



MISTI HURST

## WHAT'S A HIGHSIDE?

THE FIRST TIME IT HAPPENED TO ME WAS AT MISSION RACEWAY IN B.C. DURING A RACE WEEKEND PRACTICE DAY. THE TRACK WAS MOSTLY DRY EXCEPT FOR A FEW WET PATCHES. I WAS ON THE SECOND LAP OF THE DAY AND TAKING IT VERY EASY WHEN I WENT AROUND A TIGHT CORNER ON MY SUZUKI SV 650, TURNED THE BIKE IN, GOT ON THE GAS AND FELT THE REAR END SLIDE ON A WET PATCH OF TRACK. IT SLID FOR A GOOD WHILE AND I STILL HAD THAT CALM FEELING LIKE NOTHING WAS REALLY WRONG WHEN ALL OF A SUDDEN I WAS AIRBORNE, VERY HIGH. I HAD ENOUGH TIME TO THINK, 'THIS IS REALLY GOING TO HURT' JUST BEFORE HEARING THE LOUD 'CRACK' OF MY ARAI HELMET HITTING THE PAVEMENT.

The rest of my body crumpled down to the pavement and when I opened my eyes, I realized that I was lying in the middle of the track with bikes still racing around the corner. I tried to stand but my knees buckled from under me so I crawled to the wall and slipped over it. I waited until the red flag stopped the practice and the crash truck arrived to pick me up and retrieve my broken bike. I was a little shaken and had funky white and blue lines obscuring my vision. I couldn't remember where my pit was but other than that I came away relatively unscathed.

The corner worker that witnessed the crash referred to it as a 'wicked highside'. I nodded back at him with the kind of nod that acknowledges what he said but that contains a very blank look of someone who doesn't really understand what a highside really is.

The next two highsides also occurred at Mission Raceway with little or no repercussions, except for some bruising and stiffness and more dents in my bike that are not really worth mentioning here.

The fourth, and so far last (knock wood), of my highsides was definitely the most spectacular of the bunch. I was racing my first ever 600 race on a borrowed (and brand new) Honda CBR 600RR and riding in the final Pro Honda Oils Women's Cup Challenge race of 2005 at Shannonville Raceway in Ontario. My Dad was at the track for the second time only in my racing career (and most likely the last now) when, on the second-to-last lap and the final corner, which also happened to be the closest one to the spectators, I launched myself again.

I was chasing down the lead rider, Marie-Josée Boucher,

and must have gotten a little greedy with the throttle on a not-so-perfectly dry track when I suddenly knew something bad was about to happen. I remember noticing that the bike was suddenly at a funny angle and that I seemed to be mighty close to the ground. Then I remember feeling a violent “fling” that tossed me quite high (people in the stands said 6-7 feet) into the air and I remember feeling that inevitable descent toward the hard ground. I don’t remember the actual impact, nor do I remember lying in the middle of the track for about 30 long seconds. My poor Dad was being held back from running out onto the track to see if I was OK, and having to endure the long wait and stress of watching the limp form of his daughter sprawled out on the pavement as the ambulance made its way out to retrieve me.

When I came round, I wasn’t actually sure if I was knocked out or not, I was completely coherent and even managed a wave to the crowd to let them know I was OK. I bruised my right foot pretty bad and was very sore but I was determined to figure out what went wrong and what the heck a highside was so that I would stop doing it!

Instead of flying home the next day, I went to Firebird Raceway in Arizona as I was scheduled to coach with the California Superbike School for a couple of days. When I explained to Keith Code, former roadracer, founder of the

California Superbike School and author of *Twist of the Wrist*, what had happened, he proceeded to teach me the dynamics of a highside and how to go about saving myself from one. Then he made me ride the slide bike.

### ***So, what the heck is a highside?***

A highside occurs when a motorcycle suddenly regains traction after a skid or a slide and tosses the rider up and over the high side (the side furthest from the ground) of the bike.

A highside is probably the worst kind of single vehicle motorcycle crash; the force generated by the sudden regaining of traction can be so great that it can throw riders upwards or forward to distances as great as ten feet. The injury to the rider is most often caused by the impact of landing after being tossed but can also be from being hit by the tumbling motorcycle that is often following the path of the ejected rider.

### ***What causes a highside?***

Most commonly, a highside is caused when a rider loses traction at the rear wheel, either from stamping too hard on the rear brake or from getting on the throttle too much and sending the bike into a rear wheel slide. The rider panics, tightens up on the bars and suddenly releases the brake or chops the throttle that causes immediate traction that can jerk the motorcycle in the opposite direction and fling the rider off.

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## ***How riders make the situation worse.***

Basically, as Code says in his book *Twist of the Wrist II*, 'riders create more problems than motorcycles are designed to handle.'

What he means by that is the more you interfere with what the bike is trying to do on its own, by holding on too tight, by trying to muscle the bike around, by making sudden movements like chopping the gas or releasing the brakes too quickly, the more likely something adverse is going to happen. From *A Twist of the Wrist II*, Code explains, 'In most typical of slides, you have the back end 'coming around'. What most riders don't understand is the fact that the bike actually compensates for this slide automatically. In a rear end slide, the front end turns toward the direction the bike is actually going - into the slide. The main mass of the bike is moving outward and the front wheel turns just the right amount to stabilize it. This feature comes free of charge with every motorcycle. In a car, if the back end comes around, the front wheels turn to the inside of the turn, creating a pivot point for the car's mass, and it spins out. Learning how to drive a car in the snow is mostly a matter of understanding that you have to manually turn the wheel into the skid to stabilize it. You don't on a bike.'

Code continues, 'When the bike slides, if the rider is successful at holding the bars tight enough that they don't turn into the slide, the bike now acts like the car; the front contact patch becomes a pivot point except that a motorcycle doesn't spin out, it high-sides. More little slides have turned into far worse situations than you would care to know, because of this dramatic result of being too tight on the bars.'

So, gripping the bars too tight will prevent the bike from being able to right itself in the case of a rear end slide, and releasing the rear brake too quickly and/or rolling off the gas too fast will cause an immediate regain of traction which also contributes to the highside process.

## ***How to prevent a highside.***

Now that we know what causes high-sides, the simple way to prevent one is to not let the rear end slide out in the first place. The key to avoiding this is to learn to be smooth with the throttle, meaning a steady and gradual roll-on as opposed to a giant whack of gas. The same thing goes for the use of the rear brake, steady and gradual pressure as opposed to stomping on the pedal.

However, if you should find yourself in the unfortunate situation of realizing that the rear end is sliding out from under you, regardless of whether or not

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it was caused from overusing the rear brake, overdoing it from too much gas, or sliding because of wet or dirty pavement, there are a few things you can do to avoid a sudden and unwanted flying lesson.

1. Don't chop the gas! As Code mentions in *Twist of the Wrist II* "Your best insurance against more sliding or a highside is simply to stop rolling on the gas. The bike slows gradually, rather than quickly (as it would from chopping the throttle) and comes back into alignment smoothly." Chopping the gas suddenly, meaning a complete and sudden roll off of the throttle would cause instant traction and lift off.

2. Don't suddenly release the rear brake (if you are on the rear brake). Gradually and slowly come off the rear so that the bike begins to regain grip slowly as opposed to suddenly.

3. Don't panic and strangle the bars. This will prevent the bike from trying to correct itself and will only make matters worse.

These things are hard to do but if you understand the dynamics of what happens when you do make these mistakes, you can begin to train yourself to react calmly and appropriately if you do find yourself sliding.

### ***What to do if you start catapulting through the air anyway?***

If you do find yourself in the midst of an unscheduled flight, as crazy as it sounds, try to relax and let yourself hit the ground. The danger for the rider in a highside crash is the impact of landing. Tensing up or putting arms or legs out to stop the fall will only encourage broken bones. Floppy is better and for goodness sake wait a few seconds after you stop bouncing or sliding before trying to get up. Countless injuries occur when the rider misjudges speed while sliding and tries to get up prematurely. This causes tumbling and more aches and pains.

Another important factor is safety gear. The more safety and protective gear you wear, and the better quality it is, the less likelihood there is of serious injury. I've had four momentous highsides and every time walked away with nothing but bumps and bruises. I attribute a lot of this to the fact that I was covered head to toe in protective gear. A good, well-made Snell and DOT approved helmet is mandatory, as are a good quality jacket, gloves, boots and pants.

### ***What's a Slide Bike?***

At the California Superbike School, one of the tools we have available to coach our students with is the slide bike

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that was developed as a training tool by Keith Code. Essentially, the slide bike is a regular Kawasaki ZX636 that has been fitted with outriggers that act a little like training wheels. The outriggers are steel frames with rubber wheels and a dampening system that helps prevent the bike from highsiding. The idea of the slide bike is to teach riders how to control a rear wheel slide without the fear of highsiding the bike. One small point here is that the bike cannot highside as the outriggers will stop it from doing so, but if the rider is not careful, he or she can still highside themselves by chopping the throttle. In this situation, we are only dealing with

slide situations resulting from aggressive throttle and learning how to control the 'survival reaction' of chopping the gas.

Keith had me jump on the slide bike and keeping it in first gear, ride straight, then make a turn and get on the gas, trying to slide the rear. It took several tries for me to actually be able to get the rear end to slide even a little bit and when it did my first instinct was to chop the throttle, causing the bike to give a small jerk that bumped me a bit out of the seat. With a few more practice tries I was gradually able to make my wrist gently stop rolling on the gas instead of chopping it and it was surprising to feel the traction recover in a controlled manner as opposed to the jerkiness I was feeling before. As I became more comfortable, I was able to get the bike to slide more while still being able to gently roll off instead of chopping the throttle. It was a great learning tool and I'm happy to say that after riding the slide bike and really understanding what a highside is that I have been able to prevent at least two of them from happening and have not flung myself senselessly off any bike since.


It's an awesome feeling to be able to consciously make a decision to do something in a negative situation that helps you regain control and prevent bad things like crashing from happening. It's instinct to want to chop the throttle or let your foot off the rear brake when the rear tire loses traction but arming yourself with the knowledge, information and skills, you can be a better rider. **MMM**

Cheers, Misti

*Misti Hurst is a motorcycle racer, an instructor with the California Superbike School, and a freelance writer. More information about her can be found on her website at [www.mistihurst.com](http://www.mistihurst.com)*

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