ANATOMY OF A MOUNTAIN BIKE

Understanding new technology is the first step to proper bike maintenance.

BY TYLER MERRINGER

Over the last 15 years, mountain bikes have practically re-invented themselves. Brakes have evolved from cantilevers to more powerful V brakes to the now-standard disc brakes. Full suspension technology has reached the point that the elite-level cross-country races are won on bikes that have several inches of front and rear travel. Beefy long-travel bikes are redefining what's possible on a bicycle by kids with grey-haired parents.

With all the changes, it's an exciting time to be into mountain biking—but unless you eat, sleep and breathe the sport, it can be a little difficult to keep up with all the advances. If your bike confuses you, there's something wrong. Here's a primer on the state of modern mountain biking technology.

Photo: RYAN CREARY

REAR SHOCKS

There are two main types of rear shocks: air and coil. Both are adjustable. The air shocks are much lighter and mainly found on bikes designed to be ridden less aggressively. With air shocks, it's important to periodically check the air pressure because changes in the ambient temperature can change the psi in your air shock. Coil shocks are more common in the bigger downhill and freeride bikes, and generally require less maintenance.

The main adjustment on all shocks is the sag adjustment, which means setting up the spring according to your body weight. Check your manual for settings. For a time, there were many higher-end shocks with a manual lockout, the idea being that you could lock the shock for a sustained climb and avoid any unwanted suspension motion. Lockouts have disappeared over the last two seasons, replaced by "smarter" shocks that have a stable platform or a built-in threshold that resists reacting to smaller motions (like the "bobbing" caused by pedalling) but still lets the shock move freely on bigger impacts. Today's high-end shocks offer an incredible amount of adjustability to this pedalling platform.

TIRES

Tires might be the most overlooked part on a bike. A fresh set of rubber is one of the best upgrades you can do to your bike. Also, proper inflation is extremely important to maintain. An under-inflated tire will pinch flat, while an over-inflated tire is too hard to give you proper traction. Your ideal pressure will depend on many things including your specific tire, your weight and riding style, the terrain on which you're riding and your suspension. All tires have a recommended pressure range written on the sidewall. Start somewhere in the middle, go for a ride and then change it up and note the differences. Find your ideal and stick with it. Your efforts will make a big difference to the performance of your future rides.

Tubeless tires have been around for a number of years now and are slowly becoming more common among the recreational cyclist. They offer less rolling resistance and better protection against pinch-flats, however, they have been slow to gain widespread acceptance because they require a re-education of the way you deal with your tires. Think about a re-education program.

FORK SHOCKS

Front forks also come in either air or coil sprung versions. Many come with adjustable-travel features that let the rider adjust the length of the fork during the ride. This lets the rider drop the front end of the bike to allow it to climb better, then lengthen the fork for better bump absorption for descents. Forks with longer travel (5 to 8 inches) often come with a 20-mm through-axle, which is an oversized front hub axle that drastically increases the front end's torsional stiffness and results in a fork that steers more precisely when the going gets rough.

WHEELS

Periodically check your wheels for "trueness." Pick up the bike so a wheel is off the ground, give it a spin and watch to see if it wobbles. If it does, have it repaired before the wobble gets worse. A slight wobble is an easy job to correct if it's caught early, but a wheel that is out of "true" is much more likely to suffer further damage and not be repairable.

DISC BRAKES

Disc brakes are here to stay and are found on nearly every mountain bike sold these days. There are two major categories. Cheaper bikes have a mechanically operated system in which the brake pads are engaged by a cable link from the brake lever. The second is a higher-priced hydraulic system. Both styles offer superior stopping power and control over traditional rim brakes.

Disc-brake pads tend to last longer than rim-brake pads but be careful, it's not as easy to tell when you're running low on pad material. Just like your car, it's cheapest to replace the pads before you wear them completely out and ruin your rotor. It's equally important to ensure you never get oil or grease on the rotor or pads or you will contaminate the porous pad material and need to replace them. If you do get oil or grease on your rotor, wipe it thoroughly with rubbing alcohol before you squeeze the brakes.

With mechanical disc brakes, you must make adjustments for pad wear. Hydraulic systems are easier in this respect since they adjust automatically. With hydraulics you must be sure to never squeeze the brake lever when the wheel is removed, and avoid flipping your bike upside down for repairs since this can cause problems if there is any air in your hydraulic lines.

FRAME

These days, nearly every mountain bike is made of an aluminum alloy. Aluminum has many characteristics that make it a great frame building material, however, longevity is not one of them. It's important to periodically check your frame for hairline cracks. Do this by cleaning it thoroughly and, in good light, get in as close as possible for a visual inspection. Break out a magnifying glass if your vision is not 20/20. Pay special attention to areas where the tubes join each other and thoroughly inspect any imperfections in the paint. There are many things on a bike that can make a creaking noise (crank, seat, bottom bracket, etc.), but it just might be your frame making the noise. Find out before it becomes (painfully) obvious during a ride.

Tyler Merringer is owner and head mechanic at Revolution Cycles in Rossland, B.C.

Photo: Rocky Mountain Bicycles