

# Crafted by hand: How building your own bicycle can help change the world

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# Crafted by hand

## How building your own bicycle can help change the world

*By Marc Kitteringham*



*There are vintage bikes collecting rust and dust in garages and sheds across Canada, just waiting for the kiss of life.*

**I** TOOK THE bike home in pieces. It was a mid-'90s, purple Raleigh Legend step-through frame with a badly bent fork, no front wheel, rotten brake cables, a blown drivetrain and a seized bottom bracket. It had been left for dead at a bike shop after its previous owner rode it into a car and couldn't afford to fix it.

I know where to get cheap parts, and I figured that, with a bit of work I could at least turn it into a useable ride.

When I got it home, I immediately got rid of the janky parts. The chain and the brake cables came off, then the fork. These went into the garbage pile; the rest went to the basement to be dealt with later.

Gathering, dismantling and cleaning the parts is one of the more exciting steps in the process of building a bike. I spent a few days going to bike shops and bike kitchens –community-run DIY bike shops – digging through bins. Most of the parts at these places



*A bare frame is like a blank sheet of canvas.*

are either too expensive or too run-down. A bike shop is good place to shop for components that wear out over time, and where new really is better. This means chains, cassettes, cables, tires, tubes and brake pads. Also, retail shops sometimes have discount sections with old stock and take-off parts. A bike kitchen, like Edmonton’s BikeWorks, is a great place to find older parts that have stood the test of time, and for hunting down special pieces – like the perfect, vintage rear derailleur with an etched scroll pattern.

Edmonton bike mechanic Keith Hallgren has been building his own bikes and collecting parts for decades.

“I go to garage sales and booth sales,” he says. “I’ve bought out inventories from bike shops that have closed. You accumulate a lot of things. I might not use these parts for 20 years, but they’re there.”

Hallgren says “sometimes hunting for parts can take a lot of time.” Working on a bike is a slow process: often builders install parts that will just do the job adequately, until they find the perfect part.

Over the years, I’ve spent hours digging through parts bins at BikeWorks. My hands pry into the bins, pushing aside grimy derailleurs and plastic shifters until I find that one part that works. Often, I come away with nothing, but every now and then I find something

perfect. For this bike, I am looking for a derailleur. I need something that fits a particular tube-size and looks good on the bike. I crouch down to the bottom shelf and search. By the time I get to the bottom of the bucket, I give up. It isn't going to happen. Wiping my hands on my pants, I start poking around for anything interesting that I can hoard for a later project.

Building a bike is not just about installing the parts. The process begins long before anything comes together. I gather ideas before I even have a project bike, spending evenings on the Internet looking at pictures of bikes. Getting ideas. Designing things in my mind.



*Like most things, it all begins with a plan.*

Colour schemes unfold. Would green and orange work together? Could I pair purple and blue? I look at photos of bikes other people have built. Someone did build a purple-and-blue bike; it looks gorgeous. I'm building up the purple Raleigh frame for my girlfriend, and it's turning out to be a light touring bike, with a purple, silver, gold and blue colour scheme. We're calling it *Galactic Gypsy*.



BIKE ISN'T just a functional object; it is something beautiful. I want my bike to stand out from the crowd of factory-built machines, to be exactly what I need, and to express my personality – or the personality of the person for whom I'm building it.

This needs to be something I want to ride and can be proud of.

Building my own bike allows me to experiment and express myself. I start with some parameters that determine the kind of bike it is going to be – touring bike, fixie, commuter, cruiser – and see how far I can push my creativity. Builders put so much of

their personality into a bike that it becomes much more than transportation. It's an extension of self.

This is what drives bike builders to want to build a bike in the first place. I once worked in a high-production bike shop that focused on getting out mid-range bikes to as many people as possible. I built these bikes every day, until, eventually, the work became monotonous.

Every day, these run-of-the-mill bikes would come through my stand, and people would come into the shop and buy them. It was an assembly line. The bikes I was producing were nothing more than objects. Dissatisfied, I started looking into other genres, and seeing what other builders were doing showed me the potential bikes had as a creative outlet.

McKenzie Sanford is one of these builders. He started with a beat up old 10-speed road bike frame and built it into a fixed-gear bike, then moved on to another similar bike. Now he's riding a third fixie bike, as well as a high-end road bike, a winter bike and a polo bike. Every one of his projects involves a few months of planning and fantasizing about the finished product. He changes parts constantly, debating the merits of each chain ring and bolt.

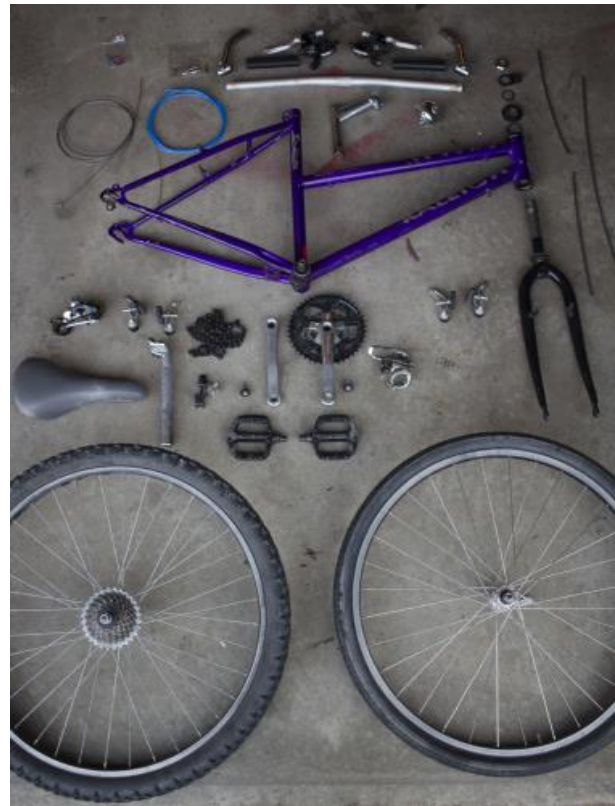
The builder can make the bike his own; there is nothing that isn't planned out; nothing is out of place.

"You can make it exactly how you want it," McKenzie says. "It's your own bike. You make it how you want to make it."

A custom bike also better fits its rider. Truly talented cyclists can use their bikes to make a masterpiece. Imagine the riders as artists working with precision, prescience and instinct, and using the simplest of tools to make beautiful and masterful works. A talented bike-polo player executes difficult manoeuvres effortlessly on his bike. A bike messenger will weave in and out of traffic flawlessly. A BMX rider will perform acrobatics most people wouldn't imagine.

In his book *The World Beyond Your Head*, Matthew B. Crawford writes: “There is pleasure in those moments when we feel a growing mastery in some small domain – mastery that is exercised through our bodies with the use of tools.”

I lay the parts out on the garage floor. The frame goes first. Slowly it is surrounded by the myriad parts that will make it what it is meant to be: bar ends, bars, levers, stem, headset, fork, brakes, cables, wheels, bottom bracket, chain, cassette, chainrings, chainring bolts, crankset, derailleurs, cables, cable ends, saddle, seat post, seat post collar, pedals. All have been carefully collected and curated over the past few weeks; all are organized on the garage floor. Everything present, nothing out of place.



*It doesn't take much to make a bike work.*

I start to assemble. The fork goes first, followed by the headset and cockpit assembly. The seat and post are next, then the brakes. After placing the wheels on the bike, I can't keep it sitting on the ground. The bottom bracket is the hardest part. The threads are a bit gunky from the old one, and it takes a lot of muscle to get into place. Installing the drivetrain is next, then attaching the cables and housing to the levers. A few final adjustments and tweaks. Then, an hour after laying out the parts, the Galactic Gypsy is finished.



ALL THAT is left is to take it for a ride.

It is an exciting time to be interested in bikes. With exploding genres like adventure biking, bikepacking, gravel grinding and the proliferation of single speeds, cycling innovation is at an all-time high.

Building your bike allows you to get into any of these cultures with ease. It is a way to experiment and express yourself. Deciding on the genre of the bike is one of the most important decisions, and begins with the frame.

I prefer older steel frames with no suspension. Their responsiveness, esthetic and simplicity appeal to me. These kinds of frames fall into two main categories – road frames and mountain frames – and a few fringe categories like BMX and cruisers.

From here, I make decisions that will determine the outcome of the bike. A road bike frame can become an off-road cyclocross bike, a fixed-gear bike, an off-road fixed-gear bike, a touring bike, an urban bike, a work bike (for messengers and other couriers).

In 1979, the Bicycle Manufacturer's Association of America estimated that there were 100 million 10-speed bicycles in the United States. Most of those bikes still exist and are lying around in barns, basements and garages to be used again.

Yet there are over 100 million bicycles manufactured every year, according to a 2007 study by the World Watch Institute. The same study says that, at this point, there are roughly 1 billion bikes in existence. The bicycle industry is driven by sales, and there are ever-increasing reasons to buy a new bike. Some are legitimate, like the emerging genre of bikepacking and gravel bikes. Some may be innovation for the sake of making sales, like electronic drivetrains, 12-speed gearing and weight shaving.

When people buy a bike, they have three options: They can go to a department store and buy a cheap one that could quickly develop mechanical issues and break down; they can go to a bike shop and spend \$500 to \$10,000 on a quality bike; they can get a used one.

A used bike is the most exciting option: you get the quality of the bike-shop bike (as long as you know how to fix it up), at the price of the department-store bike. Old bikes can change the world. There are millions of them sitting behind people's sheds being devoured by the earthy growth around them. All it takes is imagination, a bit of grease, a few tools and a lot of work to make them shine again.

I fill the Raleigh's tires, adjust the seat height and put my foot on the pedal. Gingerly, like a child learning how to ride a two-wheeler for the first time, I push off the ground. The wheel rolls comfortably over the curb and into the street. It's fast, smooth and comfortable. I pedal a bit, getting used to the character of the ride, the feel of the chain as it rolls smoothly around the gears, the slight tease of the brakes as they touch the wheel surface.

I shift through the drivetrain, the new cables stretching slightly in their housing – getting used to being pulled on.

Everything works. The world slips past in silence as I ride down the street. I ride faster and faster, each part, thoughtfully chosen, still working and communicating nicely with the others.

*Galactic Gypsy is flying.*



*One final test before the restored bicycle is ready to ride.*

*Photos and artwork by Marc Kitteringham*