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Mountain Biking UK

BRITAIN'S MOUNTAIN BIKE MAGAZINE.

THE HIGH CLIFFS!
Dizzy pictures!

ZOOM!
Racing and racers

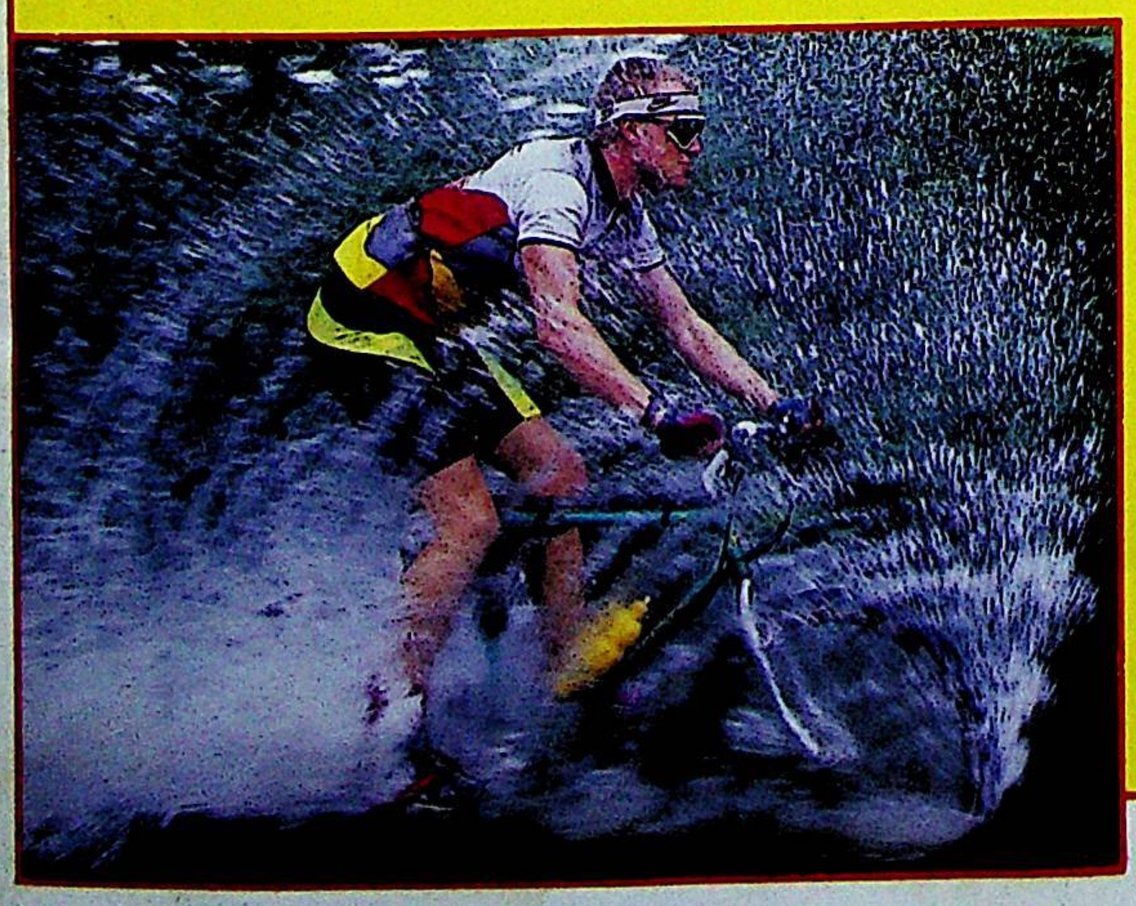
KNOBBLED!
Seattles ATB Cops

RIDING THE WORLD
Fancy an expedition?

GARY FISHER
Then and now

IT'S ALL IN THE FRAME
Materials and geometry made plain

TESTED
Three bikes at £700



MOUNTAIN BRITONS
Winning beneath the Matterhorn

Gary Fisher.....Then

The modern mountain bike may not have sprung fully grown from the brow of Gary Fisher as he hummed along with the Grateful Dead sometime in the 60s, but he was a main mover in the group of shakers that made it all happen. MBUK Associate Editor CHARLES R. KELLY was another. They lived mountain bikes together then and they live mountain bikes today. Who better to look at the Fisher contribution to the sport over a decade?

Gary Fisher and I go back a long way, to the day in 1972 when I went on a bike ride and encountered another cyclist. A skinny, long-haired individual, a road-racing dropout and part-time bike mechanic who spent some of his nights operating a light show in San Francisco's rock 'n' roll scene and the rest of his time riding. At the time, he answered to the name "Spidey", a corruption of Spider, from his slender, long-limbed frame. A road racer from the age of twelve on, he had been kicked out of racing at the age of eighteen because of his long hair, which reached the middle of his back when I met him. At this time of his life he was a classic "bike bum," willing to sacrifice many other aspects of a comfortable life in order to spend the maximum number of daily hours on a bike.

As chance would have it, I was looking for someone to share my small two-bedroom quarters. After we got acquainted a little further, Gary moved in and we ended up sharing that house and another for a total of four years.

BIKE CRAZY

One thing Gary brought when he moved in was a pile of old bicycle frames, the plunder from a bankrupt bike shop. These became the basis for our first attempts to build bikes that could be ridden on trails. Our house was filled with a jumble of old bike frames and sleek racing bikes, a workbench in the dining room and wooden crates full of worn-out parts in the corners. We did most of our early mountain bike experimentation in our house, which was the unofficial headquarters of the local off-road crowd. Gary was the master of modification, adept with file, ball-peen hammer, pry-bar, and whatever else it took to coax dissimilar parts into adjustment. He also knew more about bikes in general, from the most elite racers to the funkiest clunkers, than anyone else in our immediate cycling crowd. Bikes weren't the only thing Gary ever thought about, but bikes were what he thought about the most.

Somewhere along the way he got his racing licence back, and during an amateur career of over ten years he compiled a respectable if un-distinguished record on the road. Gary also served as a mechanic for an American team in France during 1977. In the first days of semi-organised mountain bike racing in California starting around 1976, Gary won many of the classic races, including Reseda-to-the-sea, the Whisky Town Downhill, the Central Coast Clunker Classic, the Rockhopper, and the Repack Downhill. By the time the first National Mountain Bike Championships were held in 1983, a

Photo by David Epperson

and.....Now

new generation of riders was ready to claim the title, but there is no doubt that Gary Fisher was the best mountain bike racer in the U.S. before it counted.

THE BUSINESSMAN

Our association has included a number of outrageous adventures, plenty of good times, and more than a few conflicts. In 1979, along with Tom Ritchey, Gary and I started the first business that focused strictly on these new bikes with fat tyres. We called our company *MountainBikes*, and at first we ran it from our homes, once again assembling bikes in the dining room.

Nothing is forever and, after working together for four years from 1979 to 1983, the three of us have gone down separate paths, although we are all still deeply involved with mountain bikes. Gary Fisher's place in mountain biking is assured now, and he has come a long way in life since the days, a decade ago, when he turned wrenches for someone else. Nowadays, Gary only turns wrenches when he feels like it; he jets from Europe to Asia to oversee various business efforts, and an army of mechanics, shipping clerks, secretaries and accountants take care of the mundane aspects of the bike business.

STILL BIKE CRAZY!

Gary has turned from the wild hippy I met in 1972 into a member of the international business community. He wears a suit now and then instead of his former uniform of t-shirt and faded jeans (with the right cuff shredded and blackened from the chain), and his unruly mane has long since been tamed to the point of extinction, but there is still a wild look in his eyes when he gets away from the office. Remember, this is the all-time record-holder for the Repack Downhill race. He still rides quite a bit, although he has been forced to take a break recently due to a fractured kneecap he suffered in an accident while he was riding to work.

Fisher maintains a commitment to the experimentation and flexible thinking that made him a pioneer in the field of mountain bikes. Gary and his engineering staff carry on constant research in the areas of new materials, designs and components. No idea is too wild for serious consideration; after all, it wasn't long ago that the movers and shakers of the bicycle industry thought that Gary and people like him were lunatics, and now they are doing their best to fall into step.

I trapped Gary in my office the day after he had returned from Japan, and

we touched on a few of the future plans and current developments taking place at his facility in San Rafael, California.

Charles Kelly: Let's talk about your grass-roots team approach. You sponsored one home-grown national champion (Joe Murray), and you have turned up other good riders such as Mike Kloser and Sara Ballantyne. Every company that supports a team of professional mountain bike racers is looking for the best riders. Some of the bike companies just go out and hire the riders who have already proven themselves, but the Fisher approach is to give jerseys and bikes to a lot of people all over the country, and when they start showing up at the top of the results, give them more.

Gary Fisher: Basically, yes; but in between we like to work with these people also. I'm putting together a programme of going around the country and riding with each of the co-op team members. I have to travel all over the country to do it.

CK: That means you have to go on everyone's favourite bike ride?

GF: It could be worse!

CK: Do you have a team in Britain?

GF: Yes we do; we're working with Chainsport in London. I believe it's going to be a dozen riders, and they'll be riding our ProCaliber model.

CK: What's the next dramatic change for the mountain bike? Since we have click-shifting, and frame builders seem to have settled on their geometry, is there any other area where we're going to see any major changes?

GF: I don't agree that people have settled on any geometry. I think the next type of bike is going to be in the direction of specialty bikes for different types of terrain. For instance, a real "mud bike," a "big rock" bike; we don't have those types of bikes yet. Something you can really wail with on those boulder-strewn Colorado descents, and not get numb hands and arms.

CK: Did you see the new steering damper for mountain bikes?

GF: I've ridden with it, and it's sort of a substitute for something you naturally have going for you. I'm a little afraid of it, not only because you can't steer as quickly, but on one side you can't steer the usual amount you can steer without it.

CK: What sort of changes do you have in mind for your next models?

GF: We've been doing a lot with aluminium and titanium, titanium forks, and we like aluminium frames for some really stiff models. We're working on some new joining methods also. We've been joining aluminium to steel.

CK: That's the frameset with the aluminium main triangle and the steel stays. Is that on the market yet?

GF: It's coming along. We were working on that the last two days over in Osaka (Japan), and we expect our first production in June.

CK: What about titanium bikes?

GF: We're working on titanium bikes right now. We have a set of handlebars now that are 98 grams - a bulge-bar - and they are as strong as some of the straight 7/8" aluminium. These are a little on the light side, and we make a heavier set also.

We have some new shapes in fork blades, we're going through a process of making various prototypes and seeing how they ride, before we settle on them. It's a big commitment to a single design and a few sizes in order to keep the price down.

CK: Your titanium bike will have a titanium fork, then?

GF: Definitely, along with an oversize steerer tube.

CK: How did you select your unusual tubing sizes?

GF: We set up a computer spreadsheet. We fed in the mathematics that compared different tubing materials for modules of elasticity, weight per metre, and ultimate yield strength. The materials we compared were Prestige chrome-moly, standard chrome-moly tubing, 6061 aluminium heat-treated to T-6, pure/grade-three titanium, 7000-series aluminium, and the alloy of aluminium we're using on our bikes. We fed into the computer the different tube diameters and wall thicknesses, and a graph shows the comparative numbers for the different areas. It allows you to compare things quickly, you don't have to build something to know what the weight will be and how stiff it will be.

In the first titanium bike, we tried to make it the same stiffness as one of our chrome-moly bikes; we ignored the weight, the ultimate yield strength, and the fatigue strength. We came up with something that was a little lighter, about half a pound for the frame and fork. Fatigue resistance was incredible, the thing should last for about 22 years of continuous riding.

It was a lot stiffer than I had

anticipated. Titanium has an unusual feature, or an unusual feel I should say. When you push on it, it stays stiff until you reach a certain pressure, and then it seems to give a lot more, When I hammered out of the saddle, the bike seemed stiff, but when I hit a washboard road, it ate up the shock.

The next frame we make will be the same diameter tubes but with a thinner wall. We want to keep most of the stiffness, but bring the weight down a little. I think we could make the bike 3/4 of a pound or more lighter in the same size, and still have the yield strength and fatigue

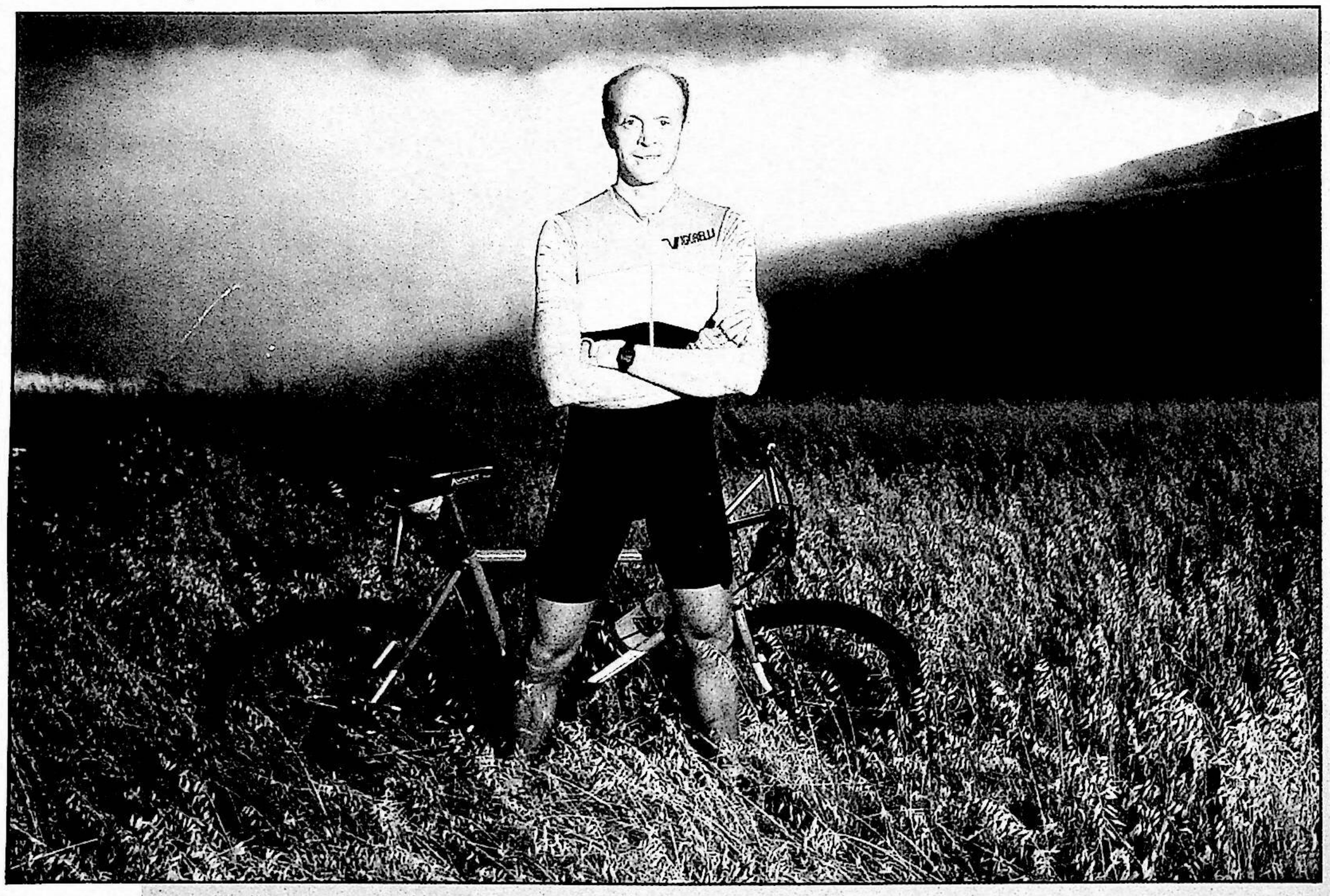


Photo by David Epperson

resistance that's necessary. I don't think it needs to be quite as stiff as we made the first one.

CK: What about the chainstays? Are they the same size as the steel stays?

GF: The chainstays are 24mm diameter, and normally we use 22.2 or 19 millimetre. The seatstay is a 19mm, where normally we would use a 16mm. So each tube is a little oversize as it turns out. This alloy of titanium that we're using has been work-hardened and it's a little better than the straight chrome-moly, closer to the Prestige tubing in yield strength, so there's no reason we can't make them just as thin.

Right now, the wall thickness of the stays is 1mm, and the wall thickness of the stays on a Prestige bike is 0.8mm. I'm using 1.1mm (wall thickness) tubing on the down tube, and on my steel bike it's 0.6mm, and it's a smaller diameter. It can get thinner, as far as strength goes. I was really trying to make a bike that was as stiff as a steel bike, because I wanted to find out what the difference was in the material.

CK: When this bike hits the market, it will need some special equipment, because of the oversize tubes.

GF: The front derailleur is available from both SHIMANO and SUNTOUR, because they make them for aluminium bikes. The headset is specially made.

CK: Assuming nothing else changes in the money market, what can I expect to pay for one of these titanium bikes?

GF: It depends on how exotic we get. It could go for anywhere from $1500 to $3000 depending on what we hang on it. You can get into a lot of custom work.

CK: Once anyone decides to buy a titanium frame, they probably want everything else they can get that's cool.

GF: You'd better believe it. Titanium bars, titanium stem, a special super-light headset.

CK: What about the composite materials, the space-age material other than metals?

GF: We're learning about it right now. It's really difficult to work with, because when you have the world's strongest material that stretches from point A to point B, at those points you have to attach it to something else. You have to form a bicycle frame with all sorts of bits and pieces of hardware hanging off it and if any of those bits and pieces fails, it won't work. It's a very difficult technology to work with compared to titanium.

CK: Titanium has certain characteristics it shares with a steel bike that are universal when you are using tubing, but composites are an entirely different technology.

GF: That's right, especially when you have materials that are so stiff, because they don't dissipate shock along their length. It sends that shock all the way to the other end.

Carbon fibre frames have a lot of damping to them, the way they are woven together and encased in a binder. I'm really intrigued by bikes like that, like the KESTREL. They will eventually be able to build a bike that will be very functional, and beautiful, and made on a mass-production basis that would make them really inexpensive. But the bugs have to be worked out of the design, and there's a lot to be done on it. MBUK