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INSIGHT: PRO TEAM SELECTION

Making The Cut

While the pros get down to business in training, their bosses are trying to work out which of their 28 riders will compete in which of the 60-odd races the teams attend each year. **Cyclist** finds out how they do it. ➔

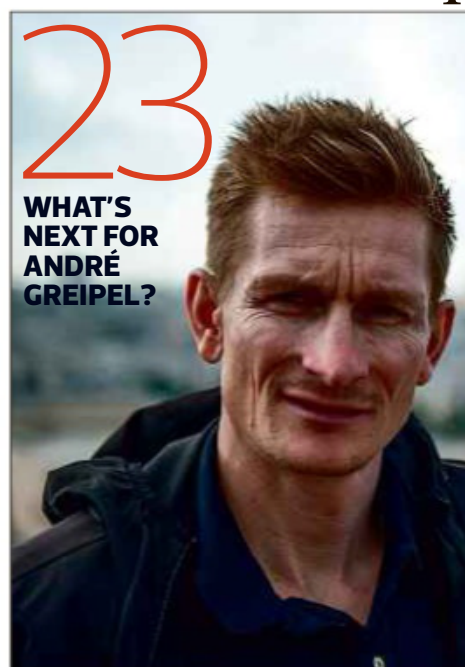


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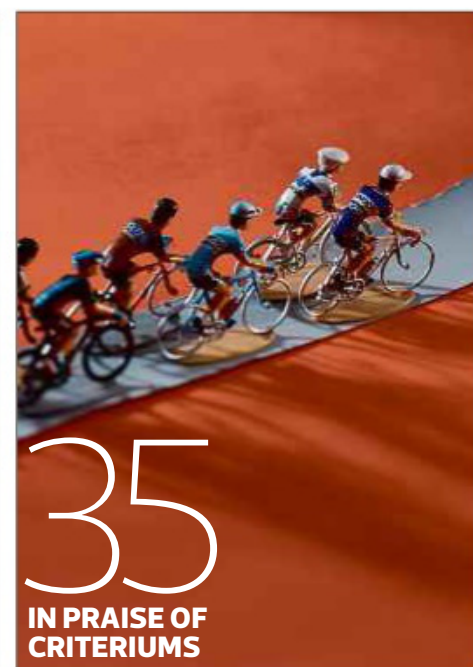
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ED'S LETTER

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The Col du Galibier is a giant among climbs, both in its size and its heritage at the Tour de France

Photo Alex Duffill



This issue our Classic Climbs series pays a visit to the mighty Col du Galibier, one of the high points – literally – of any Tour de France. It holds the record for hosting the highest stage finish ever at the Tour (2,642m, Stage 18, 2011, won by Andy Schleck) and although it is bettered in height by the likes of the Col de l'Iseran and Col de la Bonette, those have only ever been included a handful of times at the Tour, whereas the Galibier has been tackled no less than 58 times over its 108 years of appearances. It's so massive that anyone attempting it from the north has to first climb another cat 1 climb, the Col du Télégraph, just to get to the bottom of it.

The Galibier also holds a special significance for me, as it was the first HC Alpine col I ever climbed by bike. Talk about starting at the deep end! Until then, the biggest hills I had done were in Britain, and I rather fancied myself as a climber. The Galibier exposed all my weaknesses and reminded me of my insignificance in the universe.

Looking back, I can only assume that my brain was incapable of comprehending the stats of the climb. It's just shy of 35km with an elevation gain of 1,924m – that's over a mile, straight up. Plus it is no stroll to the top. The 5.5% average gradient is skewed by a downhill section after the Télégraph. In truth it is mostly over 7% and just gets steeper and steeper towards the summit, which never seems to arrive, despite being in view much of the time.

It's a climb that mocks those who underestimate it, but rewards anyone who approaches with humility and not a little reverence. It is also one of the most beautiful places on the planet, making a pilgrimage there a must for any cyclist.

Thanks to snow, the road doesn't open until June, so there's still plenty of time to start working on those hill reps now.



Pete Muir,
Editor

Cyclist TRACK DAYS

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If you want to try out a host of top-end bikes from the big brands, the Cyclist Track Day is the place to do it. But get in quick as places are limited. There are six dates to choose from at venues around the country: 3rd May at Castle Combe (near Bristol); 16th May in Leicester; 31st May in Fife; 7th June in Leeds; 20th June in Kent; and 21st June in London. As well as a whole day of riding, you get lunch, coffee and a goody bag. For tickets go to cyclisttrackdays.com.



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Photo Juan Trujillo Andrades

100

Carrying the torch for British manufacturing, folding bike maker Brompton produces more bikes in the UK than any other firm. We take a look inside its West London factory

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Special powers

Specialized claims its new e-road bike is unlike any other

Words **SAM CHALLIS** Photography **DANNY BIRD**

Specialized Turbo Creo SL

Specialized is a behemoth of the bike industry, and we're used to seeing it set new trends. Yet with the release of its first e-road bike, the brand seems to be uncharacteristically late to the party.

Sometimes, however, being fashionably late can make for a spectacular entrance, and the Turbo Creo SL is certainly turning heads with its proprietary drive system, developed entirely in-house. With typical bravado, Specialized claims it provides a better balance of power, range and weight than any other system on the market.

'That was the single biggest investment we've made in product development ever,' says Mark Cote,

Specialized's global head of marketing and innovation. 'It stems from the commitment we showed to e-bikes several years ago when we set up an e-bike development hub in Switzerland, which now has 40 employees. That area is the centre of the world for e-bikes, with one of the biggest markets.'

The Turbo Creo SL's product manager, John Cordoba, adds, 'We've been making "Turbo" bikes in one form or another for 10 years, so this is the culmination of the resources we have plus that experience. It's funny because a lot of us, including CEO Mike Sinyard, were really hesitant about going into e-bikes. Developing that first one, the group of engineers got shut down but they carried on anyway. Once they'd

finished and everyone had a go we realised the concept had huge potential.'

Cote says that no matter whether you ride in the Tour de France or haven't ridden a bike since you were a child, e-bikes have the ability to make you feel giddy with enjoyment.

'We really wanted to capture and maximise that feeling,' says Cordoba. 'Some systems are lightweight but don't have enough power; others have plenty of power and range but are really heavy. That meant we had to develop our own drive system. The key was for the motor to be extremely efficient for us to have a small, lightweight battery but enough range and power.'

Cordoba doesn't go into intimate details, but says features like the motor

Specialized
S-Works Turbo
Creo SL, £10,999,
specialized.com





being specifically placed in relation to the bottom bracket for optimum power delivery, and its casing being made from magnesium to shed weight, provide small clues as to the extent of Specialized's innovation.

Problem solved

However the brand has approached the power-weight-range conundrum, it seems to have worked. Specialized's claims about the Turbo Creo SL's performance are certainly impressive. The bike weighs 12.2kg, the motor provides up to 240 watts of assistance for up to 130km, and there's the option of using an additional battery in the seat tube bottle cage to extend the range to a whopping 195km.

'Crucially the motor's torque curve gives you that power where you'd naturally generate it yourself, in the 90-110rpm cadence range,' says Cordoba. 'Rival systems put out their peak power at 60-70rpm, so you have to ride in a different way on other e-road bikes. We wanted the ride feel to be no different to a usual bike.'

The same goes for mechanical drag. 'A Shimano Dura-Ace bottom bracket generates 0.7 watts of resistance,' says Cordoba. 'When our system cuts out over 25kmh, the BB in the motor generates just 0.3 watts of drag more than the Dura-Ace one. Plus there's a power meter built into the motor that transmits to any ANT+ head unit, or to a phone with our "Mission Control" app.'

Visually, the bike is no far cry from Specialized's Roubaix or Diverge bikes. Indeed, it uses a lot of the same materials – including the carbon fibre and resins – as those regular bikes, but adapted to meet e-bike safety regulations. It also borrows heavily from the company's 'Endurance' geometry, which is a bit more relaxed than something racy like the Tarmac.

'It increases rider confidence and makes the bike more accessible,' says Cordoba. 'A big thing we've found is that the bike is attracting people who are not our typical customers; people who don't necessarily want to suffer all day or shave their legs. It's awesome because it's opening doors for cycling to grow beyond who it traditionally appeals to.'

The Turbo Creo SL has certainly piqued our interest, so look out for a full road test next issue. ✱



Stolen Goat Bodyline Sector kit

Jersey £75, gilet £65, stolengoat.com

In a world dominated by matt black bicycles, a cyclist's clothing is their best opportunity to add a little personality, colour and flair to the equation. Stolen Goat is a brand founded on precisely that mantra.

'We base our kit designs not on a set, structured plan but simply by allowing more freedom with ideas,' says CEO Tim Bland. Take the Sector kit, for instance. Bland explains this refreshingly bold design was inspired by the multi-coloured fluoro vinyl that 1970s punk band X-Ray Spex released its records on.

Beyond aesthetics, Stolen Goat's Bodyline garments are made in Belgium by Bioracer, the company that makes the national team kit for both the Dutch and Belgian squads, and as such uses cutting edge fabrics and technology. The Bodyline range is focussed on an aero fit, so the jersey features long, laser-cut sleeves.

The super-lightweight, packable gilet, meanwhile, has a waterproof front panel, plus one central pocket and two well-positioned openings for direct access to the jersey pockets underneath. The perfect blend of practical and bonkers.



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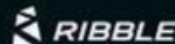
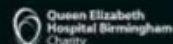
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Sidi Sixty shoes

£330, saddleback.co.uk



Guess what age Sidi has just turned? The brand's self-explanatory new shoe is claimed to be its lightest ever, which is quite something, since Sidi shoes aren't famed for being particularly lightweight. This new design is pretty competitive, however, coming in at 516g for the pair.

While the shoes are handmade in Italy like most of Sidi's top-end models, they appear cleaner and less technical than the company's other recent designs. The Sixtys eschew Sidi's adjustable heel mechanism, and the usual second Tecno-4 dial has been replaced by a Velcro strap across the forefoot. Both decisions were made to help shed grams.

Sidi claims to be doing its bit for the environment too. The shoes' TechPro upper – a polyurethane microfibre – is said to be eco-friendly as well as high-performing, being water and mould-resistant while conforming comfortably to the rider's foot.

With Sidi being as prevalent as Oakley in the pro peloton, it's no surprise that the shoes apparently have their fair share of WorldTour fans already. Rigoberto Uran has been seen racing in them, as has Vincenzo Nibali. Long time Sidi-wearer Egan Bernal has even got his hands on a gold pair, which aren't going to be available to mere mortals. Fans of bling may find this a bit disappointing but we suppose that being the current Tour de France champion should come with a few perks.

Lightweight Fernweg Evo wheels

£7,319, vielosports.com



The Fernweg Evo wheelset weighs 1.7kg. At the time of writing, the same weight of gold costs £66,289. That makes these wheels, per

gram, only 1/9th the price of gold. To our mind that's a relative bargain, as an equivalently priced 200g gold bar would have had no wind-tunnel testing. It certainly wouldn't boast a mere 1nm of lateral flex from 90nm of external force, or be able to complete 20,000 emergency stops from 50kmh to dead stop in testing.

The centrepiece for Lightweight, as ever, is the rather striking carbon spokes, each of which boasts a tensile strength of 1.8 tonnes. That makes for impressive stiffness but also offers exceptional braking. That's helped by the pentagon hub system, which dissipates heat so that even the highest temperatures generated from long descents won't lead to carbon delamination.

What separates this from Lightweight's other wheelsets, though, is aerodynamic performance. Lightweight says the wheels have been tested against the best aero wheels on the market and claims the Fernwegs demonstrate the least steering torque, and hence greatest stability, while being among the most efficient aerodynamically.

But sure, go ahead and waste your money on gold instead, if you must.



Bollé Chronoshield sunglasses

£215, bolle.com

The original Chronoshield launched back in 1986, when the style was for big and bold sunnies. Well, that trend is back, and so too are the Chronoshields. While still paying tribute to 1980s style, there's a host of new tech, including a wide field of vision from the Phantom light-adaptive polarised lenses. Fit can be tailored with adjustable temples and nose piece, there's a removable brow pad and they're available with prescription lenses.



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Huawei Watch GT 2

£179, huawei.com



Remember when smartwatches were the latest hi-tech gadget? These days they have become as commonplace as non-dairy milks and Mathieu van der Poel winning things, so a watch needs to have something very smart indeed to stand out from the crowd.

Mobile phone giant and political hot potato Huawei (pronounced *wah-way*) has decided that battery life is the best place to focus its efforts, and claims its new Watch GT 2 will go for two weeks between charges.

That's based on 'average use', which it defines as continuous heart rate monitoring, sleep tracking and 90 minutes of GPS-tracked exercise per week – covering everything from cycling to gym work to swimming (the latter an activity that usually precludes heart rate monitoring in other smartwatches due to the water, but which Huawei says its GT 2 can perform).

Of course if you're riding, 90 minutes per week isn't huge, and to ride and record more you'll need to charge the GT 2 more often. But what is quite incredible is the claim that the GT 2 can record a GPS-tracked activity such as cycling for up to 30 hours continuously. Plus at less than £200, it's one of the cheapest all-singing smartwatches on the market.



Cadex Race 28 tyres

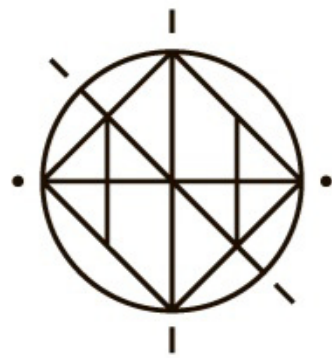
£64.99 each, cadex-cycling.com

Cadex is the new components division of Giant, providing top-end wheels and finishing kit in a similar way that Roval does for Specialized and Bontrager does for Trek.

These new Cadex tyres use an 'RR-S' silica compound for more grip but less rolling resistance, and while the casing is single layer for suppleness, it also incorporates Kevlar to resist punctures.

Do they work? Well, Cadex claims its range of 'Race' tubeless tyres has won over plenty of Giant-sponsored CCC Team pros, who are using tubeless far more regularly now.





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Q&A

André Greipel

Now riding for Israel Start-Up Nation, German sprint legend André Greipel tells *Cyclist* about why he thinks there's too much science in the sport

Words and photography
PETER STUART

Cyclist: We heard that you were considering retirement back in June last year. Is that true?

André Greipel: Exactly, those were my thoughts when I pulled out of the Critérium du Dauphiné. I was ready to stop, but my family, my coach and everybody convinced me to continue. So for me, even doing the Tour last year was already a big success. Just being there and finishing in Paris meant a lot.

Cyc: What was your time like with French team Arkéa-Samsic? Did you find it odd to step down from the WorldTour to ProContinental at this point in your career?

AG: No, I was really really happy to get the challenge to move to ProConti status with Arkéa-Samsic. But it is just a status. It was quite a professional team, and it was really nice to get to know a different culture and learn a different language as well.

We had a lot of good races too, but the bacterial disease I suffered in the early season didn't help. The riders gave their maximum and it didn't work out. I just didn't feel I could go a step further with that team.

I don't want to end up looking back too much, so I'm just quite thankful that they let me out of the contract to work on a new project.

André Greipel
Age 37
Nationality German
Honours
Tour de France
11 stage wins, 2011-16
Giro d'Italia
7 stage wins, 2008-17
Vuelta a España
4 stage wins, Points
Classification, 2009
National Road Race
Championships
1st, 2013, 2014, 2016

Cyc: Now you've moved to Israel Start-Up Nation, do you see your role as a stage winner or as a mentor for younger riders?

AG: I hope it's going to be both. The confidence of the directors is there to give me the opportunities to go for sprints with a dedicated team around me. I have to say the talent is there to make that happen, so hopefully I will be in a good position to win races.

Cyc: A few days ago you visited the Holocaust museum as part of the training camp in Israel. How does it feel being a German on an Israeli team?

AG: I think as Germans we have to continually confront our past. Of course

it is quite emotional when you go to the museum. Certainly, you don't feel super-comfortable when you are a German, but you also have to reflect that we cannot change the past.

Cyc: You've been a pro cyclist for 15 years. What changes have you seen in the peloton during that time?

AG: It's getting more and more scientific. Everybody is just thinking about numbers now. A lot of riders are not making their decisions any more, the team is mostly deciding everything.

Cyc: Do you think that has made the competition better, or has it led to races, and racers, being a little more boring? ▶





► **AG:** From my point of view, I think it's quite important to listen to yourself when racing, to make your own decisions as well. So I try to form my own ideas and follow my own instincts, which are what I've always used.

I'm open-minded to new ways of working, but ultimately I always fall back on my instincts.

Cyc: Israel Start-Up Nation will be using bikes with disc brakes as standard. Are you worried about the transition from rim brakes?

AG: No, I actually like it. I'd say disc brakes offer more security. When you're descending in 40°C heat you worry about the glue holding the tyres on the rim, and the possibility that too much braking will make the rim too hot and cause the tyre to separate. I always think about that.

The UCI minimum weight is out of date, so it's not hard to get below 6.8kg with a disc brake bike. The thru-axle already offers more security and stiffness, so it really isn't necessary to have a minimum weight any more anyway. I also find you can really feel more stiffness through the thru-axle when sprinting on disc bikes.

Cyc: Rumour has it you've been known to crack carbon frames during sprinting efforts. Is there any truth in that?

AG: Well, I've broken some chains, but I haven't known a whole bike to crack during a sprint.

Cyc: What goes through your mind when you're putting out 2,000 watts at the end of a race?

AG: At the end of the day you are just trying to push the pedals as hard as

If I had to pick my favourite sprint it would be the first time I won on the Champs-Élysées. I think I came from eighth or ninth position

possible. But for sure when you come to a sprint after a long race, you don't push 1,900 or 2,000 watts any more. Maybe I can push 1,700 watts or so. In training you can do more because you don't have to do such a big effort beforehand. But that was always my strength – I'm not as aero as everyone else, especially some of the sprinters at the moment.

Cyc: Is there any sprint from your career that you remember most fondly?

Greipel takes a selfie but he doesn't tend to over-analyse his own performance on the bike: 'I try to follow my own instincts, which are what I've always used'

AG: There are a few good sprints that come to mind. Actually I know all of my sprints from memory – what happened in each one. If I had to pick one as my favourite it would be the first time I won on the Champs-Élysées. That's because from the position I was in it seemed impossible to win. I think I came from eighth or ninth position on that final stretch and I still managed to win it.

When it comes down to sprinting on the Champs-Élysées, you're trying to squeeze the last power out of your legs after three weeks of racing. I wasn't thinking – I just tried my best.

Cyc: Were there any sprinters that you looked up to when you started out?

AG: There were a few good sprinters around. Alessandro Petacchi had a super-nice style. He looked so tight when he was sprinting. At the same time I wasn't really interested in any one sprinter because I was concentrating more on my own progression.

Cyc: We keep hearing about pro cyclists becoming vegan. Is that something you'd consider?

AG: I have admiration for it but I couldn't do it. I like food too much. 🍕

A male cyclist is shown from the waist up, leaning forward in a racing position on a road bike. He is wearing a blue Gore Wear cycling jersey with white polka dots on the sleeves, a white and black striped helmet, and dark sunglasses. He is riding on a paved road that curves through a mountainous landscape with green hills and distant peaks under a cloudy sky. The image is framed with a white border that has a slight 3D effect.

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Saffron's Matthew Sowter (below) has a new blueprint for bespoke bikes – standardising certain technical aspects on this bike to make it appeal to a wider audience

Custom but not custom

Saffron Frameworks' latest venture is a bespoke, handmade steel bike – but not as you might know it

Words **JAMES SPENDER** Photography **MIKE MASSARO**



f you ask him about winning awards for his Saffron bikes, Matthew Sowter will likely shrug, look somewhat bashful

and say something along the lines of, 'I just want to make the best bikes I can.'

Luckily for Sowter his best efforts are pretty good; his awards shelf is stacked nearly as high as his order book. However, it has been 10 years since the South African set up shop in London and he's keen to keep evolving not just his bike designs but his business model, and this is the result: the... well, er, it doesn't have a name yet.

'The bike will still be named after the customer,' says Sowter, alluding to his stock and trade of ground-up bespoke bicycles. 'And these new bikes will still be custom, but what we are doing is

standardising certain aspects of the build to make the whole process easier.'

In other words, this bike is an example of what will exist as something like a model type, still made to measure and hence ultimately unique, but built to a pre-existing basic blueprint, with in-the-flesh versions already in existence. And though this process will indeed be a touch 'easier' for Sowter, the main idea is to make custom more accessible for a certain sort of rider.

Precisely engineered

Like many custom bikes, Saffrons are not without cost. A Columbus Life and Zona tubeset steel frame costs from £1,740, with prices rising steadily as tubeset and design complexity – disc brakes for example, or internal cable routing – demand. But as Sowter sees it, cost isn't necessarily the barrier to entry for many people. Rather, it's the blank sheet of paper they're faced with.

'After doing this for quite some time I've realised going full bespoke – spec'ing everything from the tubes to the cable bosses and bottom bracket types – means you only appeal to a certain part of the market, and that's not necessarily based on financial brackets. In that part of the market is somebody who is almost a bit geeky about tubes and steel bikes, and generally they come with a little bit of knowledge. They put their trust in us to make something aesthetically pleasing, first and foremost.

'My hope is a bike like this will appeal to more people, because many of the more technical choices have been ▶





Saffron custom bike, £4,200 frameset, including headset and paint. See saffronframeworks.com for more details

made for them by us, based on 10 years of experience, and they'll also be able to see, not just imagine, the bike they'll get. It's just less overwhelming.'

As such, there are only two 'stock' paint schemes, one of which features here, the other being full custom paint for an extra charge. Geometry is based on each customer's fit data, but various 'behind the scenes' technicalities have been settled upon already, albeit after some serious deliberation.

'I used to race and I wanted this bike to hark after that yearning to compete, so it had to be stiff in the right areas and comfortable in others. The bike is predominantly normal steel, with the top tube being Columbus Spirit. The

range, designed for those Japanese track racers of the same name. As such, they are desperately thin, 'like pencils'. But that's fine, as thin is light, and Sowter says seatstays in this design need to function only in compression 'and to brace the dropouts' as opposed to increasing pedalling stiffness.

The fine details

'Most people wouldn't pick up on it, but we had our own head tube rings machined. You can see how perfectly they marry up with the headset cups. It cost us a huge amount, but this sort of thing is really important to us. We were thinking we could try to ensure this bike was as cheap as possible to make, so

'I used to race and I wanted this bike to hark after that yearning to compete, so it had to be stiff in the right areas and comfortable in others'

tube is actually designed to be taller than it is wide, but we've re-oriented it so it's wider. The width resists lateral flex, but the shallower height allows some vertical flex. That also means it mates really well with the beefy down tube and head tube, which really does stiffen up the front end of the bike.

'The chainstays and bottom bracket are stainless steel, the stays because stainless is stiffer [than regular steel], but also as it means you can leave the stays naked and not worry about them getting chipped and rusting. The bottom bracket is stainless for the practical reason that water can pool here, so this prevents rust, which is especially a consideration given the threads.'

Sowter explains that the seatstays are from Columbus's super-light Keirin

it was accessible to as many people as possible, but we stepped away from that because that doesn't really fit with what we're about, which is trying to get the best out of everything we make.'

And in that there is one last little hidden gem: the seat tube.

'We didn't want to shout about the seat tube as it's not really about that, so we painted it, but it is actually a carbon integrated seatpost,' says Sowter. 'It has been made to our specifications by a company in Slovenia.'

'Again, it's more expensive, but while we could have gone off-the-shelf, that would have been a compromise we weren't willing to make. This bike has to be the best of every material, based on our experience. It's the kind of bike I'd make for myself.' 🌟





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Jersey tales

No25: HTC-Columbia. With Mark Cavendish leading the charge, the Highroad team claimed a remarkable number of wins in just four years

Words GILES BELBIN Photography DANNY BIRD

On 17th October 2011, High Road Sports uploaded its penultimate post on Facebook. Under the headline 'Neben and Martin win final two races for HTC-Highroad', the post detailed the successes of Amber Neben and Tony Martin in the Chrono des Nations that had been held the day before.

'Both the men and the women won their first race of the season in January and now they have both won the last race,' team owner Bob Stapleton said. 'It's testament to the attitude of all of our staff and riders over the years and I'm very proud of their success.'

And what success that was. 'HTC-Highroad finishes the season with 121 victories and 513 wins since 2008,' concluded the post.

The journey to that remarkable haul started in September 2004, when Stapleton formed High Road Sports. Two years later he took the reins at the scandal-hit T-Mobile team and, when Deutsche Telekom withdrew a year later in a bid to distance its brand from cycling's doping problems, Stapleton, whose company now held the ProTour licence, established a team from T-Mobile's ashes.

'We basically nuked most of it, salvaged a few really good, competent people, and rebuilt

the thing into a really international powerhouse of young talent,' the American reflected in 2011.

Team High Road started its first ProTour race at the Tour Down Under on 22nd January 2008 and didn't have to wait long to taste success. André Greipel had already claimed the Tour Down Under's opening (non-ProTour rated) criterium, and two days later he recorded High Road's first ProTour victory. In Hahndorf, a city with German heritage, Greipel burst through the bunch to claim the stage on the line.

'I'm proud of the team,' he said afterwards. 'We began training from November so we could be good at the Tour Down Under and win races.'

The Brit closed in, and as Tom Boonen raised his arms in celebration Cavendish lunged for the line and nicked the win

The hard work paid off handsomely – Greipel would end the week with four stage wins and the overall title to his name.

Cav crashes onto the scene

Three months after Greipel's win in Hahndorf the outfit bagged its first major Classic – Kim Kirchen winning La Flèche Wallonne in the rain on the murderous Mur de Huy – but it was a young British sprinter who helped establish the team as a real force at the very biggest races.

Mark Cavendish had ridden his first full pro season the previous year with T-Mobile, picking up a number of wins. In April 2008, now wearing the Highroad jersey, he won the Scheldeprijs for the second year in succession. The final few kilometres had been dominated by QuickStep, working to deliver Tom Boonen to the line. And he was in prime position, with Cavendish seemingly too far back, but then the Brit closed in and deployed the double kick of acceleration that became his trademark.

As Boonen raised his arms in celebration Cavendish lunged for the line and nicked the win. The Briton later likened his sprint through the bunch to 'dodging traffic islands'.

Cavendish went on to secure two stage wins at the Giro d'Italia and four stages at the Tour de France that year. The 2008 Tour was the first under the Team Columbia name – the new title sponsor having just come on board – and while Kirchen wore the green jersey early on, it was during the fifth stage that the team offered a masterclass on how to lead out a sprinter. ▶

'What ended Highroad was the need to raise not €10 or €15 million but €30 or €35 million to remain competitive'

With 4km to go and a three-rider escape 20 seconds up the road, Columbia had the entire team at the head of the peloton working to deliver Cavendish to the finish. French National Champion Nicolas Vogondy attacked his fellow escapees in the final kilometre in a last-gasp bid for victory after more than 200km out front, but to no avail. His attack was snuffed out and Cavendish won by more than a bike length.

'When you have a team like I have, it's impossible not to win,' said a somewhat modest Cavendish afterwards.

Cav was undisputedly the team's star rider. He claimed 20 Tour stage wins (including three in a row on the Champs-Élysées, perhaps the most notable being in 2010 when the side-on camera view showed Cavendish blasting past his rivals like he had jet-propelled pedals), the green jersey and victory at Milan-San Remo. In his book, *Boy Racer*, Cavendish describes the sprint in San Remo as 'the best 10 seconds of my life'. But he wasn't the only winner on board.

Other standout results include Michael Rogers winning the Tour of California in 2010,

Matt Goss claiming Milan-San Remo in 2011 and Tony Martin winning Paris-Nice in 2011. For Stapleton, one of the most satisfying performances came at the Giro in 2009 when they took the race-opening team time-trial by six seconds. The result put Cavendish in pink, making him the first Brit to wear the jersey.

'This is probably the biggest win we've ever taken,' Stapleton said. 'A team time-trial is all about working well together as a unit.'

The women's team enjoyed success too, with Judith Arndt and Ina Teutenberg among those to secure notable results by winning the Tour of Flanders in 2008 and 2009 respectively.

Thank you and good night

The Columbia/Highroad adventure ended at the end of the 2011 season. Stapleton had spent much of the second half of the season trying to secure sponsorship, but ultimately he failed.

'What ended Highroad was the need to raise not €10 or €15 million but €30 or €35 million to remain competitive and to try to do it in an environment where people, if they would talk to you, were still deeply concerned about doping,' Stapleton told *The Cycling Podcast* in 2016. 'Anyone looking to spend big money had a lot of other places to put it where they didn't take any risks.'

This jersey is part of Paul Van Bommel's collection of memorabilia, on display at the Bike Experience Centre in Boom, Belgium. Go to deschorre.be/develodroom.html



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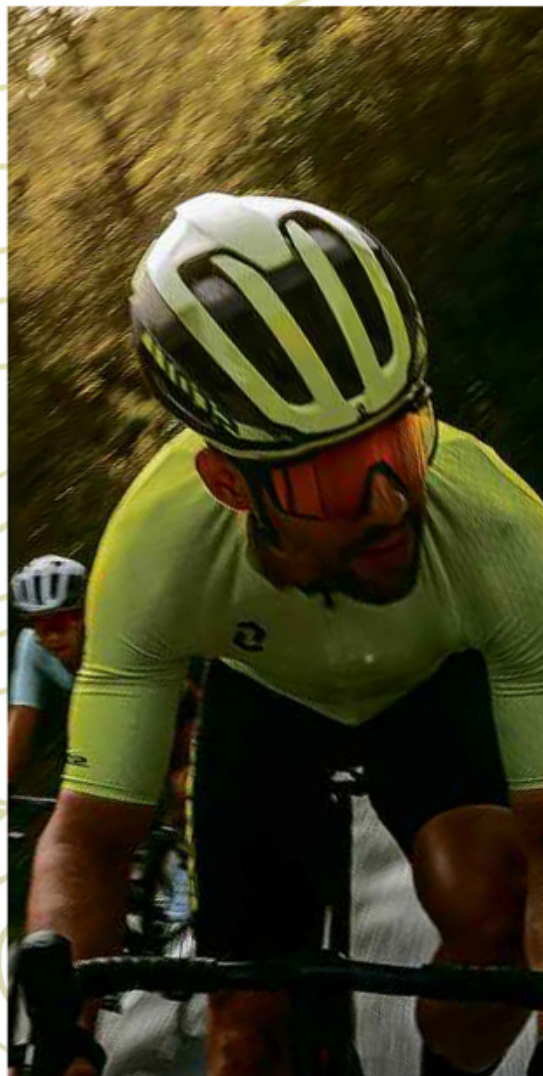
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In praise of... criteriums

Fast, frenetic, intense, dangerous, noisy... a criterium is bike racing distilled down to its most raw form

Words **TREVOR WARD** Photography **DANNY BIRD**

If you ever find yourself in Venice, and have already bagged one of Strava's more unique segments by taking the *vaporetto* across the lagoon and hiring a bike to ride the length of the Lido, a visit to the Peggy Guggenheim Collection is highly recommended. It's here you will find several examples of cycling represented in the form of modernist art.

Au Velodrome is a Cubist rendering of Charles Crupelandt winning the 1912 Paris-Roubaix, painted by French artist Jean Metzinger and believed to be the first modernist painting to show a real

sporting event and athlete. Nearby is an even more striking composition. Called *Dinamismo di un Ciclista* and painted by Italian Umberto Boccioni in 1913, it's a conflagration of shapes and colours that gradually reveals itself to be man and machine hurtling at speed. Boccioni, who would serve in a battalion of cyclists during the First World War, was a leading light of the Futurist movement that pioneered new forms of depicting speed and motion on canvas.

Although he could have taken his inspiration from any of the regular bicycle races at the time – both the Tour of Lombardy and Milan-San Remo were already popular fixtures on the

Italian sporting calendar – his painting hints at a type of racing more ferocious and uncompromising than any long-distance challenge. The broad strokes, bright colours and blur of components – human or mechanical? – represent a relentlessly fast and violent contest that could surely only be a criterium race.

Halfway between road and track riding, a criterium race typically comprises laps of a closed circuit of between 1km and 1.5km in length. Though it can be an off-road circuit – such as Scotland's Crit On The Campus, which takes place on the grounds of Stirling University – town centre circuits are more common and usually involve more challenges for the riders. The race lasts around an hour, so the pace is fast and furious from the start, requiring special skills from the protagonists. ►

A criterium isn't quite a road race but nor is it a typical track race – and picking the best bits of each is the key to its enduring popularity



'The speed and sound of a bunch roaring past your nose at 60kmh for an hour is impressive. And for us doing the racing it's pretty cool too'

► 'It's all about the ability to be lucid when you're under the pump. A smart rider will always beat an opponent who relies too much on brawn,' says James McCallum, who was British and Scottish national circuit champion and winner of the overall circuit race series during his nine years as a pro (during which time he also won a Commonwealth bronze medal in the track scratch race and was Scottish national road race champion).

'It can be pretty hairy – crashes are inevitable – and it's a brutal discipline requiring being able to continuously repeat top-end efforts for up to three to five minutes at a time, but it was my bread and butter as a pro,' he says.

Giving us the horn

McCallum, who has since gone on to coach riders including two-times British circuit champion Eileen Roe and elite road series champion Steve Lampier, adds, 'You need the ability to tap into your VO₂ max and neuromuscular power at the same time. My favourite training session was sitting behind the motorbike and having to attack when the rider hit the horn. I miss that stuff.'

Crit racing is the most popular form of the sport in the US – the Red Hook Criterium in New York grew

from an informal race for fixie riders around a Brooklyn neighbourhood into an international series with races in London, Barcelona and Milan – and can trace its roots to *kermesse* racing in Belgium, which are slightly longer road circuit races held during village fairs that are still popular today.

Before retiring as a pro in 2014, McCallum raced crits all over the world and describes Durham's undulating and cobbled circuit as the toughest he's faced: 'It's one hour of absolute panic!'

The man responsible for designing it is three-times northwest cyclocross champion Mark Leyland, who oversees all the city centre circuits featured in the Tour Series. A former junior crit racer – 'I remember the thrills and spills of racing through bus stations covered in diesel!' – he says the circuits are designed with both racers and spectators in mind.

'For the riders, a variety of skills are required. It's more than just sprint, brake, sprint,' he says. 'Pure speed isn't going to win you the race at Durham, but it might on a much flatter circuit like Stevenage. As for the spectators, crit racing is perfect – lap after lap of action at a constantly high speed and you're able to see the race go past 30 or 40 times in an hour.'

Being a successful crit rider requires a variety of skills across a range of courses – some are fast, some are hilly and some are even cobbled

McCallum agrees, saying, 'The speed and sound of a bunch roaring past your nose at 60kmh for an hour is impressive. And for us doing the racing it's pretty cool too. You're basically in a tunnel of noise for an hour, which is extremely intense. When I won the London Nocturne in Smithfield, the crowds were five to 10 deep on the home straight. That's pretty special.'

Returning to art – this time literature – the hero of Tim Krabbé's novel, *The Rider*, recounts the story of a cyclist who 'seduced a woman during a criterium'. She was among the spectators and they exchanged glances as 'every hundred seconds he came barrelling past'.

'Their love blossomed as prettily as a flower in one of those time-lapse films,' writes Krabbé. 'Ten laps long they smiled at each other, for another 10 laps she winked, they began running their tongues over their lips, and by the time the race was approaching its decisive phase their gestures had become downright salacious.'

Disappointingly, this doesn't ring any bells with either McCallum or Leyland. 'He was obviously riding quite slowly,' muses Leyland, while McCallum laughs off any parallels with his own career, saying, 'I was always too busy staying upright.' ❁ James McCallum runs his own coaching business at whatsyourmeta.com. The 2020 Tour Series starts in May

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Words JAMES SPENDER Photography DANNY BIRD

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668, the neighbour of the beast. And C17, the name attached to one of cycling's most enduring products, the Cambium (natural rubber and cotton mix) Brooks B17 saddle, which first appeared in 1888. That one was brown and leather, but the C17 is now available in this 'Octane' powder blue or fetching 'Bronze' orange. And if collars and cuffs are your thing, there's bar tape to match.

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we won't even begin to insinuate how Tom Boonen or Marcel Kittel may have used this tiny, flip-down, bar-plug mounted HideMyMirror (€24.95) for anything other than road safety or seeing who's on for the chase. Instead, we'll just say that CloseTheGap is making PrettyCleverStuff.

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The father of mathematical statistics, Karl Pearson, coined the term 'That which is measured, improves'. It seems sports tech company Leomo couldn't agree more, as it has produced the first commercial bike computer that can track and analyse a rider's biomechanics and movement as well as the more common metrics you'd associate with a modern head unit.

'The computer is also a multi-functional Android mobile device that can text, send emails and take calls, as well as host third-party apps from the Google Play Store, Spotify, Strava and the like,' says Joseph Caverretta, sports data analyst at Leomo.

The company has developed proprietary motion analysis software that, using the head unit and sensors that attach to various sites on the body, allows coaches and athletes to measure, analyse and target the qualitative aspects of motion that contribute to power production and overall performance.

'The data the Type-S generates brings lab-grade motion analysis to the field. It gives the athlete a multitude of information about their movement that can be used for both real-time and long-term analysis,' says Caverretta.

The motion sensors can be fixed to several areas of the body, for example the foot, knee, hip and torso, using adhesive pads.

'They are little boxes, but they are smart,' says Cavarretta. 'They each contain a three-axis gyroscope and three-axis accelerometer. The data they pick up is filtered into algorithms and expressed as our "MPI" values - motion performance indicators.'

It is these indicators that quantify movement so areas for improvement can be recognised. We can feel our pedalling action getting more *souplesse* already.





Ask the expert

Can I train for altitude without leaving the UK?

Get ready for that high mountain ride abroad


The expert

Ric Stern is a road racer, sports scientist and cycling and triathlon coach. For the past two years he's qualified for the UCI Gran Fondo World Championships, and has coached elite riders, Paralympians and beginners. Visit cyclecoach.com.

There's a simple answer to this: yes, you can. But first you need to understand why you might need to and how you should go about it.

Your physiology changes at altitude, especially when you exercise. It's often thought there's less oxygen, but actually it's the change in air pressure that affects you. Because cycling is largely aerobic, the delivery of oxygen is crucial to performance in terms of your maximum power output. Small changes can occur at quite low altitude, and for many people performance will start to decrease from about 500m.

In terms of actual training there isn't a whole lot you can do to replicate altitude,

because nearly everyone will face a decline in performance. But the less fit you are, the more altitude is likely to affect you, so if you know you're going to ride at altitude, the simple answer is to get as fit as you possibly can.

Your functional threshold power – FTP, the maximum average power you can maintain for an hour – is key. You can build that in a number of ways, from long (minimum one hour) medium-intensity endurance sessions to 15-minute time-trial intervals. You should also aim to increase your VO_2 max – the measure of your body's ability to use oxygen during exercise – by doing short, intense efforts of around four minutes.

You can't actually simulate riding at altitude in the UK, since the highest roads in this country are only about 500m above sea level. These include some of the longer passes in Derbyshire such as the Cat & Fiddle or Snake Pass, the Gospel Pass in Wales and some in Scotland. Unlike some of the UK's steeper ascents these are all longish climbs so they

While we've got you Our expert answers a few quick ones

Will shaving my legs make me faster?

Wind-tunnel data show that shaving your legs will indeed make you faster – a whopping 30 seconds over 25 miles – but who cares? It looks fast.

step-ups when you're off the bike.

Am I faster in cold weather or hot?

Hot, even with a decreased power output. Air density is lower at higher temperatures so you become faster because you're moving fewer air molecules out of the way. It's why they turn the heating up in velodromes.

What exercises are best for building my puny calves?

Cycling up massively steep hills should do it! But also squats and

are useful for learning how to pace yourself. Many people start too fast and then blow up.

Another potential issue abroad is altitude sickness, but not everyone suffers from it and it only really strikes at above 3,000m. If you're planning to go that high you should build up to it first by steadily increasing your altitude. Pack some energy products, drink plenty and avoid alcohol, because you may well burn through your glycogen stores and dehydrate at a faster rate.

There are other, more specific things you can do. Hypobaric chambers allow you to train in a low oxygen environment to simulate the effects of altitude. This may be useful to understand how your body performs and may also help change some physiological markers, but it's expensive.

Then there are altitude tents, where you sleep in a low-oxygen environment, and modern scientific thinking is that the best way to train for altitude is to sleep high (at high altitude) and to train low (at sea level). Training at altitude means you either lose more power or require more rest. Training at sea level and sleeping in an oxygen tent allows you to maintain your normal level of training while obtaining the physiological adaptations that occur, mainly in the blood, at altitude. Again, though, these can be pricy – upwards of £300 a month – and it's important to note that this doesn't work for everyone. Some people are non-responders.

The level of your commitment to this sort of thing depends on how serious your high-altitude ride is, or how much money you have to burn. If you're a sponsored athlete preparing for a long-distance race, it's probably worth the expense and effort. If you're not, it's worth exhausting all of the other avenues first: optimising your engine via coaching, optimising man and machine via aerodynamics, and ensuring you get the best possible nutrition. 🌸

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1 Downward dog

How: Start face down on your hands and knees with your spine neutral, then push up and back. Hold for 30 seconds, increasing the stretch as you breathe out. Repeat four times.

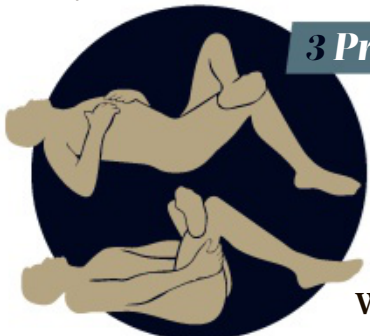
Why: 'This stretches the hamstrings and calves, which are often really tight in cyclists,' says Newton. 'You can move your legs further out behind you to target the calves, while a narrower stance will target the hamstrings. Really push into it to get the full benefit.'



2 Hip flexor stretch

How: Kneel on one leg, but instead of lunging contract your glutes hard and rotate your pelvis backward. Hold for 30 seconds and repeat on the other side. Do four reps per side.

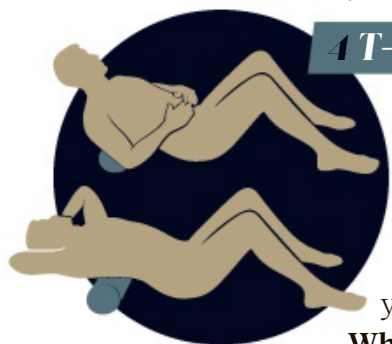
Why: 'There's not a lot of movement here, but contracting the glutes engages the antagonistic, or opposing, muscle to stretch the hip flexors. You're basically teaching the hip flexors that when the glutes are "on" they can relax and stretch – and many cyclists suffer from tight hips.'



3 Pretzel stretch

How: Lie on your back with your knees bent and your hips touching the floor, then raise your left leg and rest your ankle on your right knee. Hold for 30 seconds and repeat on the other side. Do four reps per side.

Why: 'This targets the glutes, which take a lot of punishment on the bike. To increase the stretch, move your right foot closer to your glutes or hold the back of your right leg and pull it up towards you – but making sure your hips stay on the floor.'



4 T-spine stretch

How: Lie back with a foam roller on a section of your thoracic spine – your middle and upper back. Brace your abs and, with your hands on the back of your head, allow the weight of your head and shoulders to arch your upper body back. Hold for 30–60 seconds.

Why: 'Cycling places a lot of stress on the T-spine, which you ask to hold a fixed position when it's meant to be mobile. Do a couple of sections per day but no more or it will hurt.'



5 Book-opening stretch

How: Lie on your left side with your arms out, and bring your right knee up. Raise your right arm up and all the way over to the other side until your arm is parallel to the floor. Hold for 30 seconds and do two reps per side.

Why: 'This gives you extra mobility in your T-spine and also stretches the pectoralis minor in your chest to counter your hunched posture on the bike. It's important to keep the knee up because this keeps your lower back neutral.'

Nutrition



Eat more... Chia seeds

'Chia is one of the most fashionable seeds out there right now,' says Nigel Mitchell, head nutritionist at Team EF Education First and technical lead at the English Institute of Sport. 'It makes them pretty expensive, but the hype around them is not without merit. They do have a bit of everything: Omega 3 fats, vitamin A, iron, calcium, magnesium, a really nice spread of nutrients. I like to soak them in water or a plant-based milk, which softens them into a gel-like substance – it's possible to use them in place of eggs in some vegan cooking recipes. They also mix nicely into quinoa and other grains, which is an easy way to get extra nutrients into your diet without really noticing.'

Pros don't always prefer low-carb diets

'Advocates of low-carb diets have seen pros sometimes eat low-carb meals so the idea gains momentum and perpetuates inaccuracy,' says Dr Asker Jeukendrup, the sports scientist behind Core, an online sports nutrition planning tool at fuelthecore.com. 'No pro rider is on a low-carb diet. They simply wouldn't be able to perform in races. What does happen, though, is diet periodisation.'

'Pros don't need a lot of carbs every day, so nutritionists tailor diets to their demands. When Chris Froome posted a picture of his breakfast of eggs and avocado, everyone went crazy because they thought he was off carbs. But he simply didn't need them at that time. It's just a matter of periodising.'

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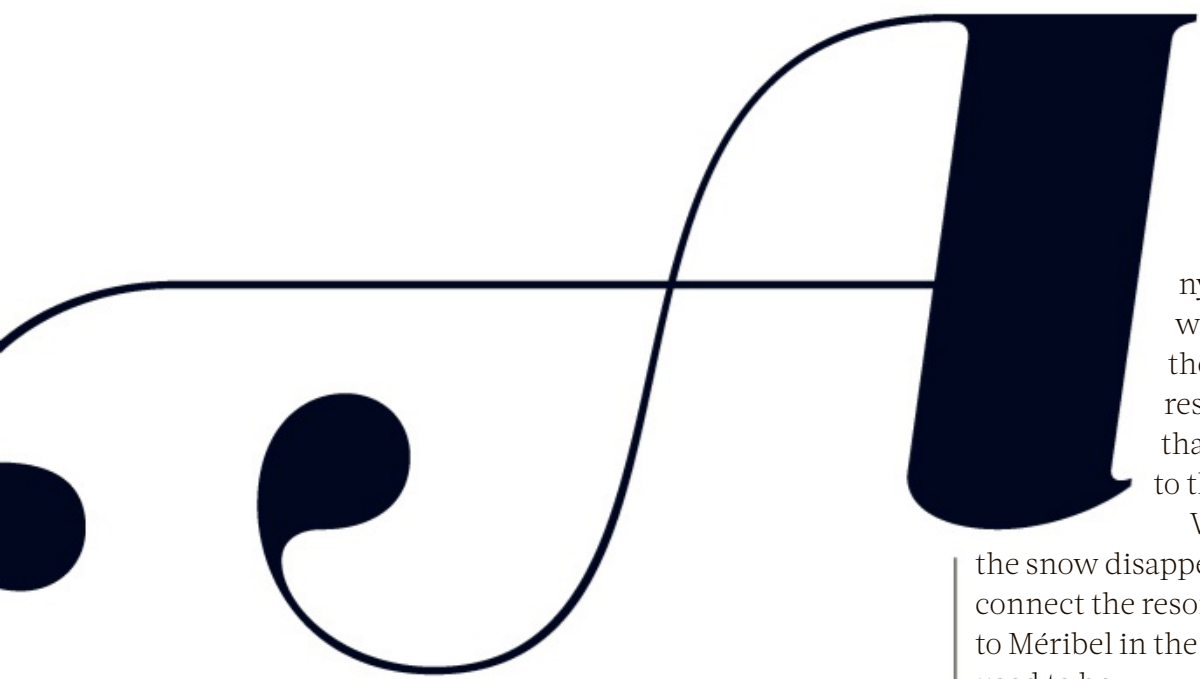


The Untouched Col

With the tarmac barely dry, *Cyclist* heads to the Alps to explore a brand new climb over the Col de la Loze that, uniquely, is just for bikes

Words **STU BOWERS** Photography **ALEX DUFFILL**





nyone who skis will no doubt be familiar with the Trois Vallées. This vast region of the French Alps is serviced by several major resorts, all interconnected by a lift system that allows skiers to move from one valley to the next as seamlessly as possible.

When the summer arrives, however, and the snow disappears, only mountain bike and hiking trails connect the resort of Courchevel in the Saint-Bon valley to Méribel in the Allues valley. Or at least, that's how it used to be.

In the summer of 2019 a road was built over the Col de la Loze, connecting the two ski resorts and creating a brand new playground for road cyclists in the process. Even better, the entire length of the route is closed to motor vehicles, so cyclists can enjoy the smooth, sinuous tarmac without being disturbed by any cars, lorries or lunatics in white vans.

At 2,304m, the Col de la Loze just misses out on a top 10 slot in the French Alpine road hierarchy, but thanks to its car-free status the region's 11th highest paved col goes straight to the top of *Cyclist's* must-do list.

Hot property

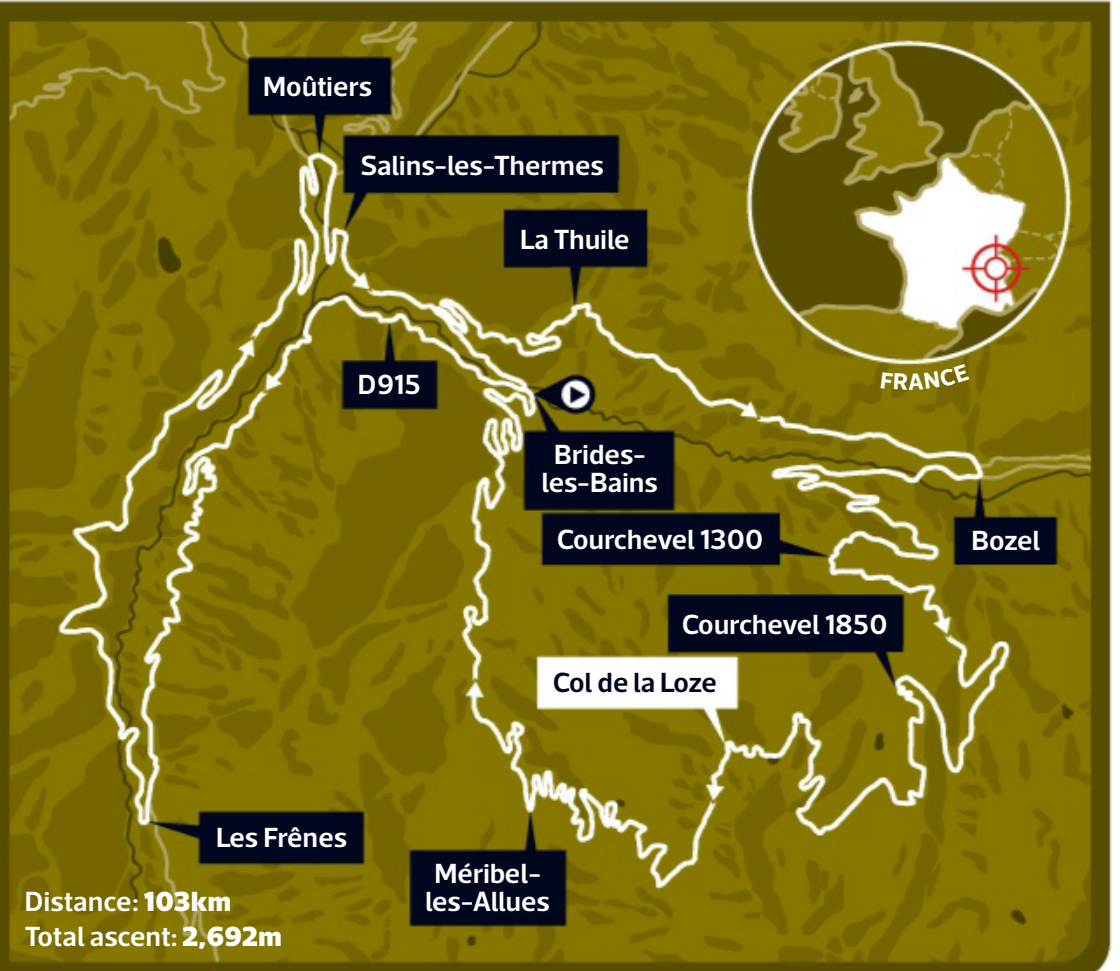
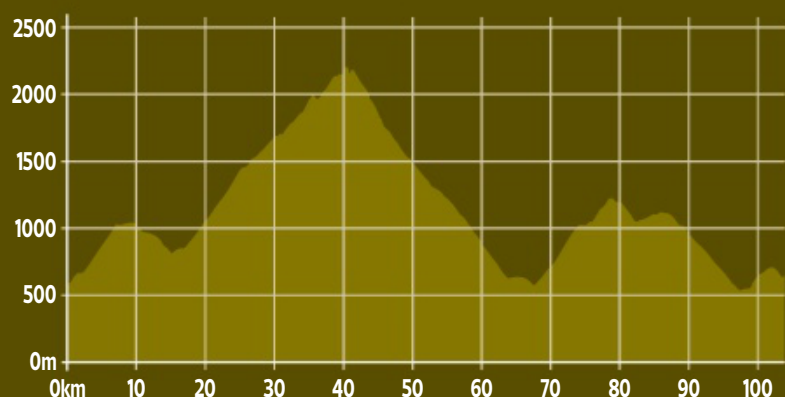
It's not by chance that we are here so soon after the road's opening. Adrian Hill – Ade to his mates – runs cycling company Alp Cycles in nearby Bozel, and he has been our 'man on the inside', keeping a close eye on the new



Highs and Loze

Follow *Cyclist's* route around the Trois Vallées

To download this route go to cyclist.co.uk/98france. From the centre of Brides-les-Bains take the Route des Frasses, and after about 2km turn right onto the balcony road to La Thuile, then Bozel. Join the main valley road (D915) and descend, then turn left towards Courchevel. Climb through Courchevel 1300 and on to 1850, which is where the new road begins. From the summit at 2,304m descend west to Méribel-les-Allues and Brides-les-Bains. Follow the D915 down the valley and turn left before Salins-les-Thermes towards Val Thorens. Turn at Les Frênes, crossing the valley, and descend to Moûtiers. Take the D915 to Salins-les-Thermes and climb Rue du Colonel Duboin to meet Route des Frasses back to Brides-les-Bains.



Distance: **103km**
Total ascent: **2,692m**



Thanks to its car-free status the region's 11th highest paved col goes straight to the top of *Cyclist's* must-do list

col's development. The minute it was officially open for business, Ade gave us the signal and we were on the next flight from London.

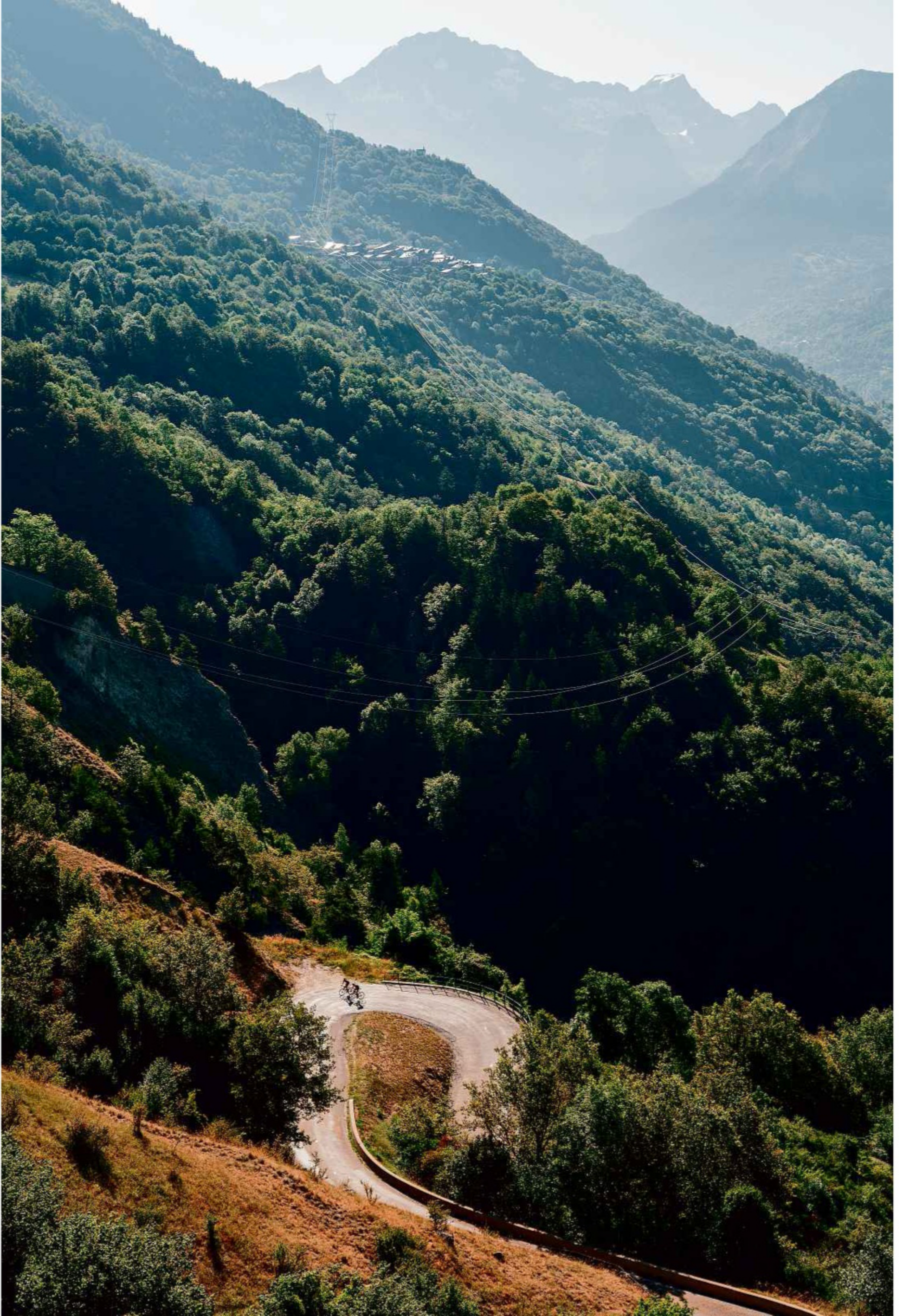
The sun is just starting to emerge above the surrounding mountain peaks as we prepare to set off from our hotel in Brides-les-Bains. Given that France is currently in the grip of a heat wave it's promising to be a scorching day. Temperatures north of 40°C have been recorded in the valley recently. That won't have made life easy for riders taking part in this year's Etape du Tour, which finished in nearby Val Thorens just a few days ago.

Ade was there, supporting some of his cycling clients, and says he has 'never seen so many riders looking so



Previous pages: The mirror-like surface of the lake reflects the surrounding peaks just before you reach the summit of the Col de la Loze

Above: The first climb of the day begins the instant you leave Brides-les-Bains for Les Frasses



broken'. They were simply frazzled by the heat and many failed to finish the 131km course.

With that in mind we slather on a generous helping of factor 50, don our sunglasses, clip in to our pedals and head out onto our planned route for the day. We'll have to wait a while before we get to experience the Col de la Loze, though. In fact our ride begins in the opposite direction by crossing the valley on the other side of the Doron de Bozel river on a serene balcony road.

We keep the pace easy in these early kilometres, but still gain height rapidly through a quick succession of hairpins. Peering down into the valley below, already the trucks and lorries on the main arterial road look the size of kids' toys and Brides-les-Bains is now just a model village.

We pass through the village of Montagny and descend into Bozel, passing by Ade's house along the way. I was already jealous of the idyllic mountain village setting he calls home, but this only intensifies when Ade points out the start of the off-road downhill mountain bike trail his son takes to get to school every morning. I can't think of any better way to start the day.

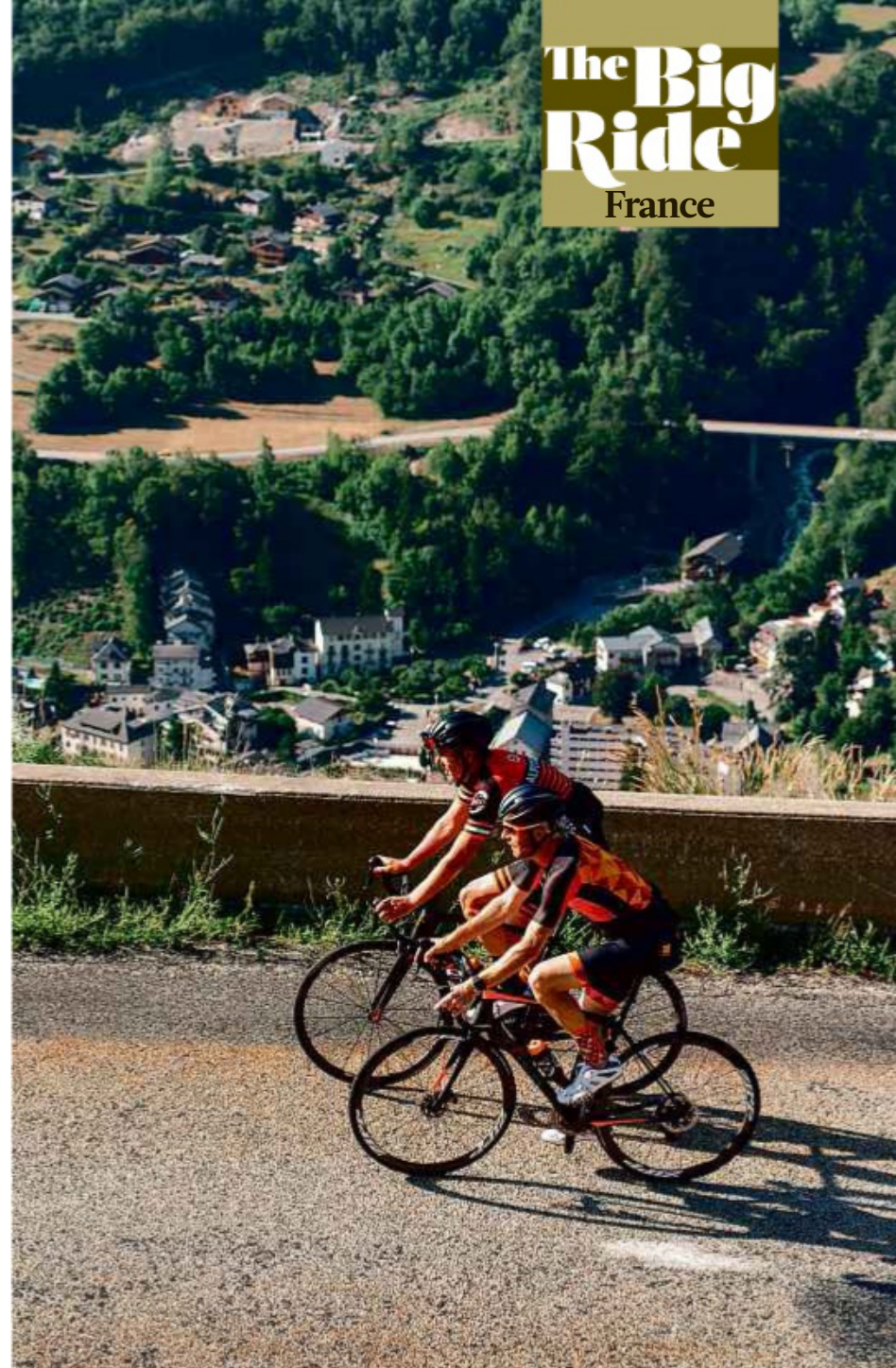
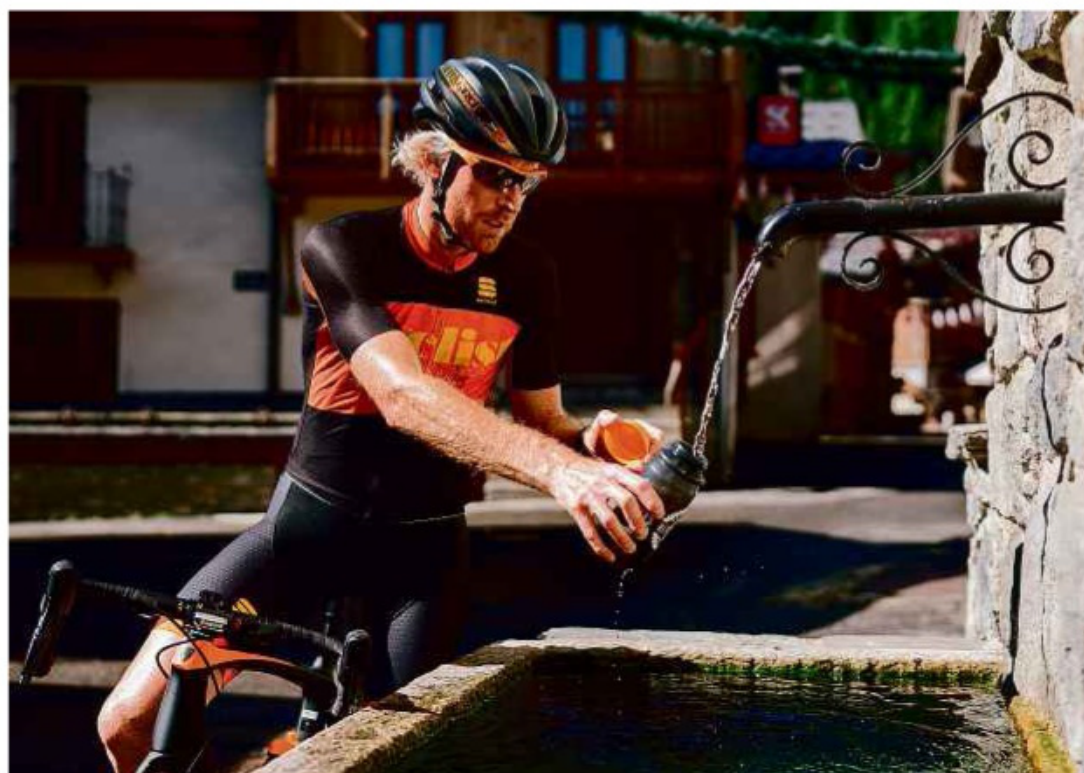
New heights

After a few more kilometres of gentle descending we suddenly find ourselves in the clutches of the main valley road. It's busy with traffic, but fortunately it's only a couple of kilometres before we swing off again onto a quieter road that signals the start of the climb to Courchevel and, beyond that, the Col de la Loze.

Right: You gain height so rapidly from the start that Brides-les-Bains quickly becomes a model village far below

Below: Water fountains are a regular feature in most Alpine villages, which is just as well when the mercury is nearing 40°C

I'm somewhat dismayed when a vehicle pulls up and the driver jumps out, moves the barriers aside and then continues driving up the road



Before now it was only possible to ride up this road as far as the ski resort at Courchevel 1850, a 17km climb at a gradient between 5% and 7%. But the opening of the Col de la Loze has changed the nature of the climb completely. The extra section adds another 6km to the distance along with an additional 377m of vertical ascent. What's more, the steepest gradients are towards the top, which means we'll need to hold something back for the final effort.

From the valley, the complete climb measures 23km in length, with a vertical gain of 1,458m to the summit at 2,304m. That puts it on a similar footing to Mont Ventoux, with its 1,640m of ascent over 21.4km. Given that, the Col de la Loze may well, in years to come, write itself into Tour de France legend too. It doesn't have long to wait to get its first chance, because the 2020 edition has a summit finish here at the end of Stage 17 from Grenoble on 15th July.

Given what lies ahead of us today, Ade and I click through the gears to settle into a comfortable rhythm. The early part of the ascent is forested, allowing us a modicum of shelter from the heat, with occasional gaps between the trees affording magnificent views across the surrounding mountains. Despite the manageable gradient it's quite an irregular climb. The switchbacks aren't regimented like they are on so many Alpine roads, but are more erratic in pattern, like the flourish of an artist's brush.

By La Praz at around 1,300m my bidons are dry, so I stop to refill them from a water fountain in the town square while admiring the ski jumps on the hillsides opposite. They were built for the 1992 Winter Olympics in Albertville, and there seems to be a flurry of activity around them. Not of skiers, but rather builders, which, ▶



Ade and I attempt to unleash our sprints, but it's like watching two old men race to the newsagents on Zimmer frames



Left: Just beyond the outer limits of Courchevel 1850 you really begin to reap the visual rewards of the 17km climb to this point. There's still around 5km to the Col de la Loze summit, but the views just keep on getting better



◀ Ade tells me, is a redevelopment to ensure future World Cup skiing events can be held here.

As we continue climbing the towns we pass through act conveniently like an altimeter. Courchevel 1550 comes first, then Courchevel 1650, and by the time Courchevel 1850 is behind us the landscape is starting to feel much more isolated. With 16km of the climb under our belts it feels like we're up among the high peaks. But we're far from done yet.

This part of town, just above 1850, is known as 'Millionaires Row', Ade tells me. 'You're looking at €30 million minimum to get a place on this stretch of road,' he says. 'Oleg Tinkov owns a hotel up here.'

It all looks quiet as we pass, so I'm guessing Tinkov's not at home. Besides, my attention is focussed more on the black ribbon of tarmac snaking out above us.

The main event

With the road having only been completed days before we got here, all that's currently in place to prevent traffic from going up the Col de la Loze is a pair of metal barriers.



I'm somewhat dismayed when a vehicle pulls up and the driver jumps out, simply moves the barriers aside and then continues driving up the road. Ade too expresses his surprise, however we're not too far down the road when we hear another car approaching from behind us. This time it's the *gendarmes* in hot pursuit of the outlaw.

On any other day a car chase might serve as a welcome distraction from the climb, but today my focus remains on my surroundings.

The new section of the Col de la Loze starts off relatively sedately, which is nice enough at the time but actually just lulls us into a false sense of security. With around 4km to go things start to ramp up – literally. From here 7% is the shallowest slope we can expect, but mostly we'll be tackling gradients in double figures.

We attempt to pass the azure-blue waters of the lake at Rocher de la Loze, but the scene is too beautiful not to stop and savour. Ade points out Mont Blanc gleaming ▶



The backdrop to the middle part of the Col de la Loze is the impressive jagged rocky spires that form the summit of the Saulire mountain, at a height of 2,738m

I get a bit of a shock, because it looks like we're about to ride off the end of the world

► in the distance on this crystal-clear day. We have an almost unbroken panoramic view of snow-capped peaks that demands to be appreciated, but equally I don't want to stand still for too long. I can see the summit of the Col de la Loze is tantalisingly close, but between it and us is a stretch of tarmac that looks brutally steep.

It turns out to be every bit as tough as it looked from below, and the last part of the climb is truly arduous.

Fatigue, combined with the thinner air, is taking its toll and the final 100m stretch is the steepest of all. Ade and I attempt to unleash our sprints in a head-to-head battle for the summit sign, but it's like watching two old men race to the newsagents on Zimmer frames. My legs begin to buckle as I tackle what feels like a wall. By the time I reach the top I'm done in, and all I can do is slump over my handlebars.

Over the top

Swinging around the corner to begin the descent off the Col de la Loze I get a bit of a shock, because it looks like we're about to ride off the end of the world. So steep is the initial drop down into the Méribel side of the valley it has effectively created a blind summit. It's at least 25% and feels so sheer that after descending just a few hundred metres, Ade and I stop to look back up at it. I can't help feeling glad we didn't decide to ride the Col de la Loze in the opposite direction, as this side really is a wall. ►

The rider's ride

Trek Émonda SLR 7 Disc eTap, £5,950, trekbikes.com

Of all Trek's race bikes, the Émonda is the climbers' favourite. The emphasis is on weight – a lack of it, of course – and the bike is built around the manufacturer's lightest ever road frame, which comes in at a claimed weight of just 665g. Throw in the fork and the frameset is still only a shade over 1kg, helping this complete bike to come in at an impressive 7.11kg including disc brakes and Sram Force eTap AXS shifting.

The combination was everything I could have asked for on this particular Alpine ride. The spec was flawless and the combination of low weight and unrelenting frame stiffness paid dividends on the climbs. And while the Émonda may be a featherweight, never once did it feel too flighty or unstable on fast descents, plus there was ample comfort too, despite the fact I was only running 25mm tyres.

Trek has left little, if anything, to complain about in what can only be described as a superb all-rounder.











By the numbers

Easy as one, two, three...

2,304

Height in metres
of Col de la Loze

103

Kilometres ridden

2,692

Metres climbed

35

Max temperature in °C

8

Bidons drunk

16

Steepest gradient climbed in %

25

Steepest gradient
descended in %

As it happens, this is the way the 2020 Tour de France will tackle it on Stage 17. This is the penultimate mountain stage and the last summit finish of the race, so it's likely to be a crucial and potentially decisive 168km day. Whatever unfolds in the battle for the General Classification, the viciousness of that final incline means whoever triumphs will be a worthy winner.

The road continues to fall away beneath us. I can feel my bike going light as we whizz over slight crests, and my disc brakes hum as I pull hard on the levers to scrub speed for the many twists and turns. The freshly laid tarmac, though, feels extremely grippy, which gives me the confidence to lean into the bends.

In virtually no time at all we've dropped a vertical kilometre to Méribel, and there's still more to come as we head further down the Allues valley and eventually all the way back to Brides-les-Bains.

With the cooling rush of air during the high-speed descent I'd almost forgotten about the temperature until, back in Brides-les-Bains, the sweltering heat hits us once more. We decide it's time we stopped for refreshments and, given the warmth, iced coffees accompanied by ice creams seems the sensible option.

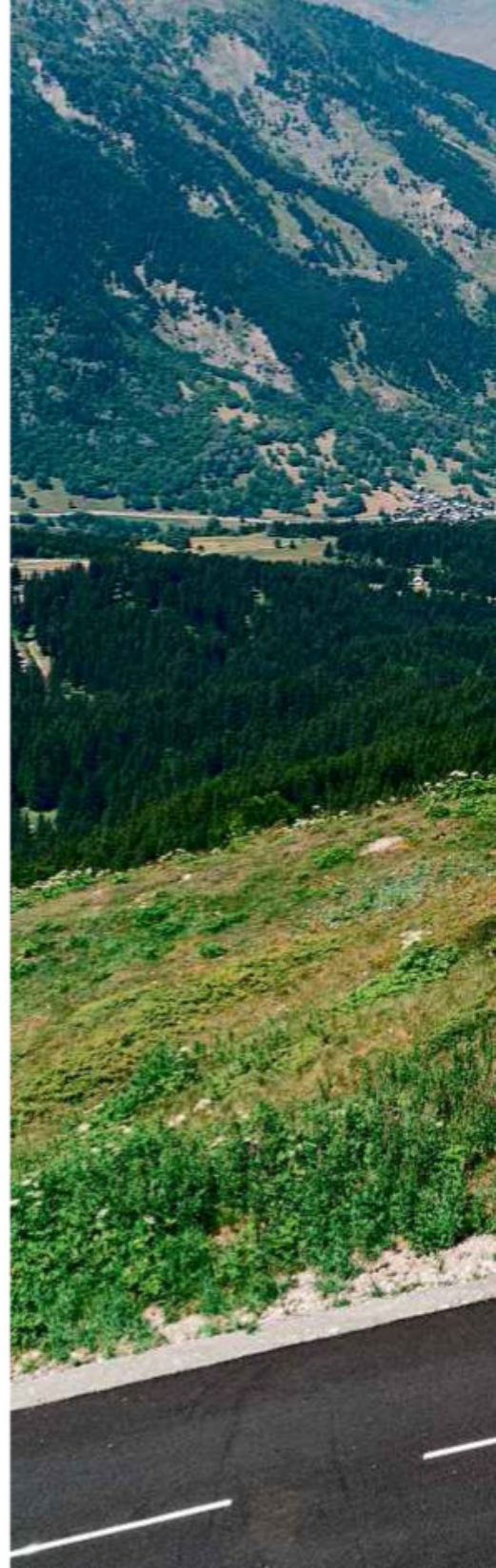
With around 65km ridden, and now back in the town where we started, we could potentially call it a day here. After all, the ride so far has certainly served up more than enough challenges and delights to be considered well worthy of drawing that line. But not today. Ade, bright spark that he is, has other ideas.

Back in the saddle, we head further down the valley and, after another short blast on a main road, reach the turnoff for Saint-Laurent-de-la-Côte.

As we begin to ascend once more, Ade has me fretting when he announces it's a 32km climb to Val Thorens – the

Previous pages: It's worth having a bit left in the tank for the top of the Col de la Loze climb. After you've passed the lake the ramps spike up to more than 10%

Right: Those steep gradients get even wilder on the first part of the descent. It's over 25% at the top as the road tips over a blind crest, and you certainly won't need to do any pedalling – just tuck and enjoy the thrill





I can feel my bike going light as we whizz over slight crests, and my disc brakes hum as I pull hard on the levers to scrub speed for the turns

same climb that was hit by floods on Stage 20 of the 2019 Tour de France – but before I can choke on the last dregs of yet another drained bidon, mercifully he adds that we’re only going about halfway up. The road to the ski resort is a dead-end so we’re not going to bother with the upper out-and-back section. Instead we will turn off and cross to the far side of the valley before descending back to Moûtiers.

I nod nonchalantly when Ade delivers the news, but the relief must surely be written all over my face. He remains the consummate host, sticking by my side through every twist and turn, over every rise and fall, but over the next few kilometres it’s clear I’m starting to flag. The early-afternoon sun is high and at full strength now, and through the meandering switchbacks there are numerous times when we are completely without shade.

I feel like I’m being cooked alive. My bike computer reads 35°C, my jersey is agape and behind my sunglasses my eyes are stinging from the ever-present sweat. The skin

on my arms and legs feels like sizzling strips of streaky bacon on a red-hot grill.

When we reach Les Varcins, having climbed around 14km, a large water trough beneath a fountain appears like an oasis. I dunk my arms in deep, then cup my hands together and scoop big handfuls over my head, face and neck. It’s tempting to climb right in, but I’m not sure the locals would approve so think better of it.

The villagers have clearly been getting in the spirit of Le Tour, putting out flags and bunting, and hanging painted bikes on walls in readiness for the arrival of the race.

We, on the other hand, are ready for our finale. This is our turning point, and it feels good to be descending again, but even these higher speeds seem incapable of delivering any significant cooling breeze. The air is just so warm, it’s like being in a wind-tunnel with a hot air fan.

My mouth is completely dry by the time we emerge in Moûtiers, and so too are my bottles. Ade, once again acting





Below: Flags and bunting are out in Les Varcins, as the Tour de France is due to roll through these parts en route to Val Thorens soon after Cyclist departs

like some sort of super-domestique, passes me one of his. 'We're not quite done yet,' he says as he does so. 'We'll turn left just up there. It's a little road the locals call The Wall.' My heart sinks.

Ade explains that the climb is a steep ramp to connect with the balcony road that we began our day on, the alternative being a long steady drag using the main trunk road. I agree that short, sharp pain seems the better option, so we make the turn, I click into my smallest gear and commence The Wall, staring at Ade's back tyre.

Twinges in my hamstrings tell me that cramps are imminent, but happily we make it to the top before my legs succumb. I'm grateful that, soon after, the road tilts downwards and stays like that all the way back to the finish at Brides-les-Bains.

The town takes its name from the reviving spring water that bubbles up from underground, but I have an entirely different kind of recovery drink in mind. ❀

Stu Bowers is editor at large of Cyclist and was briefly near the top of the Col de la Loze Strava leaderboard

'We're not quite done yet,' Ade says. 'We'll turn left just up there. It's a little road the locals call The Wall...'



Do it yourself

TRAVEL

Cyclist flew with Swiss Air from London Heathrow to Geneva. Expect to pay £90-£130 each way depending on the time of year. Geneva is one of the best-served airports in the world so there's a huge choice of airlines and flight times to suit all. Brides-les-Bains is around two hours by car.

ACCOMMODATION

We stayed at the superb Hotel Les Chalets in Brides-les-Bains (brideslesbains.com), a hotel well used to cyclists. There

is a secure garage with basic workshop facilities for bikes, and a breakfast buffet that caters for hungry riders. There's even porridge.

THANKS

Huge thanks to Ade and Shelley of Alp Cycles (alpcycles.com), who were a big help making this ride happen. Thanks also to Elodie Guignard of Courchevel Tourism Office (courchevel.com) and Nadine Carle-Edgar of Montagnes Representation in the UK (montagnes.uk.com), for their support.





Right: Sports managers such as Lotto-Soudal's Marc Sergeant are charged with organising the riders' race calendars

Making the cut

WorldTour teams comprise up to 30 riders and compete for 10 months of the year. How do they choose who rides in which races, who gets to be leader, who rides in support and who gets left behind to rest? *Cyclist* finds out

Words **JAMES WITTS** Photography **SEAN HARDY**



Last December, Jumbo-Visma took the unusual step of naming their 2020 Tour de France squad seven months early. Adopting the arguably unsuccessful Movistar model of three co-leaders – Tom Dumoulin, Primož Roglič and Steven Kruijswijk – the rest of the Tour squad will comprise Wout van Aert, Tony Martin, Laurens De Plus, Sepp Kuss and Robert Gesink. Sports director Merijn Zeeman explained the rationale behind the decision at the team’s 2020 launch in Amsterdam before Christmas.

‘We’ve analysed the last five years of Grand Tours,’ he started. ‘What is the influence of time-trials on the final classification? What was the composition of the team that was able to conquer and defend a jersey? We found a common thread. That’s why we feel we’ll be going to the Tour with this, our strongest possible team.’

But how can he be sure that it is the strongest possible team? And how will it affect the team selection for the other races across the year? It’s all about finding the perfect blend of youth, experience and technology...

An early start

Tadej Pogačar enjoyed one of the most memorable neo-pro campaigns of all time in 2019, winning three stages of the Vuelta a España en route to finishing third overall. The 21-year-old Slovenian belied a lack of experience and shortage of three-week physical conditioning to surprise rivals and pundits alike. It didn’t surprise his team, though.

‘We felt Pogačar’s build-up to Spain was spot on,’ says UAE Team Emirates’ sports director, John Wakefield. ‘It started with a good showing at January’s Tour Down Under followed by the Volta ao Algarve in February where he won GC. He did the same at May’s Tour of California and finished top-five in June’s Tour of Slovenia. He ticked numerous boxes, resulting in his Vuelta success.’

Pogačar’s box-ticking, Wakefield adds, began back in October 2018 when management ‘more or less knew who had be in the UAE squad’. October through to November is traditionally when the following season’s planning lifts off, albeit with individual differences. Fellow *Cyclist* writer Richard Moore recently interviewed Mitchelton-Scott sports director Matt White on this topic, the Australian explaining that planning happens earlier every year.

‘I began building the riders’ 2020 race calendar before the 2019 Tour,’ White revealed. ‘I collate the information on a live document that only I can edit, and send it to the other coaches for feedback. It’s a complicated process because there are around 60 races and 28 riders.’

Potentially very complicated indeed. The possible permutations of slotting 28 riders into 60 races throws up a figure 18 digits long. That’s some big maths, but thankfully White, Wakefield and EF Education First sports director Charly Wegelius simplify the process by working back from the overarching question: what are the team’s primary goals?

‘We’ll have groups of riders who will prepare for the targets of spring Classics, the Giro d’Italia and the Tour de France,’ says Wegelius. ‘Naturally there’s a degree of overlap in these groups but it’s not an autocratic process. Riders perform better when they buy into a project, so we’ll look to avoid imposing a programme on a rider if they don’t believe in it. That’s not the same as letting everyone do what they fancy, though! The degree to which riders have input over their programme is not, however, a question of hierarchy – it’s more one of experience and perspective.’

The first camp

The pre-Christmas training camp is where coaches and team managers get to assess their riders, integrate any new signings and start testing out kit ahead of the new season.

At Lotto-Soudal’s Mallorcan camp in December 2019, *Cyclist* observed as the Belgian outfit rolled out new equipment and underwent aerodynamic analysis, bike fitting and medical checks. It was also a general meet and greet for new riders while providing a platform for management to announce contract extensions for key riders, which in this case included sprinter Caleb Ewan.

‘I’m delighted to sign until the end of 2022,’ he told us, before highlighting the importance of that first camp to galvanising team spirit. ‘I’ve gelled really well with Jasper [De Buyst, who also extended his contract]. He’s been super-important to my 2019 successes.’

Unlike Jumbo-Visma, Lotto-Soudal have yet to announce their 2020 Tour de France team, but after winning twice in 2019 Ewan will surely be a shoo-in, alongside fellow 2019 stage winner Thomas De Gendt. In Mallorca, the riders and coaches began cementing their race programmes. There will always be surprises

The permutations of slotting 28 riders into 60 races throws up a figure 18 digits long

but, in general, every team knows who will take the starring roles in the big races. The more interesting question is how they decide on the supporting cast.

‘We consider many parameters,’ says Josu Larrazabal, head of performance at Trek-Segafredo. ‘This includes rider type, race type, period of the season, main goals, role of the rider... but the most important is experience and age of the rider. We must be careful with the training and race load of young riders. It’s common that during the first year they won’t compete in a Grand Tour or, if they do, they’ll withdraw halfway through.’

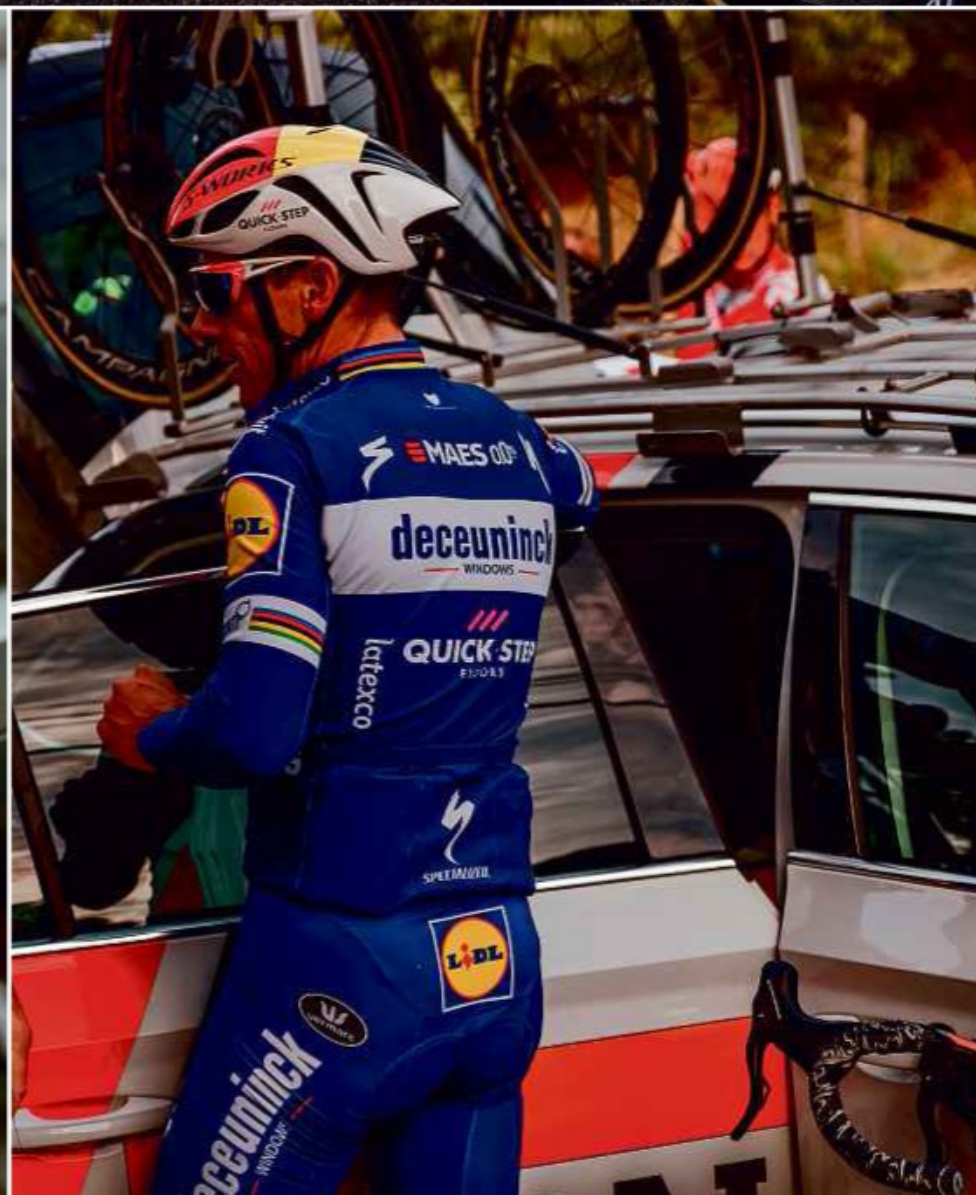
That’s what happened to 21-year-old Jasper Philipsen at the 2019 Tour, the UAE Team Emirates rider’s withdrawal after Stage 11 having been pre-planned (the UAE outfit ripped up that rulebook for Pogačar, of course). UAE’s squad is deep enough to afford such luxuries with the





Left: The pre-Christmas training camp provides a platform for riders and mechanics alike to test new equipment as they gear up for the coming season

Bottom left: Software like Velo Viewer helps teams plan their training rides





► older head of Alexander Kristoff taking over sprint duties, albeit, like his team, the Norwegian's 2019 Tour palmarès having remained stuck at zero.

Picking races

Different types of racing require different types of teams, with the heavyweights tackling the cobbles in spring, and the lightweights heading for the mountains in summer.

Take Team Ineos, formerly Sky. In April 2019, Paris-Roubaix saw Sky's average weight come in at 76kg and its average height at 1.85m, including bruisers Ian Stannard (1.91m and 83kg) and Christian Knees (1.94m and 81kg). The Ineos Tour team, however, averaged just 68kg and 1.80m, Egan Bernal feathering the scales at 60kg. Only road captain Luke Rowe and all-rounder Dylan Van Baarle competed in both events.

But beyond the blue riband events, teams have to decide which races to target and which can be safely ignored. There are 37 WorldTour races and, as of 2019, UCI rules state that although attendance at these races is 'voluntary', it's mandatory for at least 10 WorldTour teams to be at the start line of each, which is fine for established northern-European events but less desirable practically for events such as the Tour of Guangxi in China.

Attendance at smaller events is down to individual team commitments, with the popularity of domestic French and Belgian races meaning more race days for the likes of AG2R-La Mondiale and Lotto-Soudal than many of their contemporaries.

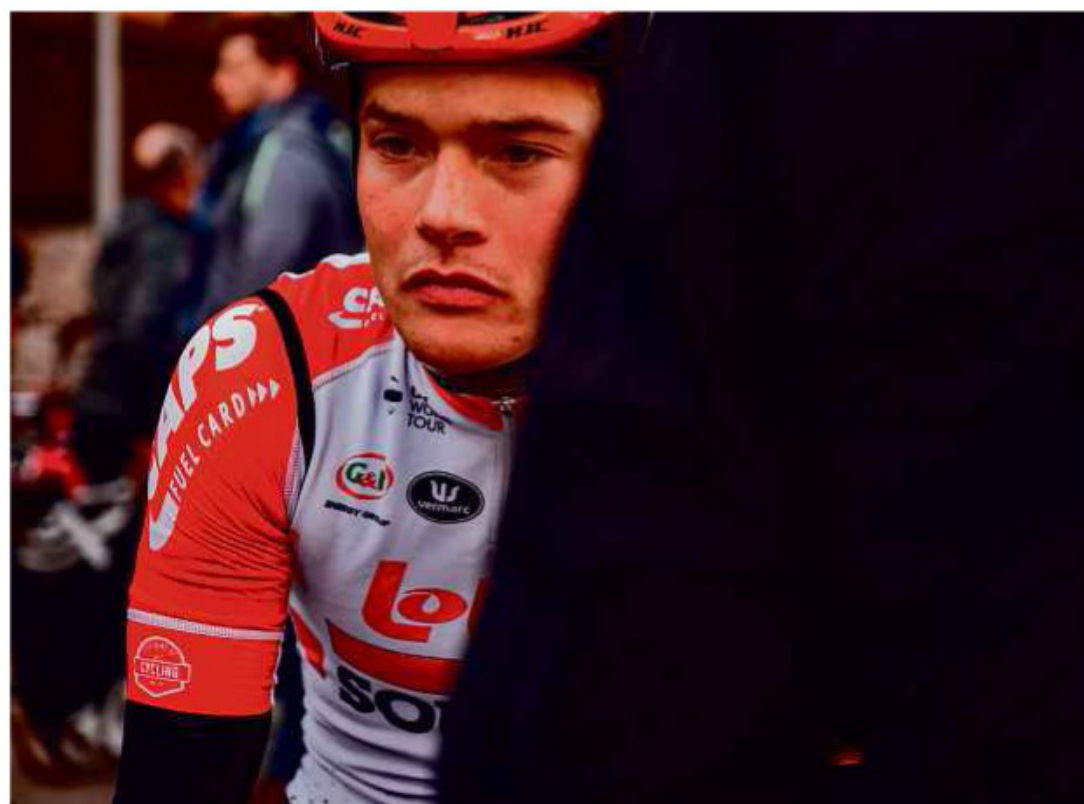
There are 37 WorldTour races and UCI rules state at least 10 teams have to be at each

'Our calendar was so busy that we could have three programmes running at the same time,' says Lotto-Soudal's former press officer, Arne Houtekier, who left at the end of 2019. 'We'd compete 185 race days a year, plus there were the commercial commitments. Lotto's very important to Belgium so you have to do some "lower-level" races.'

It's a different story at Mitchelton-Scott, with none of the Australian team's riders making the top 100 list for race days completed last season. 'We don't have the same commitments as the French or Belgians, either,' says Wakefield. 'But obviously the UAE Tour is very important to us.'

Sponsor commitments steer the race calendar at every team, with Trek's Larrazabal highlighting that the Giro has become more important since Italian coffee-maker Segafredo hooked up with the US outfit. The amount of appearance money helps too, but there's also the very human issue of physical and mental fatigue management. ►

Above left: Riders' race days are capped at 85 per year unless there are extenuating circumstances. Rémy Mertz (pictured) ticked off 62 last season



PURE CYCLING

The best rider. The best bike. Week in, week out. The World Championship-winning combination of Mathieu Van der Poel and the Canyon Inflite has turned the entire sport of cyclocross on its head.

CANYON





Mallorca has been a training destination for the likes of Lotto-Soudal and Ineos for years as their plans for the season ahead start to take shape

According to the ProCyclingStats website, the most race days of any WorldTour rider in the past 15 years was 106, ticked off by Mikhail Ignatiev (2012), Mickael Delage (2009) and Erik Zabel (2006). The last three seasons have seen no rider threaten this figure – and for good reason.

‘Since 2017, the UCI has limited rider race days to 85,’ says Wakefield. ‘That said, there are exceptions. If you look for additional days, you have to explain why to the UCI.’

The average number of rider race days is between 70 and 75, with age again a factor here. ‘Many riders enjoy training to be race-ready, while others feel they need more race days to get into shape. This is especially true of older riders,’ says Wegelius. ‘Tanel Kangert, though only 32, would happily race over 100 days a season.’

Fit for purpose

Once a sports director has decided which riders will attend particular races, the next challenge is to ensure that the riders are in prime physical condition when race day arrives. That becomes the job of the team’s sports scientists, who have to carefully adapt training programmes to match race calendars.

‘This is particularly important for higher-profile race contenders like Pogačar,’ says Wakefield. ‘He’ll be specific with his training so he’s in optimum condition, especially for something like the second week of a Grand Tour.’

Pogačar ‘only’ raced 62 days in 2019, 21 of which were at the Vuelta (he won twice in week two). Few, if any, riders will start in January’s Tour Down Under and ride through to the season finish in October’s Tour of Guangxi.

‘There are rest and detraining periods built into the season,’ says Wegelius. ‘For example, we’ll often shut down a rider’s season in August with a view to giving him an appropriate off-season because we’re looking to start him early the following year.’

‘Many riders enjoy training to be race-ready, while others feel they need more race days’

Getting the timing right is key to maximising a rider’s chances at the races that really matter. It’s one reason why the Dauphiné, for example, attracts a stronger field than the Tour du Suisse. The Dauphiné finishes a week earlier than its Swiss counterpart, leaving three weeks between its finish and the Tour de France’s Grand Départ – enough time for an altitude camp and sea-level adaptation.

In theory, a team’s top riders should arrive at the big races in optimum form. Of course, it doesn’t always work like that in practice. Fatigue and illness can decimate squads. Common causes are the stress of hitting three-week race weight, which for many can come in a few kilograms lighter than their spring campaign, and simply the pressures of racing, training and travelling.

That’s why the likes of White will split race schedules into two, meeting up with his Mitchelton-Scott riders ●



Tipping the scales in favour of peak performance rather than overtraining isn't an exact science

at June races such as the Dauphiné to discuss what comes next. 'Like many, I'm cautious with younger riders, but if I can see they're handling things I'll put them onto a harder schedule for the second half of the season,' he says. 'That's what I did with the Yates brothers when they were coming through.'

Data is important here, with software such as Training Peaks an invaluable tool to monitor a rider's progression or regression. 'We also use WKO-5,' adds Larrazabal. 'It provides more detailed analysis to make more informed choices, which might lead to an adjustment of a rider's training load.'

Technology helps, but tipping the scales in favour of peak performance rather than overtraining isn't an exact science, meaning substitutions are allowed from 1st August every season. In other words, *stagiaires*. These are essentially trainees – elite or under-23 riders – who have yet to ride for a WorldTour or ProContinental team. The *stagiaires* receive exposure and experience, and the team can plug a gap in their squad while appraising their temporary (and affordable) recruit with an eye on a permanent contract. WorldTour teams can bank up to three *stagiaires* for the remainder of the season, with Ineos's Tao Geoghegan Hart and UAE's Fernando Gaviria two high-profile examples who made the transition.

'We start the process every June with discussions between us and other teams, the rider or their manager,'

says Wakefield. 'You need to be prepared and to have your documentation ready.'

Recruitment tends to take national roots. It's a useful system, although Wegelius questions its current worth. 'Due to the fact trainee riders can now no longer ride WorldTour events, this is of limited value,' he believes.

The whole package

When Jumbo-Visma announced their triumvirate of Tour race leaders, many felt they'd jumped the gun, having become over-excited at having three genuine Grand Tour contenders in their midst. That's to disrespect the planning process of not only the Dutch team, but of all the other professional outfits who compete for 10 months of the year.

But before making their decision, Jumbo-Visma had analysed the parcours, digested the data and concluded the chosen eight could focus solely on the Tour. Illness and injury will inevitably dig potholes in the road, but that's cycling. Training overload, rest, racing, altitude camps and nutritional plans are born of science. Married with the human touch of forging bonds at lower-profile races and simple athlete-coach interaction, a professional rider's race calendar is a thing of complexity and planning. And that's before we even get to EF Education First's 'alternative calendar'... *Allez! Allez!* 🍷

James Witts is a freelance writer whose calendar mainly displays bank holidays and children's birthdays

Top right: Like many riders, Thomas de Gendt began his season at the Tour Down Under in January. His race calendar and training regime are being monitored carefully from here on in

OWN THE NIGHT



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WEEKLY
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EXPOSURE
LIGHTS

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AERO GAINS

8 watts more efficient than the Teammachine at 40km

BMC TIMEMACHINE ROAD TIME-SAVING BOTTLES

To make the Timemachine Road faster, BMC says it uses 'functional integration' such as this 'aero module'. BMC partnered with Italian accessories brand Elite to produce a bottle and storage system that sits in the main triangle, and which the brand claims enhances aerodynamics.

'The bike tests fastest in the wind-tunnel with both bottles and storage pack installed,' says head of R&D, Stephan Christ. According to BMC's published data, this design should save riders around 8 watts at 40kmh.

ROCKET FUEL

The 'Aero module' (integrated bottle system) saves up to 18 watts at 15° yaw angles



The rough and the smooth

Like any Swiss brand, BMC exudes an aura of clinical efficiency and technological mastery, but the truth is that the company has undergone years of turmoil to get to a point of stability. *Cyclist* learns the story behind the bikes

Words **SAM CHALLIS** Photography **TAPESTRY**

Think 'BMC' and a number of adjectives spring to mind: sleek, capable, innovative, expensive. The image of the company and its bikes is one of precision and professionalism, and it would seem reasonable to assume that this reputation has been built over decades of serene progression.

Learn a little of BMC's background, however, and you'll find its outward appearances are belied by its history, which is surprisingly short and turbulent. Yet the adversity it has overcome is precisely the reason why it produces some of the most innovative bikes on the market today.

BMC in its current form came into being around 20 years ago, but the company has known a few different guises since its roots were established in 1986. An American, Bob Bigelow, started things off when he founded Bigelow's Mounting Company and started building bikes up for Raleigh out of his garage in Switzerland. In 1994 he lost the licence to build for Raleigh so he changed the direction of the business, rebranding it the Bicycle Manufacturing Company and moving from bike assembly to production.

It wasn't a successful transition. Back then, BMC didn't even offer a road design, and the company struggled to make a mark, barely surviving from one year to the next. That was until Andy Rihs, billionaire owner of the hearing aid company Phonak, bought the company in 2000.

'BMC's direction and ambition changed dramatically,' says current CEO David Zurcher. 'Rihs was such a massive fan of road cycling he poured huge amounts into the research and development of road bikes.'

Highs and lows

Rihs died in 2018, but during his time with BMC he invested more money in the sport of professional cycling than any other individual before or since. At times, though, his enthusiasm for the sport wasn't the easiest thing to reconcile with BMC the business. While product output and quality grew to service the Phonak pro team Rihs owned, huge shortfalls were being covered by Rihs himself to keep his commercial venture afloat.

'The problem was that the work side of things was just not as important to Rihs as the sport, so the company often didn't have a leader with the vision to make this a viable business,' says Zurcher.

The scale of investment in product development meant BMC caught up with its competitors and was able to create the bike that Floyd Llandis rode to Tour de France victory in 2006. Unfortunately, it became obvious that the bike wasn't the only thing helping Landis to win races, and Phonak was disbanded in disgrace.

Undeterred, Rihs returned and set up the BMC Racing Team, a project separate to the bike business, even though it shared the same name. ►





STIFFER BY DESIGN

20% more torsional stiffness than the previous Roadmachine

► After a few years of gradual development the team announced grand plans with several big-name signings in 2010. A year later Cadel Evans won the Tour on a BMC and Rihs achieved his ultimate goal.

Yet despite this success, other areas of the business were still being overlooked, from marketing to industrialisation.

'My responsibility when I was hired in 2014 was to reverse that, with the understanding that I would run the whole business,' says Zurcher. 'I'm the eighth CEO BMC has had since Rihs took over, so the company has rarely known consistency. I came from Specialized and found BMC had the same number of engineers and product managers as Specialized did, despite being 15 times smaller. It meant making a lot of personnel changes but over the last few years things have really settled.'

When Rihs died a curtain was drawn on his BMC Racing Team project, and BMC moved to become bike sponsor for Dimension Data (now known as NTT Pro Cycling).

'Rihs is sorely missed,' Zurcher says. 'His legacy is BMC's move towards precision engineering. Despite not forging the simplest path, he ultimately set us up to become the company we are today.'

Since Zurcher took over BMC has been self-financed and now operates like other big bike manufacturers.

'Unfortunately on an industrial scale the project failed'

'Last year we had a nine-figure turnover for the first time,' he says. 'Yet the pyramid of the business is upside down. We sell premium bikes like crazy, yet are nowhere at the entry level. With our resources and mindset, though, we wouldn't have it any other way. Being Swiss means in a market where performance advantages are getting increasingly harder to eke out,

we possess the level of attention to detail to set ourselves apart.'

Uniquely Swiss

Rihs certainly agreed with this, which is why he plunged millions into setting up BMC's 'Impec' (short for impeccable) lab in Grenchen, Switzerland, a decade ago. The area has a long history in luxury watches – Rolex and Breitling are just down the road – which sat well with Rihs's aim of total precision. Originally the plan was to fully automate the bike production process to introduce hitherto unheard of levels of consistent quality.

'Unfortunately on an industrial scale the project failed,' says Stephan Christ, BMC's head of R&D. 'Yet a number of upshots came out of it. We recycled all the carbon tooling, CNC machines and computer simulation software and turned it into an engineers' paradise, an R&D lab to rival the best in the world. It means we've been able to try ideas and turn over prototypes far more quickly than working with ►

BMC ROADMACHINE

EXPLORATIONS IN SPACE

The original BMC Roadmachine brought some innovative features to the endurance road sector, however one feature that dated the bike was its 28mm tyre clearance. This latest revision pushes that up to 33mm, but that doesn't mean it's becoming a gravel bike.

'Getting the best out of both disciplines requires two very different bikes,' says head of R&D Stephan Christ. 'We just wanted to give the option to the rider of performing well on rougher or unpaved segments of road.'

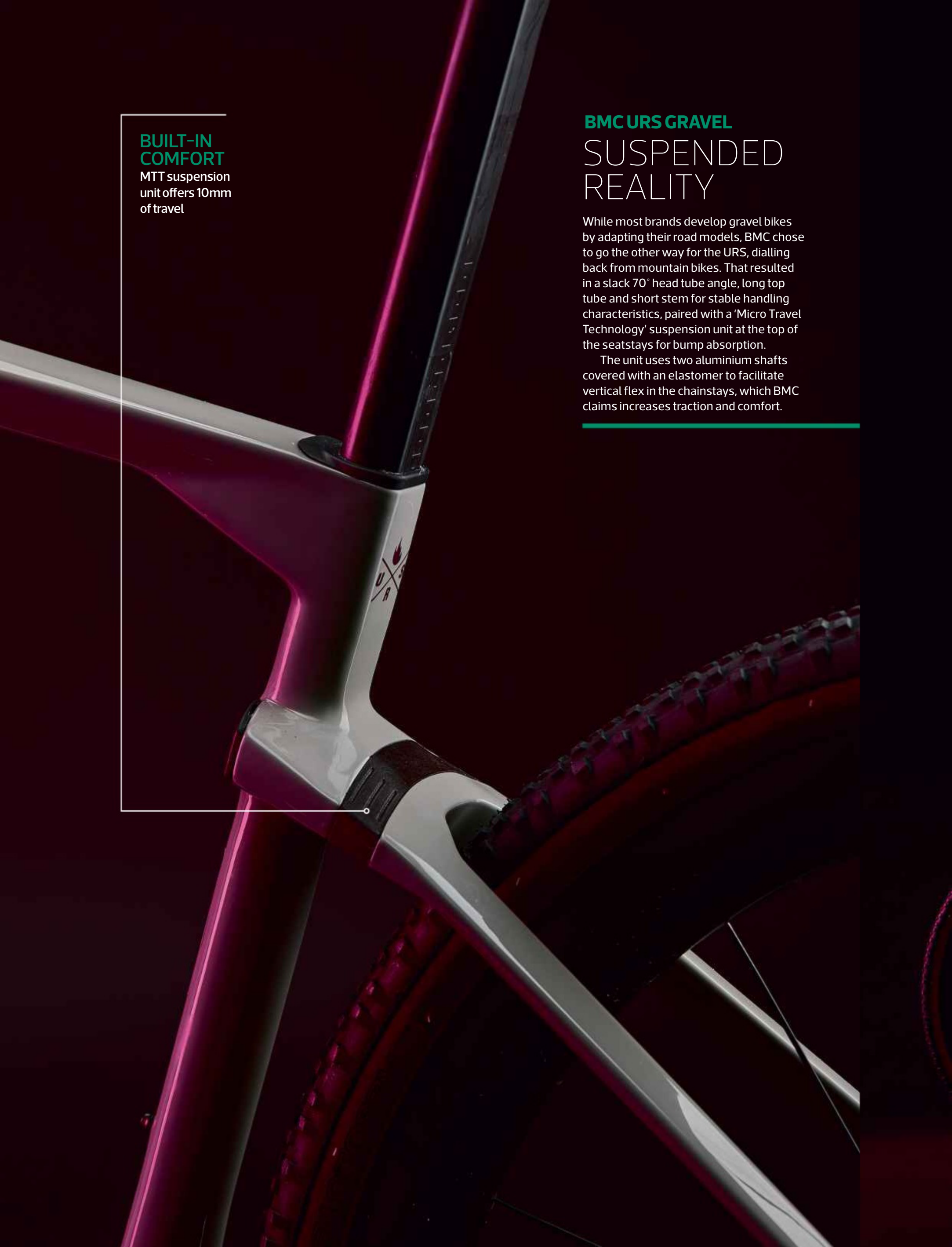
**SEATPOST
GAINS**

25% more compliant thanks to D-shaped seatpost

**SIZE
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10 sizes of integrated cockpits to accommodate more riders





BUILT-IN COMFORT

MTT suspension unit offers 10mm of travel

BMC URS GRAVEL

SUSPENDED REALITY

While most brands develop gravel bikes by adapting their road models, BMC chose to go the other way for the URS, dialling back from mountain bikes. That resulted in a slack 70° head tube angle, long top tube and short stem for stable handling characteristics, paired with a 'Micro Travel Technology' suspension unit at the top of the seatstays for bump absorption.

The unit uses two aluminium shafts covered with an elastomer to facilitate vertical flex in the chainstays, which BMC claims increases traction and comfort.

► partners in Asia. The more we can experiment, the more polished the result can be in each product cycle.'

Christ explains that further to the improved internal development, it also helps when upscaling projects for full production in Asia.

'It moved us into a position with suppliers where we could have a conversation with them on a more mature level. Because we have also made product, we know the intricacies involved. Today our product, process and supply chain is comparable to what our competitors do, despite some of them having done this more than twice as long as us.'

The investment in the Impec lab is a key part of that, and has been from the start – Christ says Evans' 2011 Tour win was a direct result.

'I joined BMC in 2006 so I was pretty involved in this success and worked with Cadel from the day he joined the team. He was always the guy who knew exactly what he was

looking for – very particular with details and materials. For us it was a natural match because this is also how Swiss people are, caring about the details and usually not satisfied with the first solution.'

This relationship was a crucial element in the development of how

'We do not only make bikes for athletes. We are all riders and so are our customers'

a race bike should ride. Evans helped BMC understand that comfort was just as important to performance as stiffness and weight when it came to a three-week Grand Tour.

'Hallmark BMC features such as dropped seatstays came out of the push he gave us to make complete

race bikes,' says Christ. 'It is one of the reasons our bikes juggle conflicting attributes so well today.'

A design in which this journey and experience is clearly embodied is BMC's Timemachine Road. The first iteration of the aero road bike was quick and light, but Christ admits it rode harshly. The latest version takes compliance far more seriously and is all the better for it. Plus, in keeping with Zurcher's efforts to make a successful business, the bike is also far better suited to the regular rider.

'Over the last few years the whole aero road market has woken up to the fact that going fast is not just about aero frames, but balance,' he says. 'And we do not only make bikes for athletes. This will always be what guides us, but we are all riders and so are our customers. If they were to have a fast bike that doesn't ride nicely we would consider that just as ►

GEARED UP FOR 1X

45mm tyre clearance, 1x specific design



COMPUTER GENERATED

30,000
iterations before
the final design
was decided

BMC TEAMMACHINE

QUICK OFF THE MARK

'The Teammachine is one of the best examples of the speed at which we can prototype in our Impec lab,' says head of R&D Stephan Christ. 'It meant we could nail down the best combination of stiffness, light weight and comfort really quickly.' One result is that BMC was among the first to go with dropped seatstays on its lightweight race bike – a feature that has since been adopted by virtually every other brand.

'With everyone chasing the same goals, and using the same materials, it's no wonder bike designs are converging.'

STAGE WINNER

15 Grand Tour
stage wins
since 2011



► much a failure as a bike with a bad stiffness-to-weight ratio.’

While aero race bikes remain individual to each brand, the same cannot be said for lightweight race bikes. BMC was among the first to adopt the blueprint of the modern race bike in the Teammachine, and Christ is not surprised that in this area bikes are becoming more similar.

‘Everyone has to optimise for low weight, high stiffness and comfort, and everyone has the same materials and technology to work with, so this type of bike was bound to converge,’ says Christ. ‘We ran more than 30,000 iterations in our software of different frame shapes and carbon layups, so we covered pretty much every way you can marry the three attributes. Nothing massive will change unless the UCI changes its rules.’

That suits BMC, says Zurcher: ‘It’s natural for us to drill down into minute points of difference. The Impec lab allows us to do it, so if there are advancements to be found we’ll

The geometry is also different. Lightweight race bikes are moving away from a fit commercial customers are looking for. Watch how pros sit – so low at the front and forward in the saddle. It isn’t what the market needs. That’s why we make our Roadmachine racier than the average endurance bike, giving it an accessible fit and ride quality in a faster package.’

If the Roadmachine stands slightly apart from the endurance bike crowd, BMC’s new URS gravel bike is in a whole other venue compared to others within the new genre. It features a rear suspension unit and radically progressive geometry.

‘For us, gravel is totally new ground,’ says Christ. ‘On purpose we wanted to push the envelope a bit further than other brands who’ve slid into that segment more naturally. Maybe what is most noticeable is how different the geometry is. With the URS we’ve come back from XC MTB geometry, rather than just pushed forward from road geometry.’

‘That was one of the things we decided very early on – we don’t care about UCI rules’

find them. Every chef has access to the same ingredients to make a dish, but everyone uses a different recipe. My experience in the industry tells me we have the best recipe.’

Clear difference

One of the main features on most lightweight race bikes’ checklist right now is wider tyre clearance, afforded by the move to disc brakes. Bigger tyres can tame a race bike somewhat, providing more comfort and traction and potentially making it accessible to a wider range of riders. Yet BMC has just released a new Roadmachine, an endurance bike that might be seen to fill the same space in the market as a wide-tyred Teammachine. Christ still sees clear water between the designs.

‘We work with different carbon fibres on the Roadmachine,’ he says. ‘It has a distinct effect on compliance. Our MTT concept [Micro Travel Technology – vertical frame flex, put simply] is far more pronounced.

Again with the Impec lab helping to facilitate rapid prototyping, Christ and his team found a longer wheelbase is beneficial off road, so that meant a slacker head angle and longer top tube to create a longer front centre (the distance from the BB to the front axle), but a short stem to keep steering responsive. The geometry is so far off a road bike that a size large is outside UCI rules, meaning it can’t be raced.

‘That was one of the things we decided very early on – we don’t care about UCI rules,’ says Christ. Considering the original Rihs-driven remit of making pro-level race bikes, that’s quite the statement to make.

‘In some ways it feels like we are just getting started as it has taken us 20 years to get organised,’ says Zurcher. If this is the company just getting its act together, it will be exciting to see what it does next. 🌟
Sam Challis is tech editor at Cyclist and exists in a permanent state of disorganisation





Col du Galibier



Since its first appearance in the Tour de France in 1911, the Galibier has dared riders to test themselves on its fearsome slopes. *Cyclist* accepts the challenge

Words **HENRY CATCHPOLE** Photography **ALEX DUFFILL**



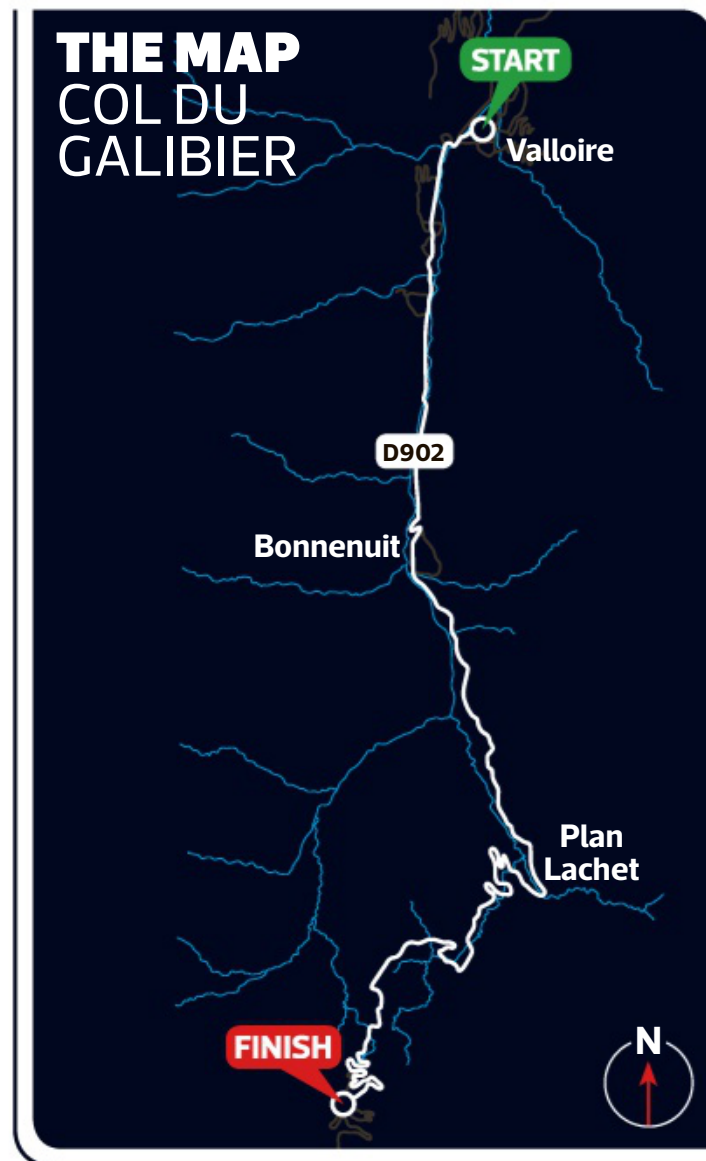


o describe the Galibier as the oldest Alpine climb feels a little misleading. After all, the paths over the Alps existed long

before the Tour de France arrived, and who knows which of them appeared first? However, in terms of the history of the Tour, the Galibier is the most senior of all the Alpine climbs and it has a grandeur befitting this status.

It first appeared on the roster in 1911, just a year after the Tourmalet had first ushered high mountains into the race. As you may remember, those forced to do battle with the Pyrenees in 1910 accused the race's mastermind, Henri Desgrange, of being 'murderers', but this clearly didn't deter him. As an introduction to the Alps, climbing the Galibier is

The chapel you pass in Valloire is dedicated to St Bernard, patron saint of mountaineers



Right: The width and gently meandering nature of the road disguise the gradient on the first half of the climb between Valloire and Plan Lachet

Previous pages: Climbing the last stretch towards the summit, with the Grand Galibier mountain looming in the background

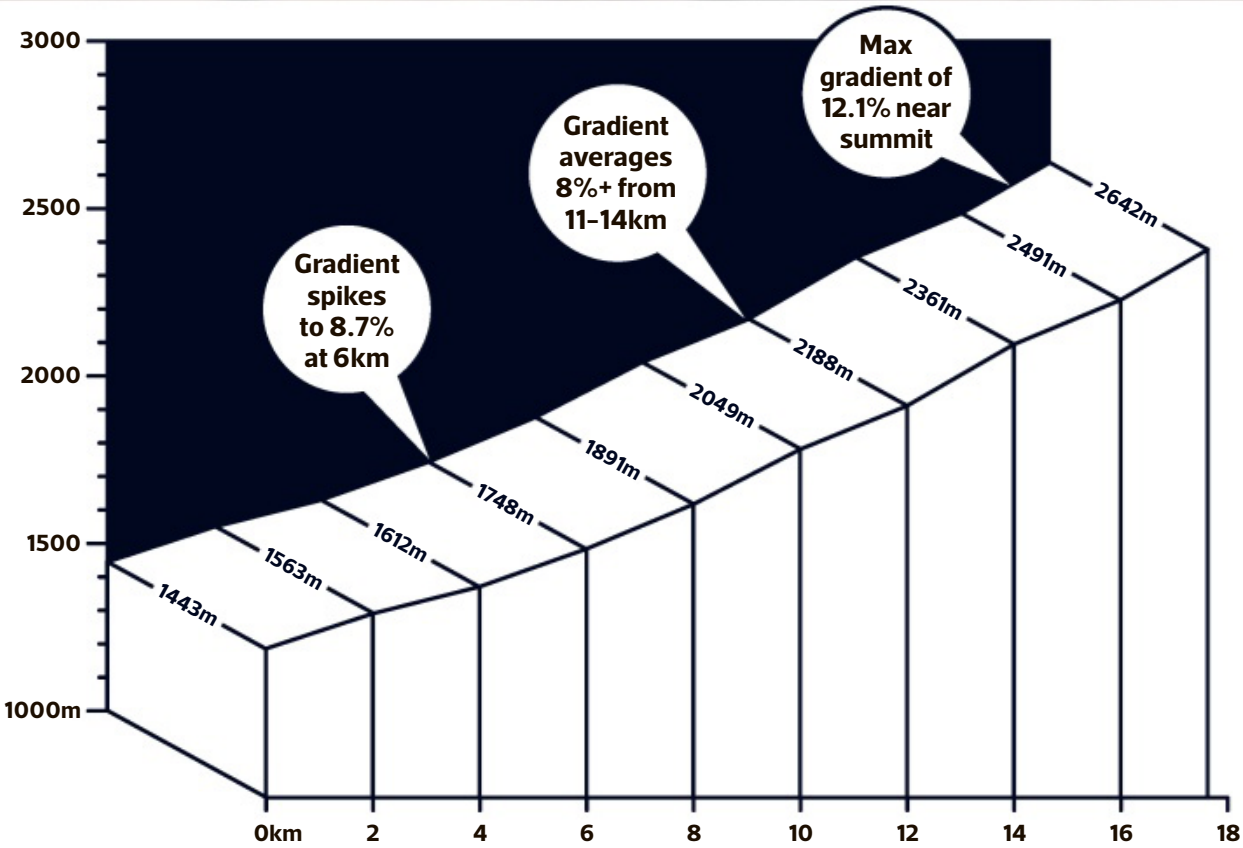


about as intimidating as learning to ride on a TT bike in a hurricane.

A famous photo of that day in 1911 shows Gustav Garrigou pushing his bike up a muddy, deeply rutted track between banks of snow. It is the sort of photo that saps the energy from your body just by looking at it over a century later. And in case you think the trudging Garrigou was some sort of also-ran, he won the Tour that year.

The big hill

Today, despite a considerably better surface and little likelihood of snow in summer, the Galibier remains a formidable challenge to pros and amateurs alike. Whichever side you tackle it from, you will already have ▶



THE STATS

Summit height 2,642m
Altitude gain 1,208m
Length 17.7km
Average gradient 6.9%
Maximum gradient 12.1%
Current best Strava time
KoM Emanuel Buchmann (Ger) pro, 51:36
QoM Nathalie Figliolini André (Fra), 1:01:26





► some climbing in your legs by the time you begin the ascent because it can only be accessed on its northern side via the Col du Telegraphe (11.8km at 7.3%) or on its southern side by the Col de Lauteret (34.2km at 3.8%).

The more oft-used and testing side – and the side used in 1911 – is from the north, and it begins in the ski resort of Valloire. Starting a climb in a ski resort is rather daunting in itself. Alpe d'Huez, which is often climbed after crossing the Galibier, ends at a ski resort and that's fine. But beginning somewhere high enough to host winter sports, knowing that you have 18km and 1,200m of vertical ascent ahead of you, means you are definitely heading into rarefied air.

As if to ram this point home, the small chapel you pass on the outskirts of Valloire is dedicated to St Bernard, patron saint of mountaineers.

A drone view of the road would show a route that looks like someone is halfway through unravelling the Christmas lights. The first 10km to Plan Lachet via Bonnenuit is almost straight as it climbs up the valley of the river Valloirette.

Down at ground level you'll find there is actually a gentle meander to this section of the climb (plus two hairpins just before Bonnenuit) meaning you never see the vast distances up the road ahead that the view from above would suggest. In terms of gradient, this first section



A drone view of the road looks like someone is halfway through unravelling the Christmas lights

averages 6%, which sounds relatively acceptable, but that includes about 2.5km of rather false flat.

As you approach the start of the second half of the climb (the tangled bit that makes you swear you'll put the lights away more carefully this year and not just shove them back in the box) the buildings dwindle and vast grey scree slopes on the other side of the valley give a menacing air to what has so far been a very green and pleasant landscape. You can almost hear the first few bars of Grieg's 'In The Hall Of The Mountain King' starting up.

Then, at Plan Lachet, there is a right-hand hairpin across a bridge spanning the river, where the road instantly kicks up to 9% and stays there for over 3km. Not that things have been easy so far, but it suddenly feels like the warm-up is over as three switchbacks lift you out of the valley and into a green landscape sprinkled with grey rocks.

Tales from the Tour

To distract you from the climb up, you might care to think of what it would be like going the other way, because this is where Julian Alaphilippe valiantly rescued his yellow jersey one last time in the 2019 Tour de ►



Far left: Just over 7km into the ride you can hear the river Valloirette rushing past to your right. At Plan Lachet in around 3km time you will cross the river to begin the final push for the summit

Left: The D902 forms a large part of the Route des Grandes Alpes, and also traverses the Izoard and Iseran



The Col de Lauterets, as seen from the southern side of the Galibier

France. Having been dropped on the southern ascent, he made up a 20-second deficit with a breath-taking display of swashbuckling descending, not only catching his adversaries but instantly scything through their ranks to make them chase his heels.

There has been some wonderful flair shown in the face of gravity, too. Given the length of the climb and the fact it has only ever hosted one summit finish, it's almost surprising that some very famous attacks have been launched here. In 1952 Fausto Coppi, already wearing yellow, cemented his position at the front



Sprint for the line and you're likely to find yourself back in the saddle before you get there

of the race (which he would go on to win by a huge margin of over 28 minutes) by attacking with 15km to go on the Galibier. By the summit his lead was nearly three minutes, and by the stage finish in Sestriere he was seven minutes ahead of the next man.

There is a lovely quote from Tour director Jacques Goddet, who said that 'Coppi climbing is like a ski-lift gliding up its steel cable'.

Then there was Marco Pantani in 1998, attacking in the rain, hands on the drops, wearing a blue bandana and riding a bike with yellow tyres. He flew out of the peloton 11km from the

◀ summit of the Galibier and 48km from the finish in Les Deux Alpes.

Initially he seemed to hesitate after his initial burst, almost stopping his Bianchi to look back over his shoulder, but seeing no reaction from behind he leaned into his big gear once more and set off into the clouds. He finished nine minutes ahead of yellow jersey wearer and defending champion Jan Ullrich to take a race lead he would hold onto until Paris.

Final countdown

With about 4km to go you pass a couple of buildings and enter a huge, lumpy, grassy bowl, and if

the weather is better than it was on that day in 1998 you can see to your left the 3,228m peak of the Grand Galibier that gives the col its name.

The end of the climb will also now be in sight, and it's quite an end. Until 1976 the summit was at 2,556m and the peloton went through a 365m tunnel below the crest, emerging where a monument to Desgrange now stands. However, when the tunnel was closed for refurbishment in 1976 a new section of road was laid over the top of the ridge, taking the summit of the col to 2,642m.

Even though the tunnel was reopened in 2002, cyclists were



Below: There's 1.5km to go by this point, and in about 500m the road splits to take you into the tunnel (if you're a car) or over the top (like us)

Right: There's just 350m to go to the summit, which you can now see before you. Unfortunately you're also approaching the steepest part of the whole climb at over 12%



Once at the top you will be standing on a summit that is the epicentre of the Alps

no longer allowed through it, the exception being Stage 19 of the 2011 Tour, which celebrated 100 years of the Galibier's first inclusion in the race by crossing it on consecutive days in each direction.

The final stretch to the new summit is a really tough finish. The road is narrower than the rest of the climb and the Galibier hits its steepest incline of 12.1% in this last hoorah. Combined with the altitude it's enough to drain any remaining vestiges of power from your legs. Sprint for the line out of the last hairpin and you're likely to find yourself back in the saddle before you get there.

Once at the top, though, you will be standing on a summit that is historically but also geographically the epicentre of the Alps as far as the Tour is concerned, because at every point of the compass around you there lies another famous road that has helped shape the race's history.

Climbs really don't come much more classic than the Galibier.  Henry Catchpole is a freelance journalist who always puts his Christmas lights away carefully







V for VICTORY!

Words **RICHARD MOORE** Illustration **TIM MCDONAGH**

At the end of last year Matt White, head sports director at Mitchelton-Scott, was invited to indulge in a game of fantasy cycling. If he could sign any rider in the world, he was asked, who would he pick?

White didn't hesitate. 'Mathieu van der Poel,' he said.

This was quite something from a man running a team whose ambitions are focussed on winning Grand Tours – which they did with Simon Yates at the 2018 Vuelta a España – to the extent that they were willing to lose two Australians, Michael Matthews and Caleb Ewan, whose talents were deemed incompatible with the pursuit of pink, yellow and red jerseys.

For Van der Poel, who is seen as capable of winning everything *except* a Grand Tour, White would sacrifice everything. Presumably, to paraphrase the strapline of a famous cosmetics brand, because the Dutchman is worth it. ▶

Dutch rider Mathieu van der Poel is the sport's new superstar, capable of winning road, cyclocross and mountain bike races. He's the bookies' favourite for the spring Classics, but can he really live up to the expectations placed on him? *Cyclist* investigates

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Van der Poel's setup is a throwback to the days when teams had all-powerful leaders – the likes of Merckx, Anquetil and Hinault

► This is all hypothetical, of course, since Van der Poel is very much not available. The 25-year-old's team, formerly known as Corendon-Circus but re-branded as Alpecin-Fenix for 2020, has developed in tandem with him and is built around him – and the brothers who run it would love nothing more than to look after the rider they call 'gold in our hands' for the duration of his career.

In this sense, Van der Poel's setup is a throwback to the days when teams had all-powerful leaders – the likes of Eddy Merckx, Jacques Anquetil and Bernard Hinault – to whom every other rider was subservient.

Racing in the genes

Van der Poel also has a powerful link to the past. His father is Adri van der Poel, a cyclocross and road star of the 1980s and 90s, and his grandfather was one of the greatest figures of world cycling, Raymond Poulidor, who died last November aged 83.

Poulidor, known as the 'Eternal Second', was runner-up in the Tour de France three times and third on five occasions. He never wore the yellow jersey and, although he did win major races, including the Vuelta, he was best known for not winning. For this he was dearly loved – a national treasure in France whose name transcended cycling and even sport.

The physical similarity between the younger Van der Poel and his grandfather is uncanny. It's in the cheekbones and eyes, and in the stocky, muscular build, although Van der Poel is taller. The main difference is that the grandson does not have his grandfather's propensity for not winning. In personality, too, they diverge. Poulidor was affable and easy-going but while Van der Poel appears to have more fun on a bike than most, he is also driven, with a ruthlessness more reminiscent of the riders who were thorns in Poulidor's side, Anquetil and Merckx.

But where Van der Poel truly stands apart, from every other rider, is in his range. Road racing is only part of what he does and who he is. You are just as likely to find him on

a mountain bike, cyclocross bike, gravel bike – even the BMX he keeps at home.

He was twice Junior World Cyclocross Champion and has since won three senior titles, including the 2020 race in Switzerland, where he simply rode away from the field from the start to win by more than a minute.

He is also one of the best mountain bikers in the world and a contender for the gold medal at the Tokyo Olympics in August. And as he demonstrated during the 2019 season,

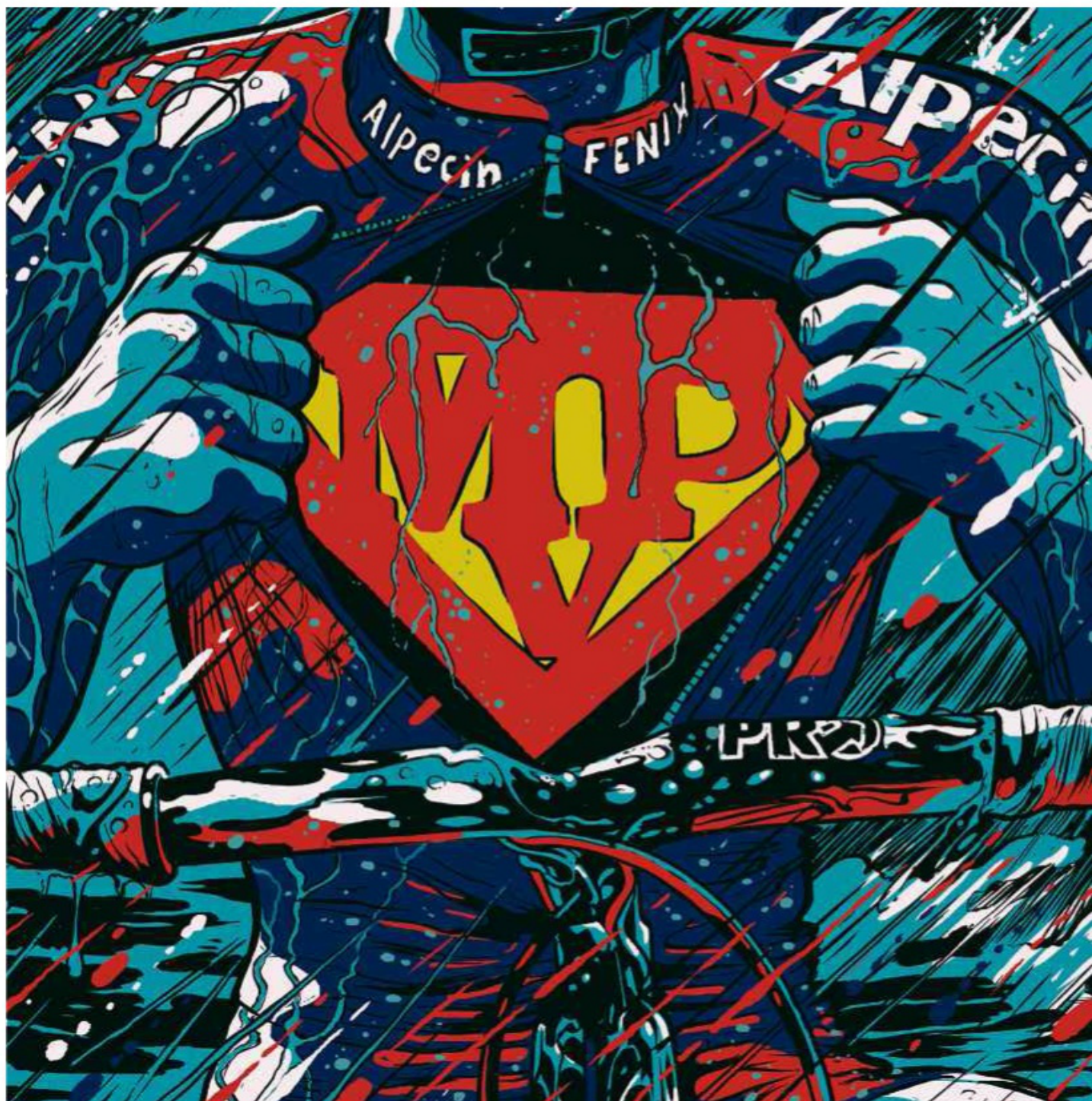
he is one of the best, and arguably the most exciting, road racers in the world.

In 2017 Van der Poel raced just 17 times on the road, but tasted victory five times. In 2018 he rode even fewer races – 13 – but won six. The 2019 season was the first in which he made the road a serious focus, targeting the spring Classics. He raced 31 times – still a modest tally – and won 11 times.

That pretty remarkable hit rate included Dwars Door Vlaanderen, Brabantse Pijl, the Tour of Britain and, most spectacularly of all, the Amstel Gold Race. But it was one of the races he *didn't* win, the Tour of Flanders, that arguably best showcased his talent, while another, the World Championships in Yorkshire, proved that he is human after all.

The question going into Flanders was how Van der Poel would cope with the distance of 270km. The answer: fine.

With 60km remaining, he crashed while attempting to bunnyhop a piece of road ►



► furniture. When he landed heavily, the front wheel broke and he was propelled over the handlebars. He slowly picked himself up and got back on his bike. He chased for almost 30km, sometimes on his own, sometimes in small groups. Getting back to the front group looked impossible, but he did it. Then he attacked on the Kruisberg, one of the cobbled climbs that pepper the finale, and was able to follow the favourites on the Oude Kwaremont and Paterberg before sprinting to fourth.

Five months later, at the World Championships, in torrential rain and freezing cold, Van der Poel bridged up to the leaders with an ease that suggested the rainbow jersey was his for the taking. But then on the final lap he abruptly cracked, losing 12 minutes in a few kilometres and appearing at the finish in a distressed, almost hypothermic state. It shattered one myth: that if Van der Poel got himself into a winning position he was unbeatable.

Or even if he didn't get himself into a winning position. At the Amstel Gold Race in April he won despite Julian Alaphilippe and Jakob Fuglsang being away and getting ready for a two-up sprint for the line. They hadn't factored in Van der Poel, who hunted them down in the last 10km – despite riders sitting on his wheel – before thundering through the final kilometre to win.

View from the sidelines

'What he did in the Amstel Gold Race was stupid,' says Hans Vandeweghe, Belgium's top sportswriter, 'but still he won.'

What he did in the Amstel Gold was stupid, but still he won. I think he's the best athlete who ever rode on two wheels'

The veteran journalist has followed the young Dutch cyclist closely, admitting to a fascination that borders on obsession, but for one simple reason: 'I think he's the best athlete who ever rode on two wheels.'

He qualifies that, a little: 'He might not be the cyclist who wins the most races – that's different – but what he can do on a bike, I've never seen anything like it before.'

'I've also never seen anything like his tests. Amazing figures. I'm not saying he's going to win the Tour de France – he's a little too heavy at 74kg. If he goes to 70 or below it would be unhealthy for him. But all the other races he can win.'

'I love writing about him,' Vandeweghe adds. 'He's not Michael Jordan. I used to interview Jordan and his every word was interesting. That's not the case with Mathieu. He's introverted. It's the only similarity between him and his father. They keep their distance; they're very wary of the press.'

'I went to his team's training camp in Benicàssim before Christmas, sitting with his manager in the car, watching the way he is with his teammates, the way he talks,

the way he plays – he's like a footballer on a bike. It's a game for him.'

In Benicàssim, Vandeweghe asked Van der Poel how he had spent his post-season holiday. 'I did some sports,' Van der Poel replied. 'What sports?' asked Vandeweghe. 'I rode my bikes,' said Van der Poel.

He is also an avid gamer. 'He often spends 10 or 12 hours just sitting on his computer playing games,' says Vandeweghe.

Perhaps it's because it comes easier to him than it does to most, but it looks as though Van der Poel has a lot of fun on his bike. 'Yes, but not in road races,' says Vandeweghe. 'The first 200km he finds very dull so he's always looking for friends to talk with.'

'One of his friends is Stijn Vandenbergh. They talk about cars. But the problem is that very early in races Stijn [who rides for French team AG2R] is called up to the front to work.'

'In mountain biking, in cyclocross, he races from the start, so he finds this part of road racing a problem.'

For the moment, Van der Poel shows no signs of turning his attention full time to the road. At the time of writing he is in the midst of yet another hugely successful cyclocross season, having just won the world title for the third time. And while his team has invitations to most of the spring Classics, his biggest goal for 2020 is the cross-country mountain bike race at the Tokyo Olympics.

'I hope he is not going to race too much before the Olympics,' says Vandeweghe. 'The cyclocross is OK because he can manage this and also train for road races, but there are a lot of demands on him. In September he said he wasn't doing the Tour of Flanders but then he talked to the organisers and now he is doing it. Every road race wants him.'

'At the Olympics he will be racing against guys who are making the Olympics their main target. For me, mountain bikers are the best athletes because they race less and spend more time training. You cannot have four peaks in one season.'

'He is doubtful for the Amstel Gold Race and I think his father will hate him for that.' ►

A BIG 'I' IN 'TEAM'

Mathieu van der Poel's team is focussed on one thing: Mathieu van der Poel

Mathieu van der Poel's team, Alpecin-Fenix, doesn't just have a new name. Formerly Corendon-Circus, it has tripled its budget and gone from a roster of 18 to 24, with more than half of the riders – 13 – new to the team.

Fresh faces include Petr Vakoč, formerly of Deceuninck-QuickStep, the Italian sprinter Sacha Modolo, who comes across from EF Education First, and Scott Thwaites, the British rider who last rode in the WorldTour two years ago with Dimension Data.

There are some strong riders, but don't be fooled – the team management and structure are the same as last year, and they remain all about just one man: Mathieu van der Poel.

'It's Molteni,' says Belgian journalist Hans

Vandeweghe, referring to the team led and dominated by Eddy Merckx in his pomp. 'There's one guy in the team who knows how to win – Mathieu. It's his team.'

Christoph Roodhooft, one of the brothers who manages Van der Poel, gently disputes this: 'We won 22 races last year with five different riders, and we have the Belgian champion [Tim Merlier], so it is not only Mathieu.'

Still, if his trajectory continues, the team will have to grow with him, which might mean joining the WorldTour.

'When the chance appears at the right time, yes,' says Christoph. 'It's not our ambition but if there's a good chance at a good moment then of course, why not?'

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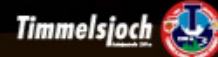
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► In fairness, to miss the race that provided such a defining moment in his road career would be odd. Then again, ‘Van der Poel is disruptive in this cycling world,’ Vandeweghe says. ‘For too long it has been ruled by the same people, with the same protocols. Van der Poel, his team and the Roodhooft brothers who run it bring some new air. They’re not going by all the old rules. They’re disruptors.’

The guardians

Philip and Christoph Roodhooft are the men behind Van der Poel, having looked after him

since he was 15 years old. Christoph, himself a former professional, runs the sporting side of the Alpecin-Fenix team, while Philip takes care of the business side.

‘We are a team of three,’ Philip has said, ‘where Mathieu is the big engine and we create the framework.’

Christoph is closest to Van der Poel the athlete. ‘We have the same relationship we have always had but obviously he has gone from teenager to adult so some things have changed,’ he explains. ‘Mathieu himself hasn’t changed.’

For one thing, he is still an avid gamer. ‘He spends less time playing *Fortnite* than he used to,’ says Christoph. ‘But still a lot.’

His manager confirms Vandeweghe’s point that every race wants Van der Poel, and says this creates problems: ‘We try to protect him. When planning, we start with his own ambitions and what’s important for him and the team, not what the organisers want – or in a couple of years we will end up with only a body without a head.’

The way they are approaching the season, says Christoph, is to ‘separate it into different parts and not think about what’s to come’. One certainty, apart from the Olympics, is a debut at the Queen of the Classics. Asked if Van der Poel has one big goal on the road, Christoph says, ‘Paris-Roubaix.’

Van der Poel is under contract with the Roodhooft brothers’ team until the end of 2022, when he will be days away from his 28th birthday. Christoph and Philip say they would like to continue beyond then. They see Tom Boonen and QuickStep as the blueprint: save for two seasons with US Postal at the start of his career, Boonen was a one-team man as he won 42 Classics, including four Paris-Roubaix wins.

Grand plans

In late January, Philip Roodhooft had a meeting in Paris with ASO, the organiser of the Tour de France, Paris-Roubaix and the Vuelta a España. Roodhooft wouldn’t say what the meeting was about, but there have been rumours that the Spanish tour, which starts this year in Holland, may invite Van der Poel’s team – presumably on the condition that Van der Poel is included.

‘I would like to ride the Vuelta,’ Van der Poel said earlier this year. ‘But my summer will not be ruined if it doesn’t work.’

Van der Poel seems happy for the moment: ‘With another team I might earn more, but here I have the freedom to do what I want to do. Thanks to the Roodhooft brothers I can combine three disciplines.’

This year is a big one, though. Van der Poel is 25; no longer a prodigy, he is entering his peak years now. There are huge demands on his schedule, on his body and – as Christoph suggests – his mind. It might easily all prove too much for any rider, even a phenomenally talented rider like him.

On the other hand, says Vandeweghe, ‘He could dominate for 10 years.’

Richard Moore is a cycling journalist and author, former racer and co-founder of The Cycling Podcast

‘Van der Poel is disruptive in this cycling world. For too long it has been ruled by the same people, with the same protocols’



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A Brompton folding bicycle is shown in a factory setting, mounted on a blue metal frame. The bike has a black frame, a black tire with 'SCHWALBE' and 'RACER' written on it, and a red frame section. A person's hand is visible on the right, holding a black tool. In the background, there is a blue metal structure and a small screen displaying 'S3'.

Welcome to the fold

It may not be a road bike, but the Brompton is still a bike we should all care about. It's clever, it's made in Britain and one day it might just change the world

Words **JOSEPH DELVES** Photography **JUAN TRUJILLO ANDRADES**





Left: Will Butler-Adams – the man now responsible for steering Brompton

Below: One of the earliest prototypes still in existence. Bike nerds will notice the similarity of its handlebars to those on the Bickerton

James Dyson might have made your vacuum cleaner suck a bit harder, but Andrew Ritchie is the UK's greatest designer. He created arguably the greatest innovation in cycling since the safety bicycle itself: the Brompton.

In just 10 seconds the Brompton bicycle can be folded down to something the size of a suitcase, making it small and neat enough to travel with you on even the most crowded public transport networks. Store it at home and it will take up minimal space; if you don't fancy leaving your bike at the mercy of thieves on the street it will sit happily under an office desk or pub table. Yet unfurled, it rides surprisingly like a normal bicycle. It is almost like having a magic carpet you keep in your pocket – which, Ritchie says, is just how he intended it.

Unfolding ambitions

The idea that would eventually become the Brompton bicycle first twinkled into life in 1975. Ritchie had graduated from Cambridge University with a degree in engineering but ended up in computer programming before drifting into landscape gardening. However, Ritchie's investment banker father, who thought it was high time his son pulled his finger out, put him onto folding bike maker Bickerton, which had approached the elder Ritchie looking for investment.

The green-fingered engineer wasn't much impressed with Bickerton's notoriously wobbly folding bike, but the core idea excited the younger Ritchie enough to get him sketching

designs for something better. After convincing a number of friends to part with £100, Ritchie was soon constructing a prototype in his flat overlooking the Brompton Oratory in London's South Kensington.

Like Frankenstein, Ritchie ended up horrified by the creature he'd created, and banished it to the nearest skip. However, its more polished sibling soon accompanied Ritchie to the Raleigh factory in Nottingham, where he hoped to convince the company to license the design. Raleigh's letter declining to take up the offer now hangs proudly by the door of Brompton's West London factory.

The bike Ritchie had taken to show Raleigh used three hinge points and could stand up by itself once folded. It had three internal gears, and when folded its drivetrain was sandwiched within the collapsed package to avoid it fouling the owner's clothing.

Despite what Raleigh might have thought, it was, and still is, one of the best folding bike designs ever made. However, Ritchie had never intended to become a bikemaker. Unable to sell the design, he was now forced to either start producing the bike himself or consign the project to the scrapheap.

Not ready to give up, Ritchie reluctantly took on the services of a brazer to make 50 bikes, the majority of which had been sold ▶

Raleigh's letter declining to take up the licence now hangs proudly by the factory door







Ritchie described the Brompton as leaving him unmarriable and with no time for gardening

► up front. The success of this first batch helped raise £8,000 from shareholders, which Ritchie used to produce 500 more over the next two years. Brompton appeared to be in business. Unfortunately, on returning to the Italian firm he'd bought the bike's original hinges from, he discovered it had no intention of creating more. Without the funds to commission the parts he needed, Brompton hit a dead end. It would prove to be an instructive lesson.

It was another British inventor, Julian Vereker, creator of Naim Audio, who helped Brompton back into business. Vereker had been sailing around Europe with an early Brompton stashed aboard his yacht. On hearing of Ritchie's plight he loaned him £40,000, helping him secure a railway arch in Brentford, west London, along with the equipment and staff to start building at scale. That was 1987.

Fast forward to 2020 and Brompton now makes 50,000 bikes a year at its nearby site in Greenford. With the firm having grown to become the largest bicycle manufacturer in Britain, Ritchie remains a significant

shareholder and technical director but has since stepped back from the company, having described the experience of nursing the Brompton into existence as leaving him unmarriable and with no time for gardening.

Building a business

When *Cyclist* visits Brompton's London facility, the current CEO, Will Butler-Adams, describes Ritchie's near-monomaniacal obsessiveness with a mixture of awe and horror.

'Andrew is a genius, and the reason he's a genius and we have this bike is because he is obsessed with detail. It's *A Beautiful Mind* stuff, and we have thousands of drawings he's done of every spring and every screw.'

Butler-Adams first met Ritchie in 2001 at the age of 28, and by 2006 was running most of Brompton's business side. In his opinion, what made Ritchie a great designer also made him ill-suited to running a company.

'Andrew is interested in systems and engineering detail. I've worked with him for so long, and although I'm extremely fond of him that doesn't mean we always agree.'

In Butler-Adams' opinion, Ritchie's desire to remain on top of every detail made the Brompton a profoundly great bike – but threatened to stifle the company's expansion. Ritchie, who looks pleasingly like what you'd expect an inventor to look like, has ►





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acknowledged that he perhaps lacks the buccaneering personality necessary to manage a growing business. And at the time Butler-Adams became involved in the company, Brompton was growing fast.

‘I told him, “Look, this bike you’ve designed, I want to commit to it, but I can’t do that if you own the company, because you’re eccentric. And I need to do things with this business that you won’t allow me to.”

‘I could have taken over, but if he had a majority stake and I did anything that he didn’t like he could say, “Well, I own this company and you can’t do that.” Which he would have.’

So in 2008 Butler-Adams raised the money from friends and individuals to buy most of Ritchie’s shares. Despite this, Ritchie retains the largest interest, with around a 20% stake, Butler-Adams controls 10%, while staff ownership has increased to around 20%.

Since Butler-Adams got hold of the business side, Brompton has expanded from around 50 employees to more than 300, while turnover

‘For a long time the bike industry has been a fashion industry. No one has invested in infrastructure’

has grown from £2 million to more than £30 million. Having initially struggled to find a role between the shop floor and boardroom, as technical director Ritchie, now 73, still comes in for regular meetings with the design team, where, in Butler-Adams’ estimation, he typically ‘tears their work to shreds’.

Means of production

The reason all of this is relevant is it informs how the business is run. Free from venture capital, Brompton can invest for the long term. It’s the polar opposite of what has happened to the rest of the UK’s cycling industry.

At its height, Britain produced more bikes than any other country, with Raleigh alone

Above: Bottom bracket assembly is one of the trickiest jobs for Brompton’s skilled brazers

Above right: Hinges being heated so as to join them to the bike’s top tube



employing 10,000 workers and making two million units every year. Now Brompton is by far the largest, despite producing only 50,000.

‘For a long time the bike industry has been a fashion industry,’ says Butler-Adams. ‘No one has invested in infrastructure. Bikes are made in one place, then import duty changes, and so they’re made somewhere else. No one is thinking long-term. Instead of going down that road, as a company we’ve invested in manufacturing to make it efficient, which translates to value for the consumer.’

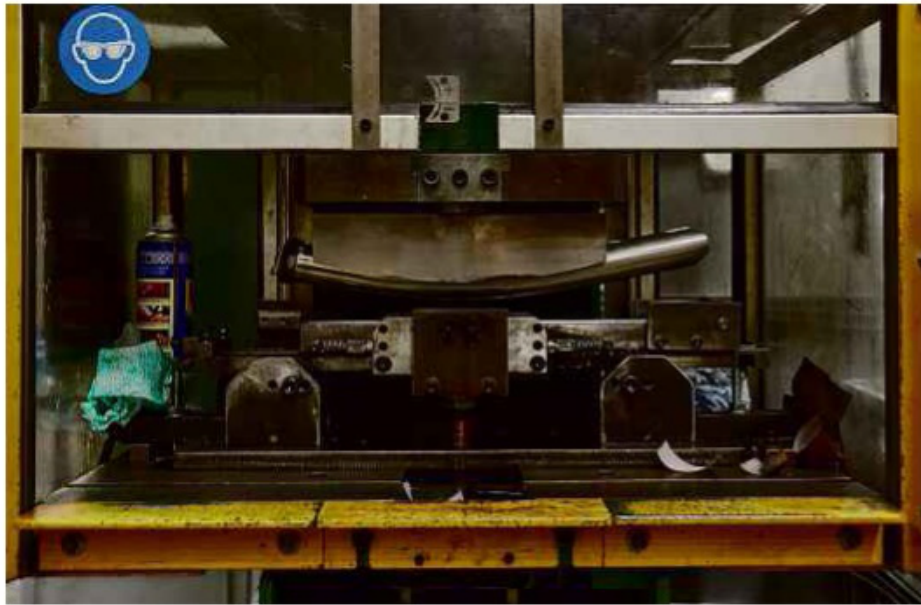
Today Brompton’s bikes start at around £745, which is not cheap but represents a bargain considering how much work goes into one, or when compared to the cost of an annual railcard.

‘If we can make bikes, not just in the UK but in London, then for f***’s sake, anyone can make anything in the UK,’ says Butler-Adams. However, to do this in a commoditised marketplace, while also looking after your staff, you need to be smart. To achieve this Brompton has developed a business model and production process that’s every bit as neat as the bike itself.

A lot of this begins with an investment in staff. Almost all brazers, of which the firm employs 37, arrive without prior experience. Starting with three months of training, they are paid at London living wage. From there they can move up the grades, and competition between staff is fierce, with those working on the assembly line often waiting for roles wielding a torch.

Work starts early at 7am and finishes at either 4pm or 6.30pm depending on the day. However, the majority of staff work a four-day week, which has cut absences. Breakfast is provided onsite, and although the taxman 🚫





Left: A top tube being formed. By taking every job in-house Brompton keeps tight control on every aspect of the bike's production

Below: Moments from completion, this bike is just a couple of jobs away from being released into the wild



◀ stopped the company giving free bikes to employees, they're still available at a hugely discounted rate. As a result most of the staff ride to work, and when the factory recently moved five miles from Kew Bridge to Greenford, only one member of staff decided they couldn't stomach the extra commute.

With most components being specific to the bike, almost every job that adds value is done in-house, from cutting and forming the frame tubes to lacing the wheels. There are 14 separate stages to building the frame, carried out across more than 40 brazer stations. At each workstation, the bike gains a stamped pair of initials so any work can be traced back to its creator. From here it can move straight through treatment and painting, then onto the final assembly line. Each day the firm sends out around 300 complete bikes.

Bring the power

The man in charge of ensuring each finished bike meets Brompton's high standards is chief design and engineering officer Will Carleymith.

'Andrew was never given a wedge of cash – he grew the company, building the tools with his profits,' Carleymith says. 'The upshot is we have a huge amount of control over our destiny.'

This is reflected in a product which is a continuous evolution of a single original

'We have a horror of obsolescence – the idea that a product only lasts a few years before you need the next'

design: 'We're not interested in fashion, we're interested in solving a problem. Andrew got it pretty right with the original folded package, and we're probably not going to mess with that. But we've evolved a lot below the surface in ways people haven't seen.'

It would be easy to look at the Brompton's silhouette and think it hasn't changed a bit. In reality, modern Bromptons are now several times stronger than early models. Part of this is down to the steel chassis.

'Steel allows us to make something stiff and strong without bulk,' says Carleymith. 'Its fatigue life means we can create something that won't just last four or five years, but for 10 years plus.'

Other recent introductions, such as lightweight titanium parts or the electric motor, also have a clear purpose and benefit. The latter of these has been almost 13 years in the making.

'Most of the bike industry is ordering off the shelf. You call up Bosch, get a motor and you've got yourself an e-bike,' says Carleymith. Instead, Brompton has tended to create its own parts, from brake levers down to inner tubes.

'The first four or five years of the electrification project were dead ends. We could see the way the market was going, but struggled to take advantage of it. Eventually, it caught up with us. It was hard to convince big tech companies that producing motors for our little bike was a viable business idea.'

Now working with Formula 1 constructor Williams, the collaboration should allow the electric Brompton to hold to one of the company's key tenets.

'We have a horror of obsolescence – the idea that a product only lasts a few years before you need to buy the next one,' says Carleymith. Key to this is controlling all of its spare parts, of which the company holds large stocks, along with building a knowledge base among its suppliers to allow them to properly manage servicing. A quick peruse of the bikes travelling down any of London's Quietway routes reveals just how successful this has been at keeping the brand's older bikes on the road.

Shaping the future

As incongruous as it is to find such an advanced production line inside of Zone 4, Butler-Adams is adamant London remains the place to be.

'Our customers like the fact the bike is made in Britain, but Britain is a big place,' he says. ▶



◀ ‘We could have gone somewhere where we’d have been paid to set up. But that place would have been an industrial estate in the arse-end of nowhere. For many products that would have been fine. But if you’re designing a bike and you make it in the middle of nowhere, you’re not going to need a Brompton to get to work.’

In the short term, this might save on rent and staff costs, but in a few years you would have a workforce that doesn’t use the thing they make.

‘Part of the reason the Brompton is half-decent is that we’re using it the whole time. And if you’re using something continuously, you’re forever dissatisfied. London matters to Brompton because it informs innovation. We’re not here for nostalgia, or because it appeals to the Union Jack brigade. We’re here because it genuinely impacts the design of the bike.’

Yet, just as being in the capital informs the Brompton’s design, so in small but important ways the existence of the Brompton is changing the city itself.

‘Most of the world’s population lives in cities, but cities haven’t been designed around people,’ says Butler-Adams. ‘Poor mental health, poor air quality, obesity, these are all problems that affect cities worst. That’s got to be wrong. We want to make products that are sufficiently useful that they change that culture. We know it’s possible because we’ve already changed the culture of London, even if just a little. And if we can do it in London, we can do it in other cities.’

Now a ubiquitous sight on the capital’s streets, the average age of Brompton users has dropped significantly, while outside the UK

Right: With three handlebar types, one, two, three or six-speed gearing, luggage, lighting, mudguard and titanium options, thousands of different Brompton builds are available

Bottom: Class of ‘88: Brompton founder Andrew Ritchie is on the far left of the picture



‘We want to make products that are sufficiently useful that they change that culture’

the brand is expanding too, with three-quarters of its bikes now going overseas.

Given the success Brompton has gained by focussing on one bike, you might expect the firm to continue in this vein. But there are plans for a second Brompton – a low-cost machine that could be produced on a huge scale and might help more people make more journeys by bike.

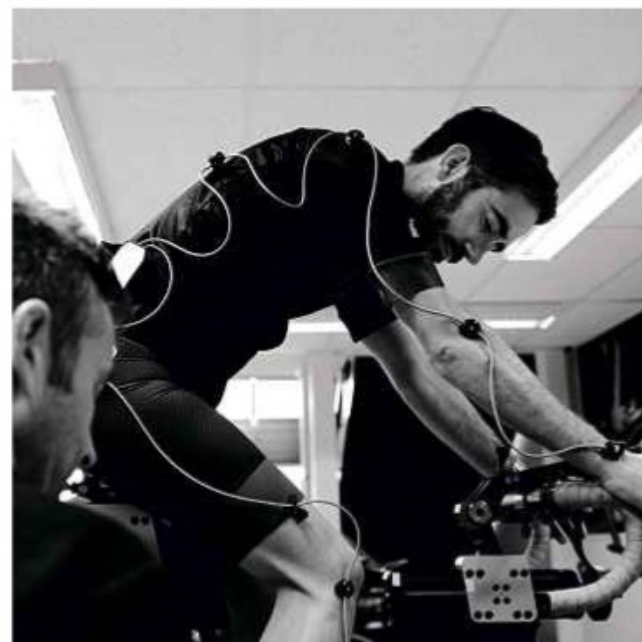
‘The Brompton bike is amazing, but it’s not enough to change the world,’ says Butler-Adams. ‘We can’t scale it to a multinational level. Our mission is to change how people live in cities all over the world, and a handmade bike is not the product to do that.’

‘It is, however, the product that can get us there. The reason we haven’t made another bike is that we haven’t got the first one completely right yet. We’ve been evolving, learning, optimising our manufacturing processes and building the capability to take that next step.’

Brompton, the man at the helm promises, is only just getting started. 🌸

Joseph Delves is a freelance writer who gets to work by moving from the bedroom to the kitchen





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FIRE AND ICE

From glowing green mountains to dark lava fields, Iceland's The Rift might be one of the most spectacular gravel races in the world. Just make sure you've packed enough spares

Words **JAMES SPENDER** Photography **MIKE MASSARO**



Iceland's population is little more than 360,000, and yet three summers ago a mind-boggling 10% of them went to Euro 2016 in France to support their national football team. The country must have seemed noticeably quieter, and certain trades understaffed. Even ignoring the masses of supporters and their day jobs, the team's manager was a dentist, and their goalkeeper a filmmaker who directed Iceland's 2012 Eurovision Song Contest video.

As we drive 100km east of Reykjavik to the town of Hvalsöllum (population 934), my host, Bjarni Ludvíksson, reels off another stat for me: 1% of his country's population is involved in Search and Rescue. By contrast, Scotland (population 5.4 million) has around 900 such volunteers – 60 times fewer proportionally.

So why the huge disparity? Apparently it's down to tourists underestimating Iceland's rugged outdoors and the 1,200 distress calls they put in each year as a result, the majority relating to hire cars that need towing.

Bjarni laughs at this. Winching hapless tourists from rivers is funny to a man who owns a Land Rover because some days there is genuinely no other way of taking the kids to school. Yet there is also frustration at the strain on Iceland's emergency services, and I'm left concerned that tomorrow I might end up adding to that burden. At 200km long, traversing Iceland's achingly beautiful yet hostile Highlands, there is every opportunity that The Rift will make me another statistic.

Dawn till dawn

The morning is cold with worryingly plump clouds, but at 5.30am it's already fully daylight. That's because even though the summer solstice was a month ago, at this time





Below left: By Icelandic standards, the weather at the start of The Rift is actually shaping up quite nicely

Left: River crossings are high up the running order. Most are rideable, but you need to concentrate. And have faith

The eternal brightness makes sleep difficult, and I now have the brain fug so typical of a sportive morning

of year Iceland's skies darken barely a shade at nighttime. This eternal brightness makes sleep difficult, and I now have the brain fug so typical of a sportive morning. Worse, what started as a gentle ticking of rain is now a fully laden tocking against the hotel windows, and I tiredly spend much longer than is necessary contemplating what to wear.

Better news is that the hotel is a stone's throw from the start line, and everyone here speaks immaculate English, so I wheel over and ask around until I locate Bjarni, who works for bike brand and event organiser Lauf, and fellow Lauf employee on the US side, Brendan. We stand and whoop at appropriate moments as ex-pros Ted King and Christian Meier are introduced as participants, together with Colin Strickland, fresh off the back of winning Dirty Kanza in the United States.

Brendan says Strickland averaged a staggering 32kmh over the 320km gravel course, and while for The Rift I am about as far away from those sorts of speeds as a fish is from climbing a tree, I reckon with the 2,000m climbing on the agenda a 20kmh average speed is doable, with ▶



The details

Your guide to traversing tectonic plates

What The Rift

Where Hvolsvöllur, Iceland

How far The Rift 200km/The Crevasse 100km/The Crevice 45km

Next one 25th July 2020

Price approx £195/£140/£100

More info therift.bike

🔴 a 14kmh average a must. Any slower and it will involve being on the bike for more than 12 hours, which sounds like a highly uncomfortable amount of time.

Into the wild

At least the rain is abating, and with the crack of a pistol 200 riders swing out onto the empty road, and damp buildings soon lose out to startlingly green fields. A horse that might best be described as arrogant – mane swishingly self-aware, feet almost too high – gallops next to us until his fence prevents him going any further, then all at once we too are curtailed by a sharp left through a gate. Gone is the tarmac, here is the gravel.

eruptions. However, as arresting as it is to survey, the appearance of these black splodges is problematic.

Volcanic ash will suffocate the land, destroying the plants that hold the soil and creating near-deserts as the wind sweeps the good soil away. To combat this, various plants were introduced in Iceland in the 1940s to try to cover eroding soil, with one such plant, the Alaskan lupine, being particularly successful. Indeed, too successful – lupine is now ironically considered an invasive threat, and its endemic nature is the reason so much of Iceland's landscape is swathed in lush greens and vibrant purples during summer. But to be so it must still be fed by water, and water is exactly what we're about to get.

While I can contemplate wet feet at this stage I'm not ready for a full Icelandic baptism

An ominously bruise-coloured mass slowly creeps onto the horizon and, with a rhythm that encourages conversation, Bjarni explains to Brendan and me that this is Hekla, whose feet we'll circle today. Like all the mountains in Iceland, Hekla is volcanic, the product of lava that spewed millennia ago through rifts that opened up as the Eurasian and North American tectonic plates began to drift apart. Around 130 such volcanoes exist, and while only 30 are deemed active and eruptions happen once in a generation, they still have a very real presence. It's the reason for the distant puddles of black in the midst of all this greenery, great pools of volcanic ash from previous

Heeding Bjarni's words about stuck tourists who underestimated depth, I unclip and trudge as opposed to trying to ride through the river. This will not be the last water crossing today, and while I can contemplate wet feet at this stage I'm not ready for a full Icelandic baptism. Brendan and Bjarni are somewhat happier to power through, albeit our trio slims to two when Bjarni says he's going to wait for some friends to catch up. With that we say our farewells.

The terrain is starting to take its toll. We won't reach higher than 900m in altitude at any point today, but we started at nigh-on sea level and the trajectory to that



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height is a saw-blade rising steadily from kilometre zero to kilometre 70. I can't quite put my finger on precisely when it changed but, from a landscape that could have fitted well on a postcard from the Lake District, Iceland is now serving up something entirely different, the likes of which I've not encountered anywhere else. Except perhaps on Instagram.

For want of a better way of describing it, what we're pedalling through *doesn't look real*. It's as if the blacks of soil and rock are somehow a new, even deeper shade more light-sucking even than Space, yet the greens of mossy lichen that cling to this have been highlighted in day-glow paint. It is the very definition of otherworldly, like a radioactive spill on an undiscovered planet.

It calls for photos, although Brendan warns me not to stray too far. While what we're riding on are designated tracks for everyone from hikers to off-road truckers, the surrounding areas are protected, and walking off-track is a punishable offence.

Memories recorded, we get back on our bikes and continue the slog, because for all its beauty this terrain lends itself poorly to fast rolling. On the ups my tyres search for grip; on the flatter sections the loamy soil tugs at our speed like fingers. Progress is further hampered by a headwind, which increases as land gives way to sky as we climb. Then, as we peak, the rain arrives.

Something in the air

It's raining excessively now. We pull over at feed station two, which is odd as I don't remember seeing feed station one. Brendan says he pointed it out some time back but 🚫

Left: Volcanic ash tracks lead riders out to Iceland's Highlands, under the watchful eye of the snow-dusted Hekla volcano



The rider's ride

Lauf True Grit, approx £4,150 as tested, £2,400 frameset, laufcycling.com

Whichever way you skin it, this cat is all about its Grit SL fork, which uses a series of leaf springs ('Lauf' is Icelandic for 'leaf') to allow the tip of the fork legs to move independently of the front wheel axle, thus providing 30mm of active suspension.

These springs are made from super-strength 'S-2' glass fibre most often seen in prosthetic limbs – the field in which the fork's designer, Benedikt Skúlason, used to work. Unlike carbon, S-2 glass fibre can bend a lot more without snapping or fatiguing, which means the Grit SL can oscillate much faster than a 'regular' telescopic fork. It's superbly well suited to gravel, which is much more about multiple low amplitude impacts as opposed to less frequent large ones, and helps lend the True Grit bike its flying carpet-like ride quality and immense grip. I'm sold.



My forearms are pulsating in a fashion that says it will be hard to hold a drink steady later on

▶ I didn't look like I wanted to stop, so we carried on. I honestly can't remember, and put this down to being either lost in the grandeur of the landscape or buried under effort. At any rate, I'm delighted to see tables piled high with bananas, less delighted to see a few shivering riders trying to shelter under an awning that's much too small. I wish I could offer them something more but I'm wearing all the clothes I brought with me – warmers, jacket and gloves – and can spare little else but a sympathetic nod.

The temperature being what it is, we dare not stop for long. Not that it is particularly cold, but the wind is fierce and I can feel it sucking heat from any piece of unprotected skin. I grimly recall Bjarni saying that 'at least if it rains it's not going to be dusty'. The going under tyres is a mulch, but on a dry day this would be powder, lending some veracity to Bjarni's earlier claim that a dust-storm once stripped the paint from the side of his Land Rover. ▶



Above: The Rift's profile is short and punchy, but with climbs comprising soft sand and 15% grades or steeper, getting off to push is inevitable for most of the riders



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► Annoyingly, my Garmin isn't prone to exaggerating either, and what feels like an age of pedalling passes before it finally trips past 100km. Plain sailing now, surely. And for a while, it is.

Just as quickly as it came, the storm dies down, the skies break and the views take a turn for the lunar. Rough, rocky fields stretch out from a road surface that is the very definition of gravel, the kind of grey, chippy scree that would feature on the cover of *Aggregate Monthly*.

Hundreds of ridges run perpendicular to the road, the product of wind and vehicle wheels and known by riders here as 'washboards'. The angle of the road is downwards and one or two riders on mountain bikes whizz past, finally vindicated in their choice of burly bikes. Not that I can complain too much, as the forks on mine and Brendan's bikes are doing their suspension best, springing up and down as our speed picks up. Nevertheless, it doesn't take more than a few kilometres before my hands are buzzing and forearms pulsating in a fashion that says it will be hard to hold a drink steady later on. If later ever comes.

A muffled thud up front is joined by a painful-sounding *twank* at the back of my bike, and although I can't hear it over the rushing wind I can feel my rear tyre rapidly losing

Right: In the centre of the Highlands lie great volcanic ash 'deserts', whose paths would all but disappear were it not for the carefully laid volcanic rocks that give them an outline

Below: Mechanicals on The Rift are not so much likely as they are an absolute certainty, so be prepared, even if you're running tubeless tyres



air. I shout ahead to Brendan but he can't hear me over the wind, and several seconds later I'm standing by the verge, watching my companion disappear into the distance. But I'm unconcerned – these tyres are tubeless, I'll be back on the road in no time!

Always read the label

Several CO₂ canisters and whole lot of sealant later, I'm forced to admit defeat. The impact to my rear wheel was enough to minutely split the tyre sidewall, which no amount of extra sealant can fix. Brilliantly, I have remembered an emergency tube, but somewhat less brilliantly, it is a 'maximum 28mm wide' road bike one, not an 'up to 47mm wide' gravel one. So with this impractical inner stretched inside the tyre more thinly than a balloon, I set off. For 2km all seems well, and I begin entertaining thoughts of catching a surprised Brendan. By 3km I'm thumbing for help.

In another world I wouldn't hold out much hope for a stranger's assistance, but this is cycling, and it's only ►





**I'm standing
by the verge,
watching my
companion
disappear into
the distance**





◻ a matter of time before a guy called Bobby pulls up beside me and tells me he'll gladly swap a tube for use of my pump – he lost his somewhere between here and the UK. If I could hear them above the wind, angels would be singing.

Bobby and I shake hands and we ride for a time together before he gestures for me to go on without him.

I bowl through meteorite-looking fields, then rail through a brief tarmac stretch. With the wind behind me I'm nearly as fast as a car. Before too long I've had to stuff warmers and jacket into my jersey and my skin is even contemplating a tan. The world is a rosy place, my average speed well over 20kmh. The finish at Hvolsvöllur has to be close. Then *thump*. This time I can hear the hiss. I've flatted again.

I stop and there's no one around, neither up the road nor behind me, with no hint of the tell-tale puffs of dust indicating any sort of transportational life. I'm out of luck and out of spares.

Since the tyre is a write-off anyway I decide the only course of action is to ride on the rim, but the noise and the feeling are excruciating, and to prevent a catastrophic wheel failure I have to put as much weight onto the bars as possible and all but hover over the saddle. It's desperately uncomfortable, and I'm not far off throwing in the towel





Since the tyre is a write-off anyway I decide the only course of action is to ride on the rim, but it's excruciating

Above: The Rift will become a relatively lonely affair for every participant, but you're guaranteed a warm welcome at the finish. And after 200km of gravel grinding over volcanoes, you'll want a hug too

altogether and waiting for the broomwagon when I hear the scrunch of gravel and a cheery English voice behind.

'Want a tube mate?' Thus for the second time today I'm saved by another rider, and using whatever energy I have left to will my rear tyre to stay inflated I literally limp over the line. I'm under my self-imposed cut-off of 12 hours, but not by much. Colin Strickland, I find out, won the race in a time of 6 hours 38 minutes. *Chapeau!*

Then again, going as slowly as I did left me time to appreciate not only the challenge of The Rift, but also its beauty. Even the darkest skies have silver linings, especially if the sun never quite goes down. 🌸

James Spender is deputy editor at Cyclist and will pay more attention to inner tube sizes next time



Do it yourself

TRAVEL

We flew with Iceland Air in late July for £290 including luggage, but booking in June or September can see prices around £170, including a bike, while basic prices from Wizz Air and Easyjet start from as little as £50. Taxis are expensive and a private airport pick-up to Reykjavik costs over £100. That's fine if you're travelling in a group, but for the cheapest transfers check out Airport Direct and Fly Bus, with prices around £20 to town or £40 for a direct-to-hotel service. Expect to pay a similar amount to get to Hvolsvöllur, where The Rift starts and finishes.

ACCOMMODATION

For a small town there are plenty of guesthouses and hotels, but we chose the Hotel Hvolsvöllur, with spacious rooms from around £80 per night, including breakfast. Visit hotelhvolsvollur.is for more details.

THANKS

Many thanks to our hosts at Lauf Cycling, to Bjarni Ludviksson for doing all the driving, Gudberg Björnsson for lending us one of Lauf's bikes (and not seeming to mind that we destroyed the rear tyre), and to Benedikt Skúlason for having invented the Lauf Grit fork, without which our hands would have needed some serious rehab. See laufcycling.com for more details.

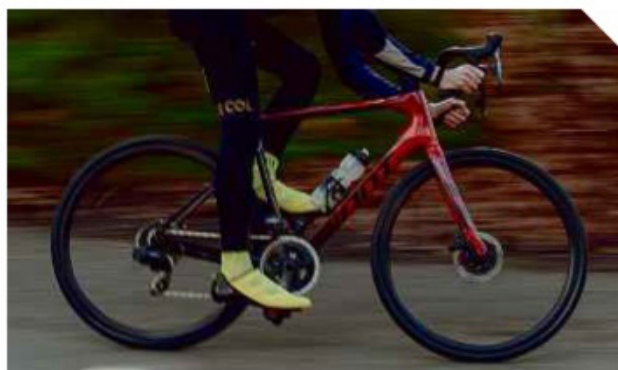
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Giant Defy Advanced Pro 1

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Scott Addict RC Ultimate

p132



3T Strada Due

p138

BIKES

ON TEST

3T's Strada was and remains one of the most radical aero race bikes on the market. But for those who think the 1x-specific design is too progressive, here's the Strada Due - the same frame but with conventional 2x gearing.

THE SPEC

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Groupset Sram Force eTap AXS
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Finishing kit Giant Contact SLR
D-Fuse handlebar, Contact SL
Stealth stem, D-Fuse SL seatpost,
Contact SL saddle, Gavia Fondo 1
32mm tyres Weight 8.24kg
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Giant Defy Advanced Pro 1

Giant's new Defy may look familiar, but it's all change beneath the skin

Words **PETER STUART**



If ever there was a brand that could see into the future, it would surely be Giant. Back when rim brakes were standard across the board, the Defy came out equipped exclusively with disc brakes, and weighed just 7.25kg. At the time that was mildly mind-blowing, and yet today it looks all too conventional. And while the new Defy doesn't look any different, rest assured, this is no less a vision of the future than its forbear.

'Aside from the D-Fuse seatpost, the headset bearings and the rear derailleur hanger, pretty much every part of the bike has changed,' says David Ward, product manager for Giant UK. Sure enough, while the 2020 Defy cuts a similar silhouette to the previous version, every tube shape is actually slightly different.

The main difference in design, though, is that the maximum tyre clearance has gone up from 25mm to 35mm – a clearance that just a few years ago would only have been found on cyclocross bikes. The Defy comes off the shelf with 32mm tyres and is equipped with tubeless tyres as standard, which I heartily applaud.

Aside from the alloy dropouts, most of the frame is made from Toray's T700 carbon. That's a slight step down from the higher-quality, stiffer T800 fibres Giant uses in the top-tier Advanced SL versions of the Propel and TCR race bikes. For



HANDLEBARS

The Contact SLR D-Fuse composite handlebar uses the same technology as the D-Fuse seatpost – a curved tube profile that flexes in one direction to absorb road buzz without sapping power.



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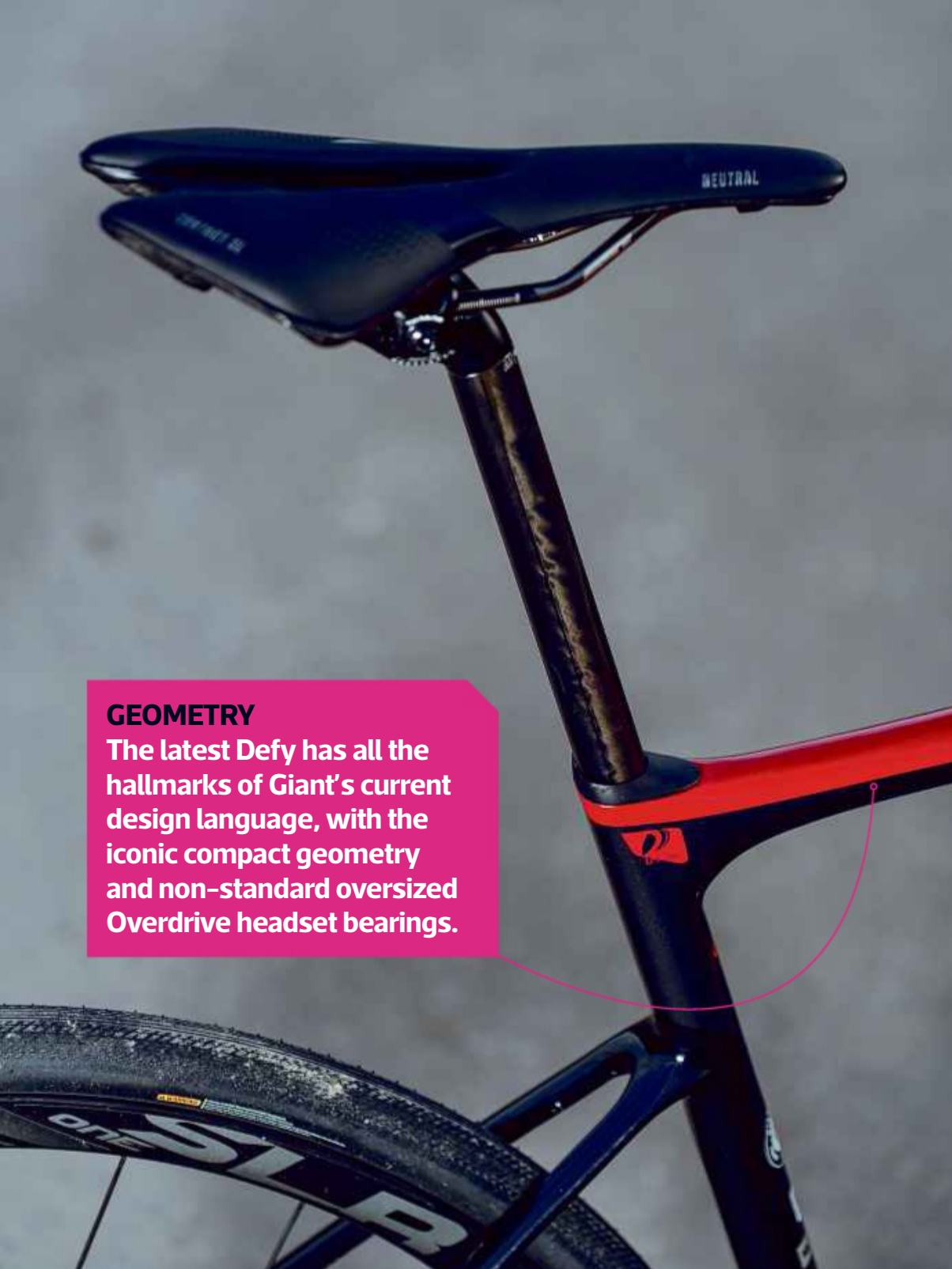
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GEOMETRY

The latest Defy has all the hallmarks of Giant's current design language, with the iconic compact geometry and non-standard oversized Overdrive headset bearings.

► the Defy, there is no Advanced SL level frame, and the less expensive Advanced tier actually uses an identical frame to this one. That's encouraging for those looking for a lower spec bike that doesn't compromise on performance.

Very much on trend with the latest batch of aero bikes, the front end cables are completely concealed. This hasn't been achieved through clever internal routing of gear cables, though, but because Giant's top two tiers of the Defy use wireless Sram groupsets. Lower-spec bikes make do with an external set of gear cables at the front, but for me that's a smart fix, as it saves on the cost of developing a complex internal cabling system through the stem. Intriguingly, the bike wasn't tested in the wind-tunnel, so the change is more a nod to aesthetics than it is to pure performance.

It's odd to think of the rugged Defy putting style ahead of substance, so I was hoping that wouldn't adversely affect the ride quality.

A Giant leap for mankind

There were a few niggles as I prepared for my first ride. The frame made a clicking noise when I turned the bars, which turned out to be the front and rear hydraulic brake cables flicking against each other inside the head tube. Easily fixed, but frustrating.

Then there was the seatpost bolt, which sits in the top tube at an angle that leaves it facing the seatpost. Its positioning means certain types of allen key, torque wrench and multitools are not compatible. For a brand with such a wealth of experience in manufacturing, tiny niggles like that are disappointing.

Riding the Defy for the first time, though, I felt as if I was aboard an aero bike on 25mm tyres – so much so I actually measured the tyre widths to confirm they were as wide as stated.

I've ridden many road bikes with 30mm+ tyres over the last few months and often feel a slight drag compared to narrower tyres. I'm impressed that Giant has managed to deliver such a racy feel on such a wide tyre, and I put that down to a mix of frame stiffness and the very good Giant-branded Fondo tyres. It's easy to underestimate just how much difference a good tubeless tyre can make. The bike simply *feels* fast.

The more time I spent with the Defy, the more impressed I was with the effortless ride quality. ►

Riding the Defy for the first time, I felt as if I was aboard an aero bike on 25mm tyres – so much so I measured the tyres



▶ With the 32mm tyres at around 70psi, I seemed to almost float over the tarmac. That in turn was reflected in the speed of the bike. I felt confident to ride through minor potholes and road scarring, which allowed me to relax and focus on putting down watts – I often found myself drifting off the front of my riding group, while the responsiveness of the frame had me sprinting up inclines.

Giant has given real thought to how the wider tyre clearance affects geometry. To counter the extra height from the tyres, Giant has lowered the BB by 5mm from the previous generation. The head tube has also been lowered, which makes the bike appear less tall, even though the stack and reach are actually identical to the last Defy. The result is geometry that's tall at the front yet aggressive enough to deliver a quick turn of speed. My ride stats backed that up, too.

On a still winter's day I posted one of my fastest times ever up a local 300m climb. That surprised me given the bike's relatively portly 8.2kg weight. On a descent on the same ride, meanwhile, I hit

I felt confident to ride through road scarring, which allowed me to relax and focus on putting down watts



MOUNTING POINTS

Despite its racy silhouette, the Defy has mudguard and rack mounting points, offering the versatility for winter riding or bikepacking.

one of my highest speeds. Perhaps because of the wider tyres, the sense of control and simply being planted to the ground was almost surreal.

With that in mind, I had no fear taking the Defy off-road either, and given more time with the bike I'd like to experiment with different tyre widths, extending to 35mm or even trying to squeeze in 38mm tyres to take on really testing terrain. The Defy seemed capable of anything. Indeed, after a month of riding it, the only criticism I could muster was that it wasn't quite as exciting as some of the competition among endurance racers.

The Specialized Roubaix or Trek Domane seem to capture a little more pro cycling glamour, and perhaps feel a little racier, too. That said, if I rode all three on the same segment I wouldn't be surprised if the Defy proved just as fast, despite being easier on the wallet. In this guise, with Sram Force AXS, the Defy is £2,000 cheaper than a Trek Domane with the equivalent spec. The same value runs through the range right down to the entry-level Defy, which shows the benefits Giant attains by making almost every component itself.

Giant may not be a brand that makes riders go misty-eyed with romance or sweaty-palmed with excitement, but there's no denying that the latest Defy is simply a very good bike indeed. 🌸

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Scott Addict RC Ultimate

Ultimate by name, but is it ultimate by nature?

Words JAMES SPENDER



ere's something I wrote in a bike review back in issue 25 of *Cyclist*, August 2014:

'The Storck Aernario Disc is arguably one of the most advanced road bikes on the planet. Yes, many other

bikes now spec electronic drivetrains, 22 gears and internal routing, but what Storck has added to the mix is hydraulic disc brakes and thru-axles.'

At the time, the mere mention of disc brakes was enough to cause coffee cups to smash on kitchen floors all around the country. It was a moment of seismic change in the industry. But now that I re-read that paragraph, I start to ponder the question so often raised by riders: has much really changed in the past five years? Are we as cyclists getting value for our time and our money?

Light years

For a bike model that has been around since 2007 there have been relatively few iterations of the Scott Addict, with the last major overhaul coming in 2013 (albeit a disc update did appear in 2016). That 2013 Addict – specifically the SL version – arrived to great fanfare because of its credentials with respect to one of cycling's oldest metrics: weight.

Back then weight was fertile ground to exploit and Cervélo was leading the arms race with its Rca – 667g for the frame, or 974g for the frameset. Yet the frameset cost £6,500 and wasn't exactly



ENGINEERING

Scott has gone down the D-shaped seatpost and lowered seatstays route for comfort, but bucking trends it has gone for an external seat clamp mechanism in a bid to shave weight – this collar is just 12g, while an internal wedge would be around 30g.

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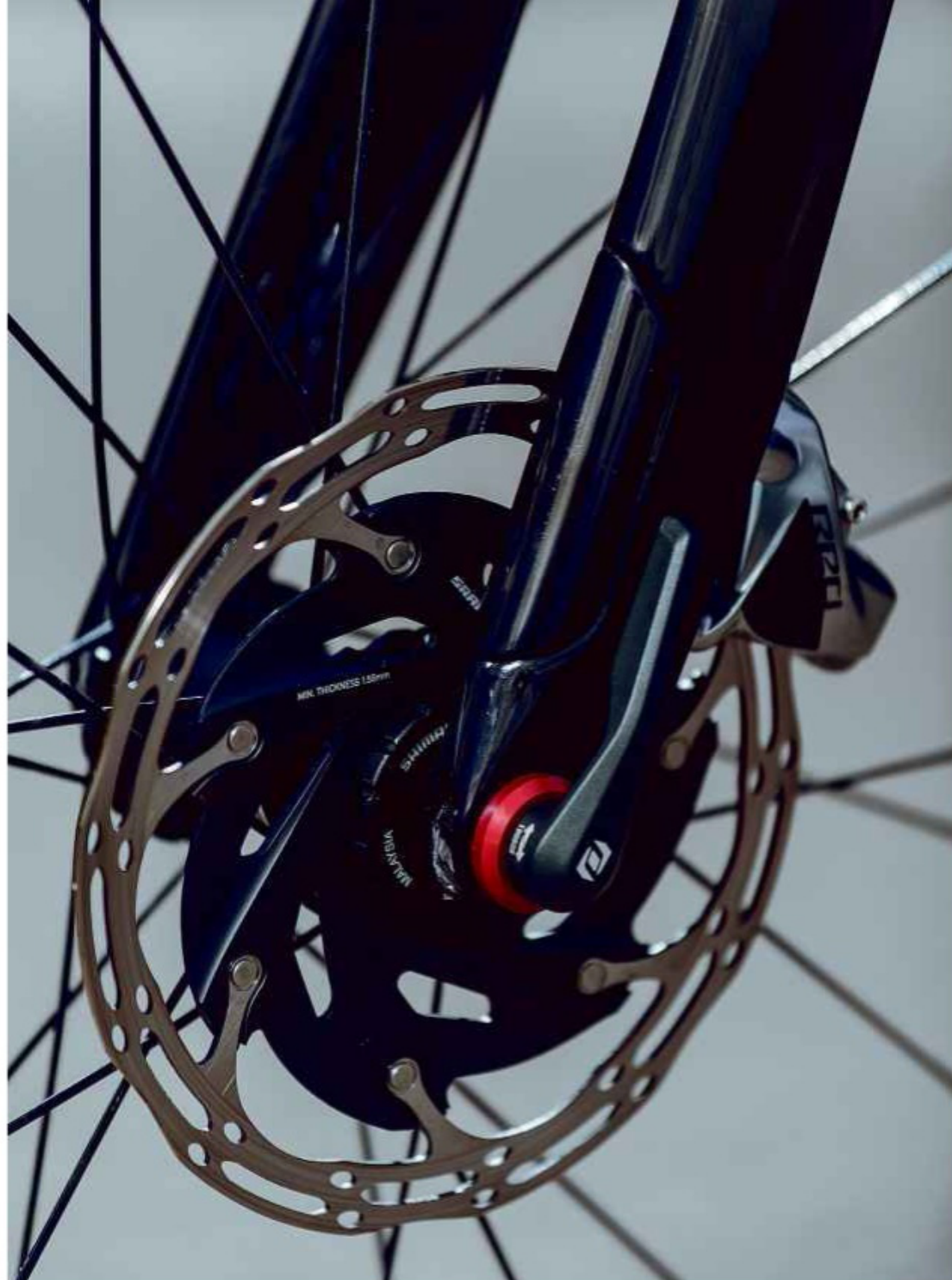
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throughout the bike. The dropouts are hollow, which allows one-piece moulding with chainstays and seatstays, such that the frame is now made in three parts, not six. Fewer joins means less weight, as less material overlaps, but to compensate for the compression forces of the thru axles, alloy inserts are bonded into the dropouts, which are anodised a fetching red. More lovely detail.

Elsewhere, the curved nature of the stem/bar intersection helps fibres run continuously across left and right sides of the bar, making for a stiffer and lighter cockpit – the Syncros setup weighs a claimed 295g – but also aids cable routing. Cables are accessed via a magnetic stem cap and run into the frame thanks to a near D-shaped head tube.

I doubt whether the average user will ever need to care about continuous fibres or easy cable routing, but this last point is important, ▶

It dances up climbs and excels when coming back down too. Then there's the frame, which hits all the right notes

▶ available at Halfords, each being built to order in California. The Addict SL, by contrast, was widely available to test at your local bike shop, the frameset tipping the scales at a claimed 985g for a size 54cm and a complete bike weighing 5.9kg and costing only £6,999. For 2020 the Addict duly follows suit, creeping in a touch above 7kg on the *Cyclist* scales for this size 56cm.

That's very light for a disc bike, although not the lightest – a top-tier BMC Teammachine or S-Works Tarmac, for example, weighs 6.9kg in the same size. However, Scott boasts that the Addict RC is the lightest *fully integrated* disc bike on the market, which aside from the Wilier Zero SLR – same weight, same integration – it could well be (the BMC and Tarmac have a few cables on show). And regardless of what the pecking order may be, the Addict *feels* wondrously light to ride.

It dances up climbs and excels coming back down too. There's nothing not to like about the braking of the Sram Red eTap AXS discs and the way the Zipp wheels and Schwalbe tyres cope with the braking forces. Then there's the frame, which hits all the right notes in stiffness, cornering flex and handling. On that subject, says Scott, the geometry has been designed around 28mm tyres – engineers addressing the fact that even small differences in tyre widths change things such as wheelbase and trail, which have a big impact on handling.

That's laudable attention to detail, which is found

HANDLEBARS

A D-shaped head tube creates a void large enough to run hoses internally without the need for awkward angles or flexy fork steerers. Access is via a magnetic top cap, as it is for the calliper bolts (above).



as the head tube shape means a round steerer is used with oversize bearings *and* there's still enough room to run hoses/cables. In the past other manufacturers have done things like chamfer or slim fork steerers to make room for cables, which leads to undue flex, but no such thing afflicts the Addict. The front end is staunchly capable in the sprints and yet there's some comfortable give in the bar thanks to its aero-flattened shape. The same can be said of flex in the seatpost and rear end. This is a very comfortable bike.

Let's get real

The list of tweaks goes on: the seat clamp is external and weighs a mere 12g; the stem height can be changed without messing with cables as the spacers come apart; there's a magnetic cap over the bolts for the fork calliper to smooth airflow, and the bolts are arranged so no alloy hardware is needed to support the mounting points. Again lighter, again ingenious, and it all helps the Addict look supremely clean. But I come back to that original point that crops up more and more in my

I would love to have the Addict as my best bike. But would I be happy paying nearly £11,000 for the privilege?

DROPOUTS

Fork and frame dropouts are hollow, and use alloy inserts for strength and stiffness against the compression loads of the thru axles. This helps save weight, not least as the rear stays can be moulded as one, which means fewer joins.



mind these days, and one I'm sorry to leave at the Addict's door, but... this bike costs £10,799. That's £3,800 more than its predecessor from five years ago, and a full kilo heavier.

Yes, this latest Addict gets discs and full integration, but back where we started, that Storck from 2014 had a lot of that too, and cost £7,999.

In pure engineering terms the Scott Addict is quite amazing. I salute its designers, it is cutting edge and in riding terms it's all but faultless. Thus, all said, I would love to have the Addict as my best bike. But – and this is a huge 'but' that the industry really needs to address – would I be happy paying nearly £11,000 for the privilege?

I've praised expensive bikes before but in the main forgone the price criticism, because these bikes are custom and they exist in a world that defies being value-assessed in the same way. You're getting the only one that exists, and can you put a price on that? And if you can, you go stock, which should *de facto* be less pricy due to ubiquity, mass production and economies of scale.

But when a stock bike costs £10,799, even if it's up there with the very, very best? You have to begin to wonder... 🌸

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3T Strada Due

Gerard Vroomen's radical bike now has conventional gearing

Words **SAM CHALLIS**



During my tests with the 3T Strada Due, I couldn't help thinking about the homeware company Alessi. It isn't quite as random a leap as it first seems – both are iconic Italian companies and both have classic designs that have become synonymous with the brand.

Alessi has its Juicy Salif lemon squeezer and 9093 Whistling Bird kettle; 3T has its Record 78 stem and, most recently, its Strada frameset. When it comes to product practicality, however, the brands couldn't be more different. Alessi's Juicy Salif juicer, resembling as it does a Martian machine from *The War Of The Worlds*, is so ungainly it is virtually impossible to store in a kitchen cupboard. And, speaking from bitter personal experience, the kettle takes an eternity to boil water.

Compare that with 3T's Record 78 stem, a design that transformed the performance and maintenance of road bikes in the late 1970s. Or compare it to the same company's Strada Due, a bike that incorporates a number of forward-thinking features that in my experience make it one of the easiest aero race bikes on the market to live with and ride day to day. Plus it's fast enough that I might just have made up the time I lost waiting for that kettle to boil.

The Strada Due is a 2x version of the original Strada, meaning it has provision on the seat tube ▶



TYRE CLEARANCE

Tyre clearance is purposefully tight for better aerodynamics. Logic suggests this might be an issue on grotty roads, but I was never once impeded by mud build-up, nor did the frame get scratched by stones stuck to the tyres.

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AERODYNAMICS

Fully integrating cables means enlarging a bike's frontal area to hide them within the head tube. By opting for a regular cockpit setup the Strada Due's front end can be narrower to reduce drag.



level appropriate for the people who ride them and the places in which they ride.

'Normal people don't sit in the saddle for 30 hours a week,' he says. 'Our roads don't get paved just because we are riding through, like they do for the Tour. They're dirty and rough. The most efficient way to achieve more comfort is to bump up tyre size, which is why we design around 28-30mm tyres.'

The next factor was aerodynamics. 'Whether we are racing or not, everyone still wants to go as fast as they can. But we make the bike aero *after* we put big tyres on.'

According to Vroomen, the issue with most aero bikes is that their aerodynamic efficiency is designed around 23mm tyres. Then people swap to 28mm tyres to improve comfort, which completely undermines the aero design. Vroomen says doing it the other way around makes the Strada bikes' aerodynamics more relevant to the real world.

'The optional third step was to further clean up the aerodynamic profile by removing the front derailleur,' says Vroomen. 'But for the drivetrain manufacturers who weren't ready for that yet, ▶

'Everyone still wants to go as fast as they can. But we make the bike aero *after* we put big tyres on'

▶ to mount a front derailleur so the bike can be run with conventional gearing. The first Strada made such a splash when it was released in 2017 partly because it was designed to only take 1x gearing, with no provision for a front derailleur.

That won the bike many fans – a 1x setup can be lighter, less fussy and is potentially more aerodynamic – but it was less favourably received by the now-defunct Aqua Blue Sport squad, who used the bike throughout their ill-fated 2018 season. The riders complained of mechanical issues and insufficient gearing options.

Cart before the horse

Following the release of the Strada Due, cynics claimed that 3T was reneging on its bold initial move, but Gerard Vroomen, head of design at 3T and the brains behind both bikes, insists this wasn't the case.

'The Strada Due was always in development from the start,' he says. 'We released the 1x version first because it was ready sooner and knew it would cause the bigger stir. In hindsight it may have been a case of "cart before the horse" because 1x groupsets weren't really ready then.'

According to Vroomen, the thinking behind both bikes was to offer a fast ride but with a comfort





WHEELS

3T's Discus C45 LTD wheels are specifically designed for the Strada and Strada Due. They have a 25mm internal rim width to support the wider tyre sizes that the Strada Due is intended to use.

The real question is whether the extra weight is offset by the additional gear options

believe Vroomen's sentiment that swollen head tubes designed to hide cables might not be nearly as aero as brands would have you think.

Shifting business

So what is the penalty of 2x gearing on the Strada Due? Vroomen estimates around 300g in terms of weight and 7 watts of drag at 32kmh. That isn't insignificant – the Strada Due's 7.78kg weight could be said to be a little chunky for a premium aero road bike nowadays. The real question, though, is whether the extra weight is offset by the additional gear options. That rather depends on your point of view.

For some, 1x offers all the gear ratios they could ever want; others will demand the wider potential range and the smaller gear steps provided by 2x. I'm inclined to believe that trying to weigh 1x and 2x against each other is actually missing the point.

The bottom line is that one of the most exciting and innovative bikes in the last couple of years is available to everyone, no matter what drivetrain the rider wants to run. And it performs just as well in either guise. 🌟

🔴 and for riders who weren't ready yet, it also made sense to produce this 2x version.'

The same, but different

The Strada Due is similar in design to the Strada. Outwardly the tube shapes are the same, with only the internal carbon layup of the seat tube altered, in that it has been beefed up to allow for the front derailleur mount. Vroomen says that the riding experience hasn't been affected, though.

I would agree. The Strada Due is as solid as its 1x predecessor, accelerating rapidly when I pushed hard on the pedals. Yet it didn't feel at all rigid when it came to comfort, thanks to the 30mm tubeless Vittoria Corsa Control tyres. On test rides I'd often look down at my computer and be surprised at the speed I was going because the wide tyres were just better at smoothing out broken road surfaces.

The bike also handled beautifully, managing to balance that tricky act of being reactive at low speeds before mellowing out at high speed.

Despite its aerodynamic credentials, the Strada Due's cockpit makes no attempt to hide away the cables – something that's becoming standard on top-tier bikes. This may seem like an oversight, but personally I prefer this setup, as it makes the bike simple to work on and adjust, plus I'm inclined to



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Gilbert's missing Monument

With just Milan-San Remo missing from the set, can Philippe Gilbert complete his monumental grand slam?

Two years ago, despite his spectacular salvo in the Tour of Flanders, Philippe Gilbert's ambitious 'Project Roubaix' was still being met with mild derision. He'd only ever ridden the Hell of the North twice, and had yet to crack the top 10. Then he fought tooth and nail – tooth mainly – to beat Nils Politt in the velodrome to add another notch in a creaking bedpost already well grooved by wins at Liège and Lombardia.

Now the Belgian veteran has quit QuickStep to join the Wolfpack's domestic rivals, Lotto-Soudal. And he's just a Via Roma shock away from joining compatriots

Eddy Merckx, Rik van Looy and Roger de Vlaeminck as a winner of all five of cycling's Monuments. Can he win an elusive Milan-San Remo? I truly hope so. Will he? That's where it gets complicated.

Gilbert's switch of teams at least gives him a chance. If he'd kept dancing with the wolves, he'd be playing second fiddle to defending champion Julian Alaphilippe, a rider who can win either side of the Poggio, plus new recruit Sam Bennett, who can mop up in a sprint.

Lotto do have a sprinting option in Caleb Ewan, and a former winner in John

Degenkolb, but Gilbert is exactly the kind of unpredictable livewire they could employ as a foil, an opportunist who can turn softener into hard-hitting success.

Age seems to be the biggest obstacle (tell me about it, Phil). Gilbert's best result at the race is third place, which he has managed twice, back in 2009 and 2011. The winners on those occasions were Fabian Cancellara and Matt Goss, both of whom have since retired from the sport. If Gilbert does triumph on Saturday 21st March, at 37 he will be the oldest ever winner of La Primavera, some 18 months more mature than Andrei Tchmil, the current oldest winner. The average age of San Remo winners over the past decade is 27.

Does Gilbert have *anything* going for him? Well, the new Lotto kit is pretty swag (as the peloton's younger representatives might say), while QuickStep's new dungaree-inspired team kits are so unappealing that Alaphilippe might not want to be too visible at the front of the race.

Also, *La Classicissima* has seen no repeat winners since Oscar Freire snared his third win in 2010. If that recent history continues then we can discount the likes of Alexander Kristoff, Arnaud Démare, Michal Kwiatkowski, Degenkolb, Vincenzo Nibali and the aforementioned Alaphilippe.

Gilbert also has the element of surprise on his side. As close as he is to a grand slam, no one really expects him to do it. It would be anachronistic, more sentimental than Richard Curtis at Christmas and the biggest surprise since Mat Hayman won Roubaix.

Perhaps Gilbert is the rider to break the mould, channel his inner Gianni Bugno and win with a long-pop on the Cipressa. Or perhaps he'll do it like Tchmil in 1999 and kick clear under the *flamme rouge*. Maybe he'll replicate Sean Kelly's jaw-dropping Poggio descent of 1992.

Or perhaps he'll do his best to set up teammate Ewan and trundle home in the peloton for 53rd place as Sagan snatches it. That's probably the most likely outcome. San Remo seems not only a step too far for Gilbert, but an entire Schlossberg Stairs of implausibility.

Even Gilbert himself seems to think so: Mister Monument hasn't used the hashtag #StriveForFive since December 2018. A clean sweep has never been so tantalisingly close and yet simultaneously so cruelly distant. He may have proved me wrong in Roubaix, but I'll stick to my guns here: if Gilbert wins, I'll eat a Lotto casquette. 🍌
Felix loves the taste of hat à l'orange

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