

## Travel

Objectively it is the merest pimple of a mountain, but for cyclists in London and south-east England, Box Hill in Surrey looms large. I had climbed it hundreds of times, so often that every subtle change in gradient, every pothole, drain and blemish in the tarmac was agonisingly familiar. But this time something was very different. I was overtaking Graham, my longtime cycling partner and rival, then leaving him far behind. I was flying up the hill, having to lean the bike right over so as not to overshoot the corners. I felt like Lance Armstrong or Marco Pantani.

Which is to say, I felt like a great climber but also something of a fraud. They both used performance-enhancing drugs; I was benefiting from a new type of cheating, something that has become known in the professional cycling world as “mechanical doping” — the use of small but powerful electric motors, entirely concealed from view.

Allegations of their use in professional cycling first emerged in 2010, when an online video featuring Italian former professional cyclist Davide Cassani became a viral sensation. It appeared to show a bike whose pedals turned on their own, and went on to suggest that the Swiss cyclist Fabian Cancellara might have used a motor to speed away from the peloton before winning that year's Paris-Roubaix race.

Most cyclists dismissed the video as a paranoid conspiracy theory. “It's so stupid, I'm speechless,” said Cancellara (whose innocence was confirmed by the sports authorities). And while the rumours and insinuations about mechanical doping have continued to circulate — one television commentator during last summer's Tour de France said Chris Froome's bike “seemed to be pedalling itself” — many fans still treat the whole idea as a bit of a joke. When Brian Cookson, president of the sport's governing body, revealed that it was testing bikes for hidden motors during the Tour de France, he sounded almost embarrassed: “Although this subject

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sometimes causes amusement and derision, we know that the technology is available.”

That tiny, high-tech, hidden motors could be available to amateur riders seems even more far-fetched — none of the keen cyclists I spoke to in London knew anything about them. So arriving at Box Hill, on a recent overcast morning, I was dubious.

The bike I had come to try is the first concealed-motor racing bike from a UK manufacturer. Built by Somerset-based Electric Mountain Bikes, it will be launched this month under the company's new brand, Goat Bikes, and will sell for £4,049. With a magnesium alloy frame, carbon fork and Shimano Ultegra gears, it looks just like any other mid-range racing bike. The slim, cylindrical motor is concealed in the lower part of the seat tube (the vertical piece of the frame which runs down from saddle to the bottom bracket) and connects with the crank axle.

While early electric bikes had heavy, cumbersome lead-acid batteries, the use of lithium means the battery can be hidden within what looks like a conventional water bottle. A tiny black rubber switch, on the end of the drop handlebars, turns the power on; stop pedalling and it turns off. Tutorial over, I set off to test it, on multiple ascents of the hill.

First impressions were of a very gentle boost (in time-honoured fashion, Graham still thrashed me to the top). But then Steve Punchard, founder of



# The hidden helping hand

**Cycling** | Bikes with concealed electric motors could transform cycling events and holidays over the next decade. *Tom Robbins* tests the first to be launched in the UK

Electric Mountain Bikes, adjusted the motor to increase the cadence and everything changed.

There was a marked boost in speed but, perhaps more importantly, the power felt completely natural. It was not like sitting on a moped just watching the scenery pass (what would be the point?). You still need to pedal, your heart rate is still raised; it still feels like you are engaged in an active, physical sport. Unlike conventional electric bikes, whose large batteries can give a powerful boost for several hours, the concealed one lasts for just an hour, making it suitable for getting over the toughest summit on a ride, or helping an exhausted rider over the final few miles. The motor and battery add about 1.8kg

**From top: Tom Robbins, right, rides the motor-assisted bike on Box Hill; the Goat bike; the motor and battery are hidden in the frame and bottle**

Tom Jamieson

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The Goat Race bike costs £4,049. See [electricmountainbikes.com](http://electricmountainbikes.com) and [goatbikes.com](http://goatbikes.com); tel: 01458 550304



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to the weight of the bike, but its handling remains unchanged.

As I dropped Graham and accelerated up the hill, my mind began racing with the implications of the modest-looking machine beneath me. Ageing riders will be able to keep going later in life; cycle holidays touring the great Alpine passes will no longer be restricted to the super-fit; couples of differing abilities will be able to ride together. Nervous novices will be able to join club rides without fear of holding others back, and on bikes that look like any other and don't mark them out as rookies.

“It is democratising access to the biking experience,” says Norman Howe, chief executive of Butterfield & Robinson, which already offers electric bikes on its worldwide bike tours, though not yet with concealed motors. “There's that ego-anxiety around this stuff — of not wanting to admit you need the help — but the more discreet the systems get, the less that issue plays out.”

Equally clear, as I whipped past other riders on expensive-looking bikes, is that there will be controversy. Much amateur riding and cycle travel is geared towards timed, mass-participation events known as sportives or gran fondos. Officially they are just for fun, but many riders take their time and their final ranking extremely seriously, training all year to better their results.

“You'd be very naive to think that people aren't going to use them in sportives,” says Michael Hutchinson, a former international racer and author of *Faster: The Obsession, Science and Luck Behind the World's Fastest Cyclists*. “At this point the technology isn't that readily available, but when that changes, someone will argue, ‘Oh, well it will help me with my training, I'll get to work faster’. Then it becomes a much smaller step to

be in a sportive and think, ‘Well I'll just use it up this bit here . . .’”

In fact, though no mainstream bike manufacturer sells such bikes and the concept remains little-known in the English-speaking world, the motors and batteries, manufactured by an Austrian company called Vivax, can already be bought through numerous dealers in Germany, Austria and the Netherlands. In those countries, where cycling has traditionally been a means of everyday transport as well as a sport, electric bikes are far more common. “But I think British people still tend to regard them as just not quite cricket,” says Hutchinson.

Though the invisibility of the Goat bike's system will remove any stigma, one giveaway remains — a distinct whirring noise when the motor is switched on. Future versions are likely to be quieter, but even the current system could be used while alone on a long climb, or to catch up if dropped by the peloton. “There are always going to be some people who are keen to cut corners,” says Ian Holt, founder of specialist tour operator La Fuga, which takes hundreds of cyclists to ride in European sportives each year. “People will be super-suspicious of each other.”

As I turned the final corner on Box Hill, I checked my time. At the peak of my cycling enthusiasm, I would climb Box Hill in seven minutes. Then, two years ago, a baby arrived and my weekly training mileage abruptly dropped from 200 to precisely zero. But here I was, arriving at the hilltop café with a new personal best of just over six minutes. In a world where many amateurs are happy to spend fortunes on the lightest carbon wheels or most aerodynamic frame, just to shave off a few seconds, that kind of performance enhancement might prove too hard to resist.

## ON LOCATION WAR AND PEACE



**The show:** No corners have been cut in the BBC's six-part serialisation of Leo Tolstoy's epic. The big-budget production, on screen this month in the UK and US, has opulent costumes, authentic locations and a cast that includes Lily James, Paul Dano, Gillian Anderson, Jim Broadbent and Greta Scacchi.

**On location:** In the novel, the action switches between St Petersburg and Moscow but, with a few notable exceptions, most filming took place in Lithuania and Latvia. The first episode opens at the St Petersburg salon of society hostess Anna Pavlovna (Gillian Anderson). These scenes were shot in the Golden Room of the Rundale Palace in Bauska, Latvia, the work of the same architect, Bartolomeo Rastrelli, who designed St Petersburg's Winter Palace and Catherine Palace. So convincingly Russian are the palace's interiors and façades that they appear in several scenes as the family home of the Rostovs, central to the novel's plot. The palace and its gardens can be visited on a day trip from Latvia's capital Riga ([rundale.net/en](http://rundale.net/en)).

For the tsar's New Year's Eve ball — one of the most memorable set pieces — location scouts managed to go one better, securing permission to film in the Catherine Palace, which was built outside St Petersburg as a summer residence for the tsars in 1717. It's here that Anna Rostova (Lily James) first dances with Prince Andrei Bolkonsky (James Norton) in the mirror-lined and candlelit ballroom ([eng.tzar.ru](http://eng.tzar.ru)). Other St Petersburg locations are the



Filming in the Catherine Palace

façade of the Winter Palace, now part of the Hermitage ([hermitagemuseum.org](http://hermitagemuseum.org)) and the Yusupov Palace ([yusupov-palace.ru/en](http://yusupov-palace.ru/en)), where Rasputin was killed in 1916.

In Lithuania, the old town of Vilnius was shut for two days while the crew transformed the high street into 19th-century Moscow. Many of the battle scenes took place on farmland outside Vilnius, while the open-air museum at Rumsiskes, near the city of Kaunas, was the location for scenes depicting the officers' quarters during the campaign. ([lfbm.lt/eng](http://lfbm.lt/eng)).

**Where to stay:** The Astoria Hotel in St Petersburg ([roccofortehotels.com](http://roccofortehotels.com)) hosted cast members. In Latvia, Mezotnes Pils ([mezotnespils.lv](http://mezotnespils.lv)) is a hotel housed in a stately home that has catered to tsars and empresses and is walking distance from the Rundale Palace. Baltic Holidays ([balticholidays.com](http://balticholidays.com)) is offering a week's tour of Lithuania and Latvia visiting some locations, from £790.

Joanne O'Connor

*In the UK, 'War and Peace' continues on BBC1 until February 7. In the US, it airs on A&E, Lifetime, and the History Channel as four two-hour episodes, beginning on January 18*

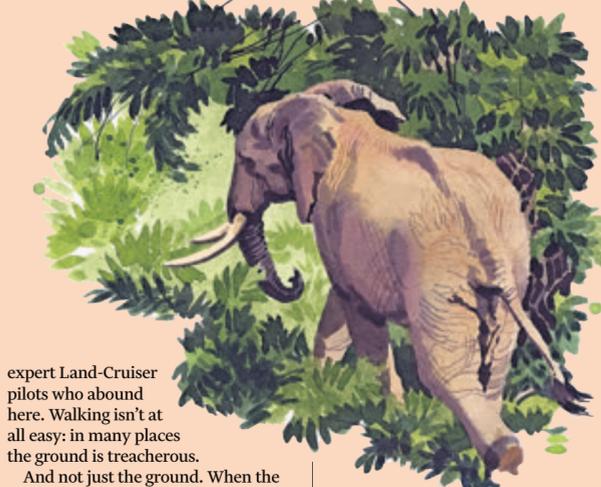
## POSTCARD FROM . . . ZAMBIA

By January the place is unrecognisable. It's as shocking a change as happens to any landscape on earth: a harsh and vicious desert that becomes a soft, benign wetland.

The Luangwa Valley in Zambia provides the finest game-viewing in Africa. At least, it did a few months back. Before it started raining. Before the place went berserk, before the place exploded into greenness. Right now it's hard to see a single large mammal because all that glorious lushness gets in the way.

They even lost the elephants — thousands of them. It was the accepted truth that in the wet months the elephants left the valley entirely and ascended into the Nchideni hills to amuse themselves until the dry times were back again. That turned out to be a rural myth. In the middle of the rainy season, I took a flight over the valley in a microlight and, from this unexpected angle, I could see great grey shapes moving softly through great green spaces. The elephants had been here all along; it's just that the wet abundant vegetation hid them from observers on the ground.

It's hard to travel across the valley at this time of year. All but a few of the roads are impassable, even to the



expert Land-Cruiser pilots who abound here. Walking isn't at all easy: in many places the ground is treacherous.

And not just the ground. When the vegetation is thick, you can't see through it. That's a problem if you want to take a nice picture of an elephant: it's also a problem if you want to stay alive. This is the most fabulous place on earth, but it does tend to be rather full of animals that can kill you. Right now you could walk into any one of them round any corner, no matter how good your bush-skills.

The most obvious change is in the river itself: in the mad, rambling,

winding, untamed Luangwa. A couple of months ago it was a narrow sluggish ditch. You could have waded it without getting your knees wet.

Now it's as wide as the Thames at Westminster and fast as a millrace, eroding its own banks, creating oxbows, adopting new courses and abandoning old ones, taking up trees and playing with them before dumping them in midstream as perches for kingfishers. This river has been thrashing about like a wounded snake for uncountable millennia, lashing itself from one side of the valley to the other: bringing life as it does so.

The valley doesn't seem like a different place at this time of year. It is a different place. The colours have changed entirely: the lion-coloured land has taken on the impossibly rich greens you find on the wings of white-fronted bee-eaters. The papyrus swamps turn an especially violent green, and a dull brown bird called the red bishop changes colour to become a living flame.

You can find water anywhere you look: puddles, ephemeral ponds, brooks, rivulets, along with turbulent tributaries to the Luangwa that at the other end of the year flow with nothing but sand. It's a kind land.

Most of the visitors come here when it's cruel. When there's no water to be

found away from the Luangwa river so every large mammal must stay within easy commuting distance of it. The land either side of the banks becomes crowded, to a staggering degree.

Two kinds of animals love this: human visitors and big carnivores. Lions loaf around the river, gorging on the buffaloes that come down to drink. Leopards hunt for antelope in the ebony glades at night; you can track their hunts with a spotlight.

Hyenas revel in the times of plenty. In the river the crocodiles make whirlash-quick assaults on drinking animals; I once saw a crocodile taking a baby elephant, to the appalling grief of its mother. This is a frightening time: and that's what makes the Luangwa Valley the best wildlife experience in Africa — perhaps the world.

But as intense womanising sometimes leads people to specialised sexual tastes, so my own glorious visits in the dry times have given me a special affection for the rains, for the soft times when you see much less, and have much less excitement. To understand the dry you have to experience the wet. To understand the ferocity you have to understand the gentle.

For after all, there really is nothing quite like a land that can lose 5,000 elephants.

Simon Barnes

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For information on visiting Zambia's Luangwa Valley, see [zambiatourism.com](http://zambiatourism.com); Expert Africa ([expertafrica.com](http://expertafrica.com)) can arrange trips to both North and South Luangwa National Parks

Simon Barnes's book about the Luangwa Valley, *The Sacred Combe*, was published this week by Bloomsbury