Cycling on Wet Roads

By Coach Steve

I rode a citizens' bike race last weekend on my tri-bike with 650c wheels. Five minutes before the start there was a downpour - big fun! If I had known the race would be on wet roads I certainly would have brought my road bike with 700c wheels, but I was there with two options: Race, or don't race. The course is hilly with plenty of turns, and the last turn is 400 meters from the finish and with a manhole cover and painted lines right on the apex.

With odds against me I managed to keep the rubber side down; I made it through the corners upright on my skinny tubulars at 130psi. In that last corner there were four of us left together in front; the lead rider slid-out and hit the deck. The rider on his wheel had to go wide and went up on the sidewalk to avoid him. The rider in third position went on the inside, as did I. At the line it was the third rider through the corner that won. Positioning was everything that day. I went through the last turn ultra conservatively, a bike length behind which I never made up on the slick road where it was too slippery to stand up to sprint with full effort.

When the road is wet in a multisport event taking a few precautions will help you get through with no mishaps. First you must respect that on a slick road surface your tires won't get as much grip. Even a little moisture reduces potential friction to perhaps 50% of a dry surface. Fifty percent less friction limits you to maybe two-thirds the 'normal' speed on a corner before tire grip is lost.

To add another variable, wet road surfaces offer a wide range of friction depending on their abrasiveness, residual oil left by cars, painted lines, and metal surfaces like manhole covers and grates.

When the wet pavement is made of tiny stones with surfaces polished by many car tires it can be as slippery as ice! If the road surface is abrasive like sandpaper there will be decent grip even in the rain. If it hasn't rained in a while there may be a coating of oil that adds to its slickness when it rains. Painted lines are to be avoided as they're slicker then most road surfaces. They're also raised above pavement - a bad thing for grip. Metal surfaces can be the worst of all and should be avoided as they're always slicker than the pavement.

There are several precautions you can take to deal with these rainy race day risks. First, fresh tires will help. Tires with good tread (ridden at least once on dry roads before race day) will give better grip in most conditions; the one exception is when the wet surface is abrasive like sandpaper (which is rare). In that case a slick tire without tread will give the best grip.

Less air pressure will let your tires flatten out more giving a larger patch in contact with the road. From my bike racing days I can remember the shock of a Belgian mechanic putting only 75psi in my tires for circuit race partly on wet cobblestones with plenty of corners. It worked, I stayed upright that day. How little pressure you can afford to use is dependant upon how many

corners you'll contend with, your weight, and how small your tires are. Less pressure gives better grip but more rolling resistance so some speed potential is lost. Less pressure will also allow the tires to bottom-out more easily making pinch flats a possibility. Choosing optimal pressure for wet roads is always a compromise. With a 700c road tire of 21mm width or more, I've ridden many of races with less than 100psi. On narrow 650c tires of 21mm or less 110psi is as low as I'd go.

In the rain your bike handling skills are as important as your tires. The same rules of good cornering technique apply on wet roads as dry - the only difference is that technique flaws are amplified on wet surfaces. With a corner too sharp or fast to pedal through, shifting some of your weight to the pedal at the outside of the corner (and in the down position) is critical. This lowers your center of gravity, which is always a good thing for control and grip wet or dry.

Perhaps the most important bike-handling consideration of all is your line through the corner. This has to do with the shape of the arc you take as you make the turn. A bigger arc will reduce your chances of slipping as you take the straightest line possible through the turn. With no road restrictions, begin the turn on the far outside, cut to the inside curb (apex), then drift to the outside as you finish the turn. Of course in most races we can't cross the lane lines and may have to contend with other riders beside us, so that determines to how you handle each turn. Still, use the entire road you have access to so you can carry your speed.

On wet roads if you find that you'll need to take a sharper angle through the corner partway through, you're in trouble. Anytime you decrease the radius of a turn (make a sharper turn), you'll increase the amount of lateral acceleration (the force pushing you to the outside of the turn). When you make this sharper turn part way though this is when your tire potentially breaks loose and you slide-out. If you're halfway through a turn and you find you can go wider (make a bigger arc) - no worries!