TRANSPORTATION ALTERNATIVES

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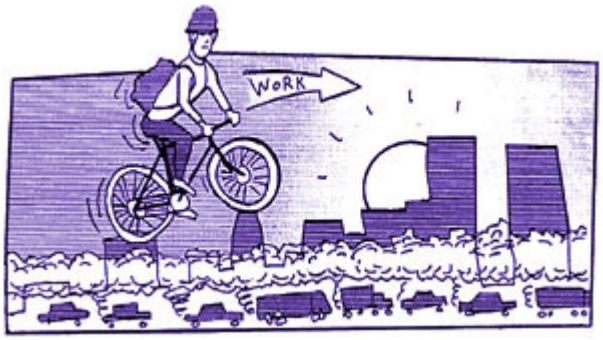
The Guide to Streetwise Cycling (Part IV): Repair Strategies



Story by Tom Hart
Drawings by Kyle Skrinak

City Cyclist presents Part IV of T.A.'s cycling guide-in-progress by Tom Hart, a T.A. member who works at Metro Bikes' mid-town store at 47th St. and 9th Ave.

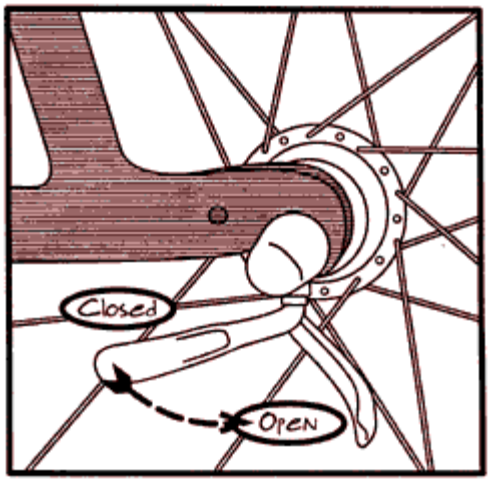
One of the many wonders of bicycles is that they are so simple; most bikes are designed so that parts are easily accessible and can be worked on with a few tools. You don't have to be a mechanical genius - or have a 20-pound tool kit - to make most necessary repairs. Because of the bicycle's inherent simplicity, learning to do basic bike repair isn't hard. Many people find it empowering, allowing them to enjoy the full freedom of cycling.

What follows is a primer to help you take care of common breakdowns and do basic maintenance. Good mechanics follow the same basic principles, whether they're working on automobiles, bikes or plumbing. They use the right tools for the job. They use pliers and vise grips only as a last resort, to avoid stripping (rounding off) bolts. They dean and grease parts before assembling, since dirt or dirty grease makes parts wear down sooner. Clean grease helps parts fit together smoothly and keeps them from seizing (rusting together). Finally, experienced mechanics avoid frustration by taking the time to do the job right.

Fixing a Flat

The #1 bike repair problem is a flat tire, and we should mention that the best solution to this problem is prevention: put Kevlar tires on your bike or install Mr. Tuffy, a plastic tire liner available at almost all bike shops. Proper inflation is also important: normal tires need air weekly or monthly. If you value round wheels, don't try riding on low tires. If you can push down on the tire and feel the rim you need to add air before riding. If, after

adding air, the pressure goes down quickly enough to be annoying, you've got a flat. To fix it, you'll need a pair of tire levers (get the plastic kind that don't punch more holes in the tubes), either a patch kit or a new tube (preferably both), a wrench to remove your wheels (if you don't have quick releases) and, of course, air.

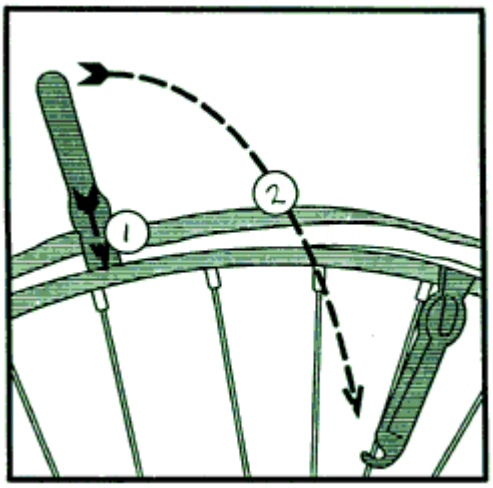


Removing the wheel: You'll have to either loosen the bolts or open the quick release. Note that quick releases aren't just bolts; most will have an "open" and "closed" side printed on the lever. You open quick releases by pulling them away from the bike, and close them by squeezing them against the frame.

To remove the rear wheel on a derailleur-equipped bike, first shift the gears into the smallest rear sprocket. On many bikes you'll also have to release the brakes. Don't unbolt anything; instead look for a lever or tab that can be released on the brake or the lever. The wheel slides in the frame through parallel slots; gently push the wheel in the direction that the slots open. If you have to push hard, try to see what's holding the wheel up rather than forcing it. The better made the bike, the less you should have to force and the more expensive the potential damage.

Once the wheel is off, carefully put the bike aside. Don't drop the bike on the derailleur or the fork blades as both are left exposed when the wheel is removed. Now you're ready to work on the tire.

Patching the tire. Put the non-hooked end of your tire levers between the tire and the rim about tour inches apart. Push down, possibly quite hard, on both of them at the same time, which should pry a four inch chunk of tire to the outside of the rim. Hook one iron under a spoke and move the other one around the rim. Breaking the first foot or so free may take a substantial effort. If you can't break it free, try prying a slightly bigger chunk of tire over the rim or even using three tire irons at once to remove 6-8 inches. With one side of the tire separated from the rim, you should be able to pull the entire tube out of the tire.



Now it's time to find out what caused the flat. The easiest way is to pump up the tube and listen or feel for air escaping through the hole. If the hole is tiny and you're near a pail of water or a sink, stick the tube under water and look for bubbles. Once you've located the hole, you should try to find the thing on the tire or rim that caused it by lining the tube up with the valve hole built into the rim.

The most common culprits are glass or metal between the tube and the tire; spokes projecting through the rim strip

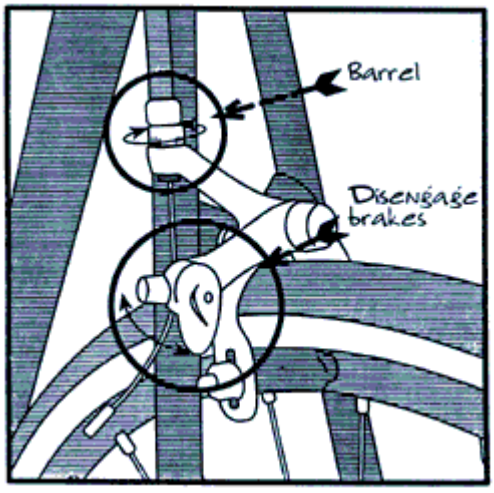
into the underside of the tube (cover with tape); tires worn through by misaligned brake pads gouging the side of tube (get a new tire and adjust your brakes); and pinch flats, a snake bite of two holes, caused by a combination of low tire pressure, sharp edges on the street or improper tire installation.

Now you can either patch your old tube or install a new tube right away or, my favorite, both. Patches often don't stick if you're in a hurry, and having a spare tube is nice for occasional tube failure and for times when you're in a crazy hurry. If you have time, inspect your tire and remove all those tiny pieces of glass that didn't cause this flat but might work their way through and cause the next. Wearing eye protection, use something fairly sharp (a fine tip ball point pen works great) to pry out any glass imbedded in all the cuts in the rubber. If the tire seems thinner in the middle than on the sides or you've just gotten too many flats, get a new tire soon.

Installing the tube. First pump the tube up to a little smaller than the inside of the tire. Insert the valve into its hole, and then place the tube inside the tire, spreading it out equally and making sure the valve is straight. Next gently push the tube onto the rim, maintaining valve straightness and keeping the tube untwisted and evenly spread. Then push the tire onto the rim, possibly using a tire lever to force the last few inches. Check all the way around the tire by squeezing both sides of it together to make sure the tube hasn't become pinched or stuck between the rim and tire. If it has, you may be able to squeeze it into place, but more often you'll need to reinstall the tube. I can't say enough about how important this sequence is. Short cut here and you will pinch your tube.

Now pump the tire back to correct tire pressure (written on the side of the tire - use a gauge, or guess by squeezing) and reinstall the wheel (or reinstall first if things are tight). If it's the rear wheel, put the chain on the smallest sprocket and slide the wheel into the dropouts. Since you already shifted into the smallest sprocket everything should line up. Always make sure the wheel is on straight and tight, that the brakes fit and that the tire isn't rubbing against anything.

Easy Important Adjustments



Tightening your brakes: Since brake pads wear and cables stretch, most brakes have a "barrel" adjuster at the end of the cable. This allows you to tighten the brake by lengthening the housing inside which the cable runs. Simply unscrew the barrel adjuster and then retighten the lock nut and you've got tight brakes for a bunch more miles.

With click shifting gears that don't seem to stay in gear, a barrel adjuster where the cable runs into the derailleur can fine tune the shifting. If the derailleur jumps around in most gears, try to line up the center of the chain with the sprocket directly above it.

Lubricating the chain: another easy and necessary repair, since lube gets washed off in the rain and wears away if you just ride a lot. Buy a bottle of chain lube from your favorite store. (I recommend the new dry lubes, which leave less gunk on your

chain and attracts less dirt.) After you've ridden in the rain or if your chain is noisy or rusty, spray the lube into the lower jockey wheel (that's the lower of the little plastic wheels at the lowest part of your rear derailleur) as you lean the bike against some- thing and backpedal.

Straightening (or raising) the handlebars: another easy and commonly needed adjustment. Stems are actually designed to twist in accidents; if they didn't something else would break. Most stems are adjusted using a six mm allen wrench; some cheaper stems use regular nuts. By loosening the nut which sits at the top of the stem, the handle bars can be easily straightened. Retighten this nut as tight as you can with the usual 4-inch-long allen.

A quick inspection before each ride is a good idea. At least squeeze both brakes to make sure they feel solid. Especially on a new or different bike, check bearing adjustment by shaking each rotating part perpendicular to its axis of rotation. To check the wheels, grab each tire and push on it sideways. To check the bottom bracket, grab the pedals and shake them sideways. For the headset, grab the handlebars and fork and shake them. In each case you're feeling for a clunk of metal against metal, as loose bearings get a running start and smash against the sides of the cups that hold them in place. If you think you feel loose bearings, get them checked and adjusted by a shop, or learn how to do it yourself. Riding on loose bearings almost certainly damages expensive parts!

Finally, as you ride, learn to listen and feel for noises and vibrations. A good bike should be nearly silent, so investigate each noise. Try to pinpoint the problem yourself, but cultivate a relationship with a good bike shop for the problems you can't solve and the tools you don't have. Expect good service and fair prices from a shop, but realize that they only have so much time and that they have to make a living. Like any good relationship, both you and the shop need to treat each other right for it to work.

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