel your hips and the bike instantly swaps direction, the flex-free frame and supportive suspension reacting to the most subtle of rider inputs. The tighter response is also what enables you to generate tons of drive to boost lips or square-off turns. Add urgent and efficient pedalling to this and all expectations of what it's like to muscle around a 166mm-travel 29er go straight out the window.

Even with its coil-sprung shock and Rottweiler-like muscularity, the Wreckoning comes over like a puppy straining at the leash to reach the next feature to play on. In that respect, the Wreckoning is different to a lot of modern 29er enduro bikes that chomp through terrain until trails evaporate beneath your tyres. And while plusher, slacker bikes may well be faster and more comfortable on the longest enduro stages, the nimble, medium-sized Wreckoning is a bit of an enigma. It magically finds extra travel once gravity sucks it down the fastest trails. Ramp up the intensity on rooty DH tracks, steep scree and rocks and it morphs into overdrive, smashing through compressions that might deflect a less-burly machine. At speed, the rear end tracks terrain with precision, offering superb grip while calmly absorbing impacts of every frequency. This allows your focus to remain sharp, yet the bike simultaneously feeds back plenty of trail topography to keep your synapses firing.

Being equally adept at different gradients and speeds likely stems from the superb front-to-rear balance. I half

expected to be hanging off the back of those short 430mm stays, but the Wreckoning never pitches rider weight too far in either direction, even on the biggest impacts. And, with 166mm of travel that seems permanently set to 'Eco' mode, the coil shock only ever uses the precise amount needed, making it a great one-bike-only option that doesn't numb the fun out of mellower UK trails.

In that respect, the Wreckoning's infectious personality certainly channels Evil's punk rock image of not giving a damn whether you stop the clock racing or not, so long as you save enough energy to rag it to its absolute limits.

Mick Kirkman

mbr 1ST IMPRESSION

HIGHS
 ✓ **Undefinable, grin-inducing X-Factor. Stiff and solid pop-machine that also looks amazing.**

LOWS
 ✗ **The price. Brakes could be more powerful. Super Boost a potential headache for part swappers. Needs a tougher-casing rear tyre.**

SPECIFICATION

Frame UD Carbon, 166mm travel, Super Boost
Fork RockShox Zeb Ultimate RC2, 170mm travel
Shock RockShox Super Deluxe Coil Ultimate
Drivetrain SRAM GX Eagle Super Boost Plus 32t chainset, GX Eagle r-mech and 12-speed shifter
Wheelset Industry Nine Enduro S Hydra 110/157mm, Maxxis Minion DHF EXO 29x2.5/2.3in tyres
Brakes SRAM G2 RS, 200/180mm
Components: Evil Boomstock 810mm bar, Evil 12 Gauge 45mm stem, One Up Dropper V2 150mm (Size M), WTB Volt Pro saddle
Sizes S, M, L, XL
Weight 14.7kg (32.4lb)

GEOMETRY

(X-LOW SETTING)
Size ridden M
Rider height 5ft 9in
Head angle 64.7°
Seat angle 69.9°
Effective SA 76.5°
BB height 344mm
Chainstay 430mm
Front centre 800mm
Wheelbase 1,230mm
Down tube 720mm
Top tube 609mm
Reach 456mm



RIBBLE HT725 PRO BUILD

£1,799 / 27.5in / ribblecycles.co.uk

NEED TO KNOW

- UK-designed Reynolds heat-treated chromoly steel hardtail featuring slack and long geometry
- Built around a 150mm-travel RockShox Revelation suspension fork
- Customisable spec and colour accents via Ribble's direct-sales BikeBuilder
- Three models to choose from, all based around the same frame, from £1,199 for the Sport Build to this Pro Build sitting at the top of the range

Ribble swaps titanium for steel with its second hardcore hardtail offering

Hailing from Preston in Lancashire, Ribble Cycles has been at the heart of British cycling for decades, but since it hasn't produced a mountain bike of note for almost 20 years, you would be forgiven if it's a name that has passed you by. Following a complete rebrand, Ribble is aiming to broaden its 'hardcore roadie' image into the off-road arena, and it's doing that by releasing two genuinely hardcore hardtails.

We've already ridden the first of those creations – a titanium model with modern geometry and a reasonable price tag that looked every bit the hooligan, but lacked stiffness and backbone in the heat of battle. So it's this model, the honest, down-to-earth steel HT 725, that we've really been waiting for. Why? It's more affordable and the ferrous frame material should bring some much-needed precision to the handling.

Ribble is a direct-to-consumer brand – nothing unique there – however it has attempted to create a buying experience a little bit different from the rest by enabling you a little more customisation if you so desire via its BikeBuilder website. Here you can cherry-pick the spec level and customise components and finishing colours to make your HT 725 a little bit more special. As standard, the frame is only available in grey, but six different finishing kit packages – consisting of decals, headset and seat clamp – provide a subtle pop of colour. But I digress, let's get back to the bike itself.

Ribble's mountain bike division has opted to build the frame out of Reynolds 725, which is a heat-treated chromoly steel tubeset. This gives the HT 725 the classic, whippet-thin frame outline we associate with proper steel bikes. There is nothing traditional about the design of the frame though and Ribble has managed to encapsulate a lot of modern thinking with regards to how a mountain bike should be built and the features that are prerequisites.

Take the geometry – one look at its stance and you can see Ribble intends the HT 725 to be pushed towards the extremes of what a hardtail should rightly ride. It has one of the slackest head angles of any normal hardtail at just under 63.5° and a long 1,229mm wheelbase that screams downhill stability. The seat angle is not bang up to date in terms of steepness, giving the HT 725 a roomier seated position at the slight expense of steep climbing prowess.

All cable routing is fully internal and I really like the fact the rear gear cable runs inside the top tube and seatstay, keeping the cable as straight as possible for improved reliability.

The frame features a reinforced

Ribble is aiming to branch out into the off-road arena



Old skool Reynolds 725 tubing belies a thoroughly modern geometry



Ribble HT 725: hardcore
hardtail that bosses
the rowdiest of trails

gusset at the bottom bracket and a simple extra triangle brace at the seat tube/top tube junction to create a really low-slung frame for ample clearance. Tyre clearance is fine around the 2.6in rubber fitted, but there are bikes with a little more if you still hanker after larger-volume tyres. Finally, being a proper British hardtail, there's a threaded BB.

HOW IT RIDES

I'm going to jump straight into how it rides as, quite frankly, it's a blast. I've always been wary of riding my local trails (Risca) on a hardtail, preferring the reassurance of a 150mm+ skill compensator, but the HT 725 has made me re-evaluate exactly what a hardtail can do. With the stretched out, limo-like wheelbase and DH slack head angle, it made riding steep and chattery trails almost as enjoyable and rewarding as on a full-sus. The RockShox Revelation proves a decent foil to the frame's personality, especially with 150mm of travel to play with.

We mentioned in the titanium version review that you could run the fork with less pressure to really get the front to



Headset, seat clamp and decals are available in a range of colours



Own-brand cockpit with 780mm bar and 45mm stem



160mm rear rotor feels underpowered for full-throttle descending



Beefy gusset stiffens up the BB junction



SRAM GX Eagle drivetrain combines a 32t chainring with an 11-50t cassette

SPECIFICATION

Frame Reynolds heat-treated 725 chromoly steel
Fork RockShox Revelation RC, 150mm
Wheels Level 35 wheels, Maxxis Minion DHF/DHR II 3C EXO 27.5x2.6in
Drivetrain SRAM GX Eagle 32t, 170mm cranks, SRAM GX Eagle r-mech and 12-speed shifter
Brakes SRAM Level T, 180/160mm
Components Race Face Aeffect R35 780mm handlebar, Level 45mm stem, Level 150mm dropper post, WTB SL8 Pro saddle
Sizes S, M, L, XL
Weight 14.46kg (31.87lb)

GEOMETRY

Size tested L
Rider height 6ft 1in
Head angle 63.4°
Seat angle 73.9°
BB height 322mm
Chainstay 430mm
Front centre 799mm
Wheelbase 1,229mm
Down tube 732mm
Top tube 640mm
Reach 473mm

The HT 725 is remarkably good value for money

bite and this rings true for the steel version. In fact it's a trick that gets the best out of the less-sophisticated Motion Control damper-equipped Revelation.

Unlike the titanium model, which we felt was just a little too soft and flexy, the steel version is taut and accurate. It's stiff enough to avoid unwanted deflection and enables the HT 725 to plough straight and true along your line of choice. Of course, line choice is still something to be hyper aware of when piloting the HT 725, but the low-slung frame and smaller wheels make flicking it about and shifting position so much more natural and impulsive.

One thing you do notice about the HT 725 is the front wheel tends to wander when cruising and especially when climbing. This is to be expected

considering just how slack and long the front end is. A degree or two of steepness on the seat tube would go some way to placing a little more weight over the front wheel, but then this is a bike that follows more of the sit and winch technique for getting climbs done – an XC racer this is not.

Value is something that needs bringing up with the HT 725 and Ribble bikes in general. Thanks to its direct-sales approach, the HT 725 is remarkably good value for money, even in this top-end Pro Build spec – arguably it even eclipses similar builds from the likes of Vitus and Ragley.

Granted, there are a few cost-saving measures, mainly centred around the wheels – from Ribble's in-house component brand Level 35 – which come with a standard HG freehub rather than a SRAM XD driver body, hence the cheaper and heavier 11-50 tooth Eagle cassette. This also restricts potential future upgrades, unless you switch freehubs. The rims also lack suitable tubeless rim tape and are a pain to seal, plus I struggled after a few gritty rides to get the dropper to operate reliably.

The final spec'ing point that seems at odds with the intended use of the HT 725 is the tiny 160mm rear rotor. While the basic but powerful SRAM Level T brakes proved to be up to the job, I'd rather see a 180mm rotor for sustained descending.

The Ribble HT 725 certainly surprised me with its capability and provides an addictive and grin-inducing ride. I'd happily put this steel version down as one of the better hardtails to have come out of 2020, and at this price the gripes I have can be easily glossed over.

James Bracey

mbr 1ST IMPRESSION



HIGHS

Geometry and tyre choice give the HT725 a confident, hard-charging personality. It's a bit of a bargain considering the frame quality and spec.



LOWS

Ribble's in-house Level 35 rims don't like holding air. Seat angle could be steeper for better climbing prowess.



WHYTE T-160 RS

£3,600 / 29in / whyte.bike

NEED TO KNOW

- New 29er trail bike that replaces the S-150
- Alloy frame with new tubeset, 150mm travel and revised kinematics for more progression
- Two models available, both get 160mm travel forks
- Shape It link offers two stock geometry settings
- RaceFace AC-30 rims and Maxxis tyres make for a solid wheelset
- Available in four frame sizes

Competitively-priced trail ripper already in the running for an end-of-year accolade

The T-160 is a brand new addition to the Whyte trail bike range. It's available in two models; the entry-level T-160 S at £2,800 and the top-end RS version that we're taking a closer look at here. And while £3.5k doesn't buy the new T-160 RS a seat at the higher stakes carbon table, this alloy trail bike boasts modern geometry, 29in wheels and 150mm travel.

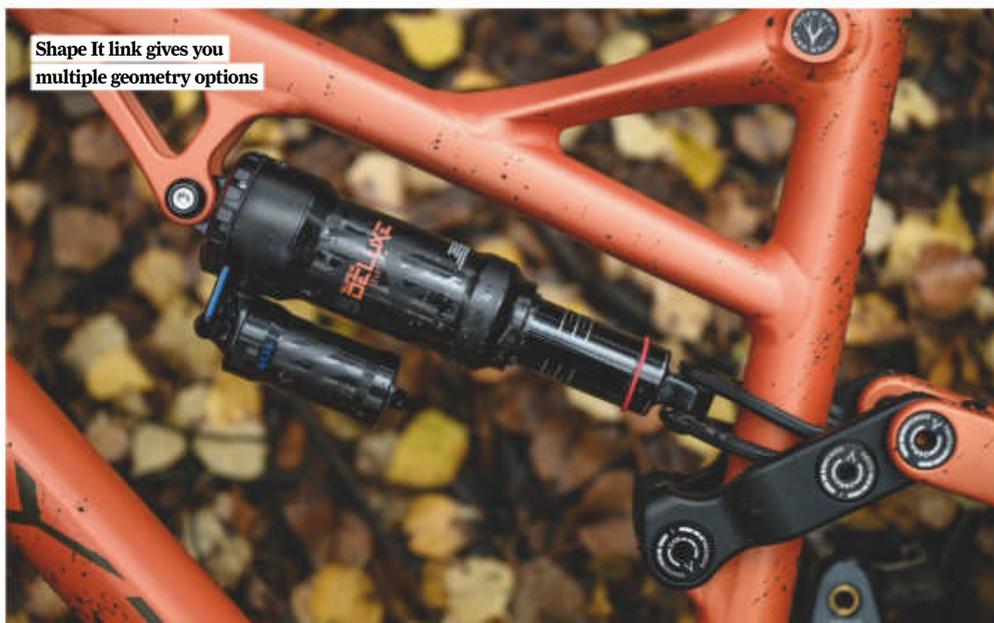
Now, I know what you're probably thinking; "Why is it called the T-160 when the frame has 150mm travel?" It's because Whyte takes the model number from the given fork travel, not the frame, and in this case it's a 160mm RockShox Lyrik RC.

To get a better understanding of

what the new T-160 is all about, we need to back up a little and take a closer look at the bike it replaces, the S-150. Launched in 2017, the S-150 was something of a hedge against what seemed like ever-changing wheel sizes. As such, the S in the model name stood for Switch, the bike designed to run either 27.5in Plus or 29in wheels. Deep down though, I think Whyte always knew which way the trail bike market was heading as the bike shipped with 29in wheels. Yes, Whyte offered a killer deal on a set of carbon 27.5in Plus wheels that included 2.8in tyres, rotors and tools for changing your cassette for anyone that wanted to easily switch between both options, but only a small percentage of riders cashed in their 27.5in chips. Which is probably a good thing as the low dynamic BB height on the S-150 would have limited pedal clearance with the smaller 27.5in Plus wheels.

To make the Switch concept really work, Whyte would have needed some sort of geometry adjustment to rise and lower the BB height for each wheel size. Which is exactly what the new T-160 has, even though it's designed exclusively around 29in wheels. Dubbed the Shape It Link, the

Shape It link gives you multiple geometry options



NEW BIKES



Shape It Link alters geometry independently of suspension settings



Big and obedient: SRAM's Code-R 200mm stoppers



Super-size your ride courtesy of a whopping 160mm travel up front



Internal routing keeps cables safe and adds to aesthetics

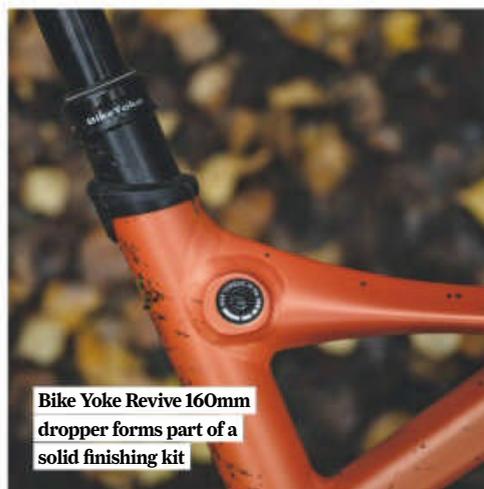


shock has an asymmetry brass insert in the body eyelet to offer two geometry settings, where the brass insert is keyed with the yoke on one side to stop it rotating. Swapping between the high and low settings involves removing the shock from the forward frame mount and compressing the suspension to gain access to the hex bolt that secures the shock to the extender yoke. With the bolt out you can use the keyed part of the yoke to hold the brass insert, like you would in a vice, then rotate the shock bit by bit to flip the orientation of the insert. It sounds more complicated than it is, and while it won't give you the fastest pit-stop, it's a great feature on any trail bike.

One complaint that we had with the S-150 was that the top tube was a little tall so it's great that Whyte has improved standover clearance on the new T-160. It has also rejigged the suspension layout slightly, increasing the leverage ratio for extra sensitivity, while upping the progression for more support. In terms of geometry the S-150 was ahead of its time, so it's hardly surprising that the T-160 isn't a major leap forward for Whyte, the size L retaining its 480mm reach. Yes, the head angle is now slacker and the chainstay length has grown from 435mm to 440mm, to keep the rider weight centered with associated increase in the front center. The slightly longer rear end also allows Whyte to reinstate the seatstay bridge, which should extend the life of the pivot bearings.

HOW IT RIDES

I experimented with the T-160 in both geometry settings and instantly preferred how the bike handled in the lower setting. That's not to say the sub-64° head angle and low 330mm



Bike Yoke Revive 160mm dropper forms part of a solid finishing kit



The rapid Maxxis Dissector rolls with the punches



The Whyte T160-RS thrives where others may falter

It's got a great set-up if your preferred riding style is to spin up fire road climbs and blaze down rough descents

BB height will be for everyone however, which is why the Shape it link is such a great addition. I also played around a lot with the suspension set-up. Running 35 per cent sag on the RockShox Super Deluxe Select + RT gives a very plush suspension response, the trade off being that you do get a lot of unwanted shock movement when you stand up to pedal. Still, it's a great set-up if your preferred style of trail riding is to spin up fire road climbs to blaze down rough descents. Increasing the pressure in the shock to reduce sag to about 28 per cent makes a big difference to how the S-160 pedals, as it also raises the centre of gravity and the amount of anti-squat. With less sag the bike feels tighter and more responsive, and because Whyte hasn't made the rear suspension overly progressive, you can still use all of the available travel.

Up front, the 160mm RockShox Lyrik fork is a great match for the rear suspension, but I'm not entirely sold on the adjustment range of the basic RC damper. After performing back-to-back runs on the same trail and doing a full sweep of the compression adjustment, it was clear that anything more than about four clicks from fully open and the fork starts to feel harsh, the front end breaking traction more readily with increased vibration through your hands. In the end, I ran the compression on

the Lyrik three clicks from wide-open which allowed me to get good support and maximum traction from the 3C High Roller II front tyre. Paired with the faster rolling Dissector rear tyre, the Whyte T-160 RS gets you to good stuff faster even with its 15.69kg (34.59lb) payload.

Thanks to the slightly longer rear end the T-160 feels perfectly poised for action, its neutral handling and sub 64° head angle allowing you to hunt down faster lines without ever having to second guess how the bike is going to react. It's got a wide set-up range too, making it an incredibly versatile trail bike. And, given how competitively priced it is for a shop bought bike, I wouldn't bet against it being odds-on favourite in our 2021 Trail Bike of the Year test.

Alan Muldoon

mbr 1ST IMPRESSION

✓ HIGHS

Unashamedly modern geometry. Balanced suspension and handling. It's bloody good value too, for a bike with full dealer support

✗ LOWS

Hard chargers will want a chain device. Only available in three sizes. Not the lightest

SPECIFICATION

Frame Alloy, 150mm travel (148mm measured)

Shock RockShox Super Deluxe Select+ RT

Fork RockShox Lyrik Select + RC, 160mm travel

Wheels Alloy double sealed hubs, Race Face AR-30 rims, Maxxis High Roller II/Dissector 29x2.5/2.4in tyres

Drivetrain SRAM GX Eagle crank, 32t, SRAM GX r-mech and 12-speed shifter

Brakes SRAM Code R, 200/200mm

Components Whyte Custom 780mm bar, Whyte Gravity 35mm stem, Bike Yoke Revive 160mm post, Whyte Custom saddle

Sizes M, L, XL

Weight 15.69kg (34.59lb)

GEOMETRY

(LOW SETTING)

Size ridden L

Rider height 5ft 11in

Head angle 63.9°

Seat angle 68.5°

Effective SA 75.4°

BB height 333mm

Chainstay 440mm

Front centre 822mm

Wheelbase 1,262mm

Down tube 755mm

Top tube 627mm

Reach 480mm

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YOUR LETTERS

Mailbox

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★ STAR LETTER ★

GHOST BIKE

Can I just start by apologising for the long-winded letter but it's worth reading to the end. Trust me! Just been reading the second installment of your E-Bike of the Year test [February 2021] with interest. Speaking from personal experience and knowing the experience of quite a few other owners I personally wouldn't recommend buying an e-bike direct.

I've got a 2019 Kona Remote CTRL that runs the Bosch CX Gen 3 (I believe) motor. I'm now on the second replacement of this unit. The last time something happened that really shook me up. An error code came up on the display after (coincidentally?) a particularly damp Quantocks outing. So I popped the battery out to check for damp, everything was fine, nice and dry, so replaced it and decided it was back to the local dealer. Just switched it on to check the code and the bike shot off of its own accord across the garage and slammed into another of my bikes and ended up on the floor! Took some time to compose myself and calm down.

So I took the bike back, the dealer was understandably horrified at what had happened and immediately contacted Bosch. To be fair to them they got in contact directly with me and were really concerned for my wellbeing and promised to investigate thoroughly. In the meantime they sent a new motor and the bike was ready within a week.

But I had lost confidence and didn't really feel happy riding it until Bosch had done their investigation even though they tried to reassure me the new motor would be fine. After thorough investigation they concluded that water ingress



Roland's rig was on a bit of a power trip



had caused the problem and they found quite a few error codes. I'm back riding the bike now but it's still in the back of my mind what happened.

So to my direct-sale point I can only imagine the hassle involved returning a 50lb plus bike to Germany or wherever when something goes wrong as it invariably does with cutting-edge tech so for me that overrides any initial savings.

Finally a couple important things: I wonder if **mbr** could find out why isn't it possible to make motors more watertight (I'll just add I never use a power washer) and from an environmental aspect what happens to the old motors? Surely they don't just go to landfill?

Roland Lovell

Ed - Hi Roland, that is a truly awful tale, have a jacket to make up for it. On a serious note, that must have been pretty scary and upsetting. We've got to say we've never heard of anything

like this happening before, either to us or anyone we ride with or indeed any brands whose bikes we've ridden. I think you were probably just extremely unlucky. It's also worth highlighting that this was an issue with the previous generation Bosch motor, not the one fitted to all current models on sale.

In our view buying direct does still offer great savings, but you do sacrifice the support a bike shop is able to offer. That said, support is growing: Canyon says if one of its bikes goes wrong it'll organise collection and shipping to the UK service centre; or - depending on the customer's location - diagnosis and repair can even be done at a nearby Shimano STEPS dealer.

Meanwhile, YT now has a service centre right here in the UK, plus the Decoy Shred is our E-Bike of the Year in the direct-sales category, meaning it could represent the best of both worlds.

#IHATEJEFFSY

Thank you for my monthly bit of joy through my mailbox. I've been thinking about buying a new bike for about... well like most mountain bikers just a few months after I bought my last one.

After much research and help from your magazine the target of my desires is a YT Jeffsy Pro 29. This decision was made towards the end of lockdown version 1.0 and back then I could excuse YT for not having that particular bike in stock, well actually almost no stock of any Jeffsy's of any colour, model or size in fact. However three months later, checking their website at least twice weekly, still no stock and no information on the website as to when they might actually begin selling bikes again.

Given the length and frequency of my attempts at purchasing a bike I'm a little unsure as to what YT are actually doing with themselves these days. A clue came from your magazine in October when you ran an article about a flagship YT demo centre they are opening in the Surrey Hills. It made me ask the question rather cynically as to whether they would have any bikes to actually display in the centre and why aren't their efforts being poured into manufacturing their excellent products as opposed to building a brand that obviously has serious production issues? I am a director of a small manufacturing business and have experienced at first-hand the difficulties that Covid-19 has forced upon supply chains and the stress we have been put under to supply important materials into the NHS. What I have learnt is one can only do what one can do, but communicating this to customers is key to managing expectations.

I tried emailing them directly to ask if they could give an idea as to when stock would become available, all I received was a couple of automated replies, one telling me that because they were busy it would be a week before they could reply to my email and then a week later I received an email telling me my 'case' was now closed. Opening a demo centre and launching a new bike when they are unable to supply their current one makes me feel they have their priorities seriously confused. I've given up on YT and am going to buy a Canyon instead.

Alex Richards

We asked YT about this and this is what it told us:

"2020 was an extremely unusual year. We want to supply all those interested in a YT bike with the product they are looking for, but no one could have foreseen the increase in demand the whole industry experienced. Sadly, replenishing stocks is not as easy as flipping a switch. Nevertheless, 2020 has speed-tracked our efforts to adjust stock level and availability strategies, 2020's increased demand will still be a challenge in 2021 though. You can believe us when we say that we would also love to see more riders on YT bikes



and we are doing everything we can to grow the community healthily.

We indeed experienced delays in customer communication in autumn. This is unsatisfactory for the customer and it is for us too. As communicated on our website this was due to a software upgrade and SAP migration to improve customer service and communication. However, during the transition process delays occurred. In the meantime, we have managed to improve response times and lead time for solutions by growing our customer service team.

Additionally, the YT Mill Surrey Hills will contribute to this positive development. It is more than a demo centre or a flagship store. Yes, you can check out our range, book a demo and even grab a coffee while reading the latest issue of mbr, but behind the scenes, we have a dedicated and growing UK customer service team. This offers a great advantage to our YT Family based in the UK.

ENTRY-LEVEL SHREDDING

I'm just looking to buy my first mountain bike. I'm a road rider and want to start to explore some nice off-road trail riding. I'm thinking about buying a hardtail Trek X-Caliber 9 and have looked on your website but couldn't see a review on this bike, maybe I just couldn't see it?

The type of riding I'm going to be doing is things like the South/North Downs Way, West Highland Way, Great North trail etc. I'm not going to be doing big jumps. Is the bike I'm looking at suitable for this type of riding? Is it good value for money? How does it compare with other brands at this price point?

Mark Chase

Ed – Firstly welcome aboard! Secondly you've made a great choice in the Trek X-Caliber 9. Although we haven't tested that particular model, we rated the more expensive Procaliber 9.7 10/10 last year and awarded it our Editor's Choice badge. As a tool for covering long distances off-road, it ticks all the right boxes. Another great option would be the Voodoo Bizango Carbon.

STOKING THE FIRE

In response to Kevin Holenbeck's letter in the February edition on e-bike haters. If I can lightheartedly pinch a serious quote from the great Morgan Freeman when he said "we won't end racism until we stop talking about it." In my view the mountain bike 'industry' only continues to stoke the flames of the e-bike love/hate debate by printing articles (and letters) and making videos about it.

Peter Cook

Ed – Totally agree, we need to just get on with riding our bikes... although I'm sorry to say you have just inadvertently "stoked the flames"!



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TRAIL
BLAZERS

BIKEPARK WALES

Since launching in 2013, BikePark Wales has proved beyond all doubt that the public will pay to ride; trail-builder-in-chief Rowan Sorrell tells us why this model is the future of mtb

Words & photos: Sim Mainey



In the previous instalment of the Trailblazers series, we visited Innerleithen in Scotland to talk to the Tweed Valley Trails Association. One point that emerged from that conversation was that as a sport we need to consider investing financially in the trails we ride.

Money is always a tricky subject and unsurprisingly the idea of paying to ride your bike is a touchy one, especially when it comes to the trails on your doorstep or those built on land owned by public bodies. However, there are venues that are charging riders to access bike-specific trails and proving that, not only does the model work, but it's also building better trails.

Like the Scottish Borders, South Wales has a long history with purpose-built riding destinations. The trail centres at Afan, Cwmcarn and Brechfa are all success stories and, along with other similar venues, they've played an important role in defining mountain biking in the UK. With easy access via the M4, these trails have drawn in riders from all over the country and helped them discover both the Welsh Valleys and the joys of riding trails built purely for mountain bikes. With no navigational nous or map needed, rideable whatever the weather, fun by design and with something for all abilities, it's easy to see why we fully embraced the concept of the trail centre.

Trail centres are still hugely popular but there's a feeling that mountain biking has moved on. The original trails, built some two decades ago, are very much of their time and have changed little while what we want out of our riding has evolved. Budget cuts to the agencies who look after the trails have seen them left to deteriorate with little hope of a refresh and no chance of any new trails being built. With the only revenue from the trails coming from parking (a mere £3.50 for a day's parking at Afan) there's no way of the trails paying their way either.

Rowan Sorrell has played a major part in South Wales's mountain bike success, ➔



The trails are still off limits due to Covid but the signs look good for the future

ABOUT THIS SERIES

One of the most exciting things about mountain biking is that it's always changing. From the bikes we ride to how and where we ride them, things never stand still for long. And here at **mbr** we're convinced things are getting better.

The Trailblazers series is our look at the people, places and events that are behind these changes; helping to define and improve riding in the UK right now. From behind-the-scenes volunteers out digging trails in their spare time; people lobbying for more access to trails; those working to get more people from all backgrounds out riding; grassroots race organisers making events happen, through to the riders who are changing how and what mountain bikers ride; we want to tell the stories and give recognition to the people who are changing mountain biking and making riding better for all of us.

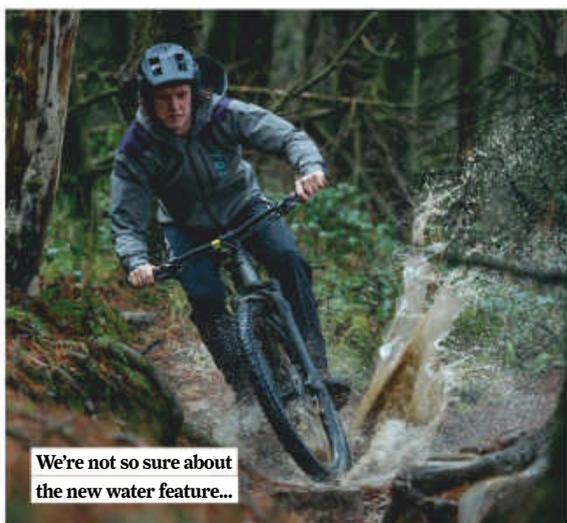
**WE NEED TO CONSIDER
INVESTING FINANCIALLY
IN THE TRAILS WE RIDE**



The relaid pump track is ready to roll



Trail-building maestro Rowan's always looking to the future



We're not so sure about the new water feature...



The visitor centre's new wing is a work in progress

having had a hand in both the design and construction of the trails at Afan, Cwmcarn and Brechfa. His experiences and frustrations with these projects helped seed the idea that would eventually become BikePark Wales. Built on a hillside outside Merthyr Tydfil, BikePark Wales (BPW) has become South Wales's go-to riding destination, eclipsing even the free-to-ride trail centres.

GOING GREEN

Turning up at BPW and having your pick of parking spaces is unusual. But unusual has become the norm this year. With the park officially shut to customers, the only vehicles in the upper car park are those belonging to myself, Rowan and the tradesmen who are working on an extension to the visitors' centre. This new section will become a hire bike centre and classrooms, the idea being to provide a mountain bike version of the Go-Ape experience and give people a taste of what mountain biking is all about. Building was supposed to have been completed by Easter 2020 but, well...

Rowan is frustrated but pragmatic about the closure. It is what it is, but it must hurt that, despite mountain biking seeing a huge boost in popularity over the last year, BPW hasn't been able to capitalise on it. The revised plan is to have everything ready for Easter 2021 when riders might be able to return to the park. There won't just be a new section of the visitors' centre greeting those riders either. Imposed downtime has given the BPW dig team the opportunity to get on top of maintenance work and get stuck into some new trails.

It might not be easy being green, but Kermit – the park's latest green-graded trail – is its easiest yet. Built to cater to new riders, it has the hallmark feel and flow recognisable to anyone familiar with BPW, albeit with a

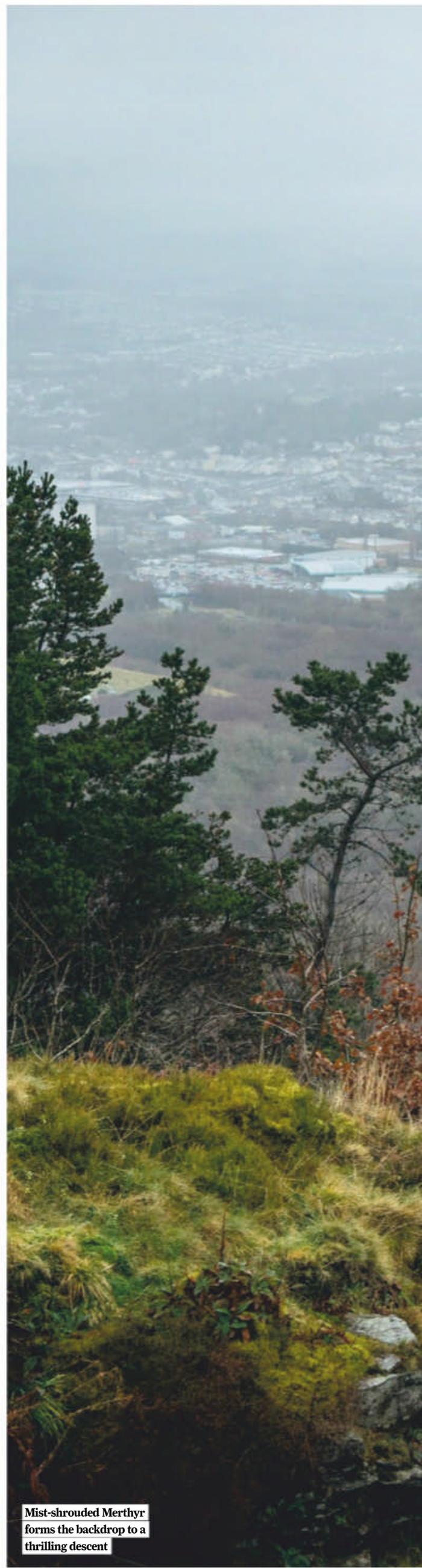
mellower attitude. Rowan says that this trail has caused him more sleepless nights than any other. Making sure it's both fun and manageable for beginners is a tricky balance. This is the trail that will hopefully turn people on to mountain biking, so it has to be judged just right. It's also important to have happy customers.

Charging for access was a discussion that was had when BPW formed. Having seen much of the hard work at the trail centres undone by a lack of continued investment, the BPW team knew that the only way they could make the venture sustainable and avoid stagnation was to make the park pay-to-ride. This would allow them to pay rent to Natural Resources Wales for use of the land, employ dedicated trail builders, buy materials, tools and machinery, as well as paying themselves a wage.

There are some who begrudge paying to ride, but as Rowan points out, there'll always be someone who will complain about the price of anything. With riding free on the wider trail network and the price of admission at trail centres so low, there's still some resistance to the idea of paying for trails. People feel like riding their bike on trails is a right, which in some cases it is, but surely thousands of hours of work creating and maintaining trails deserves recognition and remuneration?

Rowan thinks that if people are confident that their money is going directly into the trails, they are happier to pay. Admission to BPW starts at £14 for a day's worth of riding, which might be more than the car park fee at Afan, but the money is clearly being invested in the trails. This pay-to-ride system works at a private enterprise like BPW, but what about outside the park on publicly accessible trails?

With time spent riding in Canada and New Zealand, Rowan thinks we're slightly ➔



Mist-shrouded Merthyr forms the backdrop to a thrilling descent

THE PARK'S LATEST GREEN-GRADED TRAIL WILL CATER FOR NEW RIDES





behind the curve on this front. Rowan points to destinations like Squamish and Pemberton in British Columbia, where the local trail associations go to great lengths to impress upon visiting riders that the amazing trail networks they are enjoying did not come about for free and require constant funding. At the same time it's made easy for people to pay, with QR codes that can be scanned with a phone at the trailhead directing you to a secure donation webpage. Organisations like Ride Sheffield are already running a similar system in this country but for it to work successfully on a widespread basis, attitudes will have to shift slightly first and our perception of trail use and its cost needs to align with the realities.

Wild trails are appearing everywhere because they are the kinds of trail riders want to ride. Many are clustered together, creating informal bike parks. From the English border right across South Wales, Rowan reckons there are wild trails in every valley. With no provision of sanctioned areas for trail building to take place, there's a proliferation of trails being built where maybe they shouldn't be.

There's a growing recognition from bodies such as Forestry and Land Scotland and Natural Resources Wales, that they need to educate themselves about the people using their land and engage with them. Rowan says that after years of low-level conversations with staff at NRW, there are promising signs that it is starting to look at how it can better work with mountain bikers on its property.

COMMUNITY OUTREACH

Away from his role at BPW, Rowan has been working on a document for a local council explaining what mountain biking is, addressing its concerns and framing trails as a transformational aspect to an area that can bring benefits – much like the trail centres have. It's easy to forget that a lot of people don't understand what it is we actually do on our bikes. To many, mountain biking is something they tried one summer at Center Parcs, to others it's what they've seen in a Red Bull Rampage video on Facebook. People are naturally cautious about something they don't fully understand, even more so when it's happening on their property. The reaction

from riders is to try and fly under the radar rather than engage with land owners, with the worry that trails will be shut down.

Education is clearly needed on all sides. Both riders and land owners currently have knowledge gaps that are causing issues and hampering an outcome that could work for both parties. Rowan suggests that what is needed is some kind of intermediary who could work between rider groups and other interested parties, filling in knowledge gaps on both sides. The most successful trail groups have done so well, in part because they have members who are able to take on this kind of role, often thanks to experience in their professional lives. A dedicated mountain bike intermediary who could lend support to trail groups and help fill some of these knowledge gaps that exist with landowners, councils and government could have a real impact on the sport. Who that would be and who would pay for them to take on this role is the question.

BPW is a place of continual change. Older trails are being reinvented all the time, wear and tear is carefully managed to bring out the desired character from the dirt and sections



Hammering S-bends at speed is fun, even if skid marks are inevitable



Empty trails offer the chance to cast a critical eye and ensure the flow doesn't slow



The mind mapper of Merthyr sees trails where others just see trees



New blue Merthyr Rocks begins its metamorphosis from tape to trail



An earth-moving upgrade is set to turn the A470 trail a radder shade of red



Sometimes even trail builders need to cut loose and go off-piste

HUGE MOTOCROSS-STYLE JUMPS RUN ONE AFTER ANOTHER ALL THE WAY ALONG THE HILLSIDE

are tweaked to improve flow, but arguably it's the prospect of riding something totally new that draws riders back again and again. The opening of new trails has become almost expected at BPW and is one of the reasons for its continued success. With over 40 trails already in place, you'd think there would be little need to keep on building, but the desire to bring more trails to life is driven as much by the people who work there as customer demand. This creation, evolution and fight against stagnation is one of the key differences between this pay-to-ride venue and a traditional trail centre.

At the other end of the scale to the green Kermit trail is the red-graded A470 line that is currently having a face-lift. Looking at the

bare bones of the redesigned jump track gives you a very clear idea of the need for money to make trails like this possible. The huge motocross-style jumps run one after another all the way along the hillside disappearing into the low cloud that sits on the forest. Despite having their own diggers, creating a trail like this required the build team to hire in some much bigger machinery. This hasn't come cheap, but the results should be more than worth it. Once finished, this will be one of those trails that ensures that the uplift vans are kept busy ferrying riders up for one more go. Investing in trails pays.

Having seen a freshly finished trail and one midway through its construction, Rowan shows me a trail that isn't actually a trail at

all. Yet. If you didn't know, you'd dismiss the strips of tape hanging from bushes and trees as windswept litter. These are in fact telltale signs of a new trail. Merthyr Rocks will be a technical blue trail, but at the moment it's nothing more than a few scraps of plastic tape and an imagined line in the trail crews' heads. Scrambling through bracken, brambles and saplings after Rowan, it's clear he's in his element – after all, you don't start a bike park if you don't love building trails.

They may pay rent but that doesn't mean the trail builders are free to build whatever they want. Instead, each trail has to be agreed upon and built to specific requirements depending on its location and according to its grading. Land management, ecology, proposals and health and safety forms are the furthest thing from your mind when you ride here, which is as it should be. Your money not only buys you access to well-built and maintained trails, but also the freedom to enjoy them without having to think about all of those issues; for Rowan and the BPW team, that money allows them to carry on doing the thing they love: building trails for us to ride. **mbr**

CALL OF THE WILD

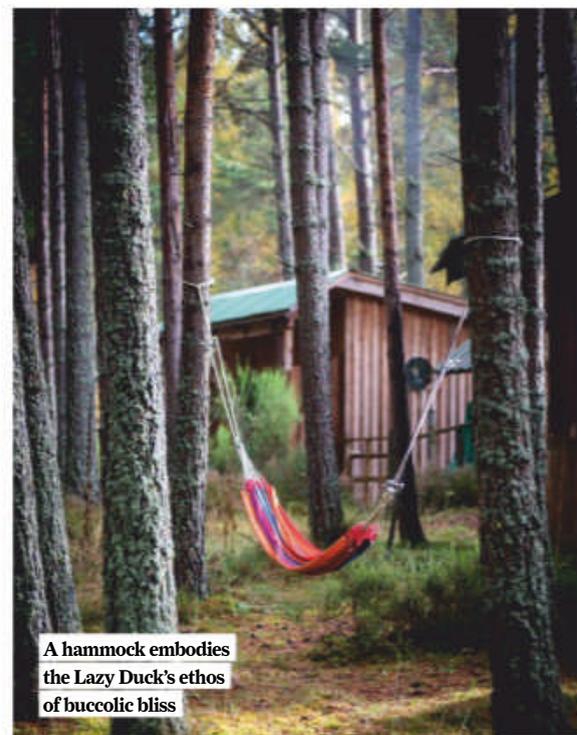
Former endurance racer Phil Hodgkiss gave up the nine-to-five to take over a Scottish eco-retreat; we headed to the Cairngorms to make like lazy ducks...

Words & photos: Andy McCandlish





Phil's Cairngorms eco-retreat is the perfect place to slow down and take it easy



A hammock embodies the Lazy Duck's ethos of bucolic bliss



Feeding time soon sorts out the pecking order



The Homestead's picket fence is a far cry from suburbia

wander out the cabin door, coffee in hand, and sit on the outside sofa.

There is absolute peace in this place, surrounded by ancient Caledonian pines deep in the Cairngorms National Park. The woodland keeps any breeze at bay, yet allows a soft light to filter through to the small collection of rustic wooden cabins and camping meadow below. A wren lands at my feet and lunges for an insect before darting off. Paradise.

Before long, two bickering kids – my kids – pour out the cabin behind and the peace is shattered. They are desperate to run through the site to feed the ducks, then get into the woods to explore the trails, swing on the swings and guddle in the streams. Someone jogs my elbow and the coffee spills.

Ach well, it was nice while it lasted.

They are heading off, but so am I. I lift my helmet from the table behind, zip up my jacket and push my bike up to the reception building where I am meeting the boss of the Lazy Duck, Phil Hodgkiss.

I say boss, but he is very much one of a team of two running the Lazy Duck, together with partner Sarah. Between them they rent four cabins, some of which are totally off-grid, manage a beautiful camping area, offer wellbeing activities and organise many other opportunities for visitors to disappear into an eco-friendly and thoroughly stress-relieving lifestyle. Hammocks are strung between trees through the woods, hens run free in the field and there are even bush showers – a bucket on a rope with shower head underneath – for

the stout of heart. We had only stayed one night so far and were already floating around in a rapidly decreasing state of tension. The duck connection, incidentally, came from the previous owners of the site. They introduced a raucous mix of several different breeds of duck many years ago, the descendants of which are still there providing fun for families and eggs for breakfast.

Phil springs into action, releasing the ducks from their enclosures to be briefly showered with food by my beaming children, before checking the booking emails are under control, helping some other guests, donning his cycling kit and finally reverting to the Phil I have known well from past years. Phil the mountain biker.

ROAD TO FREEDOM

We first met on Raasay, a small island off Skye, where he worked in sales and marketing for Raasay House. In 2007 he co-organised a remote yet incredibly popular event wrapped around a 10-hour endurance race, with music, social events and an atmosphere so good you could almost touch it. Folks came, stayed on the island and loved it. It was called The Raasay Rumble.

After that, life took him south where he had a family, held down some good jobs in project management and generally made a success



Old race numbers are the moments of an endurance addict

of himself. A big fan of endurance riding, he is a veteran of just about every singlespeed and 24-hour race you can think of, including the Singlespeed World Championships and notoriously harrowing Strathpuffer.

Fast-forward 13 years, through a divorce, several relocations and family hardships, and he met a kindred spirit in Sarah. Together they began looking for a place they could once again bring people together, create an atmosphere and push forward on their own terms. After a few false starts trying to buy land and start from scratch, they finally came across the Lazy Duck, up for lease from the original owners, who were wanting to move on after many years at the helm. They finally took over the reins in late 2019.

As we jump on the bikes and pedal up ➔

A photograph of two mountain bikers riding a dirt trail through a forest of ancient Caledonian pines. The bikers are wearing helmets and cycling gear. The forest is dense with tall, thin trees and a ground covered in moss and low-lying vegetation. The lighting is soft, suggesting a misty or overcast day.

**THERE IS ABSOLUTE
PEACE HERE,
SURROUNDED
BY ANCIENT
CALEDONIAN PINES**



With scenery this sublime, there's always time to sit back and reflect

the long, tree-lined driveway of the Lazy Duck, I can easily see what would attract someone here. The route takes a sharp left down to cross the River Nethy, and passes a small section of woodland after only a few minutes.

“That’s where they have the Springwatch set,” Phil waves to his left. The forests here are glorious, packed with wildlife at every glance, so it is no surprise. Dropping into the Nethy House cafe in Nethy Bridge we pick up David Robertson, a local rider from Kingussie who has a spare afternoon and nose for the local singletrack. A few coffees later and we are off again, this time straight onto singletrack up the riverside.

As we weave our way upstream into some low autumn sunshine, I catch up on some of the missing years with Phil.

Usually when someone ups-sticks to a forest far from their present life, it is to escape

something, to retreat from a life that isn’t making them happy or fulfilled. But the more we ride and chat, the more I realise Phil wasn’t so much running away from anything, he was running toward something he had been hankering after for a long time. In fact, right back to when we met. “It was after the Raasay Rumble,” he smiles as we pedal, “it went really well, everyone survived and had a great time. Someone just came up to me and shook my hand and I was like, yes, this is for me. That was the moment.”

The seeds had been sown.

TRUE VOCATION

After bashing along some fire road through the woods, Phil nudges us left, up a steep climb and off onto some sublime, heather-parting singletrack. He leads the way as David and I follow his polished rigid Singular, glinting its way through the trees. At no



Singletrack through pine and heather offers high-speed thrills in any weather



Phil's bike may be old-school but local knowledge gets him top marks on the trails



more than eight inches wide, the trail is pure flowing joy. It rises and falls as we crank up the speed, slipping in and out the corners, over rises and rattling the odd root plate that dares to poke up through the sandy smoothness. Phil tweaks his bars away from encroaching trees with practised skill, with David hard on his tail and me trying my best to catch up with the local knowledge. Despite recent rainfall, the trails here drain so well you could swear it was at the end of a lengthy drought and we pass through the trees with a light crackle of grit rather than the expected splash of mud.

At a stop by a glassy pond, Phil expands on his life-changing decision. A big part of it was wanting to come home. As a Scotsman, his idea of starting a hospitality business had always included coming back north of the border from his adopted Devon life. Even after all these years, he thought of it as coming home. There was also that nagging seed planted at the Rumble, just waiting to grow. But of course he had a good, solid career where he was.

“There is that sensible thing of earning money, with a pension at the end of it, and you are told that is just how you’ve got to do it,” he reminisces, idly flicking a stick into the water,

“but all the time I was thinking ‘Nooo! I want to go and do this!’”

It was clearly a difficult time, but with Sarah now on the scene and equally enthusiastic to start out on their own, plans were hatched to leave that sensible life behind and take a chance. Phil was to keep working until they found a suitable location to build the business, and as such he had just started at a prestigious yacht-building company. Then the Lazy Duck came on the market and threw their plans high into the air.

“It was too soon, but a case of either go for it, or lose it.”

He doesn’t look like a man who regrets that decision.

We push on through endless singletrack, cutting through the forest past remote cottages sitting picture-perfectly in their own clearings. The trail continues down by Loch Garten, chattering through roots on fast and increasingly muddy trails as we head for another coffee spot. Before we know it we are coated from head to toe in mud, chasing each other through the sort of deep, silty puddles that would attract hippos in other circumstances. We hoot with laughter, slipping and sliding through with roots



Not all tree houses are built with people in mind...

directing play, sidelining me at one point clean off the trail as I slide off a grassy shelf. David flies through and the chase continues.

Eventually we bust out onto a singletrack road, showering the surroundings with tyre-borne mud splatters, and follow signposts across the Spey to the small village of Boat of Garten. Well-known local rider Nash Masson’s bike shop Ride and Gashouse cafe shines like a beacon but Covid restrictions mean we can’t go in to warm up.

We clutch coffees over an outside table as Nash busies himself with a glut of repairs. 🛠️



Covid has played a huge part in Phil's first year at the Duck – just as they were winding up for their first proper season, restrictions bit hard and guests dried up completely.

“We just saw the lockdown coming and decided to email all the guests to offer them refunds or booking transfers – and out of around 100 bookings only three asked for a refund thankfully.”

David by this time returns from the local shop with cakes, as the cafe had sold out after a crazy day.

“We used the time to work on the cabins, renovating some of the interiors and getting the website completed ahead of schedule.”

SINGULAR SUCCESS

But there is no doubt it was a disastrous start to their first proper season. Modestly he doesn't mention the bunks and other woodwork he created by hand. I point out the gorgeous work he has done, carving flowing wooden lines and giving the interiors an organic yet polished feel, recalling training he had done years before with his brother Paul – still a top woodwork artisan in Glasgow. Nowhere is it more obvious that he has put his soul into this venture.

With an autumn afternoon chill settling, we leave a fine coating of dried mud on the ground as we stand, saddle up and chain gang it through the gloaming, heading back to Nethy Bridge. David breaks off with a wave, heading home, and we climb through the village, back down the driveway and into the peace of the woods.

A small sign on the gate welcomes us back. “The Lazy Duck. Come home to slow living.”

Yes please.

I am greeted by my excited family who have been waiting to get into the glorious wood-



A long and winding road has led Phil back to the life he always dreamed of

fired hot tub on the edge of the clearing. The rain has started but no one minds, and after a quick shower to sluice half the Cairngorms from my legs, we jump into the inky black water and soak up the heat. I lie back and look out over the steaming water, through the trees to the Cairngorms. What a spot.

With a steely nerve, a truckload of determination and a large slice of faith, Phil and Sarah chased down a dream and it led them here. They have found a real community of like-minded individuals, such as Nash and his bike shop cafe nearby, along with a healthy core of local rider friends and loyal customers. Phil has since got his



Coffee at the Gashouse cafe is a Covid-compliant alfresco affair



The kids are alright now the wood-fired hot tub's in action

mountain bike guiding ticket, all part of the plan, and has added that to the appeal of the Lazy Duck.

I think about one of the last things he mentioned on the ride, about leaving work and assuming the grass would be greener. Of course, it never is all the time.

“You know, when it's freezing, and you have to come out and break the ice on the chicken's water, it's not desperately pleasant. Or even when I fell into the duck pond that time... But, you know, it's on my own terms.”

Success means different things to different people, but it sure sounds to me like they have found their definition. **mbr**

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RIDE SMARTER

How to plan ahead on the trails and pick the savviest lines

Words: Andy Barlow Photos: Andy McCandlish



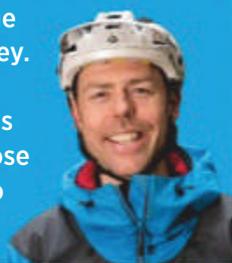
One of the most satisfying things about riding mountain bikes is knowing that you're constantly making progress. There's no better feeling when you're out for a ride than conquering a new trail, or mastering a technical challenge that's gotten the better of you for ages. Having these measurable goals allows you to keep track of your progress and gives you the confidence to try new challenges.

Every so often, though, you might find you hit a plateau and don't seem to be improving any more. This article is about identifying what's happening when you hit a bit of a wall, and how to make a plan to break through it and move beyond your self-imposed limits. By identifying some of the techniques or reactions that are holding you back, and making a deliberate plan to help you overcome them, you can start making progress again.

THE COACH

ANDY BARLOW

Before joining Dirt School Andy liked to win things – races like the Scottish XC Champs and the Scottish Downhill Champs. Since 2009, though, he's coached some of the world's best riders with Dirt School and helped develop the BASE MTB course at Borders College in the Tweed Valley. But what Andy really likes to do is communicate those pro techniques to everyday riders.



grip over the slippery bits. Be clear about what your particular goal is every ride and you'll continue to make progress even while switching off and escaping.

PLAN OF ATTACK

Riding reactively has its uses: you just swing your leg over your bike and don't have to think about it. You can just switch off from the pressures and decisions of everyday life and escape out into your own wee world in the hills for a few hours. Unfortunately though, if you spend every ride doing this your

progress might stagnate. In order to stop this from happening it's always good to have a technical goal in mind every ride. That might be to stay close to the bike in order to open up more reaction time on steep trails. If it's a wet day, it might be to brake in places where it's safe, so you can let go and get more

GOING AROUND VS HOPPING OVER

Riding around certain larger features might be easier, but if you know that it can be done a different way then why not take the plunge and give it a go? A more direct route will allow you to carry speed better, it will often give you more time to react, and it will definitely give you the satisfaction of facing a challenge head on and overcoming it. Simply put, make a plan about how you're going to face the obstacle and put it into action when you get there.



REACT

Riding around obstacles like this chunky tree stump might seem like an easier option at first, but often taking the long way round will mean more turns, fighting another adverse camber, and going into the next corner with limited time. Riding with so much going on might feel as though it's fast because you have no time to think, but it's busy, risky, and doesn't give you any room for progression or making mistakes.

PLAN

Committing to riding straight over a

feature like this will take a bit of patience and practice. It's not the kind of thing that you'll do with confidence straight away, so have a plan and stick to it. Get low on the way in to open up more room to move. As you approach the last bit of smooth ground, straighten your legs and drive the bike heavy into the trail. This will create good grip and mean that as your wheels leave the ground you feel balanced and on target. Aim to land after the obstacle on the next piece of smooth ground and you will have linked the two grippy bits together and have cleared the roots.



THERE'S AN APP FOR THAT!

Dirt School's coaching app lets you see the right and wrong techniques in slow-mo.

DIRTSCHOOL

MAINLINE VS GETTING CREATIVE

The mainline exists for a reason. It's where the majority of people ride, it's the most straightforward, and it's probably the most obvious. As you progress as a rider though, you can start to use your ability, experience and judgement to open up more creative solutions. A tight, twisty turn that you have to wiggle through might interrupt the flow of the trail. Keep your eyes open, though, and there might be a way of opening up the exit and carrying more momentum out the other side.



REACT

There's nothing wrong with the mainline here other than it leads you into a tight, twisty gap that feels like you are threading a needle at speed. If you've never stopped to look at a section like this, or if you didn't know any better, then you'd never even notice that there are other options available to you.



PLAN

By taking a straighter line into the pinch, you can open up the exit and not have to brake at all for the narrow bit. Doing this will require you to be confident with your bunny hops and linking your grip points together, but use your judgement and look at the line on foot first and you can commit to driving in the right places and open up the trail.

OFF THE BACK VS STAYING NEUTRAL

Riding a steep trail reactively will feel great right up until something goes wrong. Typically as soon as you slip on that first root, your head will fall off and it will start to get worse and worse until you're just surviving. This happens because as you start to move away from the danger, you limit the amount of movement available to neutralise the trail. Less room to move means that even the slightest slip or slide from your wheels feels massive. As long as you're aware of this you can do something about it.



REACT

As soon as the trail gets lively you might be moving backwards on your bike without even knowing it. You will still be able to ride like this, but it will feel like you have limited control and no time to react. The more your bike slides, the further off the back you go till you're just struggling and blaming the tyres/conditions/hangover... etc.

PLAN

Keep your head over the stem and get closer to your bike by bending your knees and elbows. Staying low will mean that as your bike continues to move on the trail, you will have the range of motion to be able to handle it. This in turn will keep your body weight neutral and will feel like you have more time to react. This will ultimately lead to more confidence and control. As soon as you start slipping and sliding again, have a quick body position assessment and come back to a low, neutral position as soon as you can.

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STAGE

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YOUR
SAFETY
IS OUR PRIORITY

MAINLINE VS HIGHLINE

As trails start to get steeper, taking a wider line in becomes more important. It's often easy to miss, and if you're just following the mainline you'd never even notice the other options that are available to you. Go in with a plan, though, and you'll start to notice that there are options available to you the whole way down.

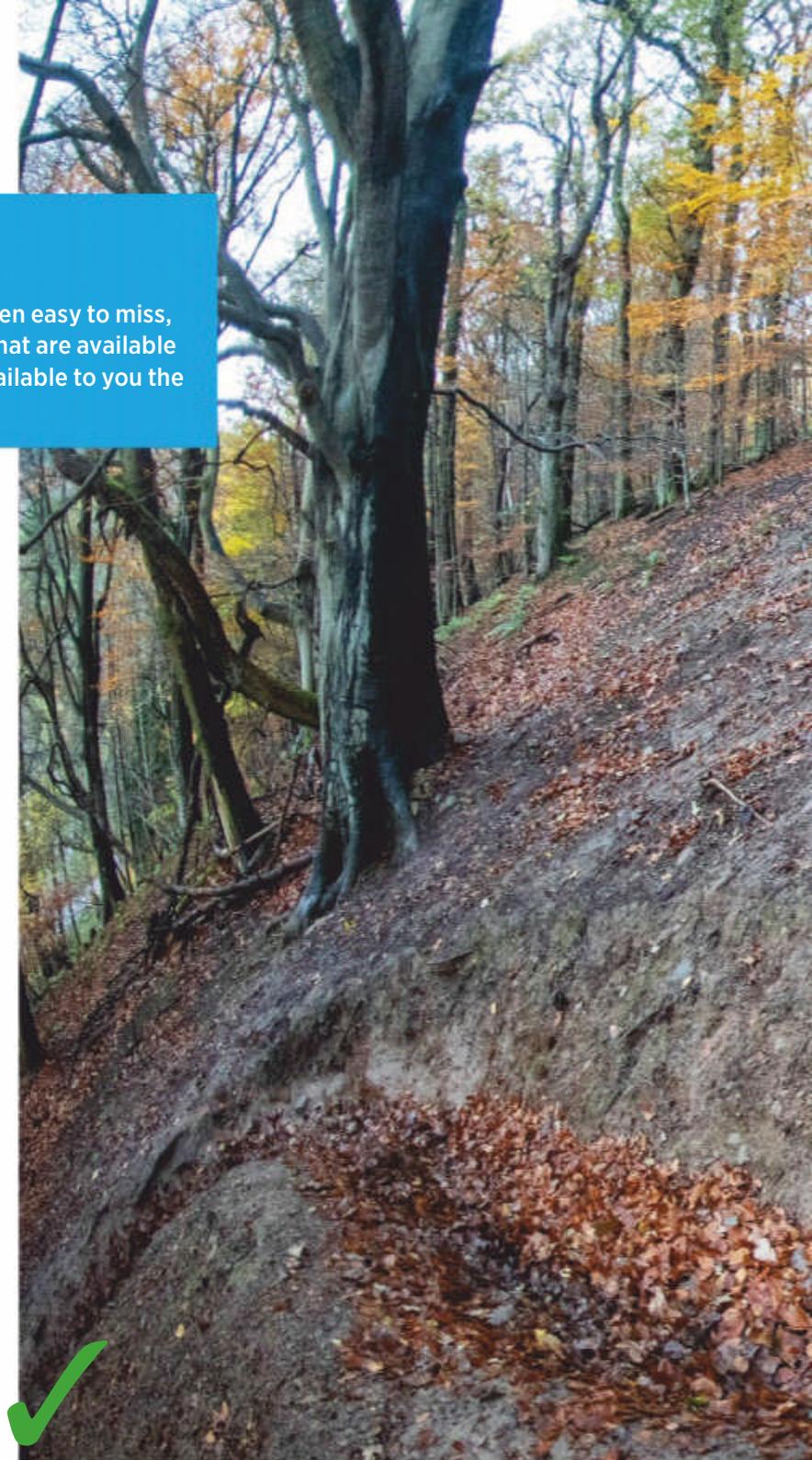
REACT

Sticking to the mainline on a turn like this will mean that you start to accelerate as soon as you tip it in. By the time you get further round the corner you will be going too fast and feel like the corner is getting tighter and like you're running out of room. The only way to stay in control if you're riding like this is to keep slowing down for the exit.



PLAN

Take a wider line in and you'll be able to do a lot of the corner up high before you've even started to accelerate. This means that as you drop in and pick up speed you'll be facing the right way to carry all that momentum out of the turn. Being patient on the way in will open up more control in the risky 'tight' bit, and mean you can carry speed with confidence on the way out.



PEDAL OUT VS BEING PATIENT

How fast you're going and how fast it feels like you're going are two completely different things. We would call this a rider's perceived exertion, and it's often very different to how fast they are actually going. A good example of this would be pedalling hard out of corners. This will work for the first two or three turns while your legs are fresh and your heart rate is low, but keep it up on a long trail and you'll be chopping away at the pedals with no power and making mistake after mistake as your heart rate soars. Having a longer-term plan might help with this.

REACT

We all react to what our senses are telling us. What other way do we have to experience the world? When it lets us down, though, is when we are putting loads of effort in and thinking that it's getting us places. Initially it will work well, but as your heart rate rises, your body will be working harder for the same effort. The eventual result is that your body is working at its max, but your actual effort has dropped significantly.

PLAN

Instead of going hard everywhere and getting slower the longer a track goes on, choose the places where your effort will make the biggest difference and save your energy everywhere else. You should be using your technique to drive your weight against a turn and build speed for the exit, only pedalling when you're out in the open and able to make a difference.





OLD BODY POSITION VS CONSCIOUSLY LOW

Being aware of your body position when descending is a huge advantage. Typically you can go low if you think about it, but it's the times where you think there's nothing to worry about that will often catch you off-guard. Lower your upper body a few centimetres, though, and you'll open up more wiggle-room for that unexpected movement.

REACT

Riding in a regular stance is fine until you hit something that you didn't expect. As soon as a slidy root, or loose rock catches you off-guard, you'll use up your available movement and be taken off-balance with no warning.

PLAN

Get into the habit of checking your body position before and after every section of trail. That way you'll keep reminding yourself to get lower, meaning that when those unexpected movements happen you can stay composed, keep your balance, and continue with confidence.

MAKING PROGRESS

The next time you ride, set yourself some goals. This is often easier on familiar terrain because you've ridden it before and know what to expect. You can spend a little more time pre-planning on your way into sections and executing your plan. You may even catch yourself missing others along the way. As long as you're working to a plan, though, you'll start to see opportunities everywhere.

LONG TERMERS

Countless hours on the trails make this the ultimate test of performance as well as reliability

INTRODUCING

PB'S HAIBIKE ALLMTN 6

£5,149 / 29/27.5in / haibike.com

MONTH 1: E-bike specialist Haibike has specced its all-mountain model with Yamaha's latest motor; PB just had to jump the shark...



THE RIDER

PAUL BURWELL

Position Freelance writer/tester

Mostly rides Surrey & Sussex

Height 5ft 10in

Weight 79kg

THE BIKE

■ All-mountain e-bike with a 160mm-travel Fox 38 fork and 150mm of rear travel

■ Carbon frame with air intake ports on the head tube for cooling

■ Powered by the latest 80Nm Yamaha PW-X2 motor and 600Wh InTube battery

■ Mullet design with 29x2.5in tyre up front and 27.5x2.8in out back

■ Acros BlockLock anti-rotation headset with custom stem

According to Google Translate Hai means shark in German – so in plain English my 2021 longtermer is the Sharkbike AllMtn 6, a carbon e-bike from Haibike with 150mm travel and a Yamaha motor and battery.

Poking around on the internet, the other thing I discovered about Haibike is, unlike other bike companies, it only makes e-bikes and has done so for the best part of 15 years. Obviously, some of those early models were trekking and commuter bikes for the German domestic market, but over the years Haibike has developed a range of performance e-MTBs, sponsoring riders such as Sam Pilgrim to promote them.

My latest longtermer is part of Haibike's new all-mountain range and the primary reason I wanted to get it on test was to try the new Yamaha PW-X2 drive unit. I'd heard it was super powerful and could potentially give the latest Bosch Performance

CX motor a real run for its money. Not that money is an issue here, the AllMtn 6 is pretty good value. True, £5k is still not to be sniffed at but you do get a lot of bike for that – full carbon frame, a Fox 38 Performance series fork and matching Fox DPS Performance Evol rear shock, a SRAM Eagle groupset and excellent Magura MT5 four-pot brakes.

But let's get back to the powerhouse. The PW-X2 is the latest electric motor from Yamaha with a claimed 80Nm of torque. Like most e-bikes, the AllMtn 6 is limited to 25kph but the thing I noticed straight away is how the Yamaha unit really delivers some extra grunt at the top end. Most motors, the Bosch included, can get a bit sluggish when you're approaching the cut-off point, but the PW-X2 really gets a shift on and never lets up. And combined with the light touch to the shock damping, the bike feels much more positive and dynamic as a result.

Yes, there is some rattle/play in the drivetrain, probably

from the motor's freewheel just before it engages, but the power delivery is incredibly smooth and it feels really effortless getting up to cruising speed. To stop you getting into too much trouble once you're ripping, the AllMtn 6 has sorted geometry, which is actually longer and slacker than claimed. You also get a 780mm handlebar and proper Maxxis Minion tyres with the tacky 3C Maxx Terra rubber. There are also no shortcomings in the suspension performance either.

Best of all, I don't have to bring this bike into my kitchen for charging because the Yamaha 600Wh battery is fully removable from the down tube. It locks in place, so I will need to be mindful of where I put the key, and features a clip-in plastic battery cover to keep out the dirt, another thing to keep an eye on.

So far, I've only done three solo rides on the AllMtn 6 but the spec is dialled, it handles well and I even like the colour scheme and angular frame design – first impressions count for a lot and this isn't one I'm going to be throwing back anytime soon.

WHY IT'S HERE
One of the few e-bike brands running Yamaha's PW-X2 motor with InTube 600Wh battery

IN THE SHED



Yamaha PW-X2 motor lays down the power with impressive smoothness



Removable 600Wh InTube battery makes for easy charging



160mm-travel Fox 38 fork neutralises the rough stuff with aplomb

SPECIFICATION

Frame XDURO AllMtn i600 carbon, 150mm travel
Shock Fox Float DPS Performance EVOL
Fork Fox 38 Performance, 160mm travel
Motor Yamaha PW-X2
Battery Yamaha 600Wh InTube
Display Yamaha, Side Switch, 1.7in LCD
Wheels HaiBike 110/148mm hubs, Mavic E-XM 430 rims, Maxxis Minion DHF/DHR II 29x2.5in/27.5x2.8in tyres
Drivetrain HaiBike TheCrank chainset 38t, SRAM GX Eagle r-mech and 12-speed shifter
Brakes Magura MT5, 203/203mm
Components Haibike TheBar +++ Gravity 780mm, Haibike TheStem 2 stem 50mm, Haibike dropper post 150mm, Selle Royal Vivo saddle
Sizes S, M, L, XL
Weight 24.5kg (54lb)

GEOMETRY

Size tested L
Head angle 64.3°
Seat angle 74.5°
Effective SA 75.1°
BB height 340mm
Chainstay 460mm
Front centre 810mm
Wheelbase 1,270mm
Down tube 750mm
Top tube 620mm
Reach 455mm



Cannondale Habit Carbon 3 £3,300



Giant Trance X 29 2 £2,999



Haibike AllMtn 6 £5,149



Vitus Escarpe 29 CRS £2,699.99



The Haibike looks sharp and has all the right angles



BEN'S VITUS ESCARPE 29 CRS

£2,699.99 / 29in / vitusbikes.com



THE RIDER

BEN DAY

Position Account director
Mostly rides Trails around Dorset
Height 6ft
Weight 80kg

THE BIKE

- Brand new carbon-framed 140mm trail bike available in both 27.5in and 29in wheels sizes
- Revised suspension layout with increased progression and control
- Rejigged geometry and a new XL frame size, that's genuinely large
- The Escarpe 29 CRS is the mid-priced bike in a three-strong range

MONTH 2: Ben's bowled over by the Vitus's value for money and keen to confirm that red gets you ahead

My first couple of rides on the Escarpe have been pretty unremarkable. But don't take that as a slur on its character, as the opposite is in fact true. If anything, it is testament to how good this bike is, so bear with me on this one.

The last bike I rode for any length of time was a Santa Cruz HighTower CC, which shares similar geometry and suspension travel but costs in excess of £6,000. A tough act to follow then, given the Santa Cruz collected one of our Editor's Choice awards in the January issue. Yes, the Santa Cruz is a fair bit lighter due to the high-end components and premium CC carbon frame, however, my first rides on the Vitus have really highlighted the law of diminishing returns once you get over £2.5k.

First up, it looks amazing, and pre-lockdown, it has had some very keen admirers commenting on the clean lines and red-to-black frame finish. I've never been a fan of red but it's supposed to be 10 per cent faster so I'm happy to see if the rumors are true. It's been some time since I've ridden a Shimano-equipped bike and the 12-speed SLX groupset is entirely what you would expect – the gears are faultless, functional and slick, the brakes powerful. In fact, my only niggle with the build kit is with the remote on the dropper. It's a cable-actuated Brand-X Ascend post and the lever feels a bit flexy. The dropper works fine though, it just doesn't have that premium feel of a high-end lever. Like I said, it's a niggle.

It's no surprise that all of my rides on the Escarpe so far have been wet and muddy, so I was relieved to discover that Vitus has designed the lower shock mount to allow water and mud to flow out, rather than collect



Drainage hole stops water collecting in lower shock mount



Brand-X dropper lacks the finesse of its premium rivals

like a reservoir. I've also noticed that the seatstays are quite wide. And while this gives great tyre clearance for mud, it does mean that I have rubbed my calves on the stays and suspension linkage...

Now, I have only done this on the usual pre-ride car park bounce, and not actually while riding in anger, so over the next few months I'll keep an eye out for signs of wear on that go-faster frame finish. For now, though, I'll be focusing on the trail ahead, and trying to keep it upright.

WHY IT'S HERE
 Ben tried going big, then going fast, now he just wants a trail bike

SPECIFICATION

Frame T700 Carbon/6061 T6 aluminium, 140mm travel
Shock RockShox Deluxe Select+
Forks RockShox Pike Select RC, 150mm travel
Wheels DT Swiss M1900 wheels, Maxxis Assegai/Dissector 29x2.5/2.4in tyres
Drivetrain Shimano SLX M7100 30t 170mm chainset, SLX r-mech and 12-speed shifter
Brakes Shimano SLX four/two-piston, 203/180mm
Components Nukeproof Horizon 780mm bar, Nukeproof Neuron 45mm stem, Brand-X Ascend 170mm post, WTB Volt saddle,
Size S, M, L, XL
Weight 14.8kg (32.63lb)

GEOMETRY

(LOW SETTING)
Size ridden L
Rider height 5ft 10in
Head angle 64.6°
Seat angle 71.6°
Effective SA 77.5°
BB height 340mm
Chainstay 440mm
Front centre 825mm
Wheelbase 1,265mm
Down Tube 760mm
Top tube 610mm
Reach 478mm



PEATY'S

Loam foam

BORN FROM THE PROFESSIONAL WORLD CUP MOUNTAIN BIKING CIRCUIT AND DESIGNED TO CLING TO YOUR BIKE FOR LONGER, RESULTING IN A SHINY, CLEAN STEED.

A MINTY FRESH, BIODEGRADABLE CLEANER THAT IS TOUGH ON DIRT YET SAFE TO USE ON ALL BIKE SURFACES.

THE CUSTOM FLIP CAP MAKES IT EASY TO SWITCH BETWEEN FOAM AND MIST SPRAY MODES FOR COMPLETE COVERAGE.



BENJI'S GIANT TRANCE X 29 2

£2,999 / 29in / giant-bicycles.com



THE RIDER

BENJI HAWORTH

Position Deputy digital editor

Mostly rides The North

Height 6ft 1in

Weight 73kg

THE BIKE

■ With progressive geometry and 135mm of travel married to a 150mm suspension fork, the new Trance X 29 is designed to do it all

■ Trance X 6011 Aluxx alloy frame is connected with a carbon rocker

■ A Fox 36 Float Rhythm fork with GRIP damper and 44mm offset is paired with Fox Float DPS trunnion-mount rear shock

■ Giant in-house finishing kit is great quality, just like the Shimano SLX drivetrain

MONTH 3: Benji fits his favourite longtermer modification, can you guess what it is?

Last month's update finished with me describing how the drivetrain on the Trance X had started sounding and feeling off-puttingly graunchy under modest pedalling loads.

After a bit of Googling I came across various suggestions as to what was causing it and how to solve it. Most of the suggestions were patently misguided but two stood out as worthy of trying.

One theory was that KMC chains are just noisy, end of. Another theory was that the top jockey wheel was sitting too close to the cassette when the bike is sagged into its travel. The latter sounded like it was at least worth trying to remedy. Partly because it required zero additional parts and also minimal workshop time!

A couple of turns of the rear mech's B-tension screw to increase the jockey wheel/cassette gap by about 5mm and it was good-to-go for a test ride.

The results were instant: much, much quieter. The shifting didn't appear to be negatively affected either. To be honest, I'd still say that the drivetrain is noisier than I think it should be, but it's no longer as distracting, worrying or embarrassing.

On to other aspects of the bike then.

The Fox suspension, at both ends, is just plain good. I've removed a volume spacer from the 36 fork (or was it two?) and am now just running one, which has opened up access to the deeper parts of the travel without introducing too much fork dive.

The Shimano MT520/501 four-pot brakes are also



B-tension screw held the solution to closing down the ratchet

WHY IT'S HERE
Because we're pumped to see the long-awaited return of the Trance X 29

great. The Giant AM 29 Alloy rims have been noticeably easy to live with in terms of swapping tyres and tubelessing etc.

Sure, the Giant Contact Switch dropper post is a little resistant to compress from full extension, but I've just got used to it and it's not been a major issue. Hopefully it's just a sign of close tolerances and it'll bed-in and remain wobble-free for a decent amount of time.

But... and there always must be a but... the front tyre contact patch is just too near the rider for my liking. The head angle is too steep and restricts what this bike can probably do. So, with -2.0° Works Components Angle Adjust headset duly installed, I'm off to hit the steep stuff.

SPECIFICATION

Frame Aluxx-SL aluminium, 135mm travel

Shock Fox Float DPS Performance

Fork Fox 36 Float Rhythm, 150mm travel

Wheels Shimano Sealed 110/148mm hubs, Giant AM29 rims, Maxxis Minion DHF/Dissector 29x2.5/2.4in tyres

Drivetrain Shimano MT501 30t chainset, Shimano SLX r-mech and 12-speed shifter

Brakes Shimano MT520, 203/180mm

Components Giant Contact TR35 800mm bar, Contact SL35 50mm stem, Contact Switch 160mm post, Giant Romero saddle

Sizes S, M, L, XL

Weight 15kg (33.1lb)

GEOMETRY

LOW SETTING

Size tested L

Head angle 64.9°

Seat angle 70.4°

Effective SA 77.4°

BB height 335mm

Chainstay 435mm

Front centre 809mm

Wheelbase 1,244mm

Down tube 755mm

Top tube 615mm

Reach 486mm



JAMIE'S CANNONDALE HABIT CARBON 3

£3,300 / 29in / cannondale.com



THE RIDER

JAMIE DARLOW

Position Mag writer, vid maker, risk taker

Mostly rides

Surrey Hills and South Downs

Height 6ft 1in

Weight 80kg

THE BIKE

■ 130mm-travel trail bike with 29in wheels, carbon frame and progressive geometry

■ Size-specific suspension kinematics mean the bike should be optimal for any size

■ Fox Float Performance-level suspension, with 140mm-travel fork

■ SRAM GX and NX drivetrain, Maxxis tyres and Stan's NoTubes Arch S1 wheels

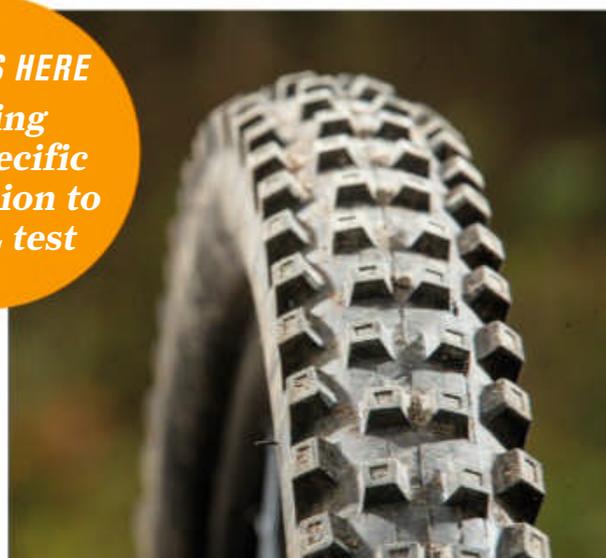
MONTH 9: Gloopy trails turn Jamie into a Hillbilly boy and an injured rider offers a sobering lesson in being prepared

With the latest lockdown in full swing, I spent my Christmas riding from the door, rediscovering old South Downs routes I used to rattle down as a teenager on my old Orange Clockwork. There's no singletrack to be found within reach of my house, barely even a corner unless you count cutting the apex on a fire-road bend, so you'd be forgiven for thinking my riding has been dull. Far from it, the mix of deep ruts and mud so slick you'd swear it was ice, has been genuinely challenging. Honestly, it humbled me, the simple XC riding I'd imagined was a doddle, something that taxed me as a youth but would be boring and simple as an adult, actually challenged the crap out of me.

I've re-learnt some simple lessons then, the first is that chalky mud with flints buried inside isn't really grippy under any tyre at all. The Maxxis Minion DHF and High Roller II combo is reasonable but picks up mud like a spaniel on a winter walk, rolling like a brown snowball that gets bigger and bigger until the wheels won't go round anymore. At this point I have to stop and poke it out with a stick.

Then I remembered the old lessons: skinny is best. I hunted for some old Specialized Storm Control tyres from back in the day, 2.0in spikes with decent rubber. Naturally I couldn't find them (we've moved house twice and **mbr** office once since the Storm's heyday), so I settled on some Hillbillies (pictured) with the original sucker pad lug design.

WHY IT'S HERE
Putting size-specific suspension to the XL test



With some semblance of grip restored, I was free to get cross rutted to my heart's content. I've learnt how to climb again – how to subtly feather my power so I don't spin out and how to balance better my weight front and rear to keep the front in line with the back still gripping.

The last lesson was more serious. Halfway up one slippy, rutted climb I came across a broken rider, he'd washed out his front wheel on a rut and broken his shoulder in three places. With no hope of helicopter rescue thanks to low cloud and the NHS under severe strain anyway, the poor soul was looking at a two-hour wait in sub-zero conditions. I resolved never again to ride solo in winter without packing at least a foil survival blanket into my pockets somewhere.

SPECIFICATION

Frame Carbon/alloy, 130mm travel

Shock Fox Float Performance DPS

Fork Fox Float Performance 34, 140mm travel

Wheels Stan's NoTubes Arch S1 rims, Formula hubs, Maxxis Minion DHF/High Roller II 29x2.5/2.3in tyres

Drivetrain Truvativ Stylo 6K crank, GX Eagle r-mech, NX Eagle shifter

Brakes SRAM Guide R, 180mm

Components Cannondale 3 Riser 780mm handlebar, Cannondale 3D forged stem, Cannondale DownLow 150mm post, Fabric Scoop saddle

Sizes S, M, L, XL
Weight 14.52kg (32.01lb)

GEOMETRY

Size tested XL (low)

Head angle 64.9°

Seat angle 65.4°

BB height 337mm

Chainstay 433mm

Front centre 821mm

Wheelbase 1,254mm

Down tube 755mm

Top tube 617mm

Reach 490mm

Tested

SILT ALL-MOUNTAIN WHEELS

£370 pair

SPECIFICATION Size: 29in • Axle: Boost • Weight: 1,890g pair • Contact: siltmtb.com

Based in Northern Ireland, Silt is a new brand putting together complete wheels at a sensible price. Plenty of others, like Hunt, have successfully done this before, so what is Silt bringing to the party?

First off, despite the very reasonable price for such a competitive weight, its MTB wheels are more than just a bunch of random components slung together. Silt uses its own patented Ratchet Drive freehub design, which is a DT Swiss-style star ratchet with a spring-loaded washer and only one moving part. The leaf spring engages when the freehub is driven, with both ratchet teeth contacting simultaneously. The system has a rapid pick up and worked perfectly throughout testing.

Silt's own drilled-flange hubs use double-sealed bearings at both ends. The front has two bearings and the rear has double bearings stacked side-by-side for extra durability. Rubber seal lips on the bearing cartridge are 1x contact and 1x non-contact, and Silt also specs its own special 'aqua' grease with a claimed greater water resistance before breaking down. These endurance bearings also sell on the website for £15 a set.

The aluminium rim is a heat treated and hardened T10 blend – an alloy I've not encountered before. It has an external width of 35mm, reducing to 30mm inside for a good tyre footprint, and it is drilled 28h front and 32h rear. Spoke eyelets are angled to help point the Sapim D-Light spokes at the hub flanges, and they are positioned asymmetrically (offset) for more even spoke tension. The double-butted spokes are J-bend for ease of replacement with alloy nipples and built two-cross front and three-cross rear. A nice touch is that tubeless valves, spare spokes and nipples are included in the box.

So, Silt has sweated the details, but how do these things ride? Very well is the short answer. The AMs feel snappy and responsive and



Silt has specced its new hoops with its own Ratchet Drive freehub design

accelerate and change direction quickly. This is likely aided by a sub-1.9kg weight, which is low for a durable enduro-ready 29er wheelset, and the same as many much more expensive wheels – including loads of carbon all-mountain packages.

The wheels are stiff enough too, so there's no twanginess or flex smashing through beaten up gulleys or eroded berms, even considering the lower front spoke count. A local young ripper, who does a lot of bike park riding and has a reputation for breaking wheels, also rode the AMs with instructions to do his worst. Several months later, there's a barely visibly ding in one rim, but both ends are still running perfectly straight and true with zero spoke tensioning or attention. Silt's freehub hasn't missed a beat either, and the hub bearings are still smooth.

All that means we can safely say these are sorted wheels for the money and highly recommended as a package that gives you the extra zip of a lighter wheelset than most of its equivalently-priced peers, yet remains tough enough for proper UK riding.

Mick Kirkman



YOUR TESTERS



PAUL BURWELL

Power hungry PB's been reliving his youth, dropping us on the climbs with his new Yamaha-driven Haibike.



DANNY MILNER

Been trying out some risible new waterproofs that let water in but not out. Next month: string vests and lensless glasses.



MICK KIRKMAN

Put eight sets of cranks – and Danny Hart – to the test in the permafrost of his local trails. Didn't break any of them.



AL MULDOON

Making a cameo appearance in the Tested section, Muldoon's been trying out the new Crankbrothers flat pedal shoes.



SHOWERS PASS CROSSPOINT WATERPROOF SOCKS

£31

SPECIFICATION Weight: 89g • Sizes: S/M, M/L, L/XL, XXL • Colours: black, grey, blue and brown • Contact: showerspass.co.uk

Showers Pass makes a range of outdoor gear, including these new Crosspoint waterproof socks. They feature a sandwich construction, with a wear-resistant knit exterior, a waterproof and breathable Artex membrane filling and then a Coolmax FX moisture-wicking, antibacterial lining. This build is pretty similar to Sealskinz and Endura socks we've tested in the past, the difference being that the Showers Pass Crosspoint feels more like a regular sock – it's snug, super-comfortable (there's no need for a liner sock) and it also breathes incredibly well, which is actually related to the fit because moisture can't jump gaps.

The Crosspoint is also super-lightweight, so it never feels like you're carrying a load of extra weight. It's also a thin sock, so if you have a tight-fitting MTB shoe, you can squeeze these in without them cutting off your circulation.

To increase comfort and durability, the Crosspoint has a reinforced toe and heel and also comes up pretty high at the ankle. There's no extra cuff like on some Sealskinz, but wear these under a waterproof trouser and you won't have any issues with water running down the top.

The Crosspoint is similar in price to other brands and offers a very similar level of performance, the difference is this just doesn't have the bulk of a conventional waterproof sock, and as a result it's become my sock of choice for winter rides. Every UK mountain biker would be wise to own a pair of waterproof socks, and if you want the most comfortable and breathable, get the Showers Pass Crosspoint.

Paul Burwell



mbr
ratings
explained
*The scores
on the doors*



1-4 Something's wrong. It's rare, but sometimes a product will have a design flaw or some other weakness that means we can't recommend it. Steer clear.



5-6 OK – one or two faults but it has potential.



7 Good – worth considering.



8 Very good – for the money, we'd buy it.



9 Excellent – a slight mod or two and it might be perfect.



10 Simply the best – we couldn't fault it.

CRANKBROTHERS STAMP LACE

£114.99

SPECIFICATION Sizes: UK 4-13 (EU 37-48) • Weight: 838g (44.5) • Colours: black/silver/gum, black/red, white/gum, navy/silver/gum • Contact: extrauk.co.uk



Slide your feet into the brand new Crankbrothers Stamp flat pedal shoes and it's like stepping into your favourite slippers. With padding in all the right areas, there are no pressure points or hot spots here, even with the laces cinched up tight.

Crankbrothers has also struck a nice balance between warmth and breathability; mesh panels on the sides of the Stamp and a perforated tongue generate air flow while the seamless toe box construction keeps most of the water and mud out. There's also a clipless version of the Stamp Lace, called the Mallet Lace, that shares the exact same last and fit, where both are available in a range of half sizes. Other neat features that carry over from the clipless shoes include a lace pouch on the tongue

and little dimpled grippers on the inside of the heel where it cups the back of your foot. And Crankbrothers hasn't shied away from additional tech throughout the Stamp range either, the Speedlace coming with toggled laces and a Velcro strap, the top-end BOA option swapping laces for speedy BOA closures. With extra tech comes extra expense, the Speedlace costing £134.99 the Stamp BOA £164.99.

But enough about the tech, let's address the elephant in the room. Crankbrothers MC2 rubber simply isn't grippy enough to keep your feet securely planted on the pedals. Yes, the midsole is nice and supple, so the shoe can wrap around the pedal nicely when all of your weight is directed through it. Unweight the bike or try to ride light however, and your feet instantly start to skate on the pedals. So for now, if it's Crankbrothers shoes you're after, and let's face it they do

look bloody cool, get the Mallet shoes and the pedals they were named after.



VERDICT

Lots of brands have tried, but until now, none have succeeded in breaking Five Ten's vice-like grip over flat pedal riders. And for good reason, Five Ten's Stealth rubber had unmatched grip

and control. Specialized has got the rubber to match but it's also priced to go toe-to-toe with the Freerider Pro. So while some riders may switch brands, most will probably stick with

what they know. As for the Stamp Lace... well, the upper is dialled, but Crankbrothers needs the rubber to match if it wants to steal a bit of Five Ten's flat-pedal thunder.

SPECIALIZED 2FO ROOST FLAT

£110

SPECIFICATION Sizes UK 3.5-14 (EU 36-49) • Weight: 828g (size 45) • Colours: black/slate or oak green/black • Contact: specialized.com



Since the introduction of the 2FO 2.0 shoe, Specialized has had a firm footing with flat pedal riders. And while grip was never on par with the Five Ten Freerider Pro, the big S did what it does best,

innovate. With neat features like cambered midsoles and custom foot beds to improve pedalling efficiency, the 2FO wasn't simply another over-priced skate shoe. It was also the first of many to introduce water-repelling uppers that didn't triple in weight when wet. Construction was first rate too, making it solid and dependable.

Enter the new 2FO Roost Flat. It still has the Body Geometry design that makes the shoe feel like it has some funky orthotics fitted, but this is a ground up redesign and it starts where the rubber meets the road. Specialized's latest SlipKnot ST compound is purported to offer

"unsurpassed flat-pedal grip and connection". I can't tell you how many times I've heard shoe brands make the exact same claim only to fall well short on their promise. So let's get one thing clear straight away. The 2FO Roost is the only flat pedal shoe other than a Five Ten where you may have to sit down and unweight the pedals to reposition your feet. Yes, they really are that grippy and it makes Specialized the only brand other than Five Ten to nail it.

The connection with the pedal has also been improved with a lower profile EVA foam midsole. Granted, it doesn't offer as much cushioning as the old 2FO, but it does make the pedals less prone to flipping over. I like the simple lace closure and so far the leather and textile upper has proved durable. There are currently no half sizes available in the UK and like the original 2FO, the Roost version sizes up small in length, even though the toe box is generous so it's a good idea to upsize.

HEAD TO HEAD

TEST WINNER!
mbr





STAGE PROVEN



NUKEPROOF HZN WHEELS

WWW.NUKEPROOF.COM

SCOTT TRAIL STORM WP PANT

£149.99

SPECIFICATION Weight: 286g • Sizes: S, M, L, XL, XXL • Colours: blue/red, black/orange • Contact: scott-sports.com

I've always considered Scott's clothing range to be unfairly overlooked in the UK. Not only is it vast, with everything from arm-warmers to short liners on offer, it's usually functional, well made and stylish. But I hardly ever see anyone wearing it, possibly because it's not on people's radar, but probably because it's not considered an aspirational clothing brand in the same way as Troy Lee or Fox.

During the last swamp age (circa late December 2020), with all my waterproof trousers in the wash, I pulled out these new Scott Trail Storm WP pants to try out. With, er, unique contrasting lower leg panels, their harlequin looks won't appeal to everyone, but the Dryosphere three-layer fabric is, from previous experience, excellent quality and the fully seam-sealed construction seemed impenetrable when I first put them on. Fit is also good, with the medium recommended by Scott's online Fit Finder tool proving to be the perfect size for me.

Then I started riding, and barely 100m along the first (admittedly soaking) trail and I could feel a stream of cold water on the back of my legs. Putting it down to splashes coming up through the open ankle cuffs, I rode/surfed on, trying to ignore my soaking limbs and concentrate on the positives. Such as the two-way stretch, rip-stop fabric that

gives decent articulation when getting loose on slippery trails and doesn't get bunched up around knee-pads or hooked up on saddles. I also really liked the hip pocket with its waterproof zip and internal phone sleeve that stopped it from slapping against my thigh, as well as the zip and Velcro fly closure that is always preferable to a press stud in my opinion. But by the time I'd got back to the car an hour later, my legs, socks, knee-pads and feet were completely drenched in muddy water.

When I peeled off the Scott pants, I discovered the reason why: massive mesh vent panels at the back of the knee, perfectly placed to capture water and channel it down the back of your legs. Now to be fair to Scott, these are mentioned in the key features on its website, so it's not something it's trying to hide, but quite why they are there in the first place, I have no idea. These pants are billed as offering 'advanced weather protection'. They are called 'Trail Storm' pants. But they are anything but. It's rare that Scott gets it wrong with its clothing, but I guess this is the exception that proves the rule.

Danny Milner



FOX RANGER FIRE WINTER GLOVES

£30

SPECIFICATION Weight: 67g • Sizes: S to XXL • Colours: black, Day-Glo • Contact: foxracing.com

Fox Ranger Fires are that rare beast of a close-fitting winter glove with no annoying padding on the palms. A thin brushed-fleece lining and tightly-woven exterior add warmth, and the palm uses a water-resistant faux suede that doesn't wet out when saturated.

An extended cuff keeps wrists cosy, with a pull tab to help put gloves on, as this makes them really tight to wriggle on. There's a nose wipe fleece on the thumb and touchscreen compatible fingertips, but the latter is ineffective on iPhone screens. Ditto the silicone finger grippers in generating extra adhesion on wet brake levers.

However, the Ranger is well articulated to hand shape and finger lengths, and snug with an unobtrusive palm feel and solid grip connection. There is slightly more bulk on the bar than 100%'s Brisker – **mbr's** top winter glove. This is due to the fleece-backed lining 'rocking' almost imperceptibly on its fibres, but I'm very fussy about grip feel and could live with it, plus this diminished after a couple of ride/wash cycles as the fabric wore in.

The outer, weatherproof fabric has a semi-neoprene feel and fends off freezing wind and wet effectively, and the extra fleece inside makes these slightly toastier and better insulated than 100%'s glove. (They're also way more flexible and dextrous than the warmer, waterproof Brisker that's too bulky for me, so make a good halfway-house option).

Overall, I still marginally prefer the 100% Brisker to the Fox Ranger Fire for its superior bar feel and even more invisible fit, but I'm perfectly happy in these too.



And, if Fox's fleece lining was everywhere except the reverse of the palm, the Ranger Fires might be even better. A good winter glove then, and one of only two that I'll actually wear in the winter months.

Mick Kirkman



HOPE CARBON HANDLEBARS 35MM

£160

SPECIFICATION Weight: 224g • Rise: 20mm • Geometry: 5° upsweep, 7° backsweep • Width: 800mm • Diameter: 35mm • Contact: hopetech.com

Hope already has a 31.9mm carbon bar, but this is its new 35mm bore version with a full 800mm width. It's enduro-rated (and even claims DH strength) with indexed surface marking to cut down to 760mm if needed and also help position controls accurately.

The UK firm is highly unusual in making carbon components from scratch in-house, with this bar even using a special manufacturing process and entirely new laminate construction. One of the main objectives was to produce a handlebar that's more compliant and comfortable than some overly stiff, body-rattling oversized bars. The brand claims it surpasses the compliance of its narrower bar and reduces vibration and

feedback without compromising any on strength.

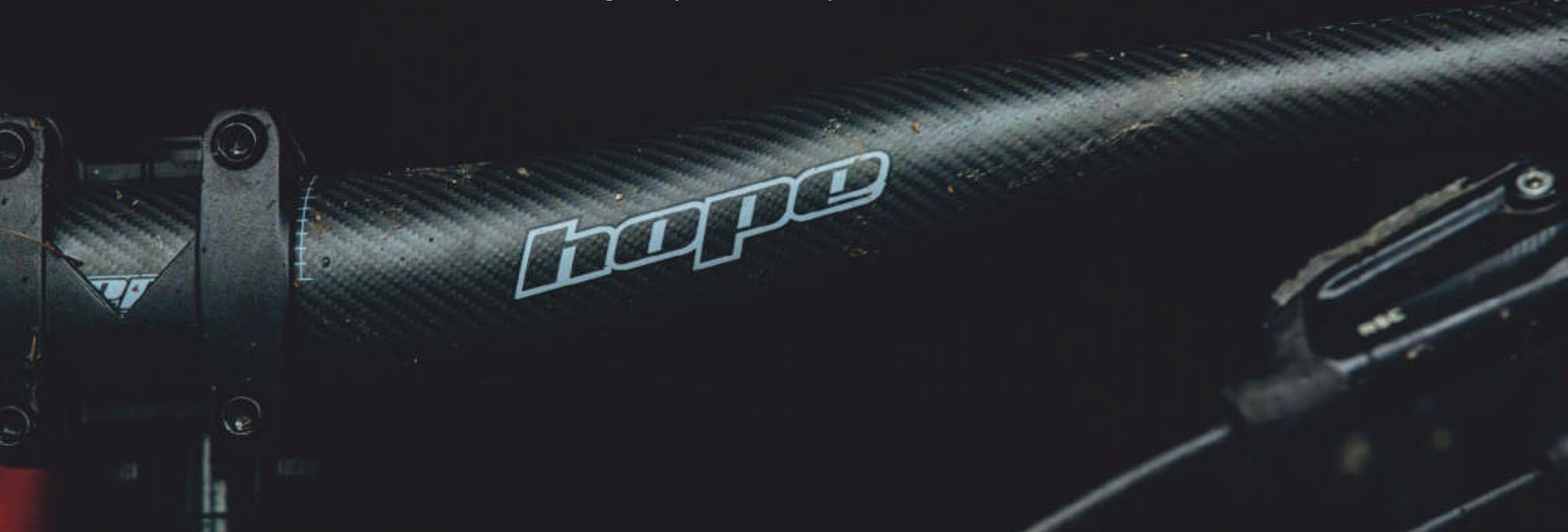
On a Hope visit, the brand showed me how it's made entirely by hand from start to finish. Various layers of pre-preg are laid up around a mould and the carbon experts (who've previously worked on Team GB race bikes) have developed a new rubberised sheath to wrap the carbon sheets from the outside for a smoother finish and better compaction on the fibre after it's cooked and cured.

The resulting finish with exposed carbon weave is stunningly smooth. But the 'carbon' look and a more bulbous shape (to get the performance Hope wanted)

is something you'll either love or loathe according to the reactions I've had to it.

In terms of performance, the 224g weight is respectively light and the bar lives up to claims of good damping and comfort to the point I loved the ride quality; it feels solid and sturdy steering, but also calm and dull on chatter and repeated hits and considerably less stiff and vibrating than the brand's skinner bar. If you like the looks, this is clearly a high-quality product, but there's no escaping the £160 price puts it up there with the most expensive carbon bars on the market.

Mick Kirkman



CAMELBAK WOMEN'S MAGIC PACK

£95

SPECIFICATION Weight: 590g • 2L reservoir, 7L storage • Contact: camelbak.co.uk

Whenever my dad says he has a women's-specific product for me to test, I always think pink or purple. Those are the two default colours for women's gear, so when he handed me the Camelbak Women's Magic backpack I had mixed feelings – this light blue pack is a welcome change, but it isn't going to match any of that other pink/purple gear I have!

There's more to this being a women's pack than the colour, it's actually a specific fit but before I get into that I'm just going to go through the features.

The Magic is a seven-litre pack with a three-litre reservoir. This is the latest Crux design and it has this really cool built-in handle that makes filling it at the tap much easier. The screw top is easy to loosen, which is handy if you have weak hands like me. There's a

new lockable (lever-operated) bite valve, which isn't something I used on the trail when riding, but rather when you're toting the pack to the trail – if you leave the bite valve open and put something on it in the car, it can leak everywhere. I've found this out the hard way.

I haven't used all the storage in the Magic, but it does have quite a few pockets, which are a mixture of mesh and nylon. There is a stuff pocket on the back for wet gear (or banana skins) and an integrated helmet holder – useful if you want to keep your gear together in the car.

I really like the ventilated back panel – it's sort of suspended, allowing air to easily circulate, but I have torn the mesh during testing, so long-term durability is questionable.

To make this women's specific, the Magic is shorter than normal and has a slight S-curve, the idea being it better fits a shorter women's torso. I can confirm the pack is shorter, but I don't find it that comfortable – it sits pretty high on my back and the shape is wide at the top and thin at the bottom. Women generally have wider hips and I want more of the weight lower down, on my hips, rather than high up on my shoulders. I've actually tried Camelbak's unisex Skyline and I found it way more comfortable.

The Magic has a great reservoir and excellent storage, but if you have around £100 to spend and want a really comfy 10-litre trail pack, I'd recommend the Solstice – the women's version of the Skyline. It also comes in black – which apparently can make you look slimmer. Or maybe that's another myth, along with all women's stuff should be pink.

Alice Burwell





Cranksets

Stoking the engine room, it's easy to underestimate the importance of a good crankset – and the better they are, the easier they are to forget. Here we spin up eight of today's best

Words & photos: Mick Kirkman

The latest mountain bike cranks almost exclusively use single front chainrings directly mounted to the drive-side arm. This negates the need for a clumsy and heavier front derailleur, cable and shifter, and with drivetrain advances stabilising the chain and increasing gearing range at the cassette, the benefits of this development are extensive.

Crank materials range from traditional aluminium to lighter weight and more expensive carbon fibre and, in the case of one product here (with an eye-watering £1,000 price tag), also welded titanium.

It's possible to spend well under a 100 quid on a decent set of cranks, right up to the aforementioned grand for Cane Creek's, blinging eeWing numbers. In crude terms, the more you spend, the more weight you

save, but beyond this there should be more sophisticated benefits such as extra durability and stiffness with pricier products.

The two main crank players are Shimano and SRAM; bolstered by the fact these brands offer complete drivetrain packages that put their products on many bikes as original equipment.

Race Face cranks also get plenty of OEM action, and E*thirteen, Hope and Cane Creek feature on some complete builds too, but these brands really concentrate on aftermarket upgrades, where their shiny products add extra bling factor.

Cranksets should be a fit and forget product, so any issues with loosening, creaking or material failures are unacceptable in a market this mature. So, let's dig in to what options are out there for your cash, and what are the pros and cons of the various systems and materials.

USED & ABUSED

How we test

Installing test cranks on the same bike allowed a direct comparison between each model regarding ease of installation, as well as stiffness and drivetrain smoothness. Cranks were then removed and handed out to various hard-riding friends to clock up winter miles in grit and grime. And, between us, we hit up a broad range of terrain including some serious jumps and long descents. Final comparison was backed up by continual use and wider experience of many of the cranks here from test bikes evaluated through the year.

Know your cranks

BOTTOM BRACKET

Most cranks use either a 24mm or 30mm diameter axle. They don't usually come with a bottom bracket, so you can mix and match brands. SRAM's latest DUB BB uses a unique axle diameter just under 29mm and requires an own brand unit or an adaptor to use with third parties. A larger axle is generally stiffer, but leaves less room for bigger bearings and seals.

GROUND CLEARANCE

The three main crank lengths are 165, 170 and 175mm. Traditional logic dictated longer cranks mated better with longer legs, so larger bike sizes often used 175mm. These days, clearance is king, and 170mm is popular to increase the gap between the ground and crank tips at the bottom of the pedal revolution to reduce strikes on rough trails.

LEVERAGE AND CRANK LENGTH

Crank length sees shorter arms spinning tighter circles and longer ones increasing leverage for a more up/down energy transfer. Multiple studies argue shorter arms and a smoother cadence can actually increase ultimate power, and it's telling BMX racers and track cyclists – who sprint hardest – now commonly use 165mm for maximum speed. We're sold on the smoother power transfer of shorter cranks for increased climbing traction too.

STIFFNESS

Ultimate stiffness should improve power delivery and reduce flex to increase responsiveness driving the bike with feet through turns and features. Too much stiffness isn't really an issue on full-suspension bikes, but a rock-solid crank on a hardtail might noticeably increase feedback and abuse on feet on rough terrain.

CHAINRINGS

All cranks here use single chainrings, which is our go-to set up here at mbr. The lone chainring allows ditching the front mech and associated weight, expense and faff. Modern chainrings use an alternating thick/thin tooth profile to improve chain retention by meshing with chain links. SRAM arguably has the most sophisticated and effective tooth profiles on its X-Sync II rings.

CONSTRUCTION

The cranks here are made from three materials – aluminium, carbon and titanium, with ascending prices in order listed. The best alloy cranks are forged to align the grain structure of the aluminium, rather than machined, with some brands also using sophisticated forged hollow arms to save weight. Axle diameters vary from 24mm to 30mm, with various pros and cons to each.

CRANK BOOTS

Carbon is more brittle and easier to damage or crack than aluminium, so plastic protective boots to shield crank tips against strikes are a wise investment. They do, however, add extra grams back in, which reduces any potential weight savings. Also, crank boots can make it difficult to fit pedals with a stubby axle, as some won't tighten fully without extra spacers.



CANE CREEK EEWINGS

£999 arms only

SPECIFICATION Compatible with X-Sync direct-mount chainrings • Weight: 404g arms only, 460g including Absolute Black Oval chainring • Lengths: 170mm, 175mm • Contact: extrauk.co.uk

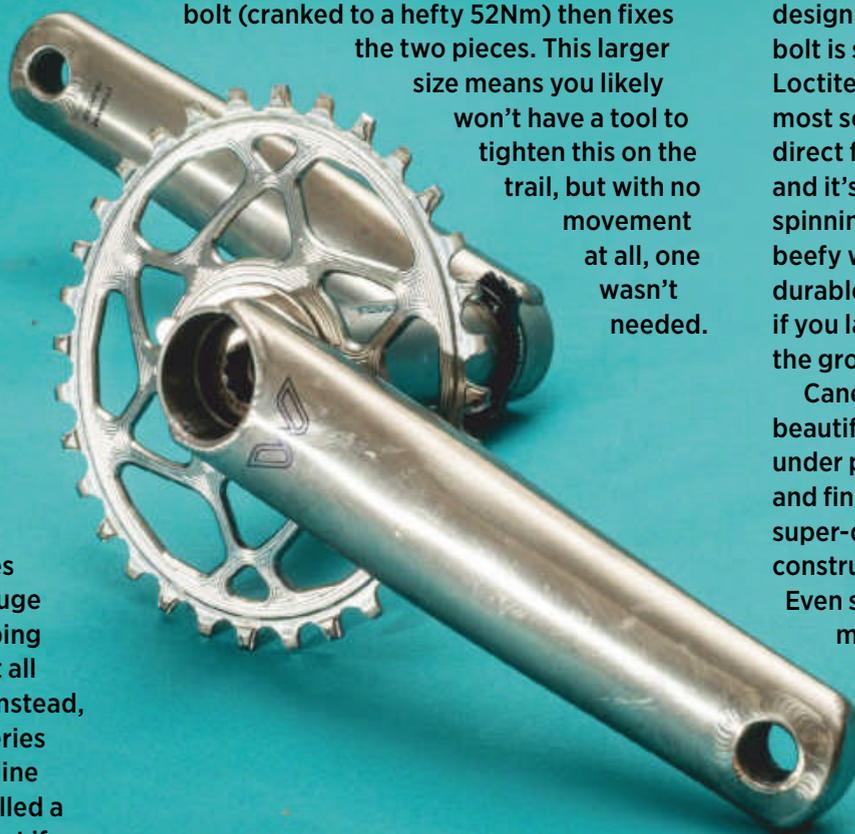
One of a kind, Cane Creek's eeWings are hollow titanium arms welded (on one side) to an oversized 30mm titanium axle. They pack plenty of unique features and look incredibly cool, but come with a whopping price tag of £1,000.

This high-end product weighs about the same as leading carbon cranks, but enjoys the advantage of superior impact resistance, stiffness and durability. The huge arms are seriously chunky, but grab the eeWings and you immediately notice a lack of heft; confirmed on the scales at a featherweight 400g without chainring – that's one of the lightest on test.

The two-piece construction sees the left crank arm welded to the huge hollow axle with minimal overlapping to save weight and zero overlap at all between driveside arm and axle. Instead, the eeWings bolt together via a series of interlocking sawtooth teeth in-line with the chainring. It's a design called a Hirth joint, and looks spooky, in that if

the crank comes loose it's totally free to fall off. Workmanship is superb though, with an absolutely flush join.

An oversized 14mm Allen-head titanium bolt (cranked to a hefty 52Nm) then fixes the two pieces. This larger size means you likely won't have a tool to tighten this on the trail, but with no movement at all, one wasn't needed.



Bearing preload is applied via a durable alloy tensioning ring, rather than a plastic one found on lots of rival products.

Initial scepticism about Cane Creek's design coming loose (especially as the sole bolt is slathered in anti-seize, rather than Loctite) was unfounded. In fact, this is the most solid crank here, with a really stiff and direct feel when pedalling and pumping, and it's also noticeably lightweight when spinning. It's a reasonable assumption the beefy welded pedal eyelet will be way more durable than an alloy insert in a carbon crank if you land really hard or smash the tips on the ground (which we did occasionally) too.

Cane Creek's eeWings not only look beautiful, they feel ultra-firm and efficient under power, plus the manufacturing quality and finish is first class. Add to that the super-durable and ding-resistant titanium construction and it makes for a great product.

Even so, loads of riders likely wouldn't tell much difference from a top alloy crank so the rating here is a reflection of the sky-high price tag.



E*THIRTEEN XCX RACE

£365 arms only / £58 chainring / £423 total

SPECIFICATION Weight: 346g arms only, 396g including chainring (170mm) • Lengths: 170mm, 172.5mm, 175mm • Contact: moorelarge.co.uk

E*thirteen's XCX crank is by a fair margin the lightest on test and, it claims, the lightest production carbon crank on the market. 346g (actual) weight is around 60g less than the nearest equivalent, and a whopping 200g less than some on test.

No surprises then, it targets XC use, rather than full-on downhill or enduro. There's no weight limit as such, but such a featherweight crank won't be best suited to huge compressions or jumps, especially if you're a heavier rider. Instead, E*thirteen's product means racing snake trail and XC riders can dump over half a pound of (rotating) weight for no more cash than equivalents.

The XCX's arms are made by a patented compression moulding process and bonded to an oversized 30mm alloy axle. The driveside bolts with a self-extracting 8mm hex key, with the spindle/arm interface connecting via a three-sided polygon called P3. E*thirteen has used this design (derived from tanks) for years, saying it delivers a large contact patch

and improved stiffness. It's easy to install and creak-free, and we've had good long-term results from it.

The brand's narrow/wide chainring is held in place with an alloy lockring, while the APS bearing preload adjuster is plastic.

In use, there are two clear sensations: a lack of mass and a lack of outright solidity. The former is so noticeable; E*thirteen cranks whizz around like both feet have taken



performance-enhancing drugs, or at least your shoes have dropped a big chunk of weight. This effect makes climbing feel easier and more efficient when spinning smaller gears.

The flipside, however, is this is clearly the flimsiest crank here, and really stomping to sprint on flat pedals, there's minor twist and flex in the arms. The crank arms also feel a bit springy slapping over root or rock webs, or landing small drops or jumps, which possibly adds comfort, but also introduces a less solid, secure sensation and was a bit distracting for riders over 80kg.

This is a niche product that delivers on its key objective. We wouldn't recommend it for bikes with much more than 120/130mm travel, and heavier riders will notice some softness. The weight saving-to-stiffness ratio is reminiscent of carbon cranks from 10 years ago, but this might be just what some riders are looking for. While £365 isn't cheap,

for the lightest carbon crank on the market, it isn't overly expensive either.



HOPE EVO

£235 arms only / £265 inc. chainring

SPECIFICATION Weight: 562g without, 605g including Hope chainring (170mm) • Lengths: 165mm, 170mm, 175mm • Contact: hopetech.com

The Evo is Hope's second-generation mountain bike crank. It's lighter and stiffer and uses a totally revised design at the axle/arm interface. What's not changed is being made in Britain at Hope's Lancashire factory and available in six funky anodised colours.

Crank arms are CNC machined from forged billets of 7150-series aluminium chosen for its strength. The oversized 30mm alloy spindle uses a different, 7075-series alloy and has a series of knurled grooves (splines) to interface with the driveside arm. Hope now uses a more common self-extracting Allen bolt that massively simplifies fitting and removal. The Evo therefore no longer requires specific tools, multiple installation stages and a huge 75Nm tightening torque rating. You do need a specific tool to install Hope's BB though, and it's not that common.

When any brand claims significant extra stiffness, our scepticism is

triggered, but, in Hope's case, its FEA analysis of where to increase stiffness and where to shed material has worked, and its latest crank is noticeably stiffer and more solid. The 15 per cent extra claimed will be most apparent for users of flat pedals, and where the older-generation arms twisted under bigger platform pedals' extra leverage when stomping, and on hard landings, these Evos are hard to separate from SRAM or Shimano.

Hope's



CNC'd direct-mount chainring is available in matching hues, uses an alternating tooth pattern for chain retention and seems to last well. With 28-36t sizes, buying it at the same time as the cranks saves you money. Finish quality and machining is as good as you'd expect, and another neat touch is machining away anodising on the most outwardly protruding points to stop the inevitable shoe-rub abrading crank colour and finish.

A further bonus is that the profile of the crank tip is very squared off. So, with the pedal eyelet sitting tight to the ends, this improves ground clearance at equivalent lengths over most rivals, resulting in fewer rock strikes.

Hope's latest cranks are around 40g lighter than before, plenty stiff enough and the fitment is now a doddle. Being British-made makes the price more than double that of quality alloy rivals from big OE rivals, but finish and function is excellent, and you

can't get this rainbow

of bling colours anywhere else in the industry – if that's what you're after.



RACE FACE NEXT R

£399.99 arms only / £54.95 chainring / £454.94 total

SPECIFICATION Weight: 409g, 478g with chainring (170mm) • Lengths: 170mm, 175mm • Contact: silverfish-uk.com

Two versions of Race Face's high-end Next cranks are available, with a 60g lighter 'SL' version optimised for XC and trail, and the beefed up 'R' model here that's rated for full-on enduro racing and e-bikes. Despite the rating, the Canadian-designed product still weighs the same as many XC-specific cranks.

The arms are hand-made in British Columbia using unidirectional carbon and bolted to a 7000 series alloy axle. The two parts join with Race Face's proven Cinch interface, which is a self-extracting system, whereby (unusually) both crank arms are bolted to the 30mm spindle, rather than one side being bonded. This allows a degree of future-proofing to any BB or axle size changes, or even the ability to swap arms between bikes.

Cinch tightens with an 8mm Allen key bolt, and a plastic bearing preload dial (that uses a tiny Allen key bolt) takes up any play in the system. The stiffer 30mm axle leaves less space for bearings, but Race Face seems to have ironed out

any issues with durability on its bottom brackets, since we've seen equivalent bearing lifespan to most brands on newer Next products. The brand now also offers a double-row, externally sealed unit with special coated bearings, seals and sleeves for even more weather protection, but it'll only work with BB92 press-fit frames.

On lighter Next SL cranks we've seen problems with pedal eyelets coming loose in the carbon.



No surprises then, part of the Next R extra weight is for combating this exact issue; achieved via a beefier alloy pedal thread insert like the brand's DH-rated SixC crank.

We had zero issues with damage, or even any small niggles with creaking and loosening, and we have had a high-mileage local tester ripping around on Next R cranks in northern conditions for over a year with no problems.

Race Face's crank is arguably the stiffest carbon crank tested. There's a marginally more positive and direct surge to power delivery than X01, although SRAM's chainring is smoother to pedal. The Next Rs also come over a touch snappier when you're really stomping down sprinting or leaning the bike hard through deep berms and trail kinks. It's a sense of solidity that translates to a more responsive and tighter feel when riding.

So, while Cane Creek's eeWings might just have the upper hand in this test in terms of outright rigidity, the snazzy, fat-armed

Next Rs are plenty stiff enough, a near identical weight and less than half the price.



SHIMANO SLX M7100

£99.99 arms only / £34.99 chainring / £134.98 total

SPECIFICATION Weight: 520g, 638g including SLX chainring (170mm) • Lengths: 165mm, 170mm, 175mm • Contact: freewheel.co.uk

Shimano SLX is the lowest-tier crank using Shimano's top-level manufacturing technology and comes in a swish gunmetal blue or black colourway. It might be mid-range in terms of price, but still uses the top Hollowtech II construction mentioned, whereby the forged alloy arms are hollow to save weight and use a multi-splined axle integrated into the driveside crank. The exact process of bonding and forging is a closely guarded secret by the Japanese firm.

The SLX axle is hollow steel and 24mm diameter. This is slimmer than most other brands, but Shimano claims multiple benefits, including improved torsional stiffness (against twisting), less rotational friction as the axle rotates inside the bearings, plus the ability for an outboard bottom bracket design. The latter leaves sufficient space for bigger and (in theory) more durable bearings and seals, and has a wider bearing stance to increase rigidity and pedal efficiency. The first claim on bearing size relative to

axle sounds about right to us, but almost all other brands have a similarly wide bearing stance nowadays.

Shimano's HollowTech 2 system fastens with a double Allen pinch bolt on the left crank, with an extra security measure of a little plastic spacer to prevent the crank coming off in the unlikely event of it working itself loose.

Latest-generation SLX ditches a built-in spider for direct-mount chainrings, and at this price that means

aluminium arms and steel teeth. The sprocket uses Shimano's DCE+ (Dynamic Tooth Engagement) layout, which is really just a variant on the widely-used thick/thin design. The brand's latest profile has some slight angles on alternate teeth, works fine and is leagues ahead of the earlier DCE design that suffered with awful chain suck in certain kinds of UK grit.

The SLX cranks feel rock-solid, are proven bombproof and simply work. There's no noticeable flex or loss of power, and the whole system plugs on without drama, to the point you simply don't have to think about it. Shimano BBs are at least as durable as any others and come without a heavy price tag.

With a chainring, the total SLX cost and weight is almost identical to SRAM GX Eagle. Both cranks perform brilliantly, and both are recommended. SRAM's X-Sync 2 chainring has a more sophisticated tooth profile that runs a fraction smoother in grit and grime,

but Shimano's latest-generation SLX arms are a tiny bit lighter.



SHIMANO XT M8100

£129.99 arms only / £59.99 chainring / £189.98 total

SPECIFICATION Weight: 524g arms only, 649g including 32t chainring (175mm) • Lengths: 165mm, 170mm, 175mm, 180mm • Contact: freewheel.co.uk

Shimano's latest XT drivetrain represents the brand finally embracing the 1x revolution. Its 12-speed crank profile is derived from the latest XTR chainset and uses a direct-mount chainring. The arms differ ever so slightly in shape from SLX, but if you squint, you'll miss it. This revised shaping saves a few claimed grams (11g to be exact), and the surface finish also uses a more expensive process to better resist repeated scuffing and scrapes, which means it costs £30 more.

In common with SLX, XT's 1x sprocket is held in place by an alloy lockring, and also uses an alloy 'spider' with a steel outer 'toothed' portion. The steel surface has a more expensive coating than SLX that should resist chain wear longer and, available in more sizes, it costs £25 more. Shimano's latest tooth profile looks more like everyone else's narrow/wide designs, but it now works fine with decent chain stability and no longer clogs or grinds excessively in UK winter mud.

One benefit of Shimano's installation is

no need for self-extraction bolts or crank pullers to remove, and the whole system connects together very precisely with zero play once you wind in a simple preload bolt on the axle and tighten two 5mm pinch bolts.

Some riders argue these bolts look less clean than rival designs, but you simply can't argue with the fit-and-forget functionality.

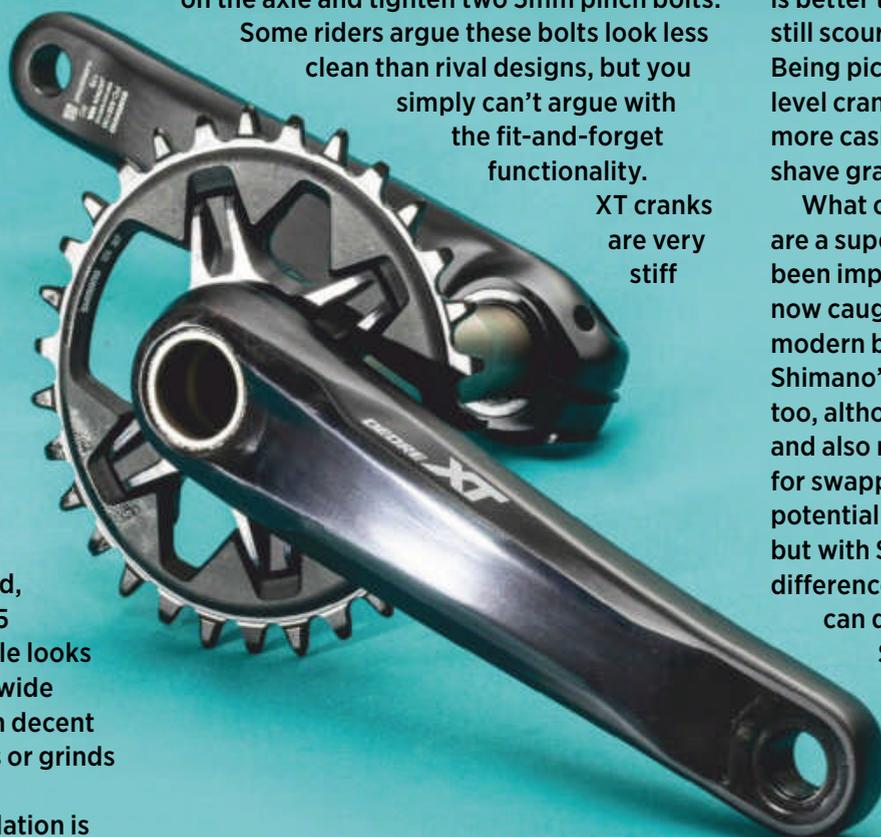
XT cranks are very stiff

and direct from the first pedal stroke, and our experience is you simply don't ever bend them, strip a thread or rip the pedal eyelet out, so durability is superb. The latest finish is better than previous generations, but it still scours off more quickly than we'd prefer. Being picky, XT isn't that light for a premium level crank and you'll need to spend a ton more cash to jump up to XTR if you want to shave grams and stay loyal to Shimano.

What can you say about XT cranks? They are a super-tough, proven product that's been improved over generations, and have now caught up to the fact that nearly all modern bikes and riders prefer 1x drivetrains. Shimano's latest chainrings are up to the job too, although still not as smooth as SRAM's and also require a special tool (TL-FC41) for swapping chainrings, which is an extra potential headache. Value is good here, but with SLX costing even less with no difference in performance that we

can detect, we'd choose

Shimano's cheaper product here and save our pennies.



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SRAM GX EAGLE DUB ALLOY

£134 inc. chainring

SPECIFICATION Weight: 558g no ring, 625g inc. 32t chainring (170mm) • Lengths: 165mm, 170mm, 175mm • Contact: zyrofischer.co.uk

GX Eagle is SRAM's massively popular, best quality and priciest aluminium crank. It was completely overhauled last year and uses the brand's relatively new DUB axle diameter and bottom bracket standard.

The redesigned crank uses a (fraction under) 29mm axle held in place by an 8mm self-extracting bolt and is cross-compatible over a wide range of axle and bottom bracket spacing options.

SRAM's cranks have become noticeably stiffer since the jump in axle size from 24mm to thicker alloy DUB spindles, and this extra solidity is presumably one of the reasons it no longer offers a pricier hollow-forged top-tier alloy crank option. So, instead of a tubular design, GX Eagle uses a forged alloy shaping that's wider and flatter than most rivals, with reinforced webbing on the backside of the crank.

The resulting arms feel solid both in the telling time/pedalling axis, and also torsionally. This means they don't flex

perceptibly under the kinds of loads that twist crank tips with the extra leverage of wide, flat pedals, and also feel stiffer than the more expensive and lighter X01 carbon cranks here.

When DUB first launched, a few SRAM cranks had an issue with the alloy cap (with DUB written on it) working loose and getting lost while riding, meaning the self-

extracting bolt had nothing to push against

to pull the arm of the axle. SRAM issued a rolling fix for this and it's no longer an issue.

That bugbear aside, GX Eagle cranks just work silently, to the point it's hard to say that much about them. They never creak or come loose (in fact they can sometimes be really hard to remove), come in at a reasonable weight and benefit from the smoothest chainring tooth profile in the game.

Talking of SRAM's X-Sync chainring, the GX level one is aluminium to save weight, but is stamped rather than forged and machined like the top-level (stiffer) chainring on the X01 carbon cranks here. It still uses the brand's sophisticated tooth profile, though, that translates to smoother pedalling in our experience.

Like Shimano's new SLX crank, this is a true no-nonsense performer that offers superb function and value for money.

The finish is good and there's a really solid drive under power here, but we suspect riders will simply pick

which brand best matches their drivetrain, and we can't argue with that.



SRAM X01 EAGLE DUB CARBON

£480 inc. chainring

SPECIFICATION Weight: 415g arms only, 481g with X-Sync II ring (170mm) • Lengths: 165mm, 170mm, 175mm • Contact: zyrofischer.co.uk

SRAM's latest X01 carbon crank is a trail and enduro-rated design that's marginally heavier than the brand's XC-focused XX1 crank, but still as light as the flagship XX1's previous incarnation.

The X01 design sees the left carbon arm permanently bonded to an oversized alloy spindle, with a rounded, splined interface that bolts to the driveside arm with an 8mm self-extracting bolt. SRAM has vastly improved stiffness and solidity in its carbon cranks since upping axle size to 29mm, but it's also done a lot of work under the hood with carbon construction.

The current generation has longer pedal thread inserts and superior fibre lay-ups, including various undisclosed terraces and bridges inside the structure to increase strength and rigidity.

Lack of stiffness isn't something we thought about during testing, and X01 resists twisting outwards under the extra load of wide platform pedals, and there's minimal distortion landing deep or bottoming-out through compressions.

That said, heavier flat pedal riders might find other cranks in this test a touch more rigid.

Another big benefit of SRAM's change to DUB, is allowing marginally larger bearings in the BB. We've ridden its latest products non-stop in foul conditions and had no major issues through a rigorous routine of neglect, abuse and jet-wash action.

Not only are the cranks themselves taut and noticeably lightweight when cycling, one often-

overlooked piece of the SRAM jigsaw is the quality of its top-tier X-Sync II ring. Especially in tandem with the rounded-inside Hard Chrome Eagle chain, retention and wear life is superb, and pedalling feels smoother than other brands' systems, to the point that SRAM's top tier feels almost a gear easier when swapping between bikes.

The latest X01 crank arms come with a thick protective transfer that keeps the finish looking better for longer as well as rubberised crank boots to protect tips against costly impacts. Final cost is almost £500 and the X01s tip the scales at 481g but the package is light and positive when pedalling and has proven tough and totally hassle-free on many bikes we've tested it on.

Compared to GX Eagle alloy, X01 is easier to turn over, and feels faster climbing and pedalling, even if the aluminium crank feels a little more solid. X01 strikes a good balance between stiffness, low weight and durability, but so does

Race Face's Next R, and that's £25 cheaper and feels slightly tauter at almost the exact same weight.



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Conclusion

Assuming a crank doesn't creak, come loose, or fail, three critical criteria to assess are weight, stiffness and price. Carbon cranks generally save on the first criteria, but aren't as good as alloy on the last two, so we'll leave you to draw your own conclusions on what's most important.

More money does generally save weight, but the lightest product here, the E*thirteen XCX crank, is far from the priciest, although you have to accept the compromise of reduced stiffness for its flighty and rapid-to-accelerate manners.

Cane Creek's exotic eeWings take the honours for most expensive, but also offer arguably the best overall performance. The cranks are super-light, yet also super-stiff. They look amazing too, but at the princely sum of £1,000 you really are in dream-build territory.

Of the pricier carbon cranks, Race Face's Next R feels stiffer and more direct under power than SRAM's X01, but we've had



SRAM's GX Eagle soars to a shared group test victory

We simply can't separate stiffness and power delivery advantages between them

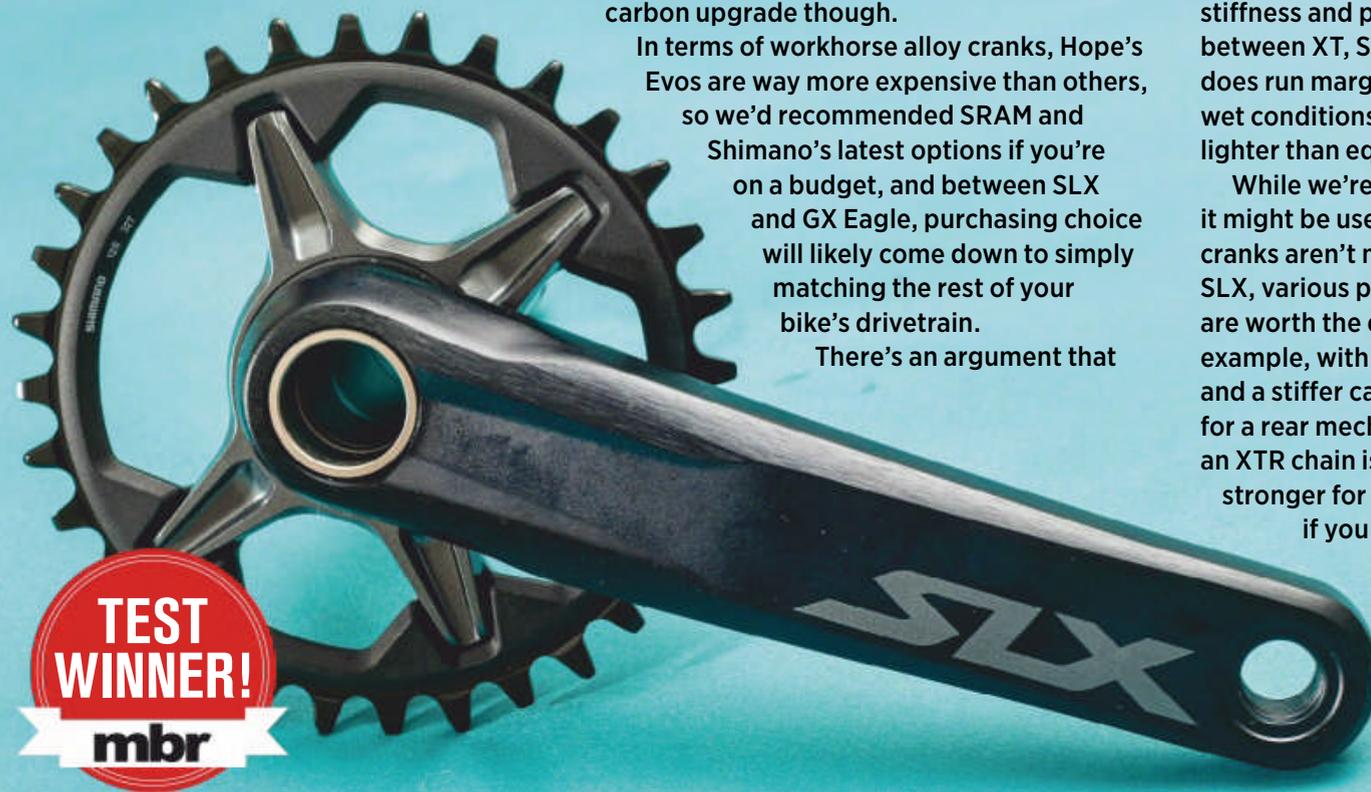
slightly better long-term durability from DUB BBs than Race Face's 30mm version. Both cranks are solid options for a lightweight carbon upgrade though.

In terms of workhorse alloy cranks, Hope's Evos are way more expensive than others, so we'd recommended SRAM and Shimano's latest options if you're on a budget, and between SLX and GX Eagle, purchasing choice will likely come down to simply matching the rest of your bike's drivetrain.

There's an argument that

Shimano's hollow-forged construction is superior, but, with the bigger DUB axle on SRAM's system, we simply can't separate stiffness and power delivery advantages between XT, SLX or GX. SRAM's chainring does run marginally smoother in cruddy wet conditions, and the system is a fraction lighter than equivalently priced SLX though.

While we're dissecting Shimano kit, it might be useful to add that while XT cranks aren't meaningfully superior to SLX, various parts in its drivetrain hierarchy are worth the extra investment. For example, with better jockey wheels and a stiffer cage, XT is a good option for a rear mech upgrade over SLX, and an XTR chain is considerably lighter and stronger for not that much more cash if you were to upgrade one item in the system. So, with SRAM drivetrains you tend to stick to specific levels, but with Shimano, it pays to mix-and-match.



	Price	Weight	Lengths	Contact	Rating
Cane Creek eeWings	£999 arms only	404g arms only	170mm, 175mm	extrauk.co.uk	8
E*thirteen XCX Race	£365 arms only / £58 chainring / £423 total	346g arms only, 396g including chainring (170mm)	170mm, 172.5mm, 175mm	moorelarge.co.uk	8
Hope EVO	£235 arms only / £265 incl. chainring	562g arms only, 605g including chainring (170mm)	165mm, 170mm, 175mm	hopetech.com	8
Race Face Next R	£399.99 arms only / £54.95 chainring / £454.94 total	409g arms only, 478g including chainring (170mm)	170mm, 175mm	silverfish-uk.com	9
Shimano SLX M7100	£99.99 arms only / £34.99 chainring / £134.98 total	520g arms only, 638g including chainring (170mm)	165mm, 170mm, 175mm	freewheel.co.uk	10
Shimano XT M8100	£129.99 arms only / £59.99 chainring / £189.98 total	524g arms only, 649g including chainring (175mm)	165mm, 170mm, 175mm, 180mm	freewheel.co.uk	9
SRAM GX Eagle DUB alloy	£134 inc. chainring	558g arms only, 625g including chainring (170mm)	165mm, 170mm, 175mm	zyrofisher.co.uk	10
SRAM X01 Eagle DUB carbon	£480 inc. chainring	415g arms only, 481g including chainring (170mm)	165mm, 170mm, 175mm	zyrofisher.co.uk	9



TESTED
THIS
MONTH



MERIDA NINETY-SIX 8000

£6,200



**SPECIALIZED EPIC EVO
EXPERT**

£6,750

*Find out who's the boss
of the bushwhackers as
we take a pair of down-
country rippers for a
rural blaze-up*

*Words: Alan Muldoon
Photos: Roo Fowler*

DOWN-COUNTRY DEMONS



Which of our two down-country rigs gets a double thumbs up?

Last year was undoubtedly the year of the down-country bike. Lightweight, short-travel rigs that blend XC components with modern trail bike geometry to promise a ride that's every bit as exhilarating uphill as it is down.

A pendulum swing to counter the trend for increasingly heavy trail bikes? Possibly. But down-country wasn't just an exercise in branding, even if very few brands delivered on their promise. One brand that captured the down-country ethos perfectly was Transition, its brand new Spur proving that efficiency and fun aren't mutually exclusive.

But developing a dedicated down-country platform isn't the only way to build a lightweight, efficient bike that can rip. In fact, we need only look at XC racing and how it is evolving to get a better understanding of where things are heading. With increasingly challenging courses, longer travel forks, shorter stems and more progressive geometry are creeping into the elite racing ranks.

Two mainstream brands offering XC bikes that have been modified to give them an even broader appeal are Merida and Specialized. By fitting 120mm travel forks, dropper posts,

bigger brakes and tyres, the Specialized Epic Evo Expert and Merida Ninety-Six 8000 are hoping to build on their XC racing pedigree to produce fun, efficient bikes that aren't simply confined by race tape. Both bikes get lightweight full carbon frames with flex stay suspension, the latest 120mm travel RockShox SID forks and slender SIDLuxe rear shocks. And both are rolling on carbon 29in wheels.

There are distinct differences in approach though. Merida uses the exact same frame as the XC race bike, and as such it has 100mm of travel and retains the ability to lock out the front and rear suspension with a twist grip remote. Specialized, on the other hand, uses a different rear end from the standard Epic XC race machine, increasing travel to 110mm while dispensing with the Brain shock to give the bike a more trail-friendly suspension response. And while both bikes have 12-speed SRAM Eagle drivetrains, the Merida gets the increased 520 per cent range of the 10-52t cassette vs the 10-50t cassette on the Specialized.

On the scales, Specialized takes it by the slightest of margins, the size L Epic Evo Expert weighed 11.71kg with the SWAT bottle cage fitted. Merida nudged the sales up to 11.93kg,

They're fast, efficient bikes that aren't confined by race tape

but the 220g weight difference can be largely be accounted for by the meatier tyres on the Merida.

In fact, the biggest difference in these bikes is tyre choice, and it's critical to get it right if the bike is really going to live up to its down-country potential. Specialized has gone for 2.3in tyres with very low profile treads, especially on the rear, to maximise speed and minimise rolling resistance. Contrast that to Merida, where it has fitted 2.3in Maxxis Minion DHR IIs with the medium Maxx Terra compound front and rear. Great tyres, but they are exactly what we'd fit to a regular trail bike.

Which approach works best remains to be seen, but with both bikes costing in excess of £6k, weighing more and having less travel than the Transition Spur X01 that we tested in the Dec 2020 issue, they'll need to be total trailblazers to topple the undisputed down-country queen.

CONTROL TYRES

To make the testing process as fair as possible we fitted the same Maxxis tyres to both of the down-country bikes in this test and used Orange Sealant for maximum puncture resistance. To minimise rolling resistance without compromising cornering confidence we opted for a 2.3in Minion DHF up front with a 2.25in Ardent on the rear, both with folding Kevlar beads to save weight. As a further concession to weight saving we also went with the standard EXO casing, not the tougher/heavier EXO+ option.

We also mixed compounds, selecting the grippier medium 3C Maxx Terra up front and the faster rolling harder wearing dual compound on the rear. All tyres available at extrauk.co.uk, prices start at £54.99 each.

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Cable routing can be cleaned up by flipping the shock around – just set your rebound first

Reynolds carbon rims have a 30mm internal width, making them ideal for 2.3-2.5in tyres

Double bottle bosses and a tool mount make it easy to ditch the hydration pack

MERIDA NINETY-SIX 8000

£6,200

SPECIFICATION

Frame CF4 III carbon, 100mm travel (96mm measured)

Shock RockShox SIDLuxe Ultimate with lockout

Fork RockShox SID Ultimate, with lockout, 120mm travel

Wheels Reynolds 110/148mm hubs, Reynolds TR 309 carbon rims, Maxxis Minion DHR II 29x2.3in tyres

Drivetrain SRAM GX Eagle 34t chainset, SRAM GX r-mech and 12-speed shifter

Brakes Shimano XT four-piston/two-piston, 180/160mm

Components Merida Team CC 740mm bar, Merida Team CC II 60mm stem, Merida Expert TR 170mm post, Prologo Scratch M5 Pas saddle

Sizes S, M, L, XL

Weight 11.93kg (26.3lb)

Contact

merida-bikes.com

GEOMETRY

Size tested L

Head angle 67.1°

Seat angle 68.4°

Effective SA 74.1°

BB height 337mm

Chainstay 435mm

Front centre 746mm

Wheelbase 1,181mm

Down tube 713mm

Top tube 625mm

Reach 456mm

With elite riders like Gunn-Rita Dahle Flesjå and José Hermida, Merida is an undisputed XC powerhouse – Dahle Flesjå winning over 30 XC World Cups, Hermida racking up three World Championship gold medals. Their bike of choice for 2021 and beyond? The new Merida Ninety-Six.

Available in RC and regular options, all Ninety-Six models are built around the same full carbon chassis, where fork travel changes to tweak the geometry and ride characteristics. Basically, the RC bikes get 100mm forks, while the more trail-focused ride – the Ninety-Six 8000 tested here is the only model – gets 120mm up front.

And while 20mm extra fork travel doesn't sound like a big difference, it's enough to have a positive impact on the geometry: namely, slackening the head angle by more than one degree to 67.1°, while raising the height of the front end, which we'll get to in just a minute.

The full carbon frame has all the features you'd expect from a modern short-travel rig, including a weight saving flex-stay suspension design which, unlike most Meridas we've tested, nearly delivers all of its claimed 100mm of travel. Cable routing is internal, where the entry ports are through the headset rather than the head tube, eliminating the need for holes in this high-stress area. A steering lock headset would be a great addition here to protect the frame, though, as even with the stem flipped to raise the bar, the controls don't clear the top tube when turned 90°.

SUSPENSION

With the 44mm-stroke RockShox

SIDLuxe shock delivering 96mm travel, this is a relatively low-leverage-ratio design. So even with the smaller SID damper, overheating won't be an issue here. The low-leverage design combined with the linkage layout means the suspension is not as sensitive as the Specialized, though – it's XC DNA selecting for improved pedalling efficiency over bump absorption. Another XC throwback is the RockShox TwistLoc handlebar remote that enables you to lock out the shock and SID Ultimate fork in an instant. The rebound adjuster on the shock is hidden below the lockout, so the shock ships with the dials facing away from the frame so you can access the rebound with a hex key. Once you have the rebound dialled in, flipping the shock will give a cleaner, more direct cable route for the remote lockout.

COMPONENTS

Merida fits a 60mm stem with -20° rise to the Ninety-Six 8000, and thank goodness it does. Only by inverting the stem were we able to raise the handlebar height and achieve a more comfortable and commanding riding position with the relatively narrow 740mm bar; Merida's lock-on grip collars reducing the effective bar width further.

XC riders push bigger gears, so it's fitting that the Merida gets a 34t chainring. Thankfully, it complements it with the wider-range 10-52t SRAM Eagle cassette, so regular riders can keep the 175mm cranks spinning for longer. Merida mixes a Shimano XT four-piston front brake with a two-piston rear, the idea being to boost stopping power, but unfortunately the brakes feel slightly different, with the two-piston rear brake having a more sluggish lever action.

PERFORMANCE

While we welcomed the slacker head angle that the 120mm-travel SID fork affords, the associated increase in BB height and reduction in reach negatively impact handling on the Ninety-Six 8000. As a result, the Merida feels short, upright and tall. Combined with the XC-focused rear suspension, the Merida lacks the traction and control to be a true trailblazer. Running the shock with more sag lowered the BB and offered a more compliant ride, but even with 35 per cent sag we never achieved full travel.

Yes, the top-quality Maxxis tyres provide improved braking and climbing traction but they also rob the Merida of rolling speed, which defeats the point of having a lightweight bike to begin with.

VERDICT

We'd love to say that through select component choices like the 120mm-travel RockShox SID fork and Maxxis tyres, the new Merida Ninety-Six 8000 blurs the line between XC racing and trail riding. Sadly, it doesn't. The suspension and geometry have both feet firmly planted in XC racing and, if anything, the taller fork negatively impacts the bike in other ways. So while the RC version of Ninety-Six is probably a capable XC race bike, the changes to the build kit that Merida has made to make the 8000 more versatile, are actually counter-productive.

7

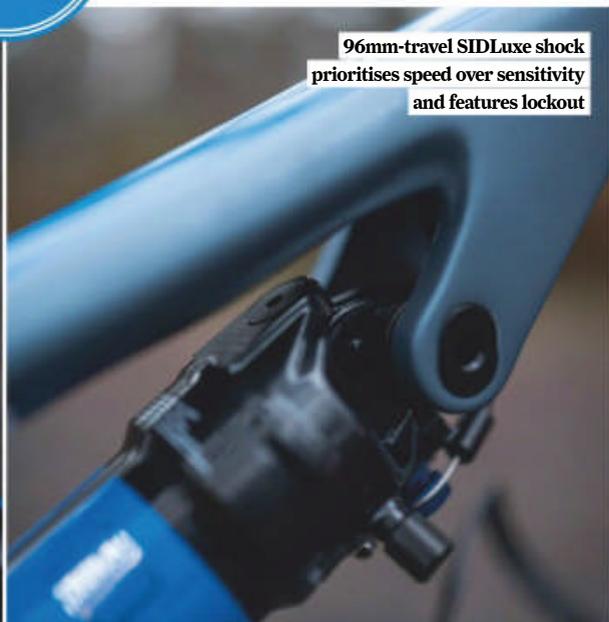


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Killer spec
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LOWS
Geometry
is old skool



Cockpit is too low and narrow
even with -20° rise stem flipped



96mm-travel SIDLuxe shock
prioritises speed over sensitivity
and features lockout



Two-piston rear brake
feels vague compared to
the four-piston front

Epic Evo dedicated rear end ditches Brain shock and boasts 110mm travel

A flip-chip in the shock yoke offers high and low geometry settings

Roval carbon rims spin effortlessly on DT Swiss 350 hubs

SRAM G2 brakes give a consistent lever feel and plenty of power

SPECIALIZED EPIC EVO EXPERT

£6,750

SPECIFICATION

Frame FACT 11m carbon, 110mm travel (105mm measured)

Shock RockShox SID Luxe Select +, RX tune

Fork RockShox SID Select + RL, 120mm travel

Wheels DT Swiss 350 - 110/148mm hubs, Roval Control Carbon 25mm rims, Specialized Ground Control/Fast Trak 29x2.3in tyres

Drivetrain SRAM X1 Dub 32t chainset, SRAM X01 r-mech and 12-speed shifter

Brakes SRAM G2 RS, 180/160mm

Components Specialized alloy 750mm bar, Specialized XC 3D 60mm stem, X-Fusion Manic 150mm post, BG Power Comp saddle

Sizes S, M, L, XL

Weight 11.71kg (25.82lb)

Contact specialized.com

GEOMETRY

Size tested L

Head angle 66.5°

Seat angle 68.9°

Effective SA 74.1°

BB height 328mm

Chainstay 435mm

Front centre 758mm

Wheelbase 1,193mm

Down tube 722mm

Top tube 617mm

Reach 462mm

None can accuse Specialized of jumping on the down-county bandwagon; the lightweight, short-travel Camber Evo ripping up trails long before anyone had coined the term DC.

The Epic Evo however, is born and bred in XC racing, so what makes it different to the pure XC-race Epic? Before we discuss that, let's take a closer look at the one thing they have in common: both share the same FACT 11m carbon front end, where the rider-tuned carbon lay-up maintains the same ride characteristics across all four frame sizes.

Rather than simply slapping a taller fork on the XC frame, Specialized opened a new mould for a different carbon rear end, forged a new shock yoke, dispensed with the Brain shock and bumped travel up by 10mm to 110mm. There's also an asymmetric flip-chip in the shock eyelet that offers two geometry settings; the high position raising the BB height by 7mm and steepening the head angle by 0.5°.

And because weight, or the lack of it, is of primary importance for a short travel bike, Specialized uses flex in the carbon stays rather than its trusty Horst link chainstay pivot in the rear suspension. A move that's also been employed on the latest Stumpjumper.

SUSPENSION

Specialized makes full use of the oversized Torque Caps on the front hub to increase steering precision on the 120mm travel RockShox SID fork. An added bonus being the hub fits snugly in the cupped dropouts making it much easier to locate the 15mm axle when fitting the front wheel. You can lock the fork out with a quarter

turn of the compression adjuster, and for a lightweight XC unit, we've been impressed by how much control the SID offers, in terms of stiffness and damping.

And the same is true for the rear shock. With Specialized's RX custom tune you get plenty of support for pedalling, but the rear end on the Epic Evo still does a great job of ironing out creases in the trail, while providing a lively poppy ride. You also get access to full travel when needed, so we can forgive it for measuring 5mm shy of the claimed 110mm.

COMPONENTS

By switching to a 34.9mm diameter seat tube, Specialized has been able to fit stronger, more reliable dropper posts – it's analogous to increasing the size of the fork stanchions and a welcome move. The action of the 150mm X-Fusion Manic post is fast and smooth, and while the Body Geometry Power saddle looks funky it's a comfortable and supportive perch. Specialized fits a generous 750mm bar, where the soft lock-on grips boost the overall width to 760mm and further enhance control. All in, the touch points on the Evo Expert are excellent.

Specialized's tyre choice, however, is more about reduced rolling resistance, rather than increasing control, especially the semi-slick Fast Trak rear tyre. Given the choice, we'd stick the Ground Control front tyre on the rear, and put something with taller knobs up front to further enhance cornering grip.

PERFORMANCE

Sling a leg over the Epic Evo and it feels more like a trail bike than its XC roots initially suggest. Standover clearance is good and the cockpit feels roomy

without pulling all of your weight onto the fork, which makes you feel very centered on the bike. Granted, you haven't got a ton of travel, but you're free to ride dynamically, which makes the bike fun and engaging at all times. Also the geometry is not so progressive that you'll constantly be writing cheques that the suspension simply can't cash.

The Epic Evo feels tight and responsive when you get on the gas too, but when a climb really steepens and you find yourself grinding rather than spinning, the rear suspension tends to squat into its travel which makes it harder to keep your weight over the front. More often than not, the rear tyre will break traction before you get to that point though, so you could say it's a blessing in disguise.

VERDICT

With the new Epic Evo Expert, Specialized has retained the best traits of a World Cup XC race bike; namely that it's light and efficient, where the Evo twist gives it more responsive suspension and a less head-down riding position. It's a great combination, not a compromise, as it lets you cover ground with ruthless efficiency and still have a blast on the fun stuff. Yes, it needs better rubber to really excel, but the real sticking point here is the price, and not just compared to the Merida. For less cash you can get the Transition Spur X01 which also has a better specification.



**TEST
WINNER!**
mbr

HIGHS
Fast and
light

LOWS
Expensive



The super-slick lines you'd expect at this price point



Flip-chip technology is cleverly integrated into the shock yoke



SRAM drivetrain includes a full gamut of gear choices

Conclusion

Given that the Merida and Specialized are closely matched in so many ways, it would have been relatively easy for us to sit on the fence in this test, awarding both bikes 8 out of ten, the Epic Evo Expert offering better performance, the Ninety-Six 8000 a superior build kit for less money.

But to do so would assume that the specification and ride quality carry equal weighting when it comes to performance, when that's clearly not the case. Swapping the tyres on the Specialized is easy, so is upgrading to a wider range cassette, or simply fitting a smaller chainring if you need a lower gear to spin up the steepest gradients.

Improving the suspension response to make the Merida more suited to trail riding is infinitely more difficult, while making the bike a little longer, slacker and a lot lower is nigh-on impossible. Sure, depending on your body proportions you could go up a frame size on the Merida, but given that we had the 170mm dropper fully slammed in the frame, it doesn't give riders much wiggle room. Stand up to climb and the Merida immediately responds but it's also instantly apparent that your hands are too close to your body, and that this bike was never designed around a 60mm stem or a short offset fork.

And it's in sizing and geometry where the Specialized Epic Evo Expert is



The Merida's lack of reach proved its downfall in this head to head

RANGE FINDER

Our test winner's SPECIALIZED EPIC EVO

£3,800

The entry-level Epic Evo Comp shares the same FACT 11m full carbon frame and geometry as the test winning Expert, albeit at a fraction of the cost. And while there's still an obvious focus on keeping weight low, the RockShox Reba RL fork and Deluxe Select+ shock won't be as light as the SID suspension components on the Expert. Alloy wheels won't do it any favours on the scales either.



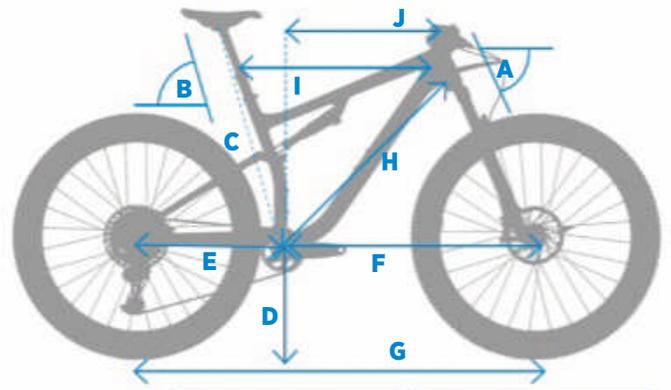
streets ahead of the Merida. The longer reach gives you the freedom you need to manoeuvre, meaning it's easier to get creative on any trail. Combine this with the more active rear suspension and slacker steering geometry, and the Epic Evo offers an altogether more engaging ride that won't simply get your heart racing on the climbs. Stomp on the pedals and it feels every bit as efficient as the Merida, and only on the very steepest climbs – when pedalling in squares rather than spinning in circles – do you feel your efforts pulling the suspension into its travel. But like we pointed out earlier, going from a 32t chainring to a 30t would be enough to fix that. For the Specialized Epic Evo Expert to truly embrace the XC/DC concept though, it needs to go further. Better tyres would be a great start, but ultimately it could also go lower in the BB height as we never came close to clipping a pedal, even with the 175mm crank arms.



NOTES ON THE NUMBERS

The bottom line

BB height goes hand in hand with travel, because, within reason, the more travel you have the higher the BB needs to be. It's why it's so important to measure the actual travel, and not simply assume that manufacturers' claims are accurate. If we take a closer look at the numbers on the Specialized, the BB height is 328mm and the measured rear travel is 105mm. So if the Specialized and Merida had the same BB height and we set the suspension with 25 per cent sag, the Spesh would have a lower dynamic ride height than the Merida as 25 per cent of 105mm travel is greater than 25 per cent of 96mm travel. But both bikes don't have the same BB heights, the Merida is 10mm higher than the Specialized and it has less travel. So while the Spesh could be a bit lower, the Merida needs to be a lot lower.



	Merida	Specialized
A Head angle	67.1°	66.5°
B Seat angle	68.4°	68.9°
C Eff. seat angle	74.1°	74.1°
D BB height	337mm	328mm
E Chainstay	435mm	435mm
F Front centre	746mm	758mm
G Wheelbase	1,181mm	1,193mm
H Down tube	713mm	722mm
I Top tube	625mm	617mm
J Reach	456mm	462mm

SPECIFICATION

This month's bikes at a glance

Make/model	Merida Ninety-Six 8000	Specialized Epic Evo Expert
Price	£6,200	£6,750
Weight	11.93kg (26.3lb)	11.71kg (25.82lb)
Contact	merida-bikes.com	specialized.com
FRAME		
Sizes	S, M, L, XL	S, M, L, XL
Size tested	L	L
Frame material	CF4 III carbon	FACT 11m carbon
Suspension fork	RockShox SID Ultimate, w/lock-out	RockShox SID Select + RL
Rear shock	RockShox SIDLuxe Ultimate, w/lock-out	RockShox SIDLuxe Select +, RX tune
Front travel	120mm	120mm
Rear travel	100mm (96mm measured)	110mm (105mm measured)
WHEELS		
Hubs	Reynolds 110/148mm	DT Swiss 350 110/148mm
Rims	Reynolds TR 309 carbon 30mm	Roval Control Carbon 25mm
Spokes	Stainless	Stainless
Tyres	Maxxis Minion DHR II 3C Maxx Terra 29x2.3in	Specialized Ground Control/Fast Trak 29x2.3in
GROUPSET		
Shifters	SRAM GX 1x12sp	SRAM X01 1x12sp
Rear mech	SRAM GX	SRAM X01
Cassette	SRAM XG-1299 Eagle, 10-52t	SRAM XG-1275 Eagle, 10-50t
Crank	SRAM GX Dub carbon 34t, 175mm	SRAM X1 Dub 32t, 175mm
Bottom bracket	SRAM DUB BSA	SRAM DUB BSA
Brakes	Shimano XT M8120/M8100	SRAM G2 RS
Rotor sizes	180/160mm	180/160mm
COMPONENTS		
Saddle	Prologo Scratch M5 Pas	BG Power Comp
Seatpost	Merida Expert TR 170mm	X-Fusion Manic 150mm
Handlebar	Merida Team CC 740mm	Specialized alloy 750mm
Stem	Merida Team CC II 60mm	Specialized XC 3D 60mm
Rating	7	8

The Epic Evo duked out a slender points win in our down-country clash

stablemates SPECIALIZED EPIC HT COMP

£3,300

If it's ultimate weight saving you're after, then why not dispense with the rear suspension altogether? The Epic HT Comp does just that, but the seatstays on the FACT 11m carbon frame have been sculpted to flex and retain comfort. With a 100mm travel RockShox Reba fork it has progressive geometry, and smatterings of Shimano SLX replace the Deore kit found on the Evo Comp.





MY BEST TRAIL

Mtb's movers and shakers select their favourite places to ride



AS CHOSEN BY...

WYN MASTERS, DH & ENDURO RACER



Wyn Masters is a downhill rider from New Zealand. He cut his teeth on the World Cup circuit before turning his talent to the EWS but he's probably best known for Wyn TV, the YouTube channel he presents for GT Bicycles, and the #wynswheelie-wednesday posts on Insta.

My Best Trail? Wow that's a tough one. I've been lucky enough to ride and race all over the world, so it's super-hard for me to pick one. But I'd say the first one that comes to mind for me is Rude Rock in Queenstown, NZ.

Rude Rock gets its name from the rude-shaped rock (you probably get the picture) that lies within sight of the beginning of this trail. The trail begins up by the Coronet Peak Ski Area car park with views back over Queenstown and Lake Wakatipu, and the reason it hit my mind first is the amount of epic early mornings I've witnessed up there. Filming video as the sun rises, the true feeling of calm you have being up above the clouds, the unreal sunsets you get at the end of a big summer day of riding... it's just something that needs to be seen.

And that's before I even dig into the flow of the trail. Originally built by Evan Winton and Tom Hey in 2013, it follows the contours of the alpine land really well to create an epic natural-feeling flow that very few trails have. And you can ride the whole thing without a pedal stroke being needed. It's probably one of my favourite flow trails with a few natural gaps to be sent along the way too, and even has a seated road pedal

(or shuttle if you must) back up to the top. If you haven't ridden it, it's definitely worth checking out, especially on an early summer's morning or late evening. Queenstown mtb club continues to develop that area too, and you can link a few more trails to make a good loop of it, or even pedal from Queenstown over the top of Ben Lomond saddle and down the Moonlight track if you really want a full-day adventure.

The feeling of calm you have being up above the clouds, the unreal sunsets at the end of a big summer day... it's something that needs to be seen

▶ RANSOM eRIDE



HELL YEAH!

eRIDE

180mm of suspension front and rear, progressive geometry, and one hell of a Bosch drive unit, the Ransom eRIDE is about as good as it gets, only better. Everyone who has ridden this bike has only had one thing to say about it, "Hell yeah!"