



# BUGS, SWEAT AND GEARS

*Doug Chinn and his daughter Kathryn put their da Vinci tandem to the test on the six-day ‘Ride the Rockies’ tour in Colorado.*

The da Vinci tandem is a rather special two-seater. This is thanks to its unique drivetrain, which allows the captain and stoker to pedal or coast (freewheel) independently. After owning one for two years, I rode on it over the spectacular ‘Ride the Rockies’ tour, with my 13-year-old daughter Kathryn as stoker. This ride was about as thorough a test of a tandem as you could wish for.

## FIRST IMPRESSIONS

The main point of interest on this bike has to be the transmission. It uses a lot of standard tandem components, a few custom ones, and no less than three chains.

Each set of pedals is linked to an extra ‘driveshaft’ through a freewheel, and this shaft (about six inches in front of the stoker’s bottom bracket) then powers the chain to the rear wheel. Because each riders’ chainrings are twice the size of the ‘intermediate’ freewheels, the shaft spins twice as fast as the pedals. This speed-doubling allows for very small final drive ‘chainrings’ – they are actually re-arranged Hyperglide sprockets. The ramps and cutaways on the sprockets mean smooth shifting, while the

extra distance from driveshaft to rear cassette reduces wear-inducing chain flex.

The system uses four of these ‘chainrings’, with 12, 18 and 22 teeth and the largest, which we christened ‘Warp Drive’, with 30 teeth. This is the equivalent of a ‘standard’ chainring set of 24 to 60 teeth and it drives an 11-30 eight speed cluster on the rear wheel. The top gear is 140 inches and low is 20 inches.

The high gearing incidentally allows the bike to use strong 26-inch wheels. We have high pressure Specialized 1.25 inch 110psi slicks on the da Vinci rims.

The rest of the bike is fitted with components I selected – the joys of getting a custom-built bike.

da Vinci is a three-man business in

Denver, Colorado, who build around a hundred frames per year, and make their own cranks and rims.

They specialise in extra short cranks for young kids, and can be pretty flexible about components.

They make one kind of frame, available in several different sizes. We have a Global Venture with custom components. Without pedals or accessories, the bike sells for \$4600 (around £3000, €5100). A ‘standard’ Shimano groupset is also offered, lowering the price to \$3600.

The standard brakes are Avids, using Campagnolo Chorus levers/shifter. Ride the Rockies is all long, steep hills, so I fitted an extra drag disc brake. The drag brake is great to set on descents so I don’t have to ride the brakes all the time



**ABOVE:** The unique da Vinci drivetrain: the extra shaft lets either rider freewheel at will

**RIGHT:** S&S couplings split the bike for transport, yet lock up rigid for riding



and can concentrate on handling.

We ordered the frame with S&S stainless steel couplers, slim and elegant. It takes six of them to break the big frame into three pieces, and adds about \$1250 to the price of the bike. They weigh about 160 grams each. We pulled it all apart to fit in a suitcase for shipping. This is a two-hour job, so we arrived the evening before the ride with plenty of time to put it together. They are easy to re-assemble, but you have to get them lined up just right. I retighten them after a few miles of riding and they never work loose after that. They don’t add any flex to the frame at all, but you pay a small weight penalty.

With couplers, three water bottle cages, speedometer, rear rack and

drag brake, the bike weighs about 42lb (19kg). The frame is welded steel with very good paint and the kind of flawless finish you’d expect at the price.

da Vinci will make you one out of aluminium for \$500 more, or titanium for a mere \$3000 more. They will also make you a full suspension mountain tandem if you want, for \$7500. Custom solo bikes are also offered.

Before we bought a da Vinci we rode several other tandems, trying to decide which one to buy. It took us about 30 seconds on the da Vinci to convince us that it is the most comfortable, easiest to ride (conventional) tandem on the market. One wonders why no one came up with the extra shaft before.



## RIDE THE ROCKIES

Ride the Rockies is a grand six-day bicycle tour of the Colorado Rocky Mountains, sponsored every year by the Denver Post newspaper and a local television station, KCNC. This year’s route covered 435 miles (680km) and climbed 25,000 feet (7600m). Two thousand cyclists and their entourage descending upon a small mountain town for the night can double the population, and the overnight stopping places see the ride as an economic dream. Aid stations are set up

every 20 miles (30km) or so, serving Gatorade, oranges, bananas and water. Local vendors offer further culinary delights such as burritos, and fried meats. You never seem to be able to get enough to eat during an 80-mile day.

A local civic organisation gets to sell the beer. Each day we’d cheer as the beer truck passed the peloton. The favourite brew? Why, Fat Tire Ale, of course. The label features a great old fat-tire bike.





RIDING THE ROCKIES

The first day we rode from Crested Butte to Buena Vista. After a fast, cold 17-mile downhill we started the climb up Cottonwood Pass, reaching 12,100 feet. It was cold and windy, but you could see forever. We then dropped 4200 feet in 19 miles into Buena Vista pedalling furiously in high warp. Buena Vista was warm and friendly, and some real cowboys put on a show. After a big spaghetti dinner and a few beers, we headed off to bed to dream about climbs ahead.

From Buena Vista we climbed up to Tennessee Pas, then a wickedly fast descent (53 mph) brought us into Edwards. Once a sleepy little ranch town, it is now a suburb of the big ski resort at Vail. It was my least favourite town on the ride: all the charm of an airport with no local flavour at all. We listened to members of John Denver's band play some great bluegrass while we sipped Fat Tire Ale in a local park.

Tuesday took us another 80 miles to Steamboat Springs. The tandem really showed its stuff on the long gradual descent from the top of the pass down to Steamboat, as we averaged about 27 mph, pulling three cyclists along with us. We hooked up with a large, fast peloton on the flat heading into town. The DaVinci was confident in the tight pack, and we even took a few pulls at the front. Speed is fun.

Next day we awoke to a cold

morning and a brutal 2700-foot climb up to the top of Rabbit Ears Pass. Another quick descent brought us to some rolling hills before the town of Kremmling, where peloton of shaved-leg young studs caught us. I was getting tired of hammering against the headwind, but Kathryn had discovered speed by this time, and while I coasted, she spun the da Vinci out in maximum warp and caught the peloton. We left them in our dust. All that hard riding left us mighty hungry, so we decided on a proper sit-down lunch at a Mexican restaurant. After a big plate of *nachos*, I had one of the biggest and best piles of *chile relLENos* I have ever eaten.

After lunch, the last 28 miles into Granby were the slowest I have ever ridden. I felt like I was ready to explode. For our British readers, a *relleno* is a cheese-stuffed chile, fried in egg batter and topped with salsa. Refried beans are served on the side. As a vegetarian, I lived on these for a week. The problem with this diet is that, uh, well, the food tends to “expand” in your gut. We spoke with another father-daughter tandem team, and she complained too about her dad's, um, gastrointestinal ‘issues’. One must put up with a lot being a stoker.

We finally rolled into Granby. The locals entertained us with another rock and roll band as we sat in the park and swapped lies about heroic rides in our various pasts.

We set out in the dark next morning, passing some brave cyclists on arm powered trikes. This was Trail Ridge Road through Rocky Mountain National Park, reaching 12,200 feet. It was cold and windy, but you really are on top of the world.

We sped down to the heat of Estes Park. The road is steep and winding, and steering took so much concentration that I didn't get to look around much. After the long descent, we had the steepest hill of the whole ride ahead of us just before the town. A one-legged cyclist on a conventional bike passed us. I guess we need to train more on the hills.

Our final day took us up and down some tough hills into Boulder, where it seemed like the whole city turned out to greet us. The ride down to Boulder has to be one of the finest descents in the world for a cycle. It goes forever with lots of curves and very high speeds. We kept having to pass single bikes by going into the climbing lane because the fast guys just weren't used to being passed, especially by an old geezer being pushed by young lady. We pulled a large peloton down the pass. Too much fun, and it was all over too soon. We'll go again next year.

THE RIDE

We'd trained about 1500 miles before the ride, as it takes quite a while for two people to become an effective tandem team.

With just a bit of practice we learned to synchronise the pedals quickly: if one rider freewheels, the pedals go out of phase. A tiny pause by one rider is enough to get the front and rear sets of pedals rotating together again. There is very little connectivity between the sets of pedals, so the bike feels more like a solo bike than it does a tandem. We have only recently been able to stand up together on the pedals. The power is amazing when we get it together, but it is hard to do.

Some tandem riders with

conventional drives asked if we had problems grounding pedals in corners. There's never been any problem for us – you just don't corner that hard on a tandem.

Starting from a stop is very easy for us, even uphill. Kathryn locks her feet in and starts pedalling. I can clip in at leisure and don't have to try to hook up to a moving crankshaft. Sometimes I forget to pedal until I hear a noise from the back.

The Campagnolo derailleur works fine. The Sachs front derailleur works fairly well but it hangs up if we are not careful shifting from the 22 to the 18. Front derailleurs aren't made for diameters that small. The drive is noisier than other tandems I've tried, due to the extra chain and small gears, even when kept well lubricated.

My Terry saddle has a hole in it, which made me comfortable the whole ride, and Kathryn's suspension seat post kept her from getting slammed on the bumps. The frame is very stiff, but some twisting can be felt when I hold the stoker's handlebar. We never had any flexing problems on the steep climbs.

We never had to use the lowest gear for climbing the paved hills, but we have used it on a local dirt hill, where we had the power to break the tyre loose. The roads in Colorado are long and the altitude is a big factor, but they are not that steep.

We rode in a couple of pelotons, averaging 25mph. The bike was stable and surefooted even in a fast, tight pack. And in high warp no single bike can hope to catch us. My cousin rode with us on a solo, and on the flat and windy sections he'd just sit in our wake and pedal as fast as he could as we passed every other bike on the road. Strong cyclists began to look for us coming, hoping to catch our wheel. We would routinely pull a group of cyclists for 30 or 40 minutes at over 20 mph. But many of the solo bikes we passed on the flats passed us on the hills.

After 435 miles, the bike was covered with bugs, sweat, road dirt



STOKER'S COMMENTARY

I started riding when I was eleven, mostly on the tandem. As a stoker it is my job to watch for cars, check for other cyclists in our pocket, and act as turbo engine. I also act as an automatic speed warning (it works on the noise-complain factor). In learning to ride the da Vinci I had to learn to get phase with my dad, as having our pedals in phase just works better.

I have learned to love riding. As a person who loves a challenge, cycling constantly challenges me, forcing me to learn and get stronger, and because I have no control over brakes or steering, it forces me to control my temper,

conquer my fears, and (after eating one too many bugs) scream with my mouth closed. On Ride the Rockies I got to meet some incredibly interesting people (and some rather annoying ones), learn to be a better rider, and get to know more of my father's side of the family. I discovered a bond in a common interest, a bond that brings 3000 people together yearly. It was a truly wonderful experience, and I encourage anyone willing to try to do it. Being the strongest, or the fastest, having the most expensive bike, or an *el cheapo* bike doesn't matter, as long as you are willing to try. Kathryn Chinn

and grease. It rode flawlessly and smoothly, and we almost hit the 55 mph (90km/h) speed limit a couple of times. We could have gone even faster, as the bike is stable at that speed. Since the gearing is so high, we could pedal earlier on the long runouts than any other bike, getting us to our hot showers sooner.

SUMMARY

da Vinci make a solid, comfortable bike that is very, very fast and stable. The dual drive makes it a whole lot easier to start from a stop, and makes the bike very good for teams with different abilities and sizes. The independent coasting ability allows both riders to maintain comfortable positions and eliminates the drive train jolts that happen on other tandems when one rider stops pedalling. It has top grade components and the workmanship is excellent.

Of course, being custom built, it is more expensive than some tandems. But if you can afford it, the benefits of the unique transmission and custom components make it, for me, well worth the extra cost.

Tandem riding is a great way to bond with a child or friend, plus you get where you are going very, very quickly. Kathryn now wants to start bike racing!

CREDITS

Action photos and text by Doug and Kathryn Chinn. Studio photos courtesy of da Vinci Designs. Special thanks to Dean VonHoldt for his help with the story and photos, and for valiantly drinking an extra six-pack of Fat Tire Ale so that we could scan the packaging.

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