

## Trailers

**B**icycle racks will only carry so much gear. We decided to evaluate single-wheeled cargo trailers as an alternative. Several double-wheeled trailers on the market might be suitable for old roadbeds and wide trails. We limited our evaluation to single-wheeled trailers because we were dealing with single-track trails on the Seward Ranger District.

Three single-wheeled trailers—the B.O.B. Yak, the B.O.B. Coz, and the Wheel Pac Dog—are commercially available. Two others were prototypes that used a Burley Design Cooperative hitch system that mounts to this company's sturdy Moose Rack cargo carrier.

Some characteristics were common to all of the trailers. When trailers were loaded with 30 to 70 pounds (13.5 to 31.5 kg), all trailers and rack combinations hurt bicycle performance. The bikes were light in the front end, even though handlebar packs were sometimes used to help offset rear weight. When cyclists hit a root while climbing, the front tire often lifted or did a "wheelie." Steering was somewhat shaky most of the time. The extra weight pushed the bike down hills, testing brakes to their limits. Extra brake pads are essential. Poor tracking around curves limits the safe usage of the trailers on narrow, winding trails. Only expert riders should use trailers on steeper, single-track trails.

The Seward trail crew evaluators suggested that trailer brakes, not offered on any of the trailers, would be an improvement.

### B.O.B. Yak Trailer

The B.O.B. Yak trailer (Figure 6) seems to be the most prevalent single-wheeled trailer being used by trail crews. Its features include an optional 5700-cubic-inch (94-L) Cordura cargo bag, chrome-moly steel frame, and 16-inch (406-mm) wheel. The bag will carry 70 pounds (31.5 kg). Its cargo space is 25 inches long, 16 inches wide, and 18 inches high (640 by 400 by 450 mm). Total weight (including the bag) is about 14 pounds (6.3 kg).

The B.O.B. Yak attaches to the hub of the rear wheel by means of a special quick-release skewer. With the special quick release left in place, the trailer can be attached or detached in seconds. The Seward trail crew found this to be the most stable connection to the bike with heavy loads. This trailer also rode the lowest to the ground. It carried handtools, chain saw, and day gear very well. Because its pivoting radius is limited, the B.O.B. Yak was the most difficult trailer to turn in tight spots.

The B.O.B. Yak has been in production for about 4 years. We have heard reports of welds breaking that attach the metal screen to the frame, and also two reports of the vertical pivot rod bending or breaking (Figure 7). The manufacturer has since beefed up the diameter of the pivot rod and nuts, and suggests that tightening the pivot rod nuts properly and sealing them with Loctite would eliminate this problem.

The International Mountain Bicycling Association (IMBA) has a 1994 memorandum of understanding with the USDA Forest Service to work cooperatively on mountain bicycling programs of mutual interest at national, regional, and local levels. Kurt Loheit, who is associated with IMBA, has designed a handtool holder that fits the B.O.B. Yak trailer (Figure 8). Kurt has shared his carrier plans with us. They are included in Appendix B.

The suggested 1998 retail price for the B.O.B. Yak is \$229, or \$259 with the fitted Yak Sak cargo bag.

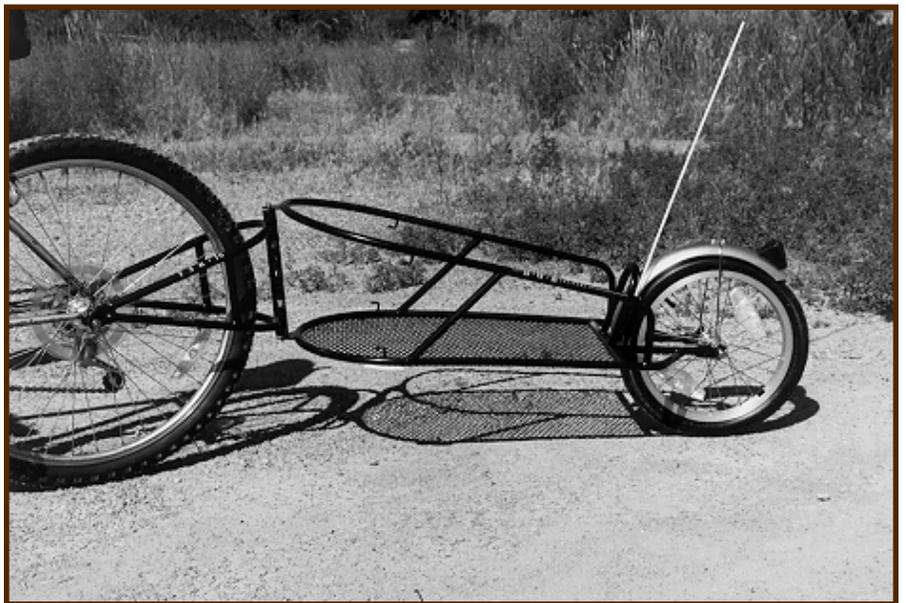


Figure 6—The B.O.B. trailer rides close to the ground and can be used with an optional cargo bag.



Figure 7—The pivot rod (under his thumb) bent on this B.O.B. Yak. On new models, the manufacturer is using a larger diameter rod and the pivot rod nut is sealed with Loctite to keep it from loosening.

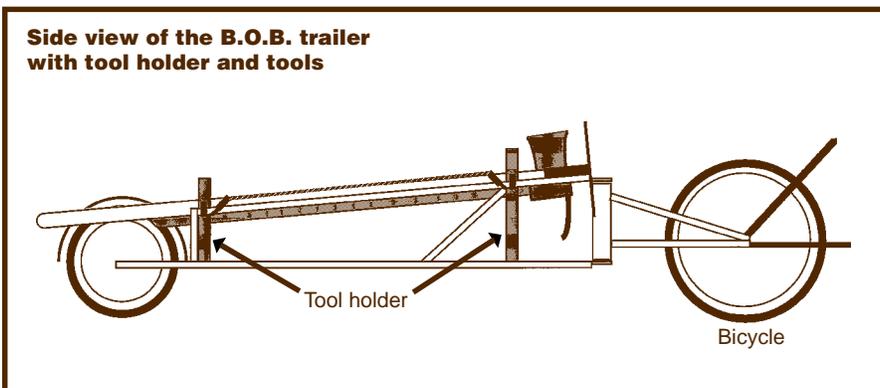


Figure 8—Kurt Loheit's tool holder for the B.O.B. Yak trailer is made of  $\frac{5}{8}$ -inch (16-mm) polyethylene. See Appendix B for construction plans.

## B.O.B. Coz Trailer

New for 1998 is the B.O.B. Coz (short for *Coz* mopolitan) cargo trailer. This single-wheeled trailer attaches to the bike in a manner similar to that used by the B.O.B. Yak, and features a 15.5-gallon (58.9-L) Rubbermaid lockable plastic box. Rubbermaid's larger

25.5-gallon (96.9-L) container will also fit the frame. The trailer weighs 20 pounds (9 kg)—more than the B.O.B. Yak—but is rated to carry only 50 pounds (22.5 kg), compared to 70 pounds (32 kg) for the Yak. It was not available when we were doing our testing. The suggested retail price for the B.O.B. Coz is \$199.95.

## Whee Pac Dog Trailer

The Whee Pac Dog trailer (Figure 9) is manufactured and distributed by Innovation Sports, Inc. It weighs about 12 pounds (5.4 kg) with the cargo bag included. It is 6 feet, 4 inches (1.9 m) long, and can carry up to 60 pounds (27 kg).

The Whee Pac Dog carries loads in a cargo bag suspended from its aluminum frame. The trailer attaches to the seatpost (Figure 10). This attachment, in the opinion of our evaluators, was the least stable setup for heavy loads.

Seward trail crew evaluators liked the Pac Dog's light weight and the ease with which gear could be loaded in the back without the need for extra strapping and bungee cords. It carried day gear, handtools, and chain saw very well.

Because it is so long, the Whee Pac Dog tracks wide around curves. On narrow trails, the trailer tends to go off the trail on curves, carrying the bike and rider with it. Riders need to dismount before going around sharp corners, or should not use the trailer on such trails. The trailer probably was not designed for use on narrow, curvy trails.

The suggested 1998 retail price for the Whee Pac Dog is \$259, including the cargo bag.

## Burley Design Cooperative's Prototype

We liked the sturdy looks of Burley Design Cooperative's unique hitch and pivot system and the Moose Rack, so we decided to have MTDC's shop build a prototype trailer featuring them.



Figure 9—The Wheelee Pac Dog weighed less than the other trailers. The adjustable compartments in the bag provided versatility, and the outside side pockets were convenient.



Figure 10—The Wheelee Pac Dog is long and tracks wide around curves, a disadvantage.

Burley also shipped one of its own prototypes directly to the Seward Ranger District for testing.

Like a fifth-wheel trailer, the Burley hitch and pivot system attaches to the bike by clamping to the top of the Moose Rack, a TIG-welded chrome-moly steel rack that also accepts panniers (Figure 11). This hitch proved to be very sturdy, locking solidly to the rack. Play in the hitch's internal pivoting mechanisms on both prototypes allowed the loaded trailers to wobble slightly from side-to-side, even though the hitches were tightly fastened. The Burley product development manager said there should be no play in the hitch if it was adjusted properly. At the time of this discussion, we no longer had the hitches to see if adjusting them would have made a difference.

Burley's prototype was heavier than most of the other trailers, about 16 pounds (7.2 kg). Because it is a proprietary design and not yet in production, we are not showing a photo of it.

The prototype held up well in the Seward trail crew's evaluation. If Burley continues to develop it, the trailer should offer another good choice for a single-wheeled trailer.

The trailer designed by MTDC was not satisfactory (Figures 12 and 13). We started out with the Burley Hitch and Moose Rack, and a stripped down version of Burley's Piccolo trailercycle, a heavy-duty, chrome-moly unit intended as a trailercycle for a child to ride tandem behind Mom or Dad. So far so good. We went wrong by loading on heavy steel side supports, two fabric ATV bags for cargo, and ATV gun racks to carry a shovel and Pulaski. We even installed brakes, responding to suggestions that they would be useful. When all was said



and done, our trailer weighed nearly 40 pounds (18 kg)—more than twice as much as the others. Although we managed to drag it along some of the easier trails around Missoula, the Seward trail crew (politely) said it was too heavy for them to even contemplate using it.

Figure 11—Burley's hitch and pivot system and Moose Rack are used in their Piccolo trailercycle. The cables are for a brake on the MTDC prototype trailer.



Figure 12—Clueless in Missoula. We put too much emphasis on sturdiness and not enough on reducing weight. You'll need a locomotive to pull this 40-pound beast.



Figure 13—We used steel and accessories designed for ATV's, but neglected to consider the importance of using lightweight materials.