
love to ride
seven cycles

“We move like birds
happily tethered to the earth.”

# articles

# Finding a Place for 25,000 Bikes

Since Seven's inception, I've been fascinated by our position in the bike industry. Fifteen years ago, a template for a medium sized custom bike building company didn't exist. It is because of this that it's been instructive to witness how the industry changes, and to see the context in which we fit—and sometimes don't fit—within those changes. Every once in a while we discover that Seven has come to influence some shift in the very industry we vie to learn from.

Over the last decade, as the larger industry has accelerated its move to the "design and import" model, there's been a counter proliferation of individual framebuilders. Bike brands seem to be getting either bigger or smaller than Seven Cycles, leaving us in a somewhat unique position. This is something I love.

To get where we are today, we spent the better part of two decades refining and expanding custom framebuilding in the context of a production setting. In essence, crunching data and developing processes that have enabled us to hand build more than 25,000 highly precise, completely custom frames.

Seven has always fostered the ambitions of young builders. Many small companies are born here. Some go on to establish

*Supporting the efforts of people who are passionate about custom framebuilding comes back to us over and over in making the world a slightly better place.*

themselves in their own right while others stay to learn and be a part of our ever growing and changing place in the industry.

Teaching and supporting this new group of builders might seem like a foolish use of time and resources—at least so I've been told—but I see that supporting the efforts of people who are passionate about custom framebuilding comes back to us over and over in making the world a slightly better place.

The industry. Our experiences. Our team. The combination of skill and drive within each Seven employee pushes us onward in the bike industry, raising the bar for our work.

It's an exciting time for Seven, as it is every year.

***Rob Vandermark** is Seven's founder. He's the luckiest person alive.*

# Nickname: Union

In my mind there was always a space between Seven Cycles' all-carbon Diamas bike line and our titanium-carbon Elium line. An opportunity to push both materials, titanium and carbon, to their limit. In fact, as we worked on the 622, we gave it the nickname Union. We literally set out to unite the two lines into one bike that would express truly unique ride characteristics and aesthetics.

The easy road would have been to take the Elium and simply add more carbon to the frame, perhaps at the head tube and down tube. In fact, we did this back in 1998. We didn't like the results so we put that project on hold until some of the Union technologies would be available. Those early prototypes


*I am always amazed at where new projects lead us. The best ideas come from unexpected people and places.*

felt more like iteration than evolution, so we bided our time.

As we worked on tangential projects over the years we finally found an opportunity to design a frame with a truly different ride feel. It wouldn't overlap with our favored Elium design or infringe on our innovative Diamas line. In short, the carbon tubes dampen the ride, almost to the feel of a full carbon bike—but not quite. The titanium lugs provide one of my favorite behaviors of titanium: the ability to absorb road shock while simultaneously offering a lively connected ride. The blending of these two materials delivers a ride that isn't achievable with a full carbon frame or a full metal frame. A unique union unlike any other.

I have to confess that in the history of Seven, I have always erred on the side of caution in frame design, which is to say I have valued the strength and durability for which we've come to be known. Because the Elium line is so durable, the evolution of the inherently tough 622 technology really freed us to think much more about the look of the bike.

Once we had the difficult parts figured out—ride and durability—I started to obsess over the visual design. As a kid, I went to art school, focusing on two disciplines, bronze figurative sculpture and illustration; and in a way those two interests have remained competing forces in my design work at Seven. On the one hand, I have a very literal sense that comes from illustration. The translation to engineering and drafting seem obvious. On the other hand, I am always attracted to organic, non-geometrical shapes. The 622 lugs show those two influences in harmony. We have succeeded in producing a frame element that is at once precise, effective, strong, and long-lasting, but also flowing and dynamic.

Another important aspect of the 622 coming to life was due to an internal collaboration with Seven's experienced framebuilders and designers, a project in which we developed a lugged steel bike, from the ground up. The outcome of that project was never intended to become a production frameset, but the lessons we learned were clearly put to good use in the 622.

I am always amazed at where new projects lead us. The best ideas come from unexpected people and places. We collaborate, we follow each other's ideas to their logical conclusions, and sometimes the result looks like our 622 SLX, a bike I'm proud to call Seven's newest design.

*Rob Vandermark began framebuilding in 1987. We haven't been able to get him to stop.*

# A Tiny Meditation

For all our love of the bicycle, it is but a tool. We've heard from cycling advocates, green activists, and city planners how the lowly bicycle is the most efficient method of multiplying energy, of moving through the world that humanity has yet devised. We may nod, but in our bones we know that misses the point. We love the bicycle not because it is efficient but because it makes us efficient. We see the world; we flow through it like water down a river and we move, yes, we move like birds happily tethered to the earth, as if being still is a theft of freedom.

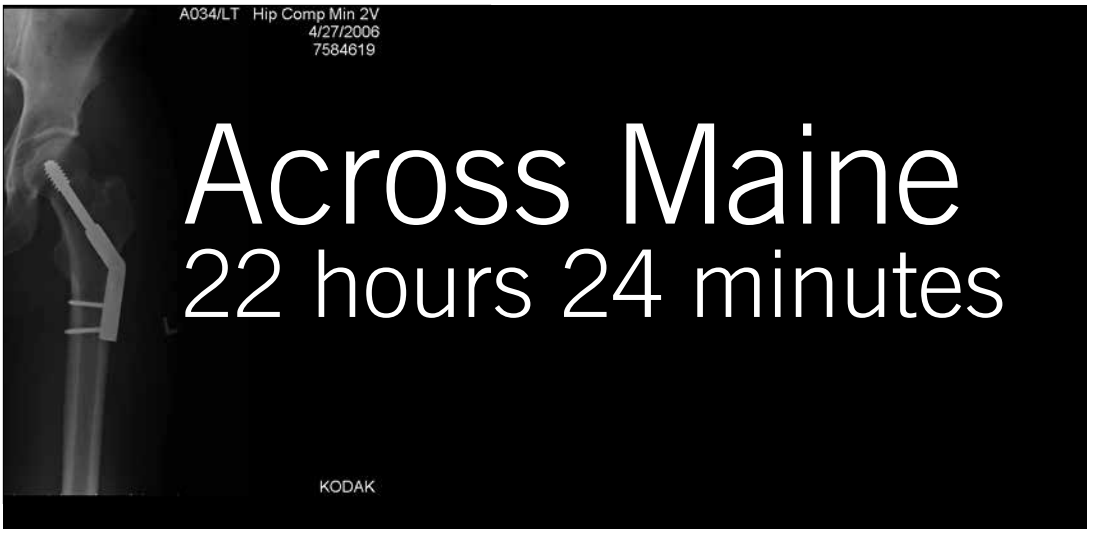
Sure, we love the bike. We love how it looks, we love its mechanical precision, its effortless elan, but for all its beauty those features are nothing more than our romantic projection of the ride itself, a way to look at an object and be reminded of the enjoyment that riding gives us.

That doesn't change the fact that the bicycle is a tool. Oh, but what a tool. It's a fun delivery device. It is the refinement of human motion, the distillation of effort and the magnifier of ambition.

It's fair to ask, though, what that tool allows us to accomplish. An axe is meant to cut down a tree, a shovel to dig a hole. The bicycle is a way to focus on process. A way to discover elegance within muscle, an elegance we may find during no other hour of the day. A way to do and do and do, until the self goes quiet. It's a way to discover our innermost thoughts. No matter what our beliefs, we are, each of us, Zen monks and each pedal stroke is a tiny meditation, a search for our truest self.

***Patrick Brady*** *runs the popular* RedKitePrayer *blog and is Editor-at-Large for* peloton *magazine. He is the author of* The No Drop Zone*, a guide to all things cycling, as well as a husband and father. He lives in Los Angeles.*

*We see the world; we flow through it like water down a river and we move, yes, we move like birds happily tethered to the earth, as if being still is a theft of freedom.*




# Across Maine
## 22 hours 24 minutes

April 9, 2006. Brigham and Women's Hospital, Boston MA.

"There is a good chance that you'll need a total hip replacement sometime in the next 3-5 years. It is also likely that you will always walk with a cane, and you will probably never ride a bike the same way again."

These were the words of my surgeon shortly before I had the ball of my femur surgically re-attached following an accident in a local criterium. I'm admittedly a little hazy about the conversation we had before I was rolled into the O.R., but I do remember saying this in response to his prognosis: "Anything less than a 100% full recovery is unacceptable."

After a few days in the hospital I came home, hobbling up the stairs on a walker. Broken. I knew right away that I needed a carrot on a stick to get me through the rehabilitation process. In those first few days, I thought a lot about what racing meant to me, what the bike meant to me. I quickly realized that what I loved most about racing was riding. I didn't care about winning or watts. Freedom. That's what it was all about. Two-wheeled independence, unfettered, anywhere, everywhere.

That's when an idea, a mission, began to crystallize: I would set the first-ever cross-state cycling record for the state of Maine. Maine's record and route were not yet established, so I had an opportunity to do it my way, to set a course that did the state justice and tested my limits.

I would start in Fort Kent, touching the Canadian border and weave my way through the back roads of Maine to Kittery, riding more than 380 miles with more than 22,000 feet of climbing. All in under 24-hours. I had a lot of work to do.

I used a walker for six weeks, crutches for three months, and endured sixteen and a half months of daily physical therapy. I got back on the bike and slowly learned the ropes of long-distance riding. Throughout my rehabilitation, and with the support of my wife, family, and friends, this goal remained my sole focus. It inspired and motivated me. I wanted to prove to everyone, myself especially, that I had made a spectacular comeback.

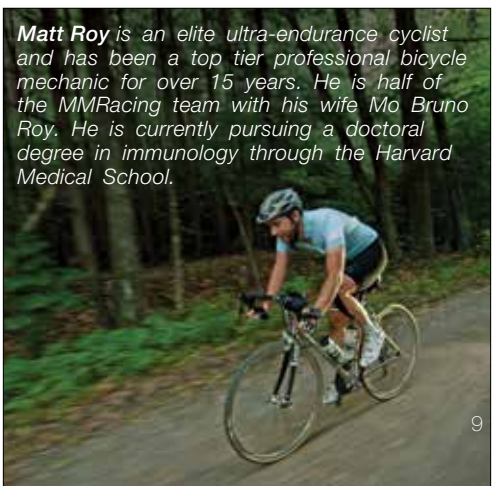
*I covered 382.24 miles that included unrelenting climbs, nasty headwinds, porcupines, looming thunderstorms, and 96-degree temperatures.*

On Saturday, August 25th at 5:15 am I left the Fort Kent Municipal Building parking lot, just across from the Canadian border. Twenty-two hours and 24 minutes later at 3:34 am, I stepped off of my bike in New Hampshire, moments after crossing the state line in Kittery, ME.

In the time between, I covered 382.24 miles that included unrelenting climbs, nasty headwinds, porcupines, looming thunderstorms, and 96-degree temperatures. My average speed with stops was 17.06 mph, with a rolling average of 18.4 mph. I set the first cross-state record for the state of Maine.

Since then I have gone on to set a number of UltraCycling records including Maine West to East, from Fryeburg to Lubec, totaling 248.3 miles in 14:45. And most recently a new Saratoga 12-hour course record of 259.5 miles at an average speed of 21.63 mph.

Through my recovery and return to cycling I have found my niche. I have been fortunate enough to crisscross New England in countless ways on two wheels. There are vistas, bridges, rivers, fields, mountains, nooks, and crannies best experienced on a bike. Every new road is freedom. Every mile, cherished. It turns out my surgeon was partly right; I never did ride a bike the same way again. Now, every pedal stroke is a gift.



***Matt Roy** is an elite ultra-endurance cyclist and has been a top tier professional bicycle mechanic for over 15 years. He is half of the MMRacing team with his wife Mo Bruno Roy. He is currently pursuing a doctoral degree in immunology through the Harvard Medical School.*

More than a format, randonneuring is a culture highlighted by long routes and camaraderie. Rando legend Melinda Lyon suggested that, first and foremost, randonneurs are always polite: you can ride hard, but your speed remains secondary to consideration for everyone, whether it's another rider, a course volunteer, a motorist, a citizen with no affiliation with the event, or your own safety. In races, other riders try to drop you; in randonnees, your company is a welcome part of the journey. The course itself is the daunting competitor.

The direct translation of the French word "randonnée" is "hike." In the context of cycling, "randonneuring" is a French invention in the same spirit as events that call themselves a "challenge." It is not a race because there are no awards or placings, and it is not a relaxed tour because the difficulties are unpleasant at times. There are, however, time limits for reaching each rest station.

Much of the challenge is due to a randonnee's length. The "short" version, a "brevet" (French for "brief") is scaled in increments of 100 kilometers—100K, 200K, 400K, etc. While most new randonneurs will try a 200K, many soon try a longer version, both for the challenge and the appeal of riding long routes with like-minded riders. The allure is not more suffering, but a craving to make a full day of it. Extending into the night only amplifies what makes the sport great. You explore like never before.



***Sandy Whittlesey*** *is the route designer behind classic off-road events like the Deerfield Dirt Road Randonnee and the Green Mountain Double Century.*

Randonnee rules are almost transparent. For example, rules require obeying traffic laws, which is the case under any circumstance. Riders have to follow the designated route—which sounds like an invitation to shortcut, except that the route typically follows the best course between points, if not steering clear of outright misery. Randonnees also disallow crew support between designated checkpoints, but that is simply the reality of the open road—and the fact that friends are generally unwilling to drive 200 miles to meet riders in the middle of nowhere with coffee and pastry at 2 am. Thus randonneurs navigate and plan their ride with extra food, clothes, and tools.

Randonnees are open to riders of all backgrounds and goals, from racers to tourists, from experienced ultradistance riders, to weekend warriors looking to highlight their season. They are a classless society. Everyone starts together and gets the same support en route. Randonneuring completely echoes the French motto "Liberty, equality, fraternity"—no wonder it has surged in popularity in the States.

The first-timers look tense at the start, but by the end, or at least after a night's sleep, one of two things has happened: either that rookie has a once-in-a-lifetime experience, never to be repeated, or is completely hooked and can't wait for the next ride.

# Through the Night, Together

# Half Crazy,
## All For the Love of You

Tandems are twice as much fun! There. The secret's out.

Not for the shy and retiring, they attract lots of attention. They elicit smiles and renditions of "Daisy, Daisy" from adults who see them as romantic, and squeals of delight from children, "Look, it's a two headed bike!" Tandems can add a whole new dimension to your cycling.

Tandems are also the victim of some common misconceptions, such as the idea that the stoker's only view is of the captain's back, that they are slow up hills, and that they are divorce machines, but in reality a well-tuned team of captain and stoker can turn a tandem into much more than just a two-headed bike.

*As we went to press,* ***Pamela Blalock and John Bayley*** *were busy testing Sevens in the Cévennes region of France.*

**Stoker:** The view from the back is 350 degrees of visual delight.

**Captain:** So that makes me 10 degrees of what, exactly? While communication on a tandem is undoubtedly important, I've learned to ignore certain communiques from the rear of the bike, such as, "Look at those skydivers."

**Stoker:** Tandems are fast. Sometimes scarily fast!

**Captain:** I've been accused of ignoring squeals from the air-brakes on scary descents.

**Stoker:** I love disproving the myth that tandems can't climb.

**Captain:** While some might take offense, I take quiet delight when I hear comments like, "You're going up there on that?" knowing that it will be mere nanoseconds until the stoker-turbo kicks in. Who needs electric assist?

**Stoker:** We frequently hear, "She's not pedaling," which I stopped finding funny, but we have stumbled across some creative ad-libbers on occasion. Our favorites include: "She's almost caught you," and "This climb is so tough, it takes two of you to get up it?" and "If you save up your money, you could afford two separate bikes."

**Captain:** Perhaps Ernest Hemingway had tandems in mind too when he wrote, "It is by riding a bicycle that you learn the contours of a country best, since you have to sweat up the hills and coast down them." That is doubly true on a tandem. On a tandem, it's all about momentum.

**Stoker:** We used the phrase tandem-rollers to describe terrain where momentum seemingly makes riding effortless. There is nothing more fun than feeling the g-forces as we crest a little tandem-roller, especially when we pass a hard-working paceline!

**Captain:** Not that she's competitive.

**Stoker:** A well-coordinated, compatible team can outperform a stronger, but less synchronized duo. But it's not always about going fast. Sometimes it's just about sharing the experience and taking the time to smell the flowers.

**Captain:** She really means "smelling the coffee."

Now that you know the secret, please keep it to yourself!

# The Inescapable Pull of the Group

All week I daydream about a single, ordinary group ride. Saturday morning I wake up before the alarm clock, whirl up a sweet, creamy smoothie, jump on my bike and pedal over to the meeting spot five minutes from home. I have no interest in sleeping in since I found this ride.

The group I roll with is mostly the same, week after week. We always gather at the same place: they expect to see me here, I expect to see them. When I first joined the ride, I knew no one, but they accepted me as we all have something—the bike—in common. We quickly became friends.

Others in the group sometimes bring their friends along. A friend-of-a-friend on a bike is a friend almost without question. None of us would know each other otherwise. This one's a software engineer. That one's a medical device salesperson. She's a lawyer. He's a physical therapist. I'm new to this area and haven't found a social group yet, but am completely satisfied with this one being it.

*Patria Lanfranchi is a co-owner and curator of the Ride Studio Cafe in Lexington, MA.*

*I wouldn't be in this spot if we hadn't taken the back roads that hug the countryside leading to the breathtaking vista.*

We know everything about each other and are anxious to catch up after a week of more-or-less regular life, work, and other hum-drum activities that fill our time and get us to the weekend faster.

Where are we headed today? The ride will be long: 6,000 feet of climbing, eighty-plus miles. We're building our base fitness, so we know we need to keep our heart rates down. The rule is: if you can talk comfortably without gasping, you're riding at the right speed. Translated, this means plenty of miles of time to visit. It's conversation at times, bike banter at others.

The talk ebbs and flows with the movement of bikes down the road, in traffic and on quiet roads. There's joking, laughing, and taunting between the girls and the guys. It's easy to forget about the distance or even the exact location.

I don't know where I am. I haven't been here before in my life. I wouldn't be in this spot if we hadn't taken the back roads that hug the countryside leading to the breathtaking vista. And I never would have ventured here if I hadn't been just following the group.

The ride passes quickly and by the end, I'm tired—we're tired. We detour to a stream that runs through town to soak our legs. We part and promise to see each other next Saturday morning. There is still a lot of time left in the day, since we started early.

I eat a tasty meal, take a walk, find my favorite spot in a beanbag chair and read myself to sleep. Each of these activities feels better after that group ride than it would have by itself. I have an overall feeling of satisfaction that I only experience after a group ride.

Tonight I will sleep better than I have all week. Tomorrow I will awake more ready for the day. Next Saturday is coming soon. I can't wait.


RUDY
63
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# Aerodynamics is Not Speed

There are few places a custom bike makes more sense than in a triathlon or time trial setting. Optimal ride position is where aerodynamics, and ultimately speed, flow. Many bike companies place their frames in wind tunnels to shave fractions of seconds out of the tapering of head tubes and seat masts. They will make the frame as aerodynamic as they can, because, in the end, they can't make the rider more aerodynamic.

Unfortunately, the rider is the largest part of the aero equation.

Wind resistance created by the rider overshadows any wind cheating benefits that an aero frame provides. The primary factor in rider aerodynamics is fit; plain and simple. If you can sit on your bike in a comfortable, aerodynamic position you will gain advantages both in limiting wind drag and in generating more power.

Designing bikes is never about focusing on only one of the machine's characteristics. It is never just about weight, or just about aerodynamics, or just about choosing the right material. Prioritize and balance all good choices against one another.

So a good tri or time trial machine has to be light, and it has to be aerodynamic, but it also has to fit the rider in a way that allows the competitor to take advantage of airflow and watts per kilo. A bike designed from scratch to fit properly has a bigger impact on speed than the aerodynamics of the frame alone.

When stock frames are adapted to try to achieve proper fit, bike handling and biomechanics are often compromised, which limits the bike's average speed.

At Seven, we build 100% custom, carbon triathlon machines with the idea of balancing weight, aerodynamics and fit for maximum on-road speed. We will not build the lightest bikes on the course. We will not build the most aerodynamic frames in the race, but the combination of custom fit, lightness and aerodynamics we build into every machine allows every Seven rider to find their top speed and hold it longer than the competition.

***Neil Doshi*** *is Seven's senior Performance Fit Designer. He surfs, skateboards, and he owns more bikes than most of us own socks.*

photo: Joseph Battaglia

# Daydreaming in Broken French

When I was a kid, there were 3 things I thought that I was good at: daydreaming, art projects, and running fast. And there was one thing I couldn't wait to be, a grown up, so I could finally do all those fantastic, fun things from my daydreams. There was nothing in particular I ever wanted to become, but there were endless things I wanted to do.

Every day I feel incredibly lucky to have this life. I am a successful massage therapist, hold a BFA in sculpture, and am an elite cyclocross racer, "on the side."

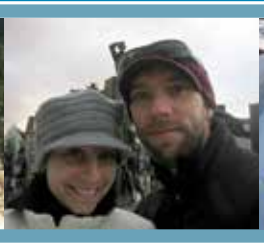
I have always identified myself as athletic, and when I stopped competing in track and field, I immediately tried mountain biking. Within a few years I started racing cyclocross. That was 2003, and I raced for a local women's club. My first race was pretty bad. I finished tenth out of twelve riders, but I really loved the intensity and energy of the races, so I committed to about six races that season.

It wasn't until my penultimate race of the season when I got my first podium, third place, and I was pretty thrilled with my success. The last snowy, icy race of that season I found myself riding off the front with the mountain bike National Champion, Mary McConneloug! The crowd was cheering so loudly and with so much energy for me as I kept pace with Mary and finally managed a second place finish. I was hooked.

It wasn't long before my husband and I were traveling all over the country and then all over the world. I've met so many kind, caring, supportive people and tried to speak more languages than I ever imagined. I consider myself fairly adept at grasping foreign languages, especially when written, but I seem to have the hardest time with French. A few years ago we were in Belgium and France for two races when I found the email address of the promoter of another small UCI 'cross race in France. With the help of Google Translate, I registered for the race, or so I thought.

*I found the email address of the promoter of a small UCI 'cross race in France, and with the help of Google Translate, I registered for the race, or so I thought.*






*Mo Bruno Roy was overall winner of the USA Cycling National Cyclocross Calendar for 2009, Bronze Medalist in the 2005 Elite Cyclocross National Championships, three-time Masters 30-34 Cyclocross National Champion and two-time US World Championships team member. She is half of the MMRacing team, along with her husband Matt Roy.*

When I arrived in the tiny village, nobody spoke English, so I did my best with polite niceties in my poor French and presented my racing license for registration. Everyone was puzzled. I was not on the list. Finally, the promoter arrived to help, and he recognized my name, finally exclaiming, "Ahh, Femme!" I had not specified that I was a woman in my email and was registered as Bruno Roy in the men's category. Another bout of hand gestures, pointing and my terrible French ensued, and now I specify "Femme" or "Dames" on every emailed Euro registration!

We rent the same little cottage in Belgium each year. I stayed there with a Canadian racer and her family my first time in Europe and made friends with the owners and their three boys. The last two December trips we have even celebrated Christmas Eve dinner together and brought the boys Legos and Silly Bandz.

For a day-dreamy-art-jock, it's pretty nice to feel that connectedness and belonging to a community. Internationally, cyclocross racers are like celebrities in many countries. It's likely the closest I'll ever get to feeling famous and that's pretty amazing for a kid that never really wanted to become anything in particular.

For me, the feeling of butterflies in my stomach starts sometimes two or three days before the actual race. I don't know why racing my bike makes me feel this way. There's not much on the line, and I'll be lucky if three spectators even know my name, but the whole thing still makes me nervous.

I started racing cyclocross a few years back, and I was hooked right from the start. I think about 'cross all summer long, and it's the thing that makes me most excited when the cool weather abruptly takes over from the August heat and humidity.

What I love about it is the culture of encouragement and enthusiasm. That and the post race beers. The venues are always interesting and often family friendly. At the start line, nerves turn into idle conversation, and the talk turns to tire pressure, lack of training, and which section of the course favors which type of rider. I like to say that bad weather and a more technical course favor my riding style, but maybe I just tell myself that because I have puny quads. My strategy: go out and ride as hard as I can until they tell us we are done.

Cross racing offers challenges that you won't find on your regular Sunday group ride. Barriers, steep and loose run-ups, beer, heckling, and more beer are all part of cyclocross. You'll also find mud, snow,

# Podium Dreams and Muddy Disappointments

sand, blazing hot sun, and freezing cold wind. I like the excitement, the community, and that racing makes me nervous days ahead of time. I also like that races only last about 45 minutes. It doesn't have to be an all-day affair.

An athlete takes some time to develop a race day ritual, and mine is not well developed. I usually try to get a lap or two on the course, especially if it's one I've not seen before. I go in knowing that I'll want to get a good warm up ride, but that hardly ever happens. These days the staging is coordinated using rankings from the folks at crossresults.com. Not only does this lend to a fair shot at moving up in the field to those who race most often, but it also gives 'cross racing an interactive fantasy football element that I rather enjoy. If I can't win, at least I can compare myself to all of the sandbaggers that beat me and see what it will take to move up. The answer is always the same—train harder (or train some) and race more often.

*At the start line, nerves turn into idle conversation, and the talk turns to tire pressure, lack of training, and which section of the course favors which type of rider.*

Even as a beginner in the world of cyclocross, I consider it a large part of how I define myself as a cyclist. It sets me apart from the guys I rode mountain bikes with in my 20's and the folks on the Sunday group ride. And when was the last time you really tried to win a race? I have podium dreams, and this might just be my year.



***Joe Wignall*** *is Seven's Senior Account Executive. He is a father of two and once earned his living as a professional ski instructor.*

# Racing Across the Andes


The landscape here is big and open, blessed with active, glacier-clad volcanoes and turquoise lakes that are fed by tremendous, untamed rivers. We spent the week far from just about everything we know, except of course our mountain bikes. Mary and I competed together as a mixed team covering more than 260 miles endowed with something on the order of 35,000 feet of climbing. We were on the bikes for 21.5 hours riding over volatile, sight-unseen terrain using racing tactics about as far away as you can get from those found within the confining ribbons and regulations of the cross country courses we normally compete on.

This was our second experience competing in the Trans Andes. A general race profile would hardly need to mention the short strips of pavement through rural villages as the majority of the time we seemed to be gnawing our way up burly gravel roads on the side of one massive mountain or another. Exposed, stair-stepped climbs continued to rudely cut technical jeep tracks often topping 20% grade for l-o-n-g minutes before continuing to excruciating single track pitches. There, we often slogged on foot, huffing pounds of powdery, disintegrated volcanic ash into our lungs as we struggled to advance in the mix of marbly duff and the dung from thousands of cattle.

*Mike Broderick has been racing mountain bikes on the World Cup circuit for the last decade and a half. He and Olympian Mary McConneloug have become legends in the race community for their green lifestyle and their long-term perseverance.*

Then there were the descents long enough to forget you had ever pedaled or been hot and sweaty, technical and fast enough to barely allow a glance at the awe-inspiring Andes that cloaked the sky. Premier single-track experiences were sprinkled in throughout the carnage, enough to make the leg-quivering pedal strokes and stumble-up hike-a-bikes worth the effort. The majority of the good feelings we have from the ride came from the tremendous amount of ground covered, over the type of terrain that made you feel that the bike was the greatest invention ever conceived.

Each day brought its own challenges and triumphs, memorably. The opening stage was so hot that some of the veteran pros needed saline IVs. Stage four, with fifty or more miles and over 7,100 feet of climbing, brought most in attendance to a new level of suffering and Mary and I to our proudest finish, as we were able to claim a hard earned second place overall after four and a half hours on the bike. We even finished the day on the winning end of a unique two-up, two-person team sprint finish.

On day five we struggled with the accumulated miles and the course profile, another with around fifty miles and over 7,000 feet of climbing complete with a hike-a-bike that, if not for the clearly marked course, would have the sane turning back, convinced it was just not a suitable place to bring a bike. The final stage was the fastest and required solid effort to preserve the week's hard earned time. Too bad this meant sucking wheels in dust thick enough to feel it settling in your lungs and grinding down your teeth like pumice stone.


Mary and I called upon the strength of our personal relationship many times while competing together. Overall we worked together incredibly well, though neither of us would hesitate to say that it was a big effort to win the overall in the mixed-duo pro category and finish third in the overall classification.

The whole experience of the Trans Andes Challenge reinforced our feelings that cyclists around the world are in effect a community and a fantastic one at that! The bonds we made while suffering and racing together over these six days are ones in some cases that will last a lifetime.

*Then there were the descents long enough to forget you had ever pedaled or been hot and sweaty, technical and fast enough to barely allow a glance at the awe-inspiring Andes that cloaked the sky.*

# Out of Gas in Leadville

When I was asked if I wanted to interrupt my life in order to take on a bunch of training and travel to Colorado for one of the hardest cycling events on the planet, my immediate and obviously irrational response was "Hell yes! I hear that thing's brutal, and I don't have the time, or the money—but uhh, where do I sign up?"

Eventually, I learned that legions of the Leadville hundreds of riders undergo this same process. This year, 2,000 souls signed up for the pain and suffering that this event is all about, and this isn't a bunch of bike racers. The truth is that the majority of the Leadville horde are just people, who ride bikes, and who have some crazy reason to take on an extreme physical and mental challenge. Their goal is to push themselves to the limit, reach a higher goal, conquer their demons and otherwise enjoy that simply sweet feeling which comes when you've finished a ride on empty.

I think I understand. I mean, I enjoy riding as much as the next guy or girl, but like so many cyclists, the main reason I spend significant chunks of time on my bike is to escape. This is my therapy and the best resource I have to clear my head and to solve life's riddles. And I guess it's in this context that the Leadville 100 makes the most sense.

Otherwise, give me a break! A mountain bike and one hundred miles of exposed high-mountain fire road, on a course that's designed to break you, and people are paying money for this?

*A mountain bike and 100 miles of exposed high-mountain fire road, on a course that's designed to break you.*

My most memorable Leadville experience was the long and arduous Powerline climb because it didn't matter who you were at that point—the course was in charge. This is a section that forces most riders to get off and walk. While I managed to tough it out, I was barely keeping it together.

At that point I thought that I'd never race Leadville again, ever. It was a very dark period in my life. Seriously. That makes whatever took place over the next hour or so remarkable, because by the time I reached the finish line my check for next year's race was already signed.

Thinking about it all now, trying out Leadville this year really wasn't the most practical decision, but my demons compelled me to go all in, and I listened. I was focused, became as fit as possible, and ended up with a strong 7 hour and 52 minute finish. I found everything I was looking for, and then some. A challenge met, with not a fume left in the tank.

*__Mitch Trux__ is an elite cyclocross racer and a successful independent marketing consultant in the bike industry. He and his wife live in San Francisco.*

# Bone Marrow Deep

I have been racing mountain bikes for more than half of my life. Starting young probably explains why the sport's hook is set so deep in my psyche. My developing teenage brain was especially susceptible to that strange combination of adrenaline, caffeine, and endorphins that intoxicate a race day.

Now, some 15 years and nearly 200 races later, I still have an evergreen enthusiasm for mountain bike racing. I love the sport for all the right reasons: the head-to-head competition, the bone-marrow-deep efforts, and the hope-then-doubt-then-elation of a race winning attack. But there is something else that draws me to mountain bike racing, something maybe a little less pure: the sweet, sweet bikes.

Bike lust hit me early and hit me hard; when other 7th graders were passing around Playboys, my friends and I were drooling over the latest bike catalog. As soon as I could talk my way into a job sweeping floors at the local bike shop, I was climbing the ladder from sport, to comp, to pro model bikes.

By now I have raced mountain bikes with almost every possible combination of frame material, wheel size, and suspension.

***Dan Vaillancourt*** *is one of Seven's Performance Designers and fitters. He raced professionally for Colavita-Sutter Home and Toshiba-Herbalife. Do not try to ride Dan's wheel.*

What have I learned from my years as a gear hound? Well, once the shine comes off and after you give up on cleaning every bit of dirt from between your cogs, the best bike is the one you ride the most and think about the least. My race bike still has to be light, fast, and cool, but now it also has to be a good value and low maintenance. Does this Porsche pickup truck exist?

Yes, it's a titanium, hardtail 29er.

The 29-inch wheels are obvious; they float over the rock gardens and root fields that define our New England trails. Big wheels mean more speed on the road, making it easy to ride to the best trails or to keep up with the Wednesday night cyclocross ride. The hardtail helps with that too; no unnecessary weight and no energy lost to bobbing.

Efficiency is great, but just as important is the ease of maintenance. When a rear suspension bearing gives up in August and the series finale is in September, you'd better be in good standing with your mechanic, or you're going to be looking for a loaner.

Hardtails are simple and reliable, season after season. A carbon hardtail could be the lightest, fastest race bike of all, just so long as you never crash. This past July, my racing frienemy Brad was about to drop me for good when he clipped a sapling and flew sideways into a tree. I was sure the crack I heard was his collarbone, but luckily it was just the top tube of his carbon race bike. I won the race, and then rode home. Brad got a lift from his girlfriend.

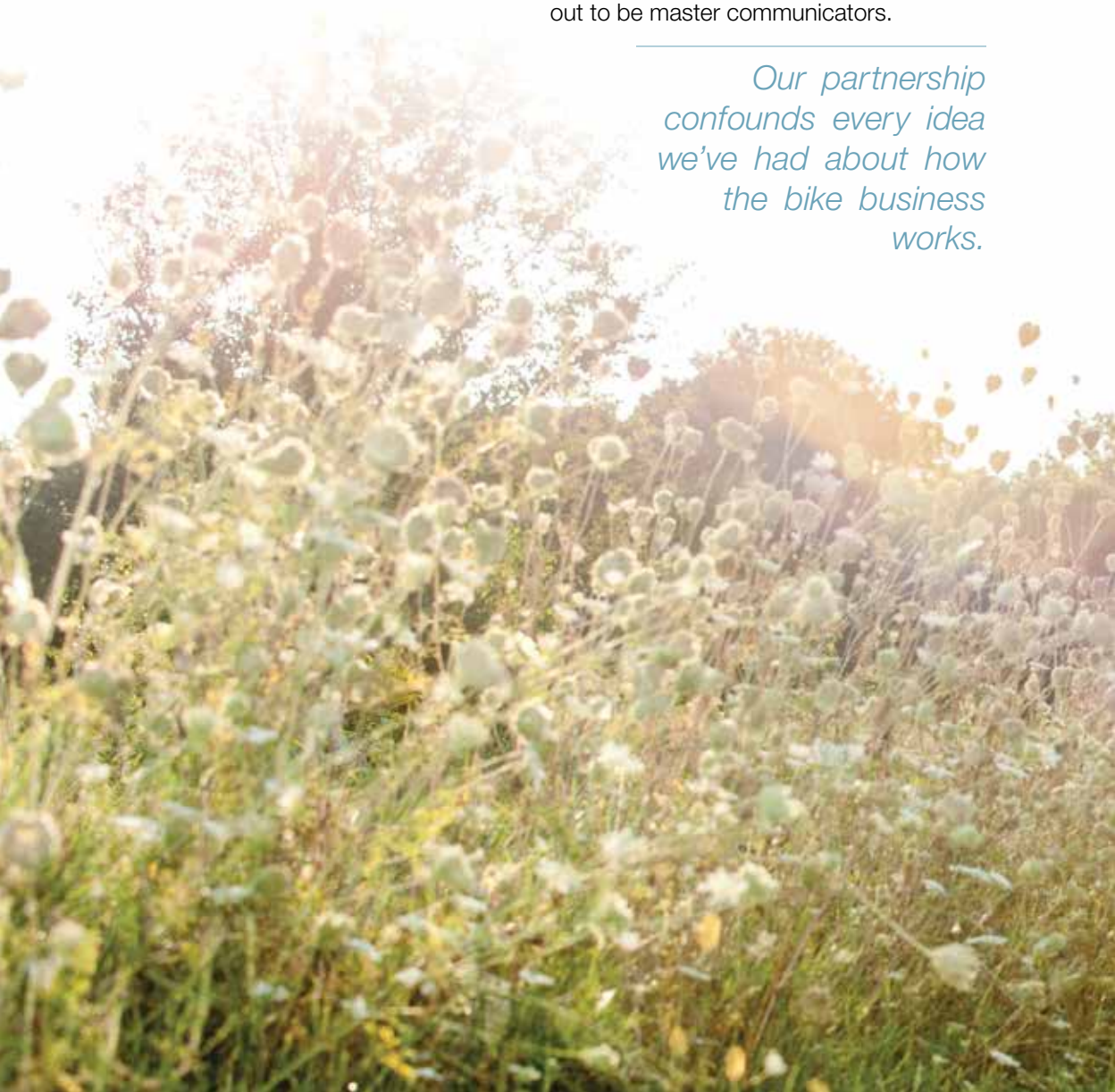
# The Language of Custom

Custom is not a secret language developed in shops and factories where there are initiated whispers in hushed tones about the craft of metal work. Custom is not a collection of technical terms that necessitates the reading of obscure manuals or classes in physics to understand.

If you've ridden a bike, you can speak the language of custom.

We don't speak Korean, but we've built nearly 3,000 bikes for South Korean riders, all through our partners Mr. Cha and Mr. Kim at ES Korea. When we met Mr. Cha and Mr. Kim at the Interbike trade show many years ago, we couldn't have known what the relationship would become. Reserved and unassuming, Cha and Kim would turn out to be master communicators.

*Our partnership confounds every idea we've had about how the bike business works.*



***Rob Vandermark*** *is confounding in any language.*

Once a year they come to Seven, so we can meet and plan for the coming season. Despite our language challenges, we invariably run out of time before we run out of things to discuss. ESK's partnership confounds every idea we've had about how the bike business works. We are not able to communicate complex ideas to them in the ways we are accustomed to with our other business partners, and yet every year we execute ambitious projects with them. We don't seem to get half as far, half as fast with anyone else. It suggests to us that the proverbial "language barrier" is sometimes, in reality, a solution to the problem of effective cooperation.

In order to determine the ideal bike fit for an individual rider, the bike industry has developed an array of different fit systems. Each is a dialect unto itself, focusing on different measurements or movements. Working in just one of these systems isn't an option for Seven.

You have to keep an open mind. You have to believe that if someone has an idea about their bike that is important to them, then there is a good way to understand it.

Sometimes customers come to us unsure they know enough about bikes to order themselves a custom bicycle, but this misgiving misses the point of custom. It is not for the riders to understand the bikes they want us to build. It is for us to understand the riders and the way they want their bikes to feel.

When we first met ES Korea, there were zero Sevens on the road there. Today there are thousands. We do more business with ES Korea than any other international distributor, and so, on a Saturday, just outside Seoul, you can see large groups of cyclists on gleaming new Sevens. These are the sorts of things that happen when you understand that the language of custom is really just a willingness to listen.

# Unimprovable

My golden number, 79.4 centimeters, was measured out, confirming my saddle height. I socked down on the bolt. With the saddle height set, the final step was to make sure the reach and differential fell into place. Clockwork.

The day was March 23rd and I had just taken delivery of, and completed building, my pride and joy, an Elium SL. I basked in its aura and felt largely unworthy of such a beautiful bike. I have ridden many miles since then, and haven't made a single change to the set up. The fit and comfort of my bike are unimprovable.

Weeks before, during Seven's design interview, we discussed what I wanted out of my new bike. Having spent considerable time on bicycles, both mountain and road, it struck me as odd that I didn't have much of an opinion on handling when first asked. I mean, I didn't fall over too often. I enjoyed leaning into corners, and riding was certainly fun, but the designer's questions went deeper. For example, was I comfortable unwrapping an energy bar while riding no-handed on my road bike? Well no, come to think of it, I wasn't great at that, and yes, that would be a nice change. Our discussion pulled opinions out of me that I didn't know I had. The result? A bike that provides the stability to unwrap an energy bar without losing control, but remains nimble enough to thrill.

Burritos and Volkswagen car doors were my first indicators that the world is full of products that were built for people bigger and stronger than I am. When I placed my order for an Elium SL, I made it clear that I wasn't interested in being thrown around by my bike. I was looking to be coddled.

What makes a Seven so personalized is that each tube is chosen and tailored specifically for the rider. In order to achieve the compliance I wanted, the narrowest carbon seat stays were paired with paper thin, butted titanium tubes. Fully assembled those individual tubes work together and yield a sporty ride that is comfortable all day long, even for a skinny guy like me.

For as out of touch as I was on the geometry of my frame, I did have some opin-

ions on the aesthetic. Simple, elegant, and clean would best describe what I look for in just about everything, and this bike was no exception. I declined on the small parts: no chain hanger, pump peg, couplers, fender mounts, or barrel adjusters for me. But I did want a fair amount of top tube slope, and while my CAD drawing showed six degrees, I wanted more. I spoke up and we adjusted the drawing to nine degrees. My suspicions were correct; it looked awesome.

Maximum adjustability is one way to make sure a bike will adapt with you as your riding style and preferences change. Seven's designs incorporate adjustability at all the touch points, and they do so in places you might not even think to check. Saddle rails, as an example are clamped right in the middle for maximum for-aft adjustability. Stem length and rise are typical lengths and rises so as not to force you into finding obscure stems should you need a minor tweak a few years from now. Placing a one-centimeter spacer under the stem, and one over, is another standard recommendation, again for future adjustability.

*Burritos and Volkswagen car doors were my first indicators that the world is full of products that were built for people bigger and stronger than I am.*

I certainly wasn't thinking about the future when I ordered my Seven, but am now a believer, because when I took delivery of my bike back on March 23rd, it was 2005. All these years later and I still feel unworthy.

***Karl Borne** is Seven's Service Manager. He believes his super power, perfecting situational comic brilliance, is the anchor of the Seven office. We're not so sure.*

# Myth vs. Material

At Seven, we adhere tightly to the philosophy that form follows function. That's why when designing a bike, we start with its mission and work back to the frame material selection.

We recommend the same approach when choosing your bike. Instead of first deciding upon a frame material, consider, "What do I want from my bike? How do I ride?" Crit racing, charity rides, touring, fast club rides, randos, solo rides, mixed surface explorations, all of the above? The answer can help lead you to the right material—and it may surprise you.

*There are no bad materials, just bad applications.*

## Carbon fiber

has been in the Seven line-up since our inception, and we helped pioneer its use in mixed material frame design. Carbon provides superior light weight and stiffness, which are properties critical when every second counts. Thus, it's a great material for racing, especially crits, where explosive acceleration is required.

For longer rides and recreational outings, where a more forgiving ride and stable handling are priorities, those same properties can become performance robbing. And if durability and versatility are high on your list of what you want in a bike, carbon may be ruled out entirely.

## Titanium

is well-known for its exceptional strength-to-weight ratio and service life, but where it really excels is in its versatility. Seven's founders and veteran manufacturing team have been designing and building titanium bikes for as long as anyone in the industry. In fact, we introduced many of the advances that have come to define the modern titanium bike.

Perhaps more so than with any other material, titanium is only as good as the framebuilder. In experienced hands, titanium's unique properties can be leveraged to yield a wide range of ride characteristics to suit a broad spectrum of riding—from racing to touring, and everything in between. Titanium is the preferred material for those who are looking to invest in their ultimate bike.

## Steel

is the original bike frame material. It gives us a connection to a building tradition that stretches back over a century. With cutting edge alloys and optimized tube butting, the modern steel bike has come a long way since its early predecessors.

Seven has always offered steel bikes, because the material offers a unique road and trail feel: lively, compliant and comfortable. Versatile, affordable, and respectably light, steel as a frame material is as relevant as ever. In fact, a custom steel Seven offers greater value than most carbon or titanium bikes in the same general price range.

We believe there are no bad materials, just bad applications. Knowing how to leverage a material's strengths and mitigate its weaknesses is integral to the art and science of bike design at Seven.

***Jennifer Miller's*** *affinity for materials planning and riding singletrack is rooted in the same basic approach to both: keep your eyes down the trail and expend resources strategically.*

# What Makes a Seven Frame a Frameset

As a custom framebuilder, you try to do everything in your power to deliver a highly specific set of performance and ride characteristics to each of your customers. If you can't do that, then there isn't much value in putting all that time into customization.

What you learn pretty quickly is that there are a myriad of other factors aside from the frame that come into play once the bike is completely assembled. Component choices have effects, both small and large, on the rider's enjoyment of the sport. And among those choices, arguably none is as important as the fork. The fork is central to how the bike handles and how it feels.

*The 5E fork allows us to deliver custom to a ridership that is as diverse as it is passionate.*

Initially, Seven worked with what was available from other companies. The problem was that most of the carbon offerings were only available in one or two rakes, optimized for racing. They only fit 23c tires and short reach brakes. This lack of options forced us to make unpleasant trade-offs between performance, handling, and versatility.

We wanted to offer riders a fork design that gave them optimal handling and stability. We wanted to give them the option to run medium-reach calipers with fenders. We wanted to offer Seven's "Five Elements of the Perfect Bike"—which we apply to each frame—to forks. Hence our fork's name, "5E." In short, we wanted to fulfill the full promise of custom frameset building, without that meaning that every fork had to be steel.

More than a decade ago designing our own carbon fork became a priority.

What makes the 5E unique is that we offer eight different rakes and it comes in three distinct models: Road, medium-reach, and 650c. This means we can give riders, all riders, very accurate handling characteristics. It's a fork that is light and stiff to be raced and we make a version that generously fits fenders and wider tires for the long ride home.

Since we do most of the work ourselves, we are not subject to availability challenges. The 5E is the ever ready solution; the great equalizer that allows us to deliver custom to a rider-ship that is as diverse as it is passionate.

***Rob Vandermark*** *spends all his time working on bikes, design, and engineered structures.*

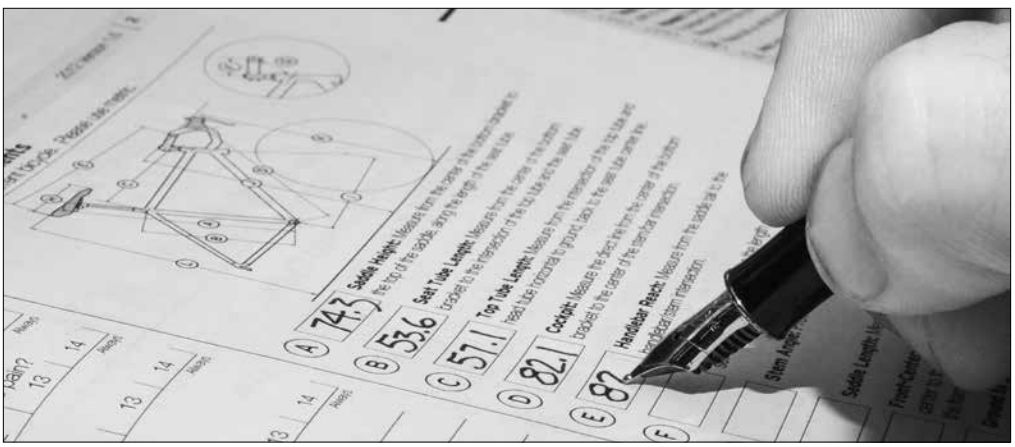
# Winning a Three-Legged Race

The story of my collaboration with Seven Cycles starts in 2000 when I took a job there. It was my dream job. At Seven, I learned frame design and fitting. I collaborated with customers and shops on over 7,000 custom bikes, and it was that experience that made my next dream job, owning my own bike shop, a reality.

When I opened Cascade Bicycle Studio, I knew the builder's side of the equation. I knew what Seven could do, and I knew how to work with shops and riders all over the world. I wanted to partner with Seven Cycles to offer a level of professional service and products that would highlight my skillset, and Seven's aptitude to build, what I still believe are the best custom bicycles in the world.

In my experience, service is built on trust. Our customers depend on us to help communicate their needs to Seven. They need to trust that we understand them as individuals and that we can effectively describe to Seven how to optimize the fit, performance, and handling of their new, custom bike.

We are Seven's hands out in the world. It is our eyes on the fitting session, and our tape measure from body to bike that begins the design process. In addition to providing Seven with body and current bicycle data, we also give them highly-detailed information about the roads, events, or rides our shared customer will encounter on their new bike. After fit, ride feel is the next element of customization. Giving the builder an accurate view of the rider is key to selecting



*We are Seven's hands out in the world. It is our eyes on the fitting session, our tape measure that starts the design process.*


the right tube set and optimizing the comfort and the acceleration of the bike.

So, how does the process work, when you, Seven and your local retailer are involved in designing a custom bicycle?

It's a three-pronged approach. First, you do a detailed fitting with your shop. Next, you speak with Seven Cycles directly on the phone, to talk through your needs one-on-one with their Performance Fit Designer. Finally, you collaborate with your retailer for elements beyond the fabrication of your bicycle: a final fitting, component selection, and post-sale service.

Shops like ours will be able to offer you resources beyond the purchase of your bicycle. We will have intimate, inside knowledge of your riding experience that will maximize your enjoyment of your new Seven. Sometimes, it's the small things: yes, a 28-tooth cog is needed in Philadelphia; fender mounts are required in Seattle; 28mm tires are really nice on gravel roads in Marin.

We will have recommendations for local rides, as well as weekly shop rides where you can find the cycling community we all crave, both as a motivation and a support system. As your cycling experiences grow and change, you'll want someone you trust to guide you through decisions about upgrades, modifications, or even a whole new style of riding. We can be that trusted guide. Our relationship with our customers is always a collaboration, one we can both learn from.


***Zac Daab*** *is the founder and co-owner of Cascade Bicycle Studio in Seattle's Fremont neighborhood. He is a legend in the Washington cyclocross community.*

# Bike Design: Neuroscience Degree Not Necessary

I have a moment a few times each month where I look at what I'm doing and decide that I made the right decision years ago.

My first bike job was at Helen's Cycles in Los Angeles, CA. I was deep in the throes of a Neuroscience degree and, frankly, questioning my place in life. I was taking some difficult classes, working on lab mice, studying late into the evenings, and generally feeling like I was barely keeping my head above water. I developed an appreciation of human physiology and the intricate workings of the brain and nervous system, but life in a lab or hospital seemed, well, clinical.

*Listening to what is unsaid is just as important as what is said.*

At the time, I rode my cyclocross bike everywhere and frequently stopped by Helen's Cycles for repairs. Imagine the draw of a little bike shop, staffed with a ragtag crew who had excellent taste in obscure bikes and music, cracked wise constantly, sipped endless cups of coffee, and knew how to enjoy life. Somehow, I convinced them to let me work there a few hours a week, which turned into weekends, and then eventually most days between classes.

I was in heaven and quickly got in deep, inhaling all the information I could along with the vapors of chain lube. Helen's sold Sevens, and one day the crew from Seven came to talk with us about these mysterious, beautifully crafted, custom-fitted wonder bikes from the East Coast. That visit planted a seed in my head that bloomed later.

I was managing a large bike shop the day I saw the job listing. Seven Cycles was hiring a new addition to their Performance Design team. Described as equal parts scientific fitter, detail oriented tech geek, and artistic designer—this was my dream job. It was also a big move away from the idyllic beach town where I grew up, but if I was going to do it, being 20-something and fresh out of college was the best time, right?

I tell people I design custom bicycles for a living—it's the simplest definition I can think of. Everything I do connects with designing bikes. A typical day might start with a mountain bike ride with the Seven crew. The design wheels are turning by then. We'll talk about the differences between Dan's 29'er and Joe's 650b, or how the gear ratio on this single-speed is finally perfect.

***Neil Doshi*** *is a member of the Performance Design Team. The best ride he had this year was a day trip pedaling the 130 miles from Boston to Portland, Maine and taking the train back in the evening.*

After getting to the office and having a cup of coffee, we chat about what's new in the industry. What bottom bracket standard is the flavor of the month? Why might we want to offer this head tube size and skip that one?

We talk to cyclists from all around the world about their riding habits, their goals, and how they see their dream bike. The personalities are as diverse as the bikes. Listening to what is unsaid is just as important as what is said. Reading between the lines is key. Learning how to communicate with different personalities is a valuable skill.

A few times each month I think of the beach and what I left behind to be here, but the thought passes quickly. There are bikes to design, to build, and to ride.

# Seven Process Methodology

There's a paradox in what we do here at Seven: on the one hand, there's the comprehensiveness of our approach to custom bike building; on the other, there's the large scale on which we do it. More than anything, what makes this possible is the system we've developed called Seven's Process Methodology, or SPM. It's a way of working that draws not only on the best traditions of custom bike building—the experience, craftsmanship, and attention to detail—but also on sophisticated process engineering for greater efficiency. At its core, SPM is a balance of people and systems.

Integral to our Methodology is single-piece-flow production, which is a key concept in the Toyota Production System—our inspiration for the Seven Process. In a typical manufacturing environment, parts move from step to step in batches of hundreds or thousands. Imagine a "framebuilder" who cut head tubes to length all day, filling bins destined for the next "framebuilder" who then drilled head badge bolt holes in them. And so on and so on, down the line. With no relationship between steps upstream and downstream, there is little sense of ownership, and defects have the potential to multiply.

By contrast at Seven, within machining or welding or finishing, each craftsperson is dedicated to only one frame at a time—one complete frameset—instilling a focus, pride of workmanship, and level of precision not possible in classic production framebuilding.

Another critical component to SPM is the concept of quick changeover. Imagine the challenge of building a 49 cm titanium road frame for one customer and then quickly switching gears to tool up to build a 21" steel mountain bike frame for another. Fixtures need to be flexible and set-ups seamless. Processes need to be standardized and raw materials and parts inventory optimized. The Seven Methodology and an on-going commitment to process improvement help make all this possible.

Providing the most wide-ranging customization with greater speed and efficiency may seem counter-intuitive. But it's a challenge fueled by passion and our continued commitment after crafting more than 25,000 custom bikes to our philosophy of 'One Bike. Yours.'

***Jennifer Miller*** *is responsible for supply chain management, among other things, and considers the role "the best seat in the house."*

# Becoming a Framebuilder

When I decided I wanted to become a framebuilder, I was coming at my new profession from a background of recreational cycling and a degree in mechanical engineering. I knew nothing of the industry side of the business and not much of the scene either. So when I called Seven Cycles early in 2006 looking for a job, I was coming to them out of left field. I liked to ride, and I really liked looking at bikes and appreciating the craft some builders were able to express through their machines, but that was it.

So it took some persistence. When I finally got the job later that fall, I was coming back from a crash course in framebuilding at the United Bicycle Institute with some basic skills and a lot of unfocused enthusiasm.

Still wet behind the ears, my idea was to work for a while at a respected custom-manufacturer in Massachusetts, the perfect place to cut my teeth and learn the craft, before starting my own company sometime in the future. What I didn't count on was how much teeth-cutting there was to do, and the depth of talent here at Seven will probably ensure that I never glean all of the possible subtleties of framebuilding in my lifetime.

For years now, I've worked alongside TIG welders, fillet brazers, and lug people like myself, all among the best in the industry, and all truly awesome human beings. I started work at Seven as a finisher, but have since come to be the primary carbon fiber builder for mixed materials and full carbon custom frames.

Oh, and I started my own company as well. At Royal H I get to silver braze steel customs for my own customers. All the while, I am using epoxies and milling machines to create cutting edge frames here at Seven. It's basically the best of all worlds, no-tech to high-tech and back again each week.

*Seven is a place where, in the midst of a frantic workday, a particularly beautiful frame can bring everyone together for a few minutes.*

What I get at Seven would be impossible to re-create on my own, access to great machines, a chance to learn from fellow builders daily, and the camaraderie of a great group of talented people. And a paycheck. That second to last one though is probably the most important.

***Mister Bryan Hollingsworth*** *is Seven's lead carbon framebuilder. He also builds lugged steel bikes for his own Royal H brand.*

I've worked a lot of jobs, and I've never seen an environment like this. The industry isn't a glamorous one, and it certainly isn't the path to riches, but these things ensure that the people in it are enthusiastic and practical.

Seven is a place where, in the midst of a frantic workday, a particularly beautiful frame can bring everyone together for a few minutes. That or a fresh pot of coffee. But one of the two happens every day, and that's why I work here.

# Framebuilding: The Rider as Tube Set

First comes the rider. Craft springs from thinking about the person before you think about the bike. From bike shops, we get the rider's physical measurements, along with tons of other data collected in our Custom Kit. We interview every customer, so we know quite a lot before we even look at creating the tube set. We know who they are and what they do. We know where they're going to ride and how they want that riding to feel. It's our job, quite literally, to craft the bike to the person.

Customizing the tubing that goes into each customer's bike frame is a highly data-driven process, so it may sound funny that when I begin, I compare everybody to myself. I've ridden all sorts of bikes over a period of several decades; so I start by asking how I can relate to the person we're building for. Bigger, smaller, younger, older? What do we have in common? What special circumstances are there? Basically, I start with what would work for me, and then I tune based on everything we know about this new customer.

Seven buys titanium directly from the mill in nearly 20 different sizes, brought in by truck in crates of 18 foot lengths. All the stock stands floor-to-ceiling, next to the lathe on which, one-by-one, we cut the specified tubes to length. Each piece goes into a box where we kit all the parts that will become the bike. There is a bright lamp perched above the cut-off lathe, across from the parts bins that hold over a dozen different types of drop outs. As we cut, titanium shavings ribbon out into the catch basin below, like high-grade Christmas tinsel.

The tubes are then custom butted, coped, mitered, bent, and formed. Angles become acute as bright yellow hole saws work slowly against the tubing. All the while we are removing and shaping the material, refining the pieces that will get finely fused together by the welders.

The shop is laid out in work cells, designed to smooth the path from tube set to frame jig. We try not to waste movement as we go from one process to the next. The cleaner we work, the cleaner the finished bike will be. Seeing the bike taking shape as the tubes are loaded into the jig is a rewarding feeling.

Out on the trail on my mountain bike I take the same approach. I am not the fastest guy, but I try to ride as smoothly and cleanly as I can. You get that feeling of flow, of being one with the bike and one with the trail. That's the magic of riding.

*You can spend a lifetime learning to work cleaner and smoother, refining your craft.*

You can spend a lifetime learning to work cleaner and smoother, refining your craft. Even now, we spend a lot of energy at Seven competing with each other to see who can do the best work. You always improve. You always get closer to that magic feeling of being one with the bike. That's the essence of framebuilding for me.

***Matt O'Keefe*** *has been our Production Manager since Seven's beginning. An avid photographer, Matt also enjoys bicycle and motorcycle touring.*

# Welding: Completely Immersed

We were car people. My dad ran an auto salvage yard, and I spent my teens there, happy to learn everything I could. It was really just curiosity that took me to the stick welder next door one day in 1975. We were friendly with the guy, and he asked me if I wanted to try welding.

*I have never lost my fascination with welding, with the magic of making things out of metal, and with finding new and better ways to do it.*

The equipment was all WWII era stuff from the shipyard, heavy leather gloves, cutting torches and riveted shields, and I found it completely captivating. I remember touching the stinger to a steel i-beam and the explosion of sparks and molten metal. I was hooked.

I started building things for dad's shop, tools and fixtures mostly. I loved being able to make things so strong. It really opened my eyes to fabrication, and what was possible. I enrolled in trade school as soon as I could.

At the vo-tech I had my first exposure to TIG-welding with aluminum, stainless steel, and copper. The control you have, the precision and cleanliness all attracted me. There was no heavy slag, no fumes, no sparks. The sound of aluminum being welded is a high-frequency buzz, like an alarm clock. I love that sound for some reason.

After school I went further down the road of precision and refinement. I made food-grade scales from stainless steel and high-vacuum chambers for testing satellites. All the welds were x-rayed for quality.

It was about this time I got interested in bicycles. I had begun riding, mostly for transportation, but this was during the initial bike boom of the '80s. I remember the guy at my local shop in Hingham, MA showing me a Fuji Opus 3, a finely built, lugged-steel road machine from Japan. I started to think about the complex engineering and craft of framebuilding. I dabbled with racing.

Then it was 1988. I had no firm intention of getting into the bike industry, but there was an ad in the paper, "Bike builder looking for welder," and I thought it sounded perfect. I drove up to Somerville for the interview.

That was Merlin Metalworks, pioneers of titanium framebuilding. Mike Augspurger, who interviewed me, asked if I could weld Ti, and I said I thought it was just like aluminum or stainless, the same process, and I did some test pieces for him. The Ti was just so simple and elegant to weld. I loved it immediately.

At the time, a very young Rob Vandermark was also starting to weld frames at Merlin. He and I went about building thousands of bikes together. I spent the next decade completely immersed in Ti welding.

Obviously, when Rob started Seven, I wanted to keep working with him. We've done another 25,000 bikes together here. New things are always coming down the road, things I want to bring to Seven, to incorporate into bikes. Through all that I have never lost my fascination with welding, with the magic of making things out of metal, and with finding new and better ways to do it.

***Tim Delaney*** *is a perfectionist and Seven's senior welder. He is also an expert in late 20th century television shows and collectibles.*

# A Lifetime of Punishment

I got into framebuilding while at art school. Merlin Metalworks was just catching lightning in a bottle, with three guys in a basement, and I was a young kid with a background in sculpture and a passion for racing mountain bikes. At Merlin I was always encouraged to pursue my ideas, the good ones and the bad ones, and I remember we built a lot of wild experimental products that weren't all the way safe for real world riding.

Up to that point, I never thought about measuring our work in any way but on the trail. If it started creaking badly during a ride, or worse—during a race—then I suspected I needed to try something different. I feel lucky, in retrospect, that I never prototyped a design that anyone was seriously injured by.

The point is, at some moment there, in the free-for-all of birthing the first titanium mountain bikes, my thinking about bike building shifted fundamentally. I realized that experimentation is good, and chasing the next great idea is addictive, but that I also wanted to build products that people could use forever, safely. I started to think about how to test, how to gather data and apply it to our work.

*At some moment there, in the free-for-all of birthing the first titanium mountain bikes, my thinking about bike building shifted fundamentally.*

When we started Seven, I had the benefit of history—having been involved in building more than 30,000 frames. We had pushed the limits of what was possible in terms of the raw materials, like steel and titanium—and even carbon—but we also had a stockpile of experience with different construction methods, welding processes, and the endless nuances that are the difference between a warranty and a lifetime bike. We really did know what we were doing, and I knew it still wasn't enough for me.

We decided to build a fatigue testing machine from scratch. We looked into buying one, but they had very limited application—we wanted a very versatile machine. Very few, if any, builders our size have the fatigue testing capabilities of Seven. In the years we've been testing and collecting data, we've done everything from straightforward frame fatigue testing, to evaluating different tubing sources, to determining ideal surface treatments. When we come up with new construction ideas, we put it through the tester—Tessa—to see if it will hold up to a lifetime of punishment.

The confidence you get from testing your work and collecting data is really empowering. It frees you to push at the limits of all your tools. It helps you to kill bad ideas, before they kill you. Obviously, the tester can't tell us everything. We retain an active development team who field tests our bikes, putting them through situations the testing machine will never replicate. It's a tough life.

But, for all our talk of craft, for all the romance that people project onto framebuilding, the truest craft is creating a bike that will last forever; the best romance is one that will never quit. Beauty isn't so grand if it ends abruptly.


***Rob Vandermark*** *fatigues everyone.*

The distinctive satiny finish of a Seven titanium frame is easy to take for granted. Clean, simple, bare metal. Impervious to rust or corrosion. No need for paint. But like many things of understated beauty, its carefree air belies an underlying deliberateness and effort.

Many of us at Seven whose roots trace back to the heyday of Merlin Metalworks, one of the first titanium framebuilders, can remember what the task of frame finishing was like then. It was a strictly entry-level job that entailed nothing other than "wheeling" and buffing frame after frame, all day, day after day. It was a gritty way to chase a dream.

In addition to a lot of elbow grease, achieving a high quality finish requires starting with very high quality titanium. This method of finishing is not designed to cover defects. The dirt on a finishers hands tells the story best, but the basic process begins with a thorough "wheeling" of the frame, which improves surface consistency using a specially coated brush wheel custom-fitted to a hand drill. The drill allows the finisher the speed and dexterity to tackle the toughest areas. After wheeling, the finisher hand buffs the frame using a very fine grade Scotch Brite™ pad. Precision hand filing with tiny needle files may also be necessary to address tight spots.

The labor intensiveness of this type of hand-finishing, not to mention that it doesn't work for lower quality materials, led many titanium framebuilders to seek alternative finishing methods. But the benefits of hand finishing are unbeatable to this day. It's easy to maintain and restore, it has a neutral effect on the titanium's mechanical properties, and we think it offers a timeless, sophisticated style.

At Seven, we wanted that labor-intensive finish for our frames. But we didn't want the job to be miserable for our employees; so we took a different approach. We made the process better.

The most important of the improvements was the result of Seven's method of framebuilding in general. (See the Seven Process Methodology on page 41.) At Seven, there are no assembly lines or batches, so the idea of employing a human being to do nothing other than wheel and buff frame after frame, all day, day after day was anathema to our core production philosophy. Seven framebuilders are highly skilled and cross-trained, engaged in performing a wide range of processes, including finishing, one frame at a time, start to finish.

*The benefits of hand finishing are unbeatable to this day.*

This approach requires a commitment to cross training and development, but it's an investment that pays in higher quality. A skilled framebuilder completes every task in our process and, because they are finishing bikes they built, they have a high degree of ownership and accountability.

More than anything, the finishing process at Seven supports the honing of craft. It plugs into our one-at-a-time approach. In this case, it is less that the end justifies the means, but rather that the means actually improve the end, and that is what we are after. Always.

# Finishing: More than Skin Deep

*Though* **Jennifer Miller** *never aspired to frame building herself, she's endlessly fascinated by the metamorphosis of raw materials into world-class bikes.*

# Painting: An Obsession with Color, Handed Down

As far back as I can remember, paint has been a part of my life. I have very fond memories of dad toting my brother and me to the PPG paint training center on weekends when mom just needed to get things done. When drawing on the dry erase board or sledding down the hills in the parking lot had lost their luster for the day, I would help my dad build product manuals and setup the classroom for the next week's classes. Little did I know, seventeen years later, those product manuals would actually mean something to me and become something much more than a way to pass the time.

Even with all the time spent at the training center when I was young, the thought never once crossed my mind that I would become a painter myself. I knew that I wanted to do something hands on and tactile, but it didn't matter what. I guess that's how I came to be here. At the point I decided I would not accept anymore pizza jobs and needed somewhere that I could build, make, and create, Seven turned out to be that place.

*It was nerve-racking, with all the architects and designers scrutinizing my work.*

This really is the perfect place for me. I've always had a bit of an obsessive side and the drive to do better. Painting bike frames provides me with the perfect forum to use these traits constructively.

When I was learning the ins and outs of frame painting, I had my fair share of repaints. Dust, bubbles, color mismatches, they all lead to stripping and starting over. I can still remember very specific frames that it took me two and even three tries to get just right. That's how you learn a craft though, by repetition and by finding your way forward when you feel like you just can't get it right.

Paint can be extremely challenging, but when things go well and you turn out a beautiful, handcrafted, sleek machine, the feeling is incredibly rewarding. The challenge is a large part of the reason I continue to paint. In the moment you may want to give up, but once the paint job is all said and done, it is always worth the effort. Besides, it's more fun in the end to push yourself and gain some knowledge in the process.

We recently exhibited some bikes at the Boston Society of Architects show called, "Let's Talk About Bikes," and our Berlin Bike turned out to be one of the show's centerpieces. It was nerve-racking, with all the architects and designers scrutinizing my work, but also extremely gratifying to stand there with the Seven team and a bike I painted.

I never imagined that I would have the honor of producing such quality bikes with some of the most passionate people in the industry. Sometimes it boggles my mind that, as a little girl, I sat leafing through paint manuals with my dad, and now here I am. I am the luckiest person to have ended up here doing what I do, and I try my best to transfer my appreciation and excitement into my work.

***Staci Sommers*** *is one of Seven's custom painters and she has always known she has wanted to work with her hands. The dirtier her hands are, the better her day has been. She loves all things relevant to seasonal New England. A few of her favorite things are pumpkins, cupcakes, whales, Sundays, and sweatshirts.*

# A Box of Chain and a New Shed Door

When I was younger I raced mountain bikes, so when I moved to the city my first commuters were just mountain bikes with slick tires. I rode what I raced, and I didn't know any better, and that worked fine. Back then everyone was on mountain bikes, even the couriers downtown. There is a rugged utility and durability to those bikes that just makes sense for everyday riding.

Utility is a funny word though. On one hand, it's about how you use your bike, on the other, it's about the new things you want to do with your commute and ways to evolve your equipment. I can tell you that in 20 years of crisscrossing the city, I have never stopped thinking about ways to change, improve, add, and simplify.

*It's about how you use your bike, but as you ride you think of new things you want to do with your commute, ways to evolve your equipment.*

There's so much more going on than just getting from point A to point B. My commute is my opportunity to be outdoors, which I love, regardless of weather. I build bikes during the day. I really depend on my commute to reconnect with the world and remind myself why I do what I do.

I usually stop for coffee on the way to work. I have four different shops to choose from on my route, and I know people at each one, so there is a social component which is important to me. I used to brew coffee at home, but then I missed seeing all those people.

I leave home and get my coffee and chat for a while and then go to the hardware store. I run all sorts of errands and never worry about parking or heavy traffic. My commute is just easier by bike.

Right now, my main commuter is a mountain frame with a wide front rack. It's set up so I can convert it to single-speed or fixed if that mood takes me. It has disc brakes, so it's basically weather-proof. It's heavy and slow, and that really works for me most of the time. It allows me to do things like pick old bikes out of the trash and bring them home. Once I picked up a new door for my shed, and a 60 pound, wooden box full of chain. The box is a planter now. I'm sure I'll find some use for the chain.

Occasionally, if I'm doing a road ride with the guys from the shop after work, I'll ride my rando bike in. I call it a rando bike, but it's just a road bike with a front rack. It'll take fenders, too. More utility. That bike feels faster than my main commuter, and once I've been on it for a day or two I start

***Matt O'Keefe:*** *Hot or cold, wet or dry, Matt O'Keefe's day is always better when he rides his bike.*


thinking about going faster and carrying less stuff. Simplicity and utility must be cousins, right?

Everything converges on utility. I see customer bikes every day with new ideas for maximizing use. I get ideas from them. I turn those over and over and dream up new configurations. Disc brakes and internal hubs have done a lot to solve some long-standing commuter challenges. Belt drives are coming into the mix more and more.

The thing that I find so amazing is the various ways people decide what will be utilitarian for them. We see a lot of cyclocross frames come through that are being set up for commuting or expeditions or some hybrid purpose like that. Mountain bikes and slick fixed gear frames get similar treatment, not to mention road bikes that are conceived as touring machines, but will end up being ridden every day.

Everyone comes at their bike from a different starting point and Seven builds them—all infinitely useful.

# A New Breed

Sometimes I like to stand around the corner from my house in Somerville, Massachusetts and watch the bicycles go by on the main road. There are so many of them now: Old bikes and new bikes, city bikes and road bikes, cargo bikes, bikes with baby seats and pet baskets. Accessorized lovingly with all manner of personal touches, they are a new breed of everyday vehicle.

In the evening commute rush hour, the colorful two-wheel procession resembles a parade, a celebration. And in a way, that is exactly what it is. Only four years ago I rode my bike down this very street, mostly alone. Drivers would shout to get off the road. I was seen as different, annoying, pathetic. Now there are many other cyclists and the drivers no longer shout. Sitting in traffic, they gaze wistfully out of their car windows at the unencumbered cyclists pedaling past. The cyclists have more freedom, and they are enjoying the fresh air. Perceptions of what is normal and what is desirable are shifting.

*The bicycle is not magical, but to me it seems pretty darn close.*

For a while now magazines have been coming out with lists of the best countries to live in, the best cities, the best neighborhoods. They used to rate them in economic terms. But now the more popular measure is quality of life. Decades of striving toward ever larger houses and cars have forced us into fragmented settlements and saddled us with commutes that tack hours onto the workday. The result is a society of isolated, unhealthy, profoundly dissatisfied individuals. But slowly we are reframing our understanding of what it is that we value about living in the first place. It is starting to dawn on us that physical activity and human connectedness should be intrinsic aspects of our lifestyles and not afterthoughts.

Quality of life is the well-being of individuals and the community as a whole. But that comes across as a contradiction. Individuals compete for resources, so how can what is good for one and good for all be lumped together? Interestingly, the bicycle resolves this conflict.

The individual appeal of cycling is strong: It is fun, exciting, relaxing, healthy. Cycling offers a way to explore our surroundings at a pace that feels just right. And in an urban environment, cycling is often the fastest way to get around. There is no need to ride a bike for anything but individual well-being; just think of what it does for you and reap the benefits. And yet, if everyone selfishly cycled, imagine the result. Traffic congestion would dissipate. The environment would thrive. Healthcare costs would diminish. The very scale of communities would change.

The bicycle is not magical, but to me it seems pretty darn close. And as I watch the two-wheel commuter parade on the main road, I am heartened to see that my neighbors agree.

***Constance Winters*** *is a hopeless bicycle obsessionist. She writes about this, along with musings regarding beautiful, functional, and comfortable bicycles on her blog: Lovely Bicycle.*

# Future Perfect

Seven's role in the future of the bike industry is complex. We are as much a product of what the larger cycling world is doing as we are of our own vision for what bikes we want to build. In the coming years, we see two curiously opposing trends emerging.

First, the traditional segments of road and mountain are breaking down into smaller and smaller niches. On the road side, new cyclists wanting the health, social, environmental, and economic benefits of riding a bike, are discovering group and club riding in growing numbers. Meanwhile, the bike industry has been busy cranking out carbon race bikes, leaving riders under-equipped to discover the right bikes for their new passions.

*Seveneers love to ride.*


Seven is building the right bikes every day. We are able to build the ideal group ride bike, or the ideal commuter, because we build each bike one-at-a-time in consultation with the person who will ride it. More and more riders are interested in endurance riding and randonneuring. Urban and utility bikes are changing, adopting new uses, new features. Seven is uniquely poised to build all those machines.

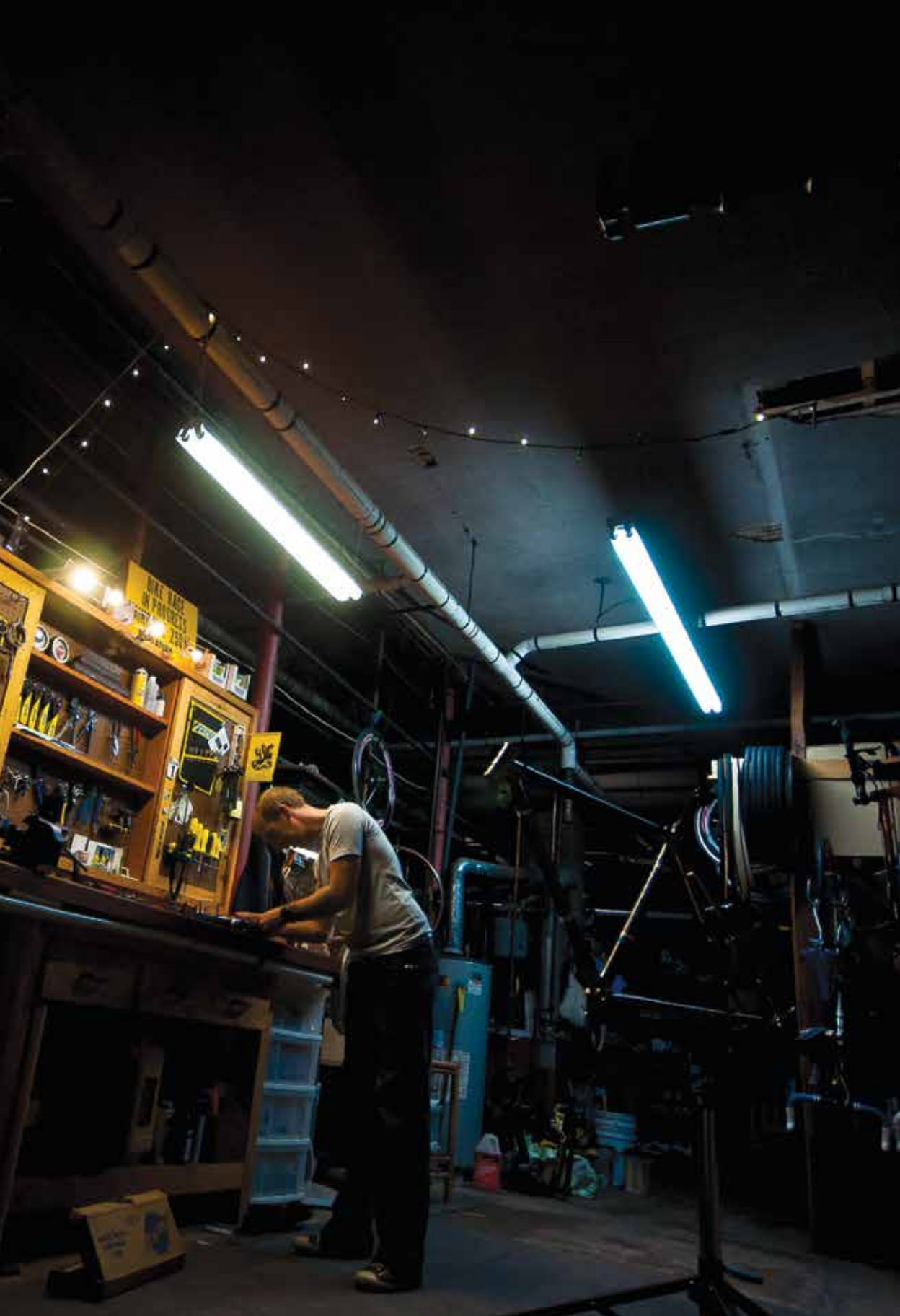
Simultaneously, experienced riders are starting to think about multi-use bikes, for example a cyclocross race bike that can also be a bad-weather commuter, or an everyday commuter that can also be configured for long club rides. Again, because of the flexibility of our processes, we can incorporate new ideas and new features into custom designs more readily than the larger industry can design, import, and market to an evolving audience.

After the boom in popularity of all carbon fiber frames, riders are beginning to rediscover the versatility and value of all the different materials that can go into a bike. Steel, titanium, and carbon all have positive characteristics for cycling. In the coming years, we expect to see fewer carbon race bikes on club rides, and more mixed material bikes.

The development of high quality disc brakes, internally-geared hubs and other innovations are demanding major rethinking of the way we use our bikes—and this will knit the various bike niches back together in interesting new ways. We've been prototyping and pushing on these ideas for a while.

We're excited to lead Seven through this next phase of our cycling adventure as our team of bike builders becomes ever more experienced and autonomous. We look forward to working with you as you dream about your perfect ride—which begins with creating your perfect bike.

*Seven is building the right bikes every day.*



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