

GETTING A CHARGE OUT OF TOURING

eBIKE TOURING

BY NICK LEGAN

As John F. Kennedy said, “Nothing compares to the simple pleasure of a bike ride.” But, for many, the thought of a bike ride, especially a long ride carrying touring essentials, is beyond the realm of feasibility. Some adventurous souls are now looking to electric bikes (eBikes) as a way to get outside regularly. The most enthusiastic among them are taking on bicycle tours of epic proportions aboard eBikes.

While eBikes do have limitations, they are not insurmountable. The upside is the ability to go farther than expected while dialing in your preferred effort level. In the end, riding a bicycle is about enjoyment. Although no one we spoke with would claim that eBikes are for everyone, these bikes most certainly have a place in the cycling world, even for extended tours.

First, a quick primer on eBikes is in order. There are three classes of electric bicycles as defined by the Bicycle Products Suppliers Association (BPSA). Class 1 eBikes are pedal assist and limited to 20

MPH. These bicycles are allowed on bike lanes and are the subject of this article. Class 2 eBikes are throttle actuated and limited to 20 MPH. Last is Class 3 — pedal-assist eBikes limited to 28 MPH, which lie in a gray area between bicycle and moped/scooter and require licensing in Europe.

According to many, including eBike makers, only in the last three or four years have eBikes come into their own. This is thanks in part to the automotive industry, which has advanced battery technology to a state that now delivers viable ranges for eBikes. More efficient drive units and refined diagnostics have also made servicing far easier than before.

There are several ways for eBikes to deliver power to the drivetrain. My first eBike experience was aboard a disappointing rear hub-drive system. While electric rear hubs are still in use, in more recent years mid-drive systems, with their low, centralized weight, seem to be winning the eBike fight. On a mid-drive unit, the motor and associated torque sensors are housed in the bottom bracket. This assembly is then bolted onto a mid-drive-specific frame and connected to a battery and display head unit. Mid-drive systems cannot be retrofitted onto standard bicycles, but the benefits include the use of standard derailleurs, cassettes, hubs, and brakes, which make them field serviceable.

A mid-drive system adds less weight to a bicycle than you might imagine, and

the placement of that weight is ideal. As Larry Pizzi, senior vice president of sales and marketing at Accell North America (parent company of Diamondback, Redline, Raleigh, IZIP, and importer of Haibike), explained, “These eBikes handle exactly the same as a normal bicycle. They simply weigh a little more, 12 to 15 pounds more. But that weight is low and centered so they handle normally.”

Pricing for eBikes that have a high-end mid-drive system from Bosch, Yamaha, TranzX, or Shimano begin around \$2,000 and go up from there. For one of Haibike’s trekking models, look to spend north of \$3,000. So quality eBikes are far from bargains. But if they are used in place of a car for daily commuting and errands as well as for touring, some of that cost can be justified.

If you’re looking to buy an eBike, you have a couple of options for retailers. Currently in the U.S., most eBikes are sold at specialty bike shops focused on assisted bikes. But more standard independent bicycle dealers are carrying eBikes every day.

“More and more independent bike dealers (IBDs) are beginning to embrace the category. We have more IBD than we have specialty eBike shops, but the eBike shops do sell more units than IBDs,” said Pizzi.

eBike capability

If the idea of an electric bike has you salivating, you can afford to let your fancy fly. For 2016, there are more eBike options than ever before with mountain bikes, fat bikes, road bikes, commuters, and trekking models offered by dozens of manufacturers.

Many of those models, especially those using a Bosch, Yamaha, TranzX, or Shimano mid-drive system, are no show ponies. They have very practical uses in mind, not just cruising about town but also carrying loads of groceries or camping equipment.

“It’s important to match the system with the intent and the price point,” Pizzi said.

Logistical issues

Modern eBikes are certainly up to the load capabilities required for touring, so what’s the trade-off? Well, just like a lighter bike will allow us to pedal more

CALIFORNIA ELECTRIC BICYCLE POLICY



VEHICLE TYPE	VEHICLE		USER				BIKEWAY ACCESS			
	LEGAL OPERABLE	MAXIMUM MOTOR-ASSISTED SPEED (MPH)	MINIMUM AGE (YEARS)	DRIVER'S LICENSE	LICENSE PLATE	HELMET	CLASS I BIKE PATH	CLASS II BIKE LANE	CLASS III BIKE ROUTE	CLASS IV PROTECTED LANE
BICYCLE	YES	N/A	N/A	NO	NO	17 AND UNDER	YES	YES	YES	YES
TYPE 1 E-BIKE	YES	20	N/A	NO	NO	17 AND UNDER	YES	YES	YES	YES
TYPE 2 E-BIKE	NO	20	N/A	NO	NO	17 AND UNDER	YES	YES	YES	YES
TYPE 3 E-BIKE	YES	28	16	NO	NO	YES	NO	YES	YES	YES
MOPED	NO	N/A	16	YES	YES	YES	NO	YES	YES	NO

*PERMITS 40-2025





THE LEGAL STANDING OF EBIKES

Currently, the legal standing of electric bikes varies by state. In most cases, eBikes are viewed as mopeds. In October 2015, California passed legislation that formalizes the three-class system for eBikes outlined at the beginning of this story. It's the first law of its kind. With speed limits for the electric assist and defined levels of access to roads, bike lanes, and bike paths, the bill comes as a result of efforts by the Bicycle Product Safety Association, People for Bikes, and the California Bicycle Coalition.

Many, including Dave Snyder, the executive director of the California Bicycle Coalition, see the new law as the first of many victories to come. "California's A.B. 1096 is a model for the U.S.," Snyder said. Efforts for similar legislation are underway in Connecticut, Hawaii, Indiana, and Tennessee.

daily miles, so will an eBike.

"Range anxiety is one of the first hurdles for many potential eBike buyers," Ken Miner, director of sales and marketing at Haibike, pointed out. "Typical range depends on terrain and wind. Just like you and I, a hilly ride will draw the battery down more quickly. Most modern eBikes will easily get you 20 miles in Turbo mode. In Eco, expect 80 miles for a Bosch bike, and 100 miles for a Yamaha-equipped model when riding it without a load."

Both Bosch and Yamaha have four assist settings and can be ridden with the system off. A recharge cycle from empty to full takes three hours. Batteries have a two-year warranty, and a typical lifespan is 1,000 deep charges — essentially three years of charging every day from empty.

Shimano's STEPS system has three settings: Eco, Normal, and High. Like the Yamaha and Bosch systems, Shimano STEPS can be ridden while off. A charge cycle is a little closer to four hours.

Most touring cyclists riding eBikes will carry a spare battery at roughly five pounds each. Australian couple Gary and Rachel Corbett are touring in pursuit of a new world long-distance eBike record. The pair has ridden over 13,500 kilometers since they began in the U.K. last April. The current record sits at 16,047 kilometers. Aboard Haibike xDuro Trekking RX bikes and towing Tout Terrain trailers, the couple has the logistics of eBike touring dialed. They each carry two batteries and plan on stopping each night to recharge them.

"Clearly the biggest challenge has

been being able to charge our eBike batteries on a daily basis," Gary said. "While I have regularly wild camped on my previous trips, this is not an option when you have to charge batteries every night. As a result, we have had to plan our daily cycling around the availability of campgrounds, but given that Rachel is not interested in wild camping anyway, this has not been a problem. On the number of occasions we have been unable to find a campground, we have knocked on farmers' doors to ask if we could camp in their field and also charge our batteries. On every occasion, people have been extremely accommodating."

Breakdowns

The next big question is: what if something goes wrong? A mid-drive



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system may use standard bicycle derailers, chains, cassettes, hubs, and brakes, but the motor, battery, and electronics are what most concern potential buyers. When I queried Gary about their eBike breakdowns and consumables, he said, “Over 13,500 kilometers so far, the system has not missed a beat in temperatures from over 40 degrees [Celsius] to below freezing and over all sorts of terrain. Sure, we have had to replace a long list of consumables, but we have not had a problem with the heart of our beasts of burden — the Bosch electrical drive system.”

He did go on to say that the power added by the mid-drive system contributes to quicker wear on chains and cassettes, and the increased weight wears out brakes a bit more quickly. This, though, is “a small price, we believe, to be able to cycle tour on eBikes.”

And what if a problem arises with the electric assist unit? Pizzi explained that just like with your car, a technician plugs in a diagnostic dongle, and software will quickly diagnose whether it is the motor, the battery, or the electronics. It’s just a matter of finding a dealer with the diagnostic know-how.

Oh, the places you’ll go

If you’ve read this far, your curiosity in eBikes has likely been piqued. You’re not alone. In 2015, the eBike market saw 34 percent growth, and the market is expected to continue to grow 16 percent annually for the next six years. As an example of this optimism, Haibike has increased the number of models brought to the U.S. from 15 to 44 for 2016, a near tripling in options. Other

brands are also ramping up their eBike models.

Other statistics are just as telling. For instance, the average eBike user rides 10 times farther than the average bicycle rider.

Haibike’s Miner pointedly said,

“In the U.S., we’ve made cycling into a sufferfest. In the rest of the world, it’s transportation.”

Many like the idea of an eBike as a leveling device allowing a couple to ride together when there is a large ability discrepancy. For the Corbetts, eBikes made touring together possible.

“Since discovering the joy of self-supported cycle touring in the mid-2000s,” Gary said, “I have completed a number of long-distance solo rides on a conventional Trek 520. But because of the extreme nature of the physical challenge involved, Rachel did not — or more precisely — was not interested in coming along. While we regularly enjoyed weekend rides together, Rachel, despite often saying she would love to accompany me on a long-distance cycle tour, basically doubted her physical ability to cycle thousands of kilometers over all types of terrain and up whatever hill came her way. That, at least, was until we heard about the new breed of eBikes on the market.”



After researching the possibility of a long-distance tour in Europe and the U.K., Gary hesitantly proposed the idea to his wife. He was surprised by her reaction. She loved the idea, and while neither of them had ridden an eBike at that point, they felt they had found the answer to touring together. Nine months and 13,500 kilometers later, they are just as excited about traveling the world by eBike.

“Many, many people will tell you that you are crazy and that it is not possible for a host of reasons — as they did to us,” Gary said. “Just make sure you do all of the necessary planning and that you carry an adequate number of spare batteries — and go for it!”

For more information on Gary and Rachel Corbett’s eBike tour, see ebikecycletourists.com.

To test ride an eBike, call your local bike shop. **AC**

Nick Legan is Adventure Cyclist’s technical editor.

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