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# Attack Of The Killer B

*Our first-ever dual-suspension wheel shootout—26 vs. 27.5 vs. 29*



**Fun factor:** Serious racers will remain on the ultimate quest for which bike is the fastest. For the wrecking crew, picking a winner came down to which bike we most enjoyed for the overall trail-riding experience.

**D**eveloped when mountain bikers had one bike for everything from cross-country to downhill, the 26-inch wheel was the undisputed standard mountain bike wheel size. As designers pushed the limits of frames and suspension, manufacturers began experimenting with larger-diameter, 29-inch wheels for specific types of riding. Cross-country and

trail riders slowly (we are talking about a decade here) adopted the new wheel size, but in the past two years, the adoption rate has skyrocketed, as have the number of 29er models offered by bicycle companies. In certain categories—hardtail trail and cross-country race bikes, for example—the 29er has severely eroded the sales of 26-inch-wheeled bikes.

The limitations of larger-diameter wheels surfaced as bike designers tried to employ them on longer-travel bikes. The big wheels needed somewhere to go as the suspension bottomed, and that meant the bike had to sit higher to start with or needed drastic changes to the frame and frame stays. This, and to some extent the weight of 29-inch wheels, got designers looking for other options. That option was not new. It was a wheel size that had been sitting on a shelf somewhere in France. The wheel was—drum roll, please—the 650b, or, more specifically, the 27.5-inch wheel—or, more fun, the Killer B wheel.

A number of handmade bike brands rushed to build Killer Bs, and Jamis and KHS get credit for championing the Killer B by releasing production bikes using this wheel size. (Haro tested the water, found it too cold and left the beach after a season.) These brands believe that the Killer B is the perfect compromise for *all* types of mountain biking, not just for cross-country or gravity.

We conducted our first side-by-side-by-side comparison of the three wheel sizes on three KHS hardtails in our April 2010 issue and couldn't come up with a decisive winner. We waited until March 2012 to try it again, this time with three Jamis steel hardtails. Two years and more time on all three wheel sizes resulted in us being able to pick a decisive winner out of the group. The Killer B did indeed kill the 26er and 29er in that shootout, although we cautioned that riding a 27.5-inch wheel meant you were committed to being an early adopter.

When KHS offered us a chance to try the three wheel sizes on comparably equipped

dual-suspension trailbikes, we jumped at the chance. The bikes would be the KHS Flagstaff (29er), KHS SixFifty656xc (27.5) and the KHS XC604 (26er). Finally, the MBA wrecking crew was set to get some serious saddle time on dual-suspension bikes with the three wheel sizes. Could the Killer B live up to its name?

### THE TEST

Our testing included riding each of the three bikes on our normal test loops. This allowed us to become familiar with the bikes and dial the suspension. Once we had become cozy with the bikes, a course was set and the wrecking crew and invited guests spent a day logging laps on each bike back to back.



**New kid on the block:** Aside from the new wheel "standard," the SixFifty656xc featured some updated features when it came to the frame. A tapered head tube and oversized downtube made for the stiffest, most responsive ride of the three.



# Wheels

This may sound good in theory, but in reality, it is more like work than fun. Mountain bikes were not invented for riding laps. Still, there is no arguing that a back-to-back comparison like this—fun or not—can generate conclusive results. Here is how the wheels stacked up.

## MOVING OUT

**26-incher:** As you might imagine, the 26er fits smaller than the other two models. The top tube is shorter and the front end is lower. While this puts you in a more upright position on the bike, the weight distribution is biased forward thanks to the smaller wheels. The handlebars on all three models were somewhat narrow, but we were glad to have a consistent size between the three models.

**27.5-inch:** The 656xc is truly the middle-of-the-road option in terms of fit. The position is more stretched out than the 26er's but more compact than the 29er's. Crewers consistently noted that the position and weight distribution were the most balanced of the three bikes.

**29-incher:** The Flagstaff fit is large for a "medium" production frame. A rider needs to at least consider moving down a size if going to this 29er. The front end is the tallest of the three, and while the cockpit is longer, the rider's weight felt farther back than on the other two bikes.

## CORNERING

**26-incher:** Riders praised the XC604 for its nimble handling characteristics, calling it "cross-country quick." When it comes to jumping from corner to corner, it is hard to beat the acceleration of 26-inch

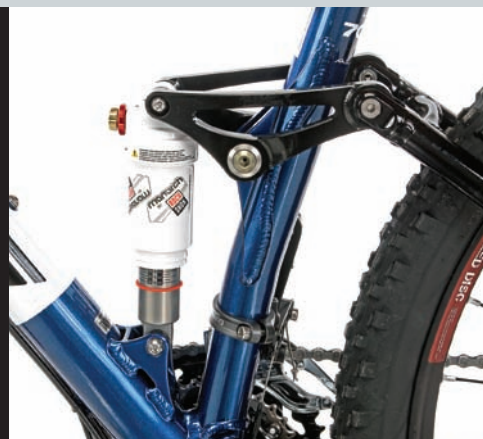


## WHAT DOES "650b" MEAN? A FORGOTTEN FORMAT GETS NEW LIFE

Blame it on the French. The number "650" came from the measurement of the outside diameter of the tire, not the rim, in millimeters. The letter following the number was a nod to the tire's width. The 650c wheel was used on cruiser bikes in the past, but time-trial roadies and triathletes commonly use this wheel size with narrow road tires.

The 650b wheel was all the rage for touring bikes (loaded to the hilt with gear) and tandems (loaded with two people) until mountain bikers became interested in applying the size to their bikes.

wheels. The 26er felt the least connected to the trail through corners. Aside from the smaller tire contact patch, the frame features a straight head tube rather than a stiffer tapered head tube, leaving some stiffness points on the table. The lateral flex was noticeable when cornering hard.



**Rock bulldozer:** The Flagstaff's frame has a sort of understated elegance to it. The suspension was outfitted by RockShox all around.

# Wheels

**27.5-inch:** The 27.5er offered a noticeably more connected feel to the trail than the 26er. Handling was not quite as quick as with the 26er, but we never found a trail where this was a problem. Our riders also commented that the suspension felt more active through corners than on the 26er. With a tapered head tube and large downtube, the 27.5 was also the stiffest laterally of the three bikes, helping keep the bike in line when cornering hard.

**29-inch:** While the cornering faults of the 29er in a stand-alone test might not be quite as noticeable, after riding the other two bikes, one crewer commented that it “felt like pulling an 18-wheeler into a Dairy Queen drive-through.” Though the bike was tougher to wrangle through tight corners, in loose, sweeping or off-camber corners, the added traction of the larger tires was definitely welcome.

## CLIMBING

**26-inch:** Our shootout location offered a great mix of steep, rocky climbs, as well as more gradual fire-road climbs. The steepest trails are where the 26er shined, leaping out from underneath you when you applied pressure. The XC604's rear suspension does a great job providing a stable platform for pedaling up climbs, even with the shock's platform valving turned off. We did, however, experience some pedal kickback when hitting square edges while climbing in the small ring.

**27.5-inch:** The stiffer chassis

seemed to make up for any loss of snap caused by the slightly larger wheels. It doesn't roll quite like the 29er at speed, but the acceleration up to speed was much better. On anything but the longest, gradual fire roads, the 27.5 out shined its big-wheeled brethren. The drivetrain was the only thing holding back the Killer B. Each rider commented that a 2x10 drivetrain would be a better fit if it were possible to spec it at this price point.

**29-inch:** The 29er was a bit lackluster in the climbing department after riding the other two models. The large wheels definitely rolled well on the fire-road climbs and over rocks smoothly, but you had to approach climbs with more speed and work harder to maintain momentum. To put it bluntly, a 29er of equal value to either the 26 or 27.5 tested here is going to get creamed on the climbs.

## DESCENDING

**26-inch:** The 26er was the easiest to flick around the trail and pop off of terrain, but this is a double-edged sword. While the bike is great for experienced riders who are skilled at picking smooth lines and darting from one side to the other on the



**Classic styling:** The XC604 featured a straight 1 1/8-inch head tube that flowed into the ovalized top and downtubes. Like the other two KHS models, the 26er uses a four-bar Horst linkage rear end.

# Wheels

trail while avoiding ruts and pumping for speed, for novice riders, the smaller wheels can be intimidating. We found ourselves going downhill slower and being more cautious on descents littered with square-edged hits ready to grab the front wheel. Riders felt that a slightly longer top tube paired with a shorter stem would give the bike some more stability.

**27.5-inch:** While imitating many of the characteristics we liked about the 26er, the 27.5-inch was much more stable on rough descents. It required more muscling to lift the front wheel up and over obstacles due to the longer wheelbase and larger wheels, but it was a compromise we'll take to gain more confidence through the rocks. You still get the sensation of being able to pump the bike through transitions on the trail, something that is muffled on a 29er. The mid-sized wheels, along with the full-suspension chassis, gave us all the stability we could want in a cross-country-oriented trailbike.

**29-incher:** The Flagstaff got the job done on the descents, but left us feeling that we had missed out on something at the bottom of the trail. The large-diameter tires soak up the trail and roll better than the other two sizes, but the bike feels like it is glued to the trail. Popping off of obstacles took more effort than it was worth, as the rear suspension felt dead. We found ourselves riding lazy, giving the bike less and less input and just plowing down trails.

## BRAKING

**All:** Brake performance left something to be desired on all three bikes. The Avid Elixir 1's were consistent but felt underpowered. The rear suspension stiffened up under hard braking forces and left some rubber out on the trails. The shootout was a draw in this performance area.

## THE RESULTS

Can you take our shootout results as an absolute for all mountain bikes? Of course not. Our shootout



**Stuck in the middle:** Being the middle sibling certainly isn't a bad thing. The Killer B seemed to take on the best qualities of the other two wheel sizes. On climbs, it offers plenty of the traction we love the 29er for while maintaining the snappy feel of the 26er on steep sections.

conclusion was arrived at in a vacuum of sorts. We compared three similar bikes for trail riding. As the price point of the bikes change (in either direction) and their applications change (downhill, cross-country racing versus trail riding), so could the results of the standings.

That said, we had absolutely no trouble ranking these three bikes, because they used the same rear suspension design and were relatively close in price. When the dust had settled, the lap times had been compared and the recovery drinks consumed, our little trio shook out like this.

### 1<sup>st</sup> PLACE: 27.5-INCH

Out of these three bikes, we would feel sorry for the rider who didn't buy this one. It was our favorite everywhere on the trail. The bike is a great blend of lively handling, quick acceleration, low rolling resistance and stability. Is it the fastest? That answer depends on your terrain. For an all-around trail machine, you can't beat the fun factor and versatility of the Killer B.



**Enough room on the trail:** Even with the segmentation of three different wheel sizes, through a variety of terrain, it became clear that each bike still has its place. On rolling trail and off-camber corners, the stability of the 29er is still king.

## 2<sup>nd</sup> PLACE: 26-INCH

The 26er just “feels like home,” as one crewer said. The handling characteristics and climbing and descending attributes are familiar. However, the familiarity alone wasn’t enough for us to give it the win. The XC604 was a champ on steep climbs and fun to throw around the trail, but lacked some stability on rougher descents and corners. With an updated, stiffer chassis and some geometry tweaks, this 26er could give the Killer B a run for its money.

## 3<sup>rd</sup> PLACE: 29-INCH

The Flagstaff was the easiest and the hardest bike to ride. For a beginner looking for a dose of confidence over rough terrain, the larger wheels make riding easier. For aggressive riders looking to attack the trail, this 29er feels like you’re trying to convince your lazy friend to get off the couch to get some fresh air. The Flagstaff will get down the trail, and in a hurry, but the rear suspension paired with the larger wheels makes for a bike that feels lethargic. □



### THE COMING STORM FASTER THAN THE 29ER

Ten years after the first Gary Fisher 29ers hit the trails, Jaroslav Kulhavy became the 2011 Cross-Country World Champion aboard a full-suspension Specialized S-Works Epic 29er. That was a first for the large wheel size. It seemed there was truly a changing of the cross-country racing guard. The 26er was the past generation’s weapon of choice, while the new generation was working up the ranks on the larger wheels.

This theory seemed to pan out at the opening round of the 2012 World Cup series. In the men’s cross-country event, eight of the top 10 finishers were racing on 29ers, and only one in the top 10 was aboard a 26-inch-wheeled machine. But wait, eight and one is nine. What was the final rider, and winner of the event, riding?

Nino Schurter, on a prototype Scott bike, won the event on a set of Killer B wheels. Although Scott has not yet announced the release of a Killer B model, it is hard to imagine that they are not planning a 2013 release of at least one model with the 27.5-inch wheels. There is also speculation that at least one major brand is going to join KHS and Jamis in offering production Killer B models for 2013.

If you feel that another wheel size is unnecessary, confusing or redundant, we’d have to bet you haven’t ridden a Killer B bike yet. By this time next year, the wheels rolling on your favorite singletrack could be very different indeed. The times they are a changin’.

### COMPARISON CHART

	XC604	SixFifty656xc	Flagstaff 29er
<b>Price</b>	\$2000	\$2600	\$2700
<b>Weight (pounds)*</b>	31.9	31	30.9
<b>Frame tested</b>	17"	18"	17.5"
<b>Bottom bracket</b>	13.3" (high)	13.2" (high)	13.4" (high)
<b>Axle height</b>	13.3"	14.2"	14.7"
<b>Chainstay length</b>	16.7"	17.3"	17.75"
<b>Top tube length</b>	22.8"	23.4"	23.7"
<b>Head tube angle</b>	68.5°	69.5°	71°
<b>Seat tube angle</b>	73.3°	74.5°	73.5°
<b>Standover height</b>	30.6"	29.1"	29.5"
<b>Wheelbase</b>	43.3"	43.75"	44"
<b>Frame material</b>	Aluminum	Aluminum	Aluminum
<b>Suspension travel</b>	4.7" (front)	4.7" (front)	3.9" (front)
<b>Suspension travel</b>	4.7" (rear)	4.7" (rear)	3.9" (rear)
<b>Crankarm length</b>	175mm	175mm	175mm
<b>Handlebar width</b>	27"	27"	27"
<b>Stem length</b>	90mm	90mm	80mm
<b>Head tube height</b>	36.2"	37"	37.1"
<b>Chainrings</b>	42/32/24	42/32/24	42/32/24
<b>Cassette</b>	11-34, 10-cog (11-13-15-17-19-21- 24-28-32-36)	11-36, 10-cog (11-13-15-17-19-21- 24-28-32-36)	11-36, 10-cog (11-13-15-17-19-21- 24-28-32-36)
<b>Lowest gear (feet)</b>	4.5 (per crank rotation)	4.8	5.1
<b>Tallest gear (feet)</b>	26 (per crank rotation)	27.5	29
<b>Rims</b>	WTB SX17	WTB Trail 650b	WTB Cross-Country
<b>Tires</b>	Kenda Slant Six (2.1")	Schwalbe Racing Ralph (2.25")	WTB Prowler (2.1")
<b>Front wheel (pounds)</b>	4.3	4.3	4.4
<b>Rear wheel (pounds)</b>	5.8	5.7	6.3
<b>Tire/tube (pounds)</b>	1.9	1.8	2
<b>Pedals</b>	All bikes weighed with Shimano PD-M530 pedals		

\*Our bikes have similar travel and drivetrains. The price difference is the reason the 26-inch-wheeled bike had a higher overall weight. If it had a \$2700 price point, it would weigh in at approximately 29 pounds.