SELECTING WHEELS for TOURING

Tips to keep you rolling on your next tour. by Larry Diskin

There is no part of your bicycle that is subject to more wear and tear than its wheels. That’s why wheels are the most common trouble spot on loaded touring bikes. Oodles of time is spent discussing bicycle frame construction but the fact is, you are more likely to have trouble with your wheels than your frame. Ask the question “What makes a good wheel?” and you’ll get a pile of differing answers. But ask “What makes a good wheel for loaded touring?” and the answer is clear — durability and ease of maintenance.

Wheels that come standard on most bikes today are not designed for loaded touring. Most standard wheels on high-end road bikes are designed to be lightweight and aerodynamic. This performance comes at the expense of durability. Original equipment wheels are nearly always made by a machine and are nowhere near as well-built as those that are hand-built by a professional. The way spokes are installed in a wheel and the way tension is applied to them has a great effect on wheel strength. Those of you who tour often should invest in custom, hand-built wheels.

Choosing a wheel builder is every bit as important as selecting the right parts. Ask your cycling friends if they know of a good builder. A good wheel builder will take pride in his or her work and will tell you who tour often should invest in custom, hand-built wheels.

Wheels have three major components: a rim, a hub and spokes. Each component must be selected from a wide assortment of choices to create your ideal setup. You will also need to decide how many spokes and how many times you want the spokes to cross each other between the rim and hub. This is called the lacing pattern.

Lacing patterns typically range from no crosses at all, or radial lacing, to three crosses. More crossing generally makes the wheel stiffer. The only reason to have fewer crosses is to save weight — fewer crosses equal shorter spokes. Stick with the standard three-cross design for ultimate durability.

The spoke is attached to the rim with a nipple, which is either brass or aluminum. Choose brass nipples for touring wheels; they are far more durable than aluminum nipples.

Spokes are available in varied gauges, with 14- and 15-gauge spokes being the most common. Spokes are also available in butted or straight versions. Butted spokes are typically one gauge thicker for an inch or so on each end. Many people use butted spokes to shave weight, but the main reason butted spokes were invented is to increase the life span of the spoke. Spokes are most prone to breaking near the ends. By making the center portion of the spoke thinner than the end, more of the stress is distributed over the thinner center portion, thereby reducing stress failures. This makes butted spokes the best choice for touring purposes, but the difference is not dramatic.

The hub is the only part of the wheel with moving parts. There are two main types of hub construction. The first utilizes a traditional ball-and-cone bearing system. Bearings, cones and axles for these hubs are readily available at most bike shops. The second uses pressed-in sealed bearings, similar to those used for in-line skate wheels. Sealed bearing hubs are usually more expensive because they run smoother and have the potential to go farther between maintenance. The catch is, if you are using a sealed bearing hub and it does have a problem (which I have seen happen with even the best), it might be difficult to find replacement parts in a timely fashion, since most of these hubs require unique parts.

Therefore, for maximum reliability, I vote for the traditional ball and cone hubs made by Shimano — the XT and Ultegra models are great. Although they may require a bit more maintenance overall, they are easy to service, parts are readily available, and they will not likely leave you stranded. Shimano hubs are available with a maximum of 36 holes.

The rim is another variable that will affect the strength and durability of the wheel. Rider weight, load weight and road surface are important factors to consider when selecting a rim. Dirt or humpy roads are particularly hard on wheels, so if you plan to do this type of riding, it is best to err on the heavy-duty side. Mavic makes the best rims, but there are a few models made by Sun that are good as well.

- Recommended rims for riders under 230 pounds: 26 inch-Mavic F 519, Mavic F 219 (disc brake), Sun Ryhno Lite, 700c-Mavic T 239, Sun CR 18.
- Recommended rims for riders over 230 pounds: 26 inch-Mavic D 521, Mavic D 321 (disc brake) Sun Mammoth, 700c-Mavic T 520, Sun Ryhno Lite ABT.

So let’s review. Here are the factors that make a wheel suitable for loaded touring: professionally hand built; minimum of 36 spokes; three-cross lacing pattern; brass nipples; butted spokes; ball-and-cone hubs, strong rim.

To learn how to build a wheel, or to learn more about wheel building theory, read “The Bicycle Wheel,” by Jobst Brandt. But before you leave for Patagonia on wheels you built yourself, make darn sure you know what you’re doing!

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