



# 1999 Touring Bike Buyer's

**A**ny sturdy bike can be a touring bike. Many cyclists over the years have toured happily on one-speed cruisers, English-style 3-speeds, sport-touring 10-speeds, small-wheel folders, even high wheelers. You shouldn't let the lack of a purpose-built bike keep you home, as long as you have a bike that will carry the load you need to take, and that won't be likely to break down and leave you stranded far from home. That is to say, you shouldn't try to tour on a low-end bicycle that is made of cheesy materials, nor should you use a super-light racer that wasn't meant to carry a load.

## WHAT MAKES A TOURING BIKE:

■ Longer chainstays (typically 43-44 cm), to permit the use of large panniers without having the rider's heels bump into the panniers.

■ Wide range of gears, particularly on the low end (down to 27 gear-inches or so). These bikes always have triple chainwheels, giving 27, 24, or 21 speeds, depending on the rear cluster.

■ Slightly more upright riding position, mainly due to a shorter top tube.

■ Brazed-on attachment points for front and rear luggage carriers, fenders and multiple water bottles.

■ Frame with a long (40 inches or more) wheelbase and slightly less vertical (72-73 degrees) seat tube and head tube. This provides more stability (at a slight sacrifice in maneuverability) and a more comfortable ride on rough surfaces.

# Guide

## The Big News Is In Brakes

Ideally, you should have a bike with a good range of gears, particularly on the low end, if you want to avoid having to walk up steep hills (or to avoid knee injury.) Most experienced tourists prefer a gain ratio around 2, (27 inches or so). On a bike with conventional-sized wheels, having the smallest chainwheel the same size as the largest rear sprocket will give this ratio.

### Types of bikes for touring:

The type of bike you need will mainly depend on the conditions you ride in, and where you plan to sleep.



■ Stronger, somewhat heavier wheels, with thicker, stronger rims, 36 spokes (instead of 32) per wheel, and wider tires (typically 32 mm or wider.) Wider tires contribute greatly to durability and comfort, at a slight cost in speed.

■ Cantilever brakes and generous frame clearance for plump tires and fenders.

### “Loaded” Touring Bikes

Traditional “loaded” touring bikes remain the first choice for most long-distance tourists. These bikes have a riding position similar to other road bikes with drop handlebars. Loaded touring bikes differ from other road bikes in that they feature:

- A slightly more upright riding position, mainly due to a shorter top tube.
- A wide range of gears, particularly on the low end. These bikes always have triple chainwheels, giving 27, 24, or 21 speeds, depending on the rear cluster.
- A frame with a long (40 inches or more) wheelbase and slightly less vertical (72-73 degrees) seat tube and head tube. This provides more stability (at a slight sacrifice in maneuverability) and a more comfortable ride on rough surfaces.
- Longer chainstays (typically 43-44 cm), to permit the use of large panniers without having the rider's heels bump into the panniers.
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- Brazed-on attachment points for front and rear luggage carriers, fenders and multiple water bottles.

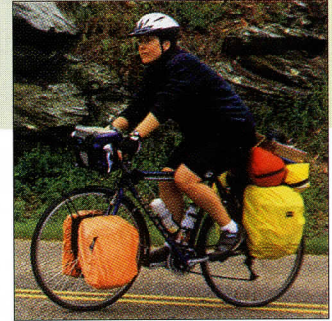


PHOTO BY KATHY VERSLUYS

INDEPENDENT FABRICATIONS TOURING BIKE COURTESY OF INTERNATIONAL BICYCLE CENTER, BOSTON, MASS.

### Light “Credit Card” Touring Bikes

If you'll be riding in dry conditions, on good roads, and staying at B&Bs, inns, motels and the like, you can make do with a light touring bike. This is basically a racing-style bike with a third chainwheel to provide a lower range of gears than a racer would use. When you're doing long mileage, you will want to conserve your strength and take it easier on the climbs than you might on a short day ride. This type of bike is fast and easy-running, but has several serious limitations for more demanding conditions.

Unfortunately, the current fad in racing-style bikes, which also applies to most light touring bikes, is for frames/brakes with very little clearance around the tires. Few of these bikes have room for tires any wider than 28 mm, and many won't even handle 28s. Skinny tires, while light and fast, are also fragile, and their high pressures make them harsh and uncomfortable on less-than-perfect pavement.

This tight tire clearance also makes it impossible to install proper fenders in most cases. A bike without fenders is very unpleasant and messy to ride in wet conditions.

By Sheldon Brown



While fenderless bikes may be fine for desert tours, or day trips when the forecast is favorable, they are unsuitable for extended tours in areas where rain may occur.

Light touring bikes are also limited in load-carrying capacity. They can usually handle, at most, a small, lightly loaded pair of panniers and a handlebar bag. If you overload a light touring bike, you are very liable to suffer broken spokes, dented rims, and other wheel failures. Finally, the gearing on light touring bikes is lower than that of racing bikes, but not low enough for most people carrying a lot of baggage.

### Mountain Bikes

In some respects, a mountain bike is just a loaded touring bike carried to a further extreme. Many serious tourists are using them these days, especially those who are carrying camping/cooking equipment. The

major drawback of a mountain bike for touring is the limited range of riding positions provided by the straight handle-bars.

This can be remedied by the use of various types of handlebar add-ons, such as bar ends and clip-on aero bars.

The tires that come on most mountain bikes are extremely poor for use on pavement. If you plan to tour on a mountain bike, you should replace the stock knobby tires with something more roadworthy. For riding on all surfaces except loose dirt, mud or sand, a smooth slick or semi-slick tread tire works much better. Among my favorites are the



PHOTO BY IAN AUSTIN

Avocet FasGrip, Continental Avenue, and Specialized Fat Boy.

### Recumbents

Many cyclists believe that recumbents are the bicycles of the future. While they are not ideal for all uses, touring is one application where recumbents really shine. The "Barcalounger" riding position greatly reduces discomfort to the neck and wrists, and, in many cases, to the butt.

Better recumbents are well set up for touring. If you choose a recumbent for touring, pay some attention to the tire sizes used. Recumbents usually use a fairly small front wheel. Smaller tires wear faster, and the wheel sizes on some brands may make it difficult to find replacement tires outside of major metropolitan

## About This Table

It is impossible to list all bicycles that are suitable for touring, because so many different types of bikes can be (and are) used by happy touring cyclists. For the purposes of this article, therefore, only "classic" production touring bikes have been listed on the table below. The criteria for my selections are:

- Full-size wheels
- Drop handlebars
- Frame clearances for suitably wide tires, and fenders
- Triple chainwheels
- Cantilever brakes

### Custom and Semi-custom Touring Bikes

Many committed touring cyclists choose to have a custom or semi-custom bike built, and there are a large number of frame-builders who can provide high-end touring bikes. Because the specifications and equipment of such bikes are chosen by the rider, we have decided to omit custom bikes from the chart.

We do provide a contact list of custom builders, however, on page 28. If you're interested in ordering a custom touring bike, it is a good idea to choose a builder in your own area.

### 32-622 mm? What does that mean?

If you're puzzled by the reference to "622 mm" tires in the table, that's the size in

the international ISO/E.T.R.T.O sizing system. The 622 mm size is also known by the obsolete French designation "700 c," or, in northern Europe as "28 inch" (not to be confused with the English 28-inch size, which is quite a bit larger than 622 mm). The first number, in the designation — the "32" in "32-622" — is the width of the tire in millimeters.

The old national-based tire-sizing systems are on their way out, and are in the process of being replaced by the much less confusing ISO system. We will cover this topic fully in a future article, but if you can't wait for the gory details, check out [www.sheldonbrown.com/tire\\_sizing.html](http://www.sheldonbrown.com/tire_sizing.html) on the Web.

-S.B.

Bike	Chainstay (56 cm frame)	Tubing	Component group	Rear speeds	Shifters	Tire size	Small chainring	Large cog
<b>Bianchi Volpe</b>	43 cm	CroMo Bianchi SuperSet II	Shimano RSX	8	Shimano RSX STI	32-622 mm	30	26
<b>Bianchi San Remo</b>	44 cm	CroMo Bianchi SuperSet II	Campagnolo Mirage/Avanti	8	Avanti Ergo	32-622 mm	32	26
<b>Bruce Gordon BLT</b>	44 cm	Tange CrMo	Shimano LX	9	Ultegra bar-end	38-622 mm	22	32
<b>Cannondale T500</b>	45.7 cm	6061-T6 aluminum	Shimano RSX/STX/Alivio	7	Shimano RSX downtube	35-622 mm	22	28
<b>Cannondale T700</b>	45.7 cm	6061-T6 aluminum	Shimano RSX/LX	8	Shimano RSX STI	35-622 mm	30	28
<b>Cannondale ST700</b>	45.7 cm	6061-T6 aluminum	Shimano RSX/LX	8	Shimano RSX STI	35-622 mm	30	28
<b>Cannondale T1000</b>	45.7 cm	6061-T6 aluminum	Shimano 105/XT	8	Shimano 105 STI	35-622 mm	30	27
<b>Fuji Touring Series</b>	44 cm	True Temper CroMo DB	Shimano RSX	8	Shimano RSX STI	30-622 mm	30	28
<b>Peugeot Appalaches</b>	44.5 cm	True-TemperCrMo	Shimano RSX/Acera	7	Shimano RSX STI	32-622 mm	26	28
<b>Raleigh R300</b>	44.7 cm	7005 Aluminum	Shimano RSX	8	Shimano RSX STI	28-622 mm	30	28
<b>REI Novara Randonee</b>	43.4 cm	CroMo DB	Shimano RSX	8	Shimano RSX STI	32-622 mm	30	26
<b>Trek 520</b>	45 cm	Double-Butted CrMo	Shimano 105/LX	8	Shimano Ultegra bar-end	32-622 mm	30	30
<b>Trek 540</b>	45.7 cm	Trek Alpha aluminum	Shimano 105/XT/LX	8	Shimano Ultegra bar-end	32-622 mm	30	28

areas. I would strongly recommend avoiding any small wheel size other than 406 mm (20 x [some decimal]) if you will be using the bike for touring in remote areas. The 406 mm size is the same as used on kids' BMX bikes, and you can get these tires anywhere.

Bents have disadvantages as well: They are typically more awkward to store and transport. They are less visible in crowded city traffic. Their drive trains are typically slightly less efficient. They are more expensive. None of these characteristics seriously detracts from their suitability for long-distance touring, however.

### Folders

Better quality folding/take-apart bikes can also be a good choice for touring. Specifically, The Green Gear Bike Friday and Alex Moulton's APB are highly tourable. I would advise avoiding models that use the hard-to-find 451 mm (20 x [some fraction]) wheel size, though.

### Tandems

Most good-quality tandems share the characteristics of a loaded touring bike, and tend to be highly tourable. If you're planning to tour on a tandem, especially one with 622 mm (700C) wheels, consider using a trailer to carry your baggage, unless you're carrying minimalist equipment. A tandem can't carry any more panniers than a solo bike, but there are two people to provide for. In addition, the extra weight increases the risk of wheel damage. A trailer gets around this neatly, because most or all of the weight of the baggage is carried by the trailer's wheels, not those of the tandem.

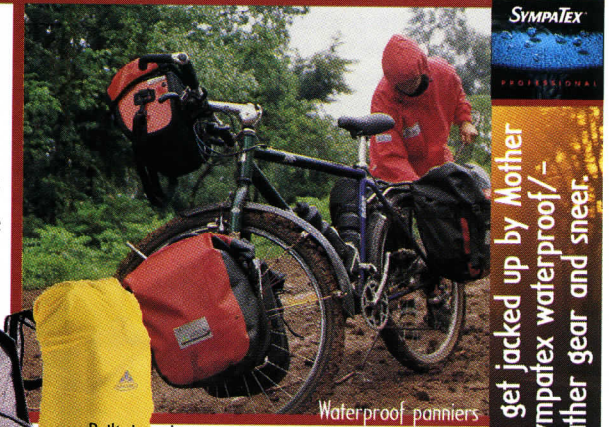
### The Year Of Direct-Pull Brakes

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bikes was direct-pull cantilever brakes (the best-known version is Shimano's V-Brake). This type of brake gets rid of the transverse cable and yoke of conventional cantilevers, and runs the main cable straight across from one cantilever to the other.

Direct-pull cantilevers have a much higher mechanical advantage (MA — see sidebar) than conventional center-pull can-

tilevers, in fact too much unless you use special brake levers with a reduced mechanical advantage.

By increasing the MA of the cantilever and reducing that of the lever, you wind up with about the same, generally desirable MA. Where a conventional cantilever has a MA of 1:1 or maybe 1.25:1, a typical direct-pull cantilever will have a MA closer to 2:1.

Brakes	Notes	Price	Contact information
Tektro Mini-V Shorty direct-pull	Cork handlebar tape	\$700	Bianchi, (510) 264-1001, www.bianchi.it/BianchiUSA/Start.html
Shimano Acera cantilever	Cork handlebar tape	\$1200	
Shimano LX cantilevers	Bruce Gordon racks for approx. \$200 more	\$1195 (approx.)	Bruce Gordon Cycles, (707) 762-5601, www.bgcycles.com/
TX-22 Side-pull cantilevers	Made in the U.S.A.	\$799	Cannondale, (800) 245-3872, www.cannondale.com
PX-2 Side-pull cantilevers	Clipless pedals	\$869	
PX-2 Side-pull cantileversl	Suspension fork; clipless pedals	\$1199	
PX-2 Side-pull cantilevers	Clipless pedals	\$1400	
Tektro 917A direct-pull	Includes rear rack	\$699	Fuji, (800) 631-8474; www.fujibike.com
Tektro direct-pull	Frame is internally lugged, brazed	\$759 Can.	Pro Cycle USA, (800) 543-4142
Tektro direct-pull	Includes rear rack	\$649	Raleigh USA, (800) 222-5527; www.raleighusa.com
Shimano LX cantilevers	Ritchey bar, stem and seatpost	\$650	REI, (888) 873-1938; www.rei.com
Shimano LX Center-pull/Dia Compe 287	Clipless pedals, rear rack	\$1099	Trek, (800) 369-TREK; www.trekbikes.com
Shimano LX Center-pull/Dia Compe 287	Clipless pedals	\$1449	



If you used a normal 4:1 brake lever on a direct-pull cantilever, this would give you a total MA of 8:1, which is not safe. A brake with this much MA will be too grabby for delicate control

in dry conditions, and will likely run out of lever travel if used in wet conditions. Thus, direct-pull brakes need to be used with special levers that only have about a 2:1 mechanical advantage. This brings the overall MA of the system back to the desirable 4:1 range.

A benefit of this is that the cable is under reduced stress (though it travels farther to make up for it.) This reduces cable friction and flex/stretch in the cable system.

Another good point of direct-pull cantis is that the MA remains basically constant as the brake shoes move inward toward the rim. This is not the case with center-pull cantis, where the MA actually decreases the farther inward toward the rim the brake shoes move. Thus, the mechanical advantage is at its lowest when the brake is engaged!

For 1999, most brake manufacturers have switched to direct-pull units, which are popular (and also cheaper to make). This has caused conventional center-pull cantilevers to become nearly unobtainable in wholesale quantities.

### The Bad News

Unfortunately, direct-pull brakes are not ideal for touring bikes. There are lots of direct-pull compatible brake levers available for upright bars used on mountain bikes and hybrids, but that's not the case in the world of drop bars. There are basically three options available, none of them entirely satisfactory.

#### \* Dia-Compe 287-V Brake Levers

There's only one direct-pull compatible lever made for drop bars, the Dia Compe 287-V. These work fine, if you are willing to give up STI/Ergo combined brake/shift levers. Some manufacturers are going this route, and using handlebar-end shifters. Most buyers of drop-bar bikes, however, are not willing to forgo the nifty combined shifters.

#### \* Pulley Systems to Adjust Mechanical Advantage

By putting an eccentric or double-stage pulley in the system, it is possible to adjust the mechanical advantage at the cantilever. The best-known of such devices are the QBC Travel Agent and the World Class V-Daptor. These permit direct-pull cantilevers to be used with any conventional brake levers, including STI/Ergo brake/shifters.

Unfortunately, the bicycle industry is



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currently in a bit of a state of shock as a result of a recent liability judgement involving a mountain-bike stem that ran the brake cable over a pulley. In this case, the pulley was poorly chosen and located, and caused the cable to fray (in a place where it was not visible) and break. When the cable broke, the transverse cable (this was a traditional center-pull system) got caught on the knobs of the MTB tire and caused the front wheel to lock up.

This has caused a number of last-minute spec changes on bikes, which were originally to be equipped with pulley-type linkages. The actual danger of these arrangements is quite minimal, since the cable is readily visible. Also, since touring bikes don't have knobby tires, and direct-pull brakes don't have transverse cables to snag on them, this bespeaks more paranoia on the part of manufacturers' legal departments than real-world risk.

*\*Shorty Direct-Pull Cantilevers*

The third solution, and a very common one for 1999, is to use STI brake/shift



PHOTO BY BOB BEAK

levers with direct-pull cantilevers, but to use special extra-short-arm cantis. These have less mechanical advantage than full-size direct-pulls do. Unfortunately, these are not very satisfactory either, because the feature that reduces their mechanical advantage is that the cable crosses very low over the top of the tire.

Shorty direct-pulls won't work on mountain bikes because of the tight tire clearance. They just barely work on touring bikes — unless you want to mount fenders! This leaves us with the silly situation of frames with nice, generous tire/fender clearance, on

which you cannot install fenders because the darn brake cable is in the way! If you're looking for a capable bike for real touring, think long and hard before choosing a model with shorty direct-pull brakes.

**Are You Stuck?**

If a bike you otherwise prefer has shorty brakes, don't despair. Although conventional cantilevers in large quantities are not currently available to manufacturers, they remain available at the retail level, and a full-service bike shop can swap out the brakes if necessary to provide proper fender clearance. Don't expect this to be done for free, but it is not a terribly expensive proposition either. ●

*Sheldon Brown is head mechanic/Webmaster at Harris Cyclery in West Newton, Massachusetts, and has an extensive Web site full of bicycle lore and technical info at <http://www.sheldonbrown.com/harris>*

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