

FROM OFFROAD ZERO TO HERO
20 PRO SECRETS TO MOUNTAIN BIKE SUCCESS

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FEBRUARY
1999



**LIGHTWEIGHT FORK
SHOOTOUT: ROCK SHOX
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**SOFT
TAILS:
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LIGHTER!
BETTER?
ALTERNATIVE TO
FULL SUSPENSION**

**EXPLORING
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TRI-GUYS IN HAWAII; TEAM VAIL
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A HARD LOOK AT SOFT-TAILS

Competitive or a compromise?



What is a soft tail? Good question. In the confusing world of mountain bike jargon, "soft tail" has cropped up in the midst of cantilever beam, floating drivetrain, McPherson strut, rising rate and swing-link. Borrowed from Harley-Davidson's nomenclature for a motorcycle that has suspension but locks like it doesn't, a soft-tail mountain bike features a standard-type diamond frame with a telescoping

shock absorber neatly disguised as a mono-sway rear end. The "soft" part of the soft tail can be actuated by an air shock, elastomer bumper or coil spring.

What's the difference between a soft-tail and a full-suspension bike? (1) The soft-tail is minimalist. It's basically a hardtail with a shock replacing a tube. (2) A soft-tail has limited travel. So limited, in fact, that the chainstays don't use pivots at the

Hardcore softies: Soft-tail bikes are not a factor in the grand scheme of mountain biking. Yet, the simplistic suspension system *and* added comfort are winning over riders from both the hardtail and full-suspension camps.

bottom bracket. They are designed to flex enough to handle the 1,125-inches of rear wheel travel. There are no pivots, bearings, or linkages and no swingarms on a soft-tail. (3) They are light. The optimum frame material is titanium because it allows the chainstays to flex thanks to its high modulus of elasticity. The basic soft-tail weighs less than most aluminum hardtails.

IS IT FOR YOU?

Who is buying soft-tails? Let's face it, a soft-tail doesn't have enough travel to satisfy riders with a jones for three or more inches of rear wheel travel, nor is it pure enough to satisfy the hardtail traditionalist (who feels constrained by any travel whatsoever). So who buys soft-tails? A surprisingly large number of riders. They come from three distinct groups.

Many are converts from the hardtail ranks. They take their riding very seriously, never miss a weekly group ride and slip on race numbers a few times a year. Weight is a big concern for them, as is age. Say what? Age is a factor in soft-tail purchases for three reasons: (1) Since most soft-tails are constructed out of titanium, they are expensive. Very expensive. That eliminates the college student or young housewife. (2) As your body ages, your lower spine loses its sharp rings, sprays and joints—the once lively feel of an aluminum hardtail becomes a jackhammer as you ease into middle age. (3) Older riders are wiser. They can still insist on high-performance, but be smart enough to understand the benefits of not taking a beating.

Of course, many soft-tail advocates are deserters from the full suspension movement. Many early disciples of full suspension became disenchanted with the leap from hardtail to three inches of travel. Unable to break their hardtail habits (spending a big gear, out of the saddle, sprints and less than fluid pedaling), they want to return to the hardtail fold, but don't want to give up the advantages of rear suspension.

Finally, there are riders who are ethically insulted by the sight of swingarms, chain guides, linkages, struts, mainframe levers, springs, bearings or a puddle of oil on their garage floor. This group shies away from late night adjusting, cleaning, replacing and wrenching on their bikes. Simplicity is what the biking experience is all about to them.

HARDTAIL OR SOFT-TAIL?

If they don't have pivots, couldn't they break from the flexing? Yes, they could. And some of the original soft-tail designs did. However, as long as designers don't try to coax three inches of travel out of their softies, the chainstays can handle the load (especially titanium chainstays).

Success stories abound. Moots has been tracking soft-tails for 11 years and they back their soft-tails with a limited lifetime warranty. Even companies who manufacture their soft-tails out of chromoly (and there are a few) back their soft-tails with strong warranties.

Soft-tails are very appealing. The idea of blending the best of a hardtail with the pluses of a suspension bike is hard to resist. So hard that the MBA test crew assembled a wide assortment of the latest and greatest soft-tails in one place for two months of testing. We rode them in the same gnarly conditions that our suspension bikes thrive in and so the grider climbs that favor their rigid forebearers. We put the Saram, Exact, Moots YBB, Merlin Fit Beat, Dean Duke and KHS Comp ST through a battery of tests that were anything but soft.

MOOTS YBB

Where the party started

Ken Erickson is credited with the creation of the modern day soft tail. The first one was born in 1988 in Moots' Steamboat Springs, Colorado, shop. Those rudimentary chromoly-framed soft-tails have evolved into the current 3/25 titanium YBB (which stands for "Why Be Fear?").

THE GEAR

MBA's YBB was dressed to impress with Rock Shox SID Long Travel forks; Shimano's top-of-the-line XTR compo-



Hidden intricacies: Don't be fooled by the simple appearance. The Moots YBB offers quality the eye can't see, but the rider can feel. A decade of engineering has gone into tube manipulation, joint fitting and welding.

Most point: Can a \$5000 bike be a deal? Yep! While the Moots YBB price puts the bike in the upper echelon, there is no problem justifying the price. The Y-BB-Beat fell right from the first ride. ▶

onents, Moots' proprietary titanium stem, seat post and bars; Maric X517 SRP rims; a Serfas/Moots saddle and Serfas grips. A Chris King No-Thread Set with sealed bearings took care of the headset duties. Tires were Ritchey Z Masses.

Suspension duties inside Moots' mono-day are handled by a coil spring positioned over a urethane bumper. The spring rate and urethane density are chosen based on the frame size and potential rider's girth. Moots offers two



Patient zero: Moots is where the soft-tail movement began eleven years ago, and the company is still on the leading edge of the technology (no small feat in the ever-changing mountain bike world).



different springs and three clasterers.

Moots trains that consistency and fanatical attention to joint fitting are essential to producing a reliable, high performance soft-tail. Moots' titanium chainstays are bent in batches so their consistency can be guaranteed, even if it means components sit on the shelf for a few months waiting for a bike order. Moots has always been more interested in great performing bicycles than great performing production lines.

FACT AND COMMENT

The first thing that catches your eye on the Moots is not the integrated shock in the telescoping mono-stay; it is the massive looking 1-1/2 inch diameter top tube. On all frames over 17-inches, Moots fits this seriously oversized tube for rigidity and added strength.

The YBB has all of Moots' signature characteristics: quick handling, initiated move from the hips than the bars, casual drifting through fast corners, nimble turning in the tight stuff and snide producing predictability everywhere else. The YBB's light and nimble feel made it cool on the dirtails with the soft tail in active mode.

The YBB is very comfortable and gives up so little on efficiency that there is no excuse not to use the YBB as an all-out NORBA racer. The YBB does offer a lock-out mechanism that requires tightening an Allen screw. It is not something done on the fly. However, the rear end movement is so subtle, even on hard-packed climbs, that no serious rider ever locked it out after trying it once.

The YBB doesn't come close to a full-suspension bike in traction enhancement or on rough rocky terrain, but Moots has never claimed that to be one of their intentions. Think of the YBB as a super comfortable hardtail instead of a limited travel full-suspension bike.

AGRA RATINGS

The bike that started the revolution continues to be the target that everyone is aiming for. It's not a cheap bike, but with the price comes years of soft-tail manufacturing experience. If switching to a full-suspension bike has left you feeling sluggish and heavy, but switching back to a hardtail means buying Ben Gay by the gallon, you owe it to yourself to take a look at the YBB.

MOOTS YBB SPECS

Frame size	17.5"
Weight	22 3/4 lb.
Bottom bracket height	11.875"
Chain stay length	16.7"
Top tube length	22.4"
Seat tube angle	73.25°
Head angle	71°
Price as tested	\$4951
Phone: (870) 878-1078	

Break dancers: The most consistent soft-tail question is, "Won't frames without pivots break from the flex?" Some originals did break, but today's designers don't try to create those inches of travel out of their softies. Success stories abound.



Show stopper: Merlin's Fat Beat was the standout surprise of Intertube (the bicycle industry's big trade show) and on the trail it was no different. The Fat Beat sits dropped-jaw, eye-peeping expressions from all who cross its path. ▶



SUNN EXACT

One hard soft-tail

█ The MBA wracking crew thrashed the Sunn Exact just a few issues ago (MBA September '88) but thought it would be a good idea to take the Exact out for another spin since the MBA garage was now packed with softies. If you'd like a more comprehensive analysis of the Sunn Exact, pick up the September issue, but meanwhile, here is a quick review.

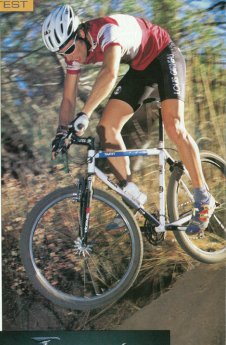
MBA RATING

Revisiting the French manufacturer's soft-tail offering didn't change our original opinion. The Exact was the hardest soft-tail we had ridden when we tested it several months ago—and it still is. The Exact is so stiff that wracking crew members compared the ride to that of a hard-tail. The stiffness negates the main reason riders look at soft-tails in the first place.

Food chain: The Exact is at the top of Sunn's soft-tailed food chain. Sunn's softies start \$600, so don't let the Exact's stiff price or stiff ride scare you away. ▶



Homegrown: Sunn builds their own forks, the air/vol Carbon Obayo. Sunn speed valving to resist bobbing under power. It takes a big hit to get the attention of these forks—and with a 35mm stroke, it is not a lot of attention.



▶ **Riding Sunn:** The Sunn Exact is so close to the feel of a hardtail, one has to ask: why not just ride a Sunn Hardtail? Good question. The forks and rear suspension are tuned for the race. All others need not apply.

The TIG-welded chromoly frame (one of only two steel-framed soft-tails in this test) and elastomer spring/damper rear shock performed without complaint for months, unlike the riders. Test riders got off the Exact wanting to go for a softer mount or back to a hardtail.

SUNN EXACT SPECS

Frame size	18"
Weight	24 lb.
Bottom Bracket height	12.17"
Chain stay length	16.8"
Top tube length	23.5"
Seat tube angle	72°
Head angle	71.5°
Price as tested	\$2,500
Phone	(800) 838-0378



KHS COMP ST

A social soft-tail

Most soft-tails share one trait: they are expensive—very expensive. But, we want you to meet the exception to the rule. The KHS Comp ST is surprisingly well-equipped for a sub-\$800 bicycle. A Manitou Spyder fork graces the front. Shifters are Shimano STX RC with STX RC front derailleurs and an LX on the rear. Cranks are Tracer Safari, rims are Sun double wall (they're black with machined sidewalls) and tires are IRC Mythos XC's. The other major components (including bar ends) are KHS' own PowerTools brand—except for a Kelsey Alton Micro-Adjust seat post.

FACT AND COMMENT

There is no way around it, at 28.25 pounds the KHS Comp ST (for Soft-Tail) can't compete in the weight department with the higher priced bikes in our test, but that doesn't make the Comp ST a loser. Let's put it in perspective. At under 27 pounds, the Comp ST is lighter than most full-suspension bikes in its price range and not all that much heavier than the hardtails it competes with for showroom space. But the price, the KHS' weight is on target, but it is on target once you get on the trail?

Relax, the Comp ST is a great ride! First off, the frame is made from chromoly—and not the thin walled variety. KHS knew that a steel soft tail needed stout (and weighty) tubes to assure longevity. The tubing and adjustable spring/adjustable pre-load shock deliver one sweet inch of rear wheel travel. This may be a hair less travel than the expensive soft-tails, but the Comp ST doesn't bob on the flats or bang on the descents.



Real work: KHS offers a soft-tail for those without blue chip stocks in their portfolios. Prices range from \$2,250 to the Comp ST's budgetable \$749. The chromoly frames are backed with a guarantee that shows KHS has the confidence.

Handling is very middle of the road. It feels quick on the trails without being twitchy on fast fire roads.

What about the weight? On flat or rolling trails, the weight is not noticeable. The bike wheelsies easily over steps and can even bounce hop without pulling anyone's groin muscles. However, there is no hiding the weight on the climbs, even with the menial 22-tooth chainring.

Everyone we encountered while riding the Comp ST asked the same ques-

Full PowerTools: Our Comp ST was decked out with PowerTools components. The quality and function of the in-house parts was impressive for the price.

Raise velocity: The KHS Team ST is for racers and the KHS Comp ST is for weekend warriors. Nothing is zeeder than passing an expensive hard tail on the Comp.

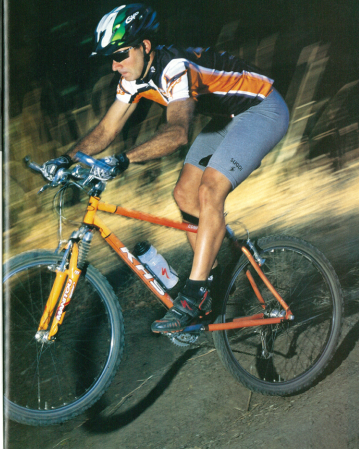
tion, "Aren't you afraid that the chromoly chainstays are going to crack?" To tell the truth, we were. The fatigue cycle of chromoly is not as long as that of titanium, but with know-how it is possible to engineer plenty of durability into the frame. KHS feels that they have the combination of flex and durability figured out well enough to offer a limited lifetime warranty.

MIRA RATING

The Comp ST is perfect for the rider who wants what a soft tail has to offer, but only has about 750 bucks to spend. If you want less weight and Shimano LX or XTR components, you can look at the slightly more expensive KHS Team ST (\$1149 for LX and \$2479 for the XTR). How well did we like the Comp ST? When the winking crew opened up the MIRA garage full of \$5000 soft-tail bikes, nobody wanted it if they ended up on the Comp ST (well, okay, we admit that they whimpered a little).

KHS COMP ST SPECS

Frame size	17"
Weight	26-1/4 lb.
Bottom Bracket height	12.5"
Chain stay length	16.75"
Top tube length	23.5"
Seat tube angle	74°
Head angle	70.5°
Price as tested	\$749
Phone	(310) 852-7175



DEAN DUKE

Soft-tail sophistication

Dean Ultimate Bicycles, out of Boulder, Colorado, started making soft-tails three years ago and now offers models in both titanium (Duke) and chromoly (Dostar). The MBA wrecking crew first rode the Duke a year ago, but it has seen enough refinement in the last 12 months (including a 1/2-inch higher bottom bracket and steeper head tube angle) to induce the MBA gang to take it for another spin.

THE GEAR

MBA's Duke had an impressive array of back-up components. Shimano's XTR group was surrounded by Dean's own titanium seat post, aluminum stem, carbon fiber bar ends and 6061-T6 aluminum bars. WTB's (Wilderness Trail Bike) Momentum passive guard headset held a Rock Shox SID SL fork which directed a Spineray Spox front wheel. The Shimano nine-speed freehub was attached to another Spineray Spox wheel. The distinctive, dipped-nosed, WTB Comfort Zone saddle (\$150) kept the test crew comfy. Tires were WTB's hand-packed surface, low rolling resistance Racing Reptor.

FACT AND COMMENT

Dean's custom drawn 3/2.5, seamless, radial, titanium soft-tail frame accepts a shock you'd expect on a full-suspension bike. The Strata shock Pro air-oil shock absorbs both to the seat stays in a fashion

that could fool you into believing the shock was machined to the stays. It's that close.

Thanks to the adjustability of the shock, Dean's responsive rear triangle and WTB's saddle, the Duke has a surprisingly plush rear suspension. Of all the soft-tails the MBA test crew has ridden, this is the one that leans most to the full-suspension side of the equation. Test riders in the 170-pound range ran 300 psi in the shock, while lighter and heavier riders were in 15-pound increments to find their sweet spot. Satoru and Dean developed the rear suspension together and their cooperation paid off.

The MBA wrecking crew raved about the Duke's climbing ability. Brack down, twist the shock's lockout lever and you've got a hardtail. An award has to go out to the WTB tires and Spineray wheels for best supporting components for riders who attack climbs. Speaking of the Spineray Spox wheels, we didn't like the braking ability at first, but once the rims (made for Spineray by Sun) and brake pads got to know each other (and after displacing the brake pads), braking performance improved (although not to world class levels). The Spineray wheels showed signs of settling-in after the first five hours of riding. We could get them to rub the brake pads with out-of-the-saddle attacks. Spineray says this is standard with their wheels and advises customers to have the wheels treated by one of their dealers at this point.

The frame is a stable climber and intrusive descender, but you need to have a light touch at speed. The steep head angle makes things happen quickly. This bike loves carving up tight singletrack. Dean's neutral balance between the Rock Shox

Forks and StrataShock rear suspension helped riders make subtle directional changes without having to feed too much input into the front end. This made the bike a blast to slither down singletrack on. It could be fiddled more than turned.

MBA RATINGS

Dean is pushing the envelope of soft-tail technology—not by adding more travel but by adding quality to the travel. Now, here's the catch: If you are looking at soft-tails in search of simplicity, the Dean may not be for you. It uses a sophisticated shock that has to be fiddled with, adjusted and cared for. However, if you are disappointed with the performance, bulk or complexity of full-suspension bikes, the Duke will meet your needs without damaging your kidneys.



Shocking collaboration: Dean worked closely with Strata to come up with the most adjustable soft-tail MBA has ridden. This is not a shock that was pulled off the shelf. It was engineered for this project, and it shows.

Tough guy: The name fits whether it is in tribute to John Wayne or referring to the heat of competition (duke it out in a fight). The Dean Duke is a high performance bike ready to do battle with hardtails or flexors. »

DEAN DUKE SPECS

Frame size	16.5"
Weight	23 1/4 lb.
Bottom Bracket height	112"
Chain stay length	16.75"
Top tube length	23"
Seat tube angle	73°
Head angle	71°
Price as tested	\$3800
Phone: (303) 530-5080	☐



Setting the firm: Dean didn't spare any expense on the components. The Duke made test riders' jaws drop every time we hit the trail.





MERLIN FAT BEAT

Egos checked at the door

To understand the significance of the Merlin Fat Beat, you have to realize that the men at Merlin are fiercely individualistic. They think differently from the rest of us. They dream differently. It is the only way a business working without any economy of scale could survive.

Foundational to this individualism is an ego many times larger than the company's best year's production numbers. That's why the Merlin Fat Beat is such a pleasant surprise. Merlin checked its collective ego at the door when building the Fat Beat.



MBA SOFT TAIL TEST

Working backwards: Merlin visualized the ideal bicycle and then built it. The Fat Beat is a bike without compromise—even if Merlin had to license ideas from their competitors.

How so? Rather than try to come up with their own design (or rip-off a company that they obviously admired), Merlin licensed the Moovs YRB suspension system. Why reinvent the wheel (or in this case the soft-tail)? But that isn't all. Next, the Cambridge, Massachusetts, company went to Cannondale to borrow the company's Head Shox Fifty SL front suspension. Why? Suspension at both ends handled. Merlin concentrated on what goes in the middle—the frame.

THE GEAR

MBA's Fat Beat used a Shimano XTR group with IRC Mythos XC FK tires, Mavic SUP Ceramic 550X19 radial road rims, Mavic CrossMax hubs, Thomson Elite seatpost, Selle Italia Titanium saddle, Oury grips and Merlin 3/2.5 Sitauze bars.

FACT AND COMMENT

This bike shines on the trail. It literally turns the knobbies (no suction cups!) It sticks. On MBA's exceptionally nasty hard-packed saddle downhills (with loose needles on top) the Fat Beat was the equal of any bike we've tested for tracking true and cornering accurately.

The bike's balance was a delight on tight singletrack. Test riders found themselves taking more chances on technical sections because the Fat Beat instills confidence that it will get you through sections you've never cleared before. It seems to intuitively stay put when you want it to.

Climbing was another Merlin strong point, although most test riders reported

that staying smooth and not bogging on the bars seemed to be the key. Bar ends are not recommended; they are required.

Our only complaint? The Cannondale Head Shox fork pushes the front of the frame's triangle towards the strass-plants. To compensate for the height of the head tube, Merlin sloped the top tube to negate lost standover height and used a negative-rise Code stem to get the bars back down into the proper position. If you are a rider who prefers a long and low feel, the Merlin's front end is going to be slightly disappointing.

MBA HATING

This is a bike that evokes emotions. No one is noncommittal about the Fat Beat. Test riders either loved it or loathed it, but the reasons were always fit related. Riders with short legs and long torsos felt cramped on the Merlin. They couldn't get stretched-out enough. Meanwhile, one fire-plug look-a-like couldn't be prided off the Fat Beat.

As for the Fat Beat's off-road efficiency, it was incredible. There were times we needed to be reminded that we were on a soft-tail and not a full-suspension bike. The Fat Beat offers amazing performance and a ride that feels like floating.

MERLIN FAT BEAT SPECS

Frame size	17.5"
Weight	23.14 lb.
Bottom Bracket height	11.8"
Chain stay length	18.75"
Top tube length	23"
Seat tube angle	73°
Head angle	71°
Price as tested	\$1200
Phone: (617) 661-6668	(1200 from fork & headset)

fit to fly. While a portion of the test riders had trouble fitting on the Fat Beat, that shouldn't deter you from looking closer. A good bike shop can fit riders with the correct stem length and rise.

▲ **Nippy marriage:** Merlin's union of a Cannondale HeadShox Fifty SL and Moovs' YRB rear suspension to a marriage made in heaven. Supporting the workload is a frame design just for this happy couple.