

THE VANGUARD

ATBs and Their Dedicated, Imaginative Band of California Builders



Although the concept has now spread worldwide, northern California and specifically Marin County, just north of San Francisco, have taken credit for starting the “fat-tire” or “all-terrain” bicycle movement. True, people in other areas have independently arrived at similar ideas, and as early as

1953 John Finley Scott built an off-road bicycle on a Schwinn diamond frame that looked remarkably similar to bikes on the market today. But the idea failed to take off.

Perhaps real viability depended on a certain California craziness. At any rate, the northern Californian influence can be traced through all its stages to the current state of the art, and the process is still going on via a cadre of dedicated and imaginative bike builders.

The bikes may have been unavoidable. In the mid-'70s the bike boom had made bicycles popular, but they were still a long way from practical; the more one spent on a bike, the less substantial it seemed to be. In the evolution of the ATB there was no plan, just as nature has no plan. The all-terrain design evolved spontaneously through a series of unplanned steps in which broken parts were replaced with stronger or newly fabricated ones, until it reached the stage where the bikes became as sophisticated as similar road machinery.

Recently we spoke to four well-known West Coast builders about their influences and ideas, and they revealed an interesting diversity within the group. The evolution of

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By Charles R. Kelly



A

ATB race or bust! These fat-tire flyers (left) also use their truck to travel over the wet, rocky, and not-so-beaten path. America's most prolific ATB builder (above), Tom Ritchey, and his bike grip the grade. The ultimate in ATB radical chic (right)—the Cunningham Indian.



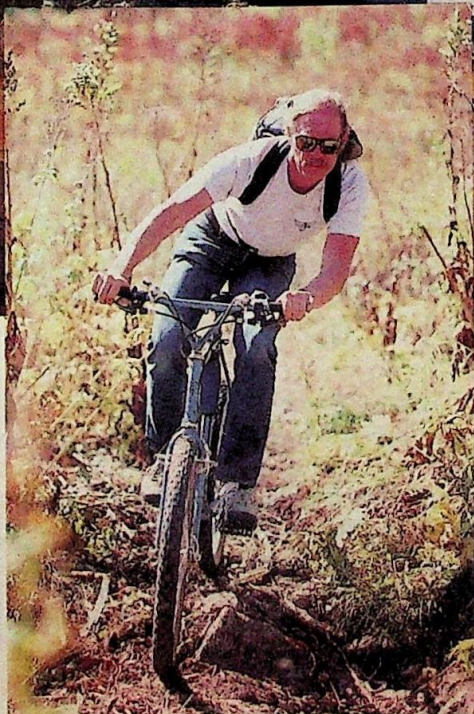
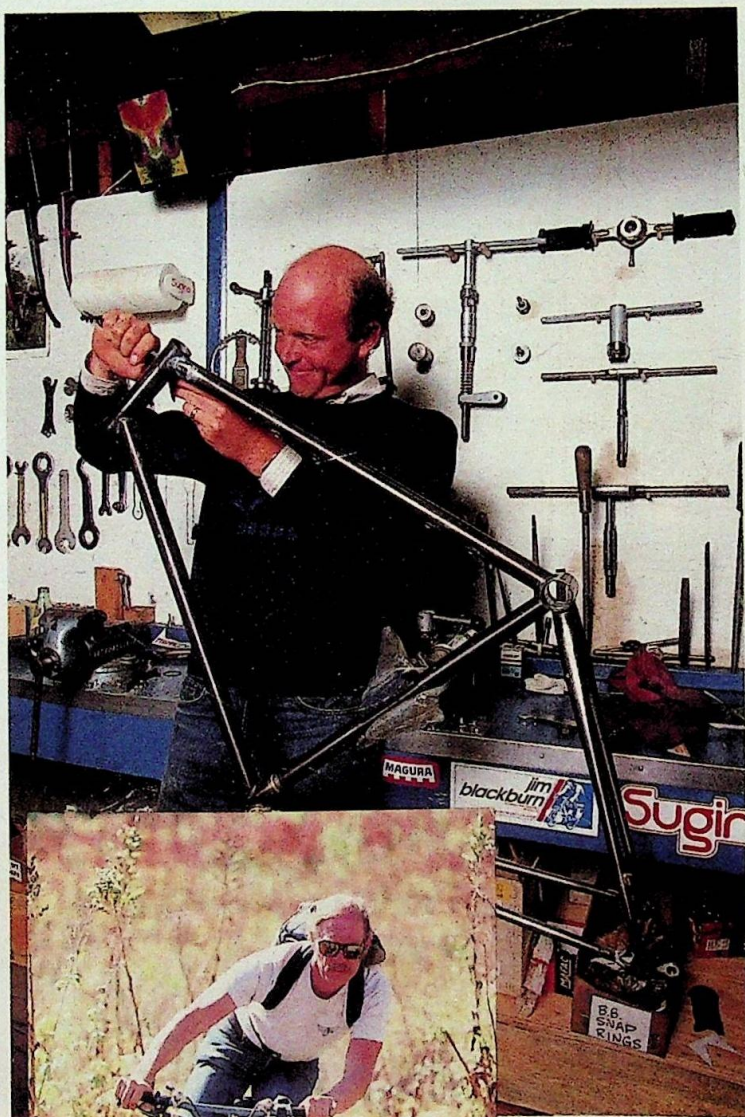
The Man Behind Mountain Bikes

Gary Fisher, another well-known name among ATB enthusiasts, has had an impact on the ATB movement that deserves some mention as well. Fisher is credited with being the first Marin County rider to put gears on his "clunker." Others had done similar variations as early as 1953, but Fisher's innovation of gears on a fat-tire bike is the lineal ancestor of the modern mountain machine. Fisher also deserves credit for being the first to use "thumbshifters," the now-universal shifting mechanism for ATBs, and for introducing the seatpost quick-release—standard equipment for serious off-road cyclists.

In 1979 Fisher asked Tom Ritchey to build him an off-road bike, and that request helped to open the ATB floodgates. Ritchey built not just one but twelve in the first couple of months. As his interest grew, Ritchey asked Fisher to help him sell the bikes. The first attempt at marketing ATBs was Ritchey MountainBikes, a partnership including Fisher, Ritchey, and Charles Kelly. Most "serious" manufacturers were amused when they first saw these bikes at the trade shows, but subsequent events have brought ATBs out of the novelty category and placed them firmly in the visionary column.

In the early days of the off-road racing movement, Fisher was unbeatable, winning nearly every race he entered. He is also the holder of the course record on the infamous Repack downhill race for five years (and still counting). Fisher has passed the torch to his ace rider, local boy Joe Murray, who works in Fisher's bike shop between his increasingly extended duties as the hottest off-road racer in 1984.

In the past two years Fisher has bought out his former partner Kelly and severed his relationship with Tom Ritchey as frame builder in order to take a new approach to marketing his ATBs. His company, now known as Fisher MountainBikes, features a Japanese-built, T.I.G.-welded ATB, the Montare. MountainBikes also has a limited production competition model with a hand-made domestic frame. Although Fisher is reluctant to reveal the names of the frame builders putting them together, he says he has seven different builders working off a set of standard plans. And he is beginning to do some of the frame work himself as he gears up a frame producing capability in his shop. ○



Gary Fisher (above), who with Charles Kelly and Tom Ritchey helped to put the "mountain bike" on the cycling map, checks a frame. Early pioneer Charles Kelly (left) tackles the terrain. He writes about ATBs when he can't be out riding 'em.

the ATB has become one of the major changes in the bicycle industry and in the way people look at bicycles, and in many respects it is hard to decide whether the people make the times or the times make the people.

Roadies and Gonzos

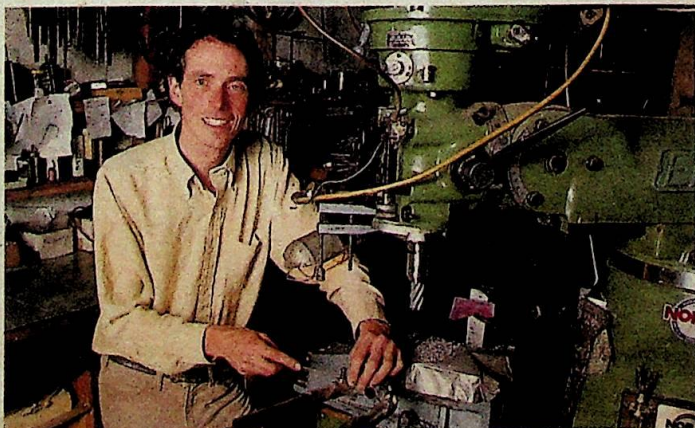
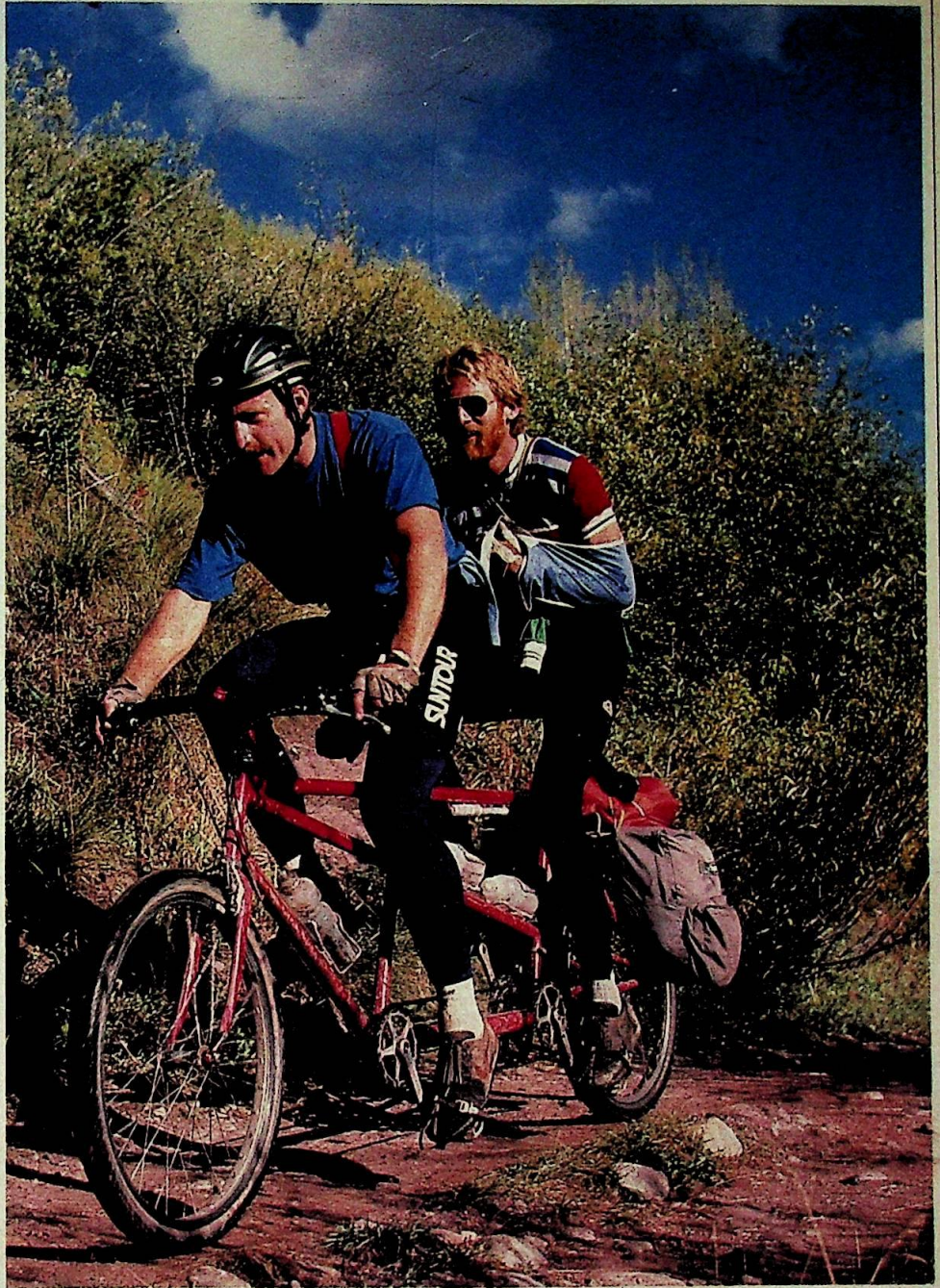
The two major cycling influences present in Marin County in the early '70s were the traditional roadie types and the more outlaw, one-speed, downhill coasters. Although each group regarded the other with something akin to suspicion, crossover was inevitable. From the gonzos came the tradition of off-road insanity, and from the roadies came the equipment innovations and the desire to ride up as well as down hills.

As a result, the two groups merged slightly, and by 1976 the Marin County "clunker" was a unique breed of bike found nowhere else in such numbers. With an old Schwinn frame (preferably from the Excelsior series), drum brakes, huge motorcycle handlebars, motorcycle brake levers, chrome "fork braces," thumb shifters or perhaps a pair of stem shifters next to one grip, Brooks B-72 saddle, one-piece cranks (or the occasional TA), the whole package weighed 50 pounds.

But as the sport grew, the supply of good, old frames was shrinking as more and more fell apart from off-road abuse, and the cost of replacing one almost justified a custom frame. At this point, a new breed of bike tinkers and frame builders began to set their own course in the development of yet another all-American product.

Joe Breeze

Joe Breeze deserves credit for the first successful version of a custom fat-tire bicycle made for rough country, and all of the ten frames he built in 1977 are still in use. Breeze had taken Albert Eisentraut's frame-building course and built several road frames, and his other qualifications were good. He had some of the fastest times on the Repack downhill race course (so named because of what it requires for your bearings); thus he knew about handling. And he was and is an exacting crafts-

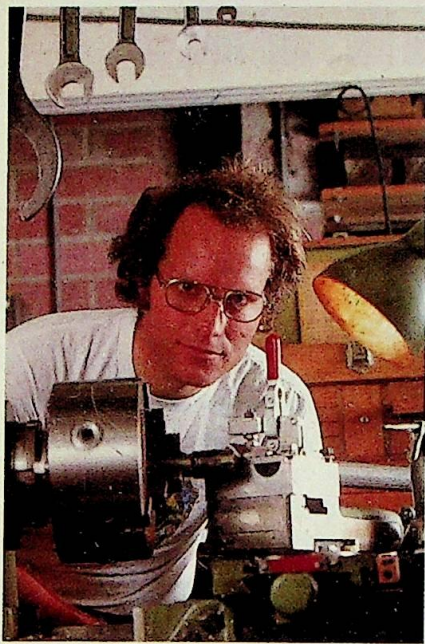


Steve Potts and a game stoker (above) show how sedate an ATB tandem rider can be. Charlie Cunningham (left) and part of his workshop.

FRANK STAUB

MITCH MANDELL

TECHNICAL EDGE



MITCH MANDEL



Old-timer Joe Breeze at work.

man — too exacting almost. It took eight months from the first exchange of money until the first bikes were done, but in that time Breeze literally reinvented the wheel.

Among his innovations were the first use of oversized tubing for ATBs (using a 1 1/8-inch down tube for a top tube), the use of a motorcycle handlebar, and the use of a standard bottom bracket for a balloon-tire bicycle.

Here's how Breeze tells his story: "I was interested in restoring old bikes. Right around that same time I started building road frames, and I wanted to get some of these old bikes and restore something like that Columbia shaft-drive. So while we went to different road races around the state, we would always check out old barns, old bike shops, and try to track down these old bikes. Down in Santa Cruz at this old shop we went through this deep, deep pile going back in time. We finally got down to the late '30s and early '40s and picked out this Schwinn; it was actually the Excelsior design — what we call a short Excelsior. It was spray painted red and had fenders and a big wire basket; the guy wanted five dollars for it, so I went for it.

"Some of my friends had been riding on the mountain on old fat-tire bikes, and I had friends from back in high school who had these Speedo bikes that they got from the

dumps for basic transportation. I used to look at those and say, 'Inefficient—forget it; you know skinny tires and drop handlebars are the way to go.' One of my friends had this old bike, a '47 Schwinn, but the tires were pumped up and the chain was oiled, so I just hopped on it to see what this was all about, and I said, 'Wow, this is great!' Nice stable feel, like the difference between ballet on the skinny-tire bike and football on the fat-tire bike.

"So I went home and I scraped the red paint off my Schwinn Excelsior, and it had the original beautiful two-tone paint job with the feather heads around the head tube. I was just going to restore it, but a couple of my friends talked me into hitchhiking to the top of the mountain with it. We rode down this old railroad grade, and it was incredible. So, I really got into it.

"These Excelsior designs seemed to handle pretty well. It had the best geometry for this type of riding, and we spent a lot of time hitchhiking up the mountain with our bikes to ride down. Then after a while, because we were in pretty good shape from road racing, we started riding further and further up the mountain before hitchhiking until eventually we would just ride to the top. The gearing was 52/20, and that's a pretty tall gear to be riding uphill; even though we were in good shape, it got old.

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"A bunch of guys from my bike club got into the old bikes, and eventually gears were put on them. Gary (Fisher) had a lot to do with that, as well as being the person who put the quick-release on the seatpost. So the gears came into play, and there were people riding around on these old bikes with gears.

"Some of my friends approached me to build some frames, so I said, 'Yeah, I'll build ten and see how it goes,' and before they were half done, they were all sold. They were pretty much the Excelsior design, because I wanted to start with something that I knew worked for what we were doing, which was all-around transportation-type bike riding. I associated the curved tubes with straight ones, and instead of using mild steel tubing I used chrome-moly, bigger-diameter tubes with thinner walls. The first ten had twin laterals, but later on I incorporated some of that weight into a bigger-diameter down tube and thicker chainstays for a bike that was 3/4 to one pound lighter but was just as strong and stiff and had ten fewer welds.

"Those bikes had a 68-degree head angle and 70 seat, around a 44-inch wheelbase with 18 1/2-inch chainstays and a 2-inch fork offset. The bikes I build now are pretty much the same, except that I've steepened the head angle and the chainstays are a little shorter."

In 1978 Breeze and Otis Guy wanted to set a cross-country record on a tandem, so they went to frame builder Tom Ritchey for a special bike. Breeze describes what happened when Ritchey saw his new all-terrain bike: "His eyes lit up, and he said, 'That's great!'"

Tom Ritchey

Tom Ritchey began building bikes when he was a teenage cycling wunderkind. He jokes that the first frame he built when he was fourteen was going to "... revolutionize bike building. I raced on that bike and actually won, but I wouldn't ride it now." Ritchey was a talented racer and attended the Junior World's Championship race in Poland when he was seventeen. One of the more amusing anecdotes of his racing career occurred when he was sixteen. Ritchey entered the 90-mile Crockett-Martinez road race and won it with a solo breakaway that left no doubt as to who was the strongest rider in the field. When the USCF officials found out his age, he was disqualified for being too young and the prize was given to a rider who had arrived at the line several minutes after Ritchey. Juniors at that time were limited to races of no more than 50 miles.

The pressures of traveling to races and the absence of any tangible rewards discouraged him from staying on the circuit as an adult. So, he has applied his talents to frame building since his late teens.

Ritchey is now known as someone who has done all right in the field of fat-tires. As a single frame builder making handcrafted off-road bikes, he is far ahead of whoever is in second place in production, and his designs have heavily influenced the direction of the industry. Working once again from the design of the Schwinn Excelsior and adding the influence of Breeze's bikes along with his own ideas, Ritchey began making his best-known bikes in 1979. Among his innovations that have become common are the one-piece triangulated handlebar, the seat tube ovalized at bottom bracket, the curved, tapered fork blades, and the overall design of the diamond frame with oversized top and down tubes.

Ritchey prefers to be regarded as a conservative frame builder. Although his off-road bikes have evolved significantly in five years, he claims that he is doing little that is really new.

"These are really traditional bikes, built with modern methods," he says. "I started with these bikes by copying an old Schwinn design ... how conservative can you get? The principles of building bikes have been researched for 75 years or more, and by now there isn't much that hasn't been tried in available materials, tubing diameters, and so on. For some reason

the chrome-moly steel frame, with a certain size tubing, has been the one design that has lasted, and there must be a reason.

"My design has evolved from the geometry I started with, though. The first bikes were 68-70, but now I use 68 1/2-72 for my regular bikes and 69-73 for the racing model. The problem with the shallow seat angle is that it puts the weight too far back on the climbs."

Ritchey believes building lugless bicycles made it easier for him to experiment with his first bikes. "Because I've always worked lugless, it was easy to put together these new bikes, using unusual tubing sizes (oversize top and down tubes, stays made of straight-gauge tubing) and angles. Most frame builders use lugs, and production bikes wouldn't be possible without lugs. But for the strongest frame, brazing is the best way, especially for mountain bikes that take more abuse than road bikes."

Ritchey feels that the finish of the bike says a lot about the builder. He points out the scalloped seat cluster reinforcement: "That scallop is done carefully to get the perfect French curve. That's my art—little touches like that. I've even seen other frame builders try to copy this scallop, and they don't seem to understand the lines of it; they make the point

too sharp or too blunt, they don't radius it right ..."

As a person who has immersed himself in bicycles since his early teens, Ritchey believes that a real dedication to the subject is essential to building quality bicycles. "So many people learn to weld in an auto shop, and they decide to reinvent the wheel by building a completely new kind of bike. I don't think a lot of them understand how beautifully the forces are balanced in the designs that have been around for so long. Even though my bikes are designed in a new direction, I don't think I'm doing anything really new; I'm just trying to complement a tradition that's been around a lot longer than I have."

Steve Potts

Steve Potts has a reputation as a meticulous craftsman among off-road frame builders. That's not surprising since he and Ritchey are good friends. Potts says, "I've been messing around with torches since I was about thirteen—silver soldering and brazing and so on. When I was in high school I used to work in the metal shop, repairing old bikes and fixing them up." Potts tried his hand at motorcycle racing, playing drums, and sheet-metal work.

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But his life turned around in 1980 when he and Breeze toured New Zealand on a pair of Breeze's ATBs. Potts got so excited about the new bikes that he decided to try his hand at the thing he loved most. In 1981 he built his first ATB, a present for a friend, and he hasn't looked back since.

With a smaller output than Ritchey's, Potts and business partner Mark Slate take a personal interest in each of their customers, and in Marin County Potts's bikes have a strong following. Potts gives Ritchey credit for being one of his strongest influences when he started

building frames. "Even though we're kind of competitors," says Potts, "I go over to Tom's house and we bounce ideas off each other. He taught me a lot of what I know about building bikes."

Working with his friend Slate, Potts has taken his bikes into his own creative areas, experimenting with geometry and handlebar designs as well as looking into different ways to join the tubing. One of his means of strengthening a frame is to slip a short piece of tubing into the end of the down tube where it is attached to the head tube. "We make the internal

tube a really close fit, and then when we put it on the head tube it wicks the brass up inside for a really strong joint." This process is not used on every bike. "We only do it on bikes that are going to need it for big or strong riders. Then the whole bike is built with the extra strength in mind. It wouldn't be right to do it to a small bike because it would change the way the bike worked."

Potts and Slate feel that they are in the process of fine-tuning their bike designs, and both prefer to ride a little steeper head angle than on the bikes they normally sell. "It's really precise handling," Potts says. "Not 'quick,' just precise; it goes where you point it. 'Quick' implies that it could sweep you off at any moment."

"Mark's bike and my bike are a little steeper and a little shorter and probably not for everybody, but I like it just fine. Ours are 71-degree head, but for most people 70 degrees with the wheelbase we're using is just right. Our wheelbase is from 41 1/2 inches up to 44 inches, depending on the size of the bike. A lot of bikes go through different sizes and have the same chainstay lengths. Every one of ours is different, and it makes a lot more work for us because the differences are small. It has to be done in a balanced manner; you can't just change one thing and leave everything else alone. Every one is a different size, and they'll sit on the bike differently. The weight will be in a different place if you don't take that into account."

In addition to their frames, Potts and Slate have a number of components either in production or on the drawing board, including new stems, seatpost designs, and brakes. Still, they give credit to the roots of their interest. "The original design everybody used is off, Joe's conception of the Schwinn Excelsior, so you know it all evolves. We're all standing on each other's shoulders, learning things from each other. We didn't design anything new; we just refined a few things. But where most bicycle companies are conservative, we try a lot of new things, although we're not off-the-wall radicals with a lot of crazy ideas."

Charlie Cunningham

Although Charlie Cunningham builds his own frames, he is loosely associated with Potts and Slate in a group effort called Wilderness Trail Bikes and is a co-developer of some of their new components. (Cunningham helped develop a new braking system for ATBs, the "roller-cam" brake, which is manufactured by SunTour.) Cunningham's approach to off-road bikes draws on years of cycling and his experience as an aerospace engineer. (He has a degree in the subject from the University of California.) Working as a carpenter, he commuted over Marin County fire roads on a "skinny-tire" bike, until the fat-tire revolution

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that was going on around him became too attractive to resist.

Cunningham builds only a few dozen frames a year, not many compared to the standards of some builders. He takes an interest in each rider, seeing that the purchaser is happy with the product. As a limited-production item, Cunningham's bicycles are among the most expensive ATBs on the market, with framesets averaging around \$1,500.

Cunningham's bikes are as radical a departure as seems possible from the other off-road designs. His choice of material is oversized aluminum tubing, which is put together in configurations that most cyclists will find unconventional, and some of the components are of his own design or are standard components modified for his designs. Many of his off-road bicycles are equipped with drop handlebars in contrast to the flat, motorcycle style more commonly used.

"Heat-treated, oversized aluminum tubes have not been used for off-road frames on a significant scale, so there is little prior design experience to draw from," he says. "This puts special importance on the necessity of excellent engineering from the outset. I feel that aluminum, if properly engineered, will in time be widely accepted as the ideal material for high performance bike frames. It's already

used in almost all components.

"There is a responsibility that accompanies involvement with oversized aluminum in its early stages of development, and that is to insure that it gains an impeccable reputation as a frame material as the years go by. I expect my customers to share with me information derived from the use of their bikes under all conditions. One way I test bikes is to build intentionally underdesigned bikes, which are tested by carefully chosen riders to find out where the trouble areas might be."

Cunningham is proud of his bikes' durability and performance. "My bikes have an excellent reputation for doing what off-road bikes are supposed to do, and they're guaranteed for the lifetime of the owner."

Cunningham is currently using three designs: the "Indian," a general riding frame with the relaxed angles and slightly longer wheelbase reminiscent of the Excelsior-based designs; a racing frame with stiffer forks, shorter wheelbase, and steeper angles; and a "Little People's Bike" for riders with short legs. As an example of how one thing leads to another, the roller cam brake design is necessary for some of Cunningham's designs that have short seatstays; a conventional cantilever brake would be in the way of the rider's heels, but the roller-cam does not project from the frame

and is mounted under the chainstays instead of the seatstay.

Cunningham points out that in spite of some non-traditional characteristics, his "Indian" touring model is built up with standard off-the-shelf components. "While my racing bikes have custom or custom-modified components, the touring models can be worked on in any bike shop between here and Timbuktu. Everything is standard — headset, bottom bracket, derailleurs and hubs." There is, however, a long list of options for riders who want them, including custom forks, brakes, stem, handlebars, hubs, and toeclips; these are all products of Cunningham's desire to build the best bike he can, regardless of the limits imposed on him by component manufacturers.

Aside from the fact that they are on the cutting edge of off-road bicycle technology and chose different approaches to their off-road vehicles, these builders' common element is their creative attitude toward bicycle building. While they may protest that they have only carried on in the tradition of other frame builders, each of these artists has put his mark on his chosen field, as have the many other builders and enthusiasts who have helped make these new bikes into the most versatile form of two-wheeled transportation yet devised.○