

# The Safety Corner

## Braking Techniques

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**T**his Safety Corner will talk about **braking techniques**. It will:

- Help you understand the technique used to achieve maximum braking.
- Help you understand what causes “high-siding” and how to prevent it.



### About Maximum Braking:

Maximum stopping power is achieved **when both brakes are firmly applied simultaneously**, just enough pressure to a point where the wheels are about to lock and skid. Apply **BOTH** brakes firmly with even pressure: do not grab them! Maximum stopping power will achieve minimum stopping distance only by full application of both brakes without skidding. In studies, it has been proven that over 70% of the stopping power on a motorcycle is provided by the front brake. Invariably, in a panic situation, the inexperienced rider will lock one or more of their motorcycles wheels and start to skid. Generally the rear wheel will lock first since that is where the lightest load is when braking.

### Controlling skids.

If you have front wheel skid, **release the front brake lever immediately.** Keep your eyes up and look straight ahead.

Rear wheel skid on pavement or a fairly solid surface, **KEEP THE REAR WHEEL LOCKED, DO NOT RELEASE THE REAR BRAKE!** Look well ahead, eyes up, (you will get tired of hearing about keeping those eyes up), and steer to maintain a straight path of travel.

Rear wheel skid on loose surface (poor traction, low speed) - ease brake pressure to regain control. Look well ahead to maintain desired path of travel.

### **High-Siding:**

**High-Siding occurs when a rider is braking and the motorcycle suddenly flips over.** The motorcycle rider has applied the brakes **locked** the rear wheel, and then **released** the rear brake. High-siding can occur on dry or wet pavement, grass, or any fairly solid surface. At speed, it takes a motorcycle less than **one-half a second** to high-side. **YOU CAN PREVENT IT!** If you are in a rear wheel skid, **DO NOT release** your rear brake. When the rear wheel is locked, there is no traction on the rear wheel, it is skidding. When the rear brake is released, the rear wheel regains traction, causing the motorcycle to suddenly straighten up. Unfortunately, the momentum of straightening up is **so great**, the motorcycle continues to roll and will actually leave the ground and flip. I have not personally experienced this phenomenon, but I have talked to riders that have. Other riders that have taken the MSF Experienced Rider Course have praised the fact that controlling rear wheel skids, high-siding and its causes, were part of the techniques taught. The riders that have experienced high-siding and can tell you about it are the lucky ones!

The GWRRA Touring and Braking Seminar teaches you more about high-siding and its prevention as well as the MSF Experience Rider Course.

**DO NOT TRY ANY EXERCISE IF YOU FEEL YOU WILL ENDANGER YOURSELF!****Braking Exercise, Equipment Needed:**

Let's try some simple braking exercises that will help you understand the techniques required to achieve maximum braking. The exercises will take one rider, one observer, one piece of chalk, and two paper cups. On an **empty parking lot free of obstructions and loose gravel**, place two paper cups about 6 feet apart, somewhere about 40 feet from the end of the lot

NEVER EXCEED 20 MPH WHILE DOING THESE EXERCISES.

**Exercise One: Rear Wheel Braking Only:**

Start riding toward the cups at **15-20 mph**. Achieve a speed and hold it constant. Remember how fast you are traveling, say 18 mph. As your **FRONT** wheel passes the cups, apply your **REAR brake only**; try not to skid. **If you do lock the rear wheel, DO NOT RELEASE IT!!** When you have safely stopped, have the observer come over and make a line opposite your front axle. This will show you how much braking power is in the rear wheel alone. (Gold Wings have the integrated braking system where both brakes are applied with the right foot pedal, but still do this exercise, you will see why later.)

**Exercise Two: Front Wheel Braking Only:**

The rider again starts driving toward the cups at 18 mph. Keep the same speed as you had in the rear wheel braking exercise. As the **FRONT** wheel passes the cups, apply your **FRONT** brake only. **DO NOT GRAB THE BRAKE!** **If you skid, release the front brake IMMEDIATELY**, regain control and go around and try again. When you have stopped, have the observer come over and make a line opposite your front axle again. You should see that the line is closer to the cups than the line drawn when doing the rear wheel brake exercise.

**Exercise Three: Braking With Both Wheels:**

Again the rider starts driving toward the cups at 18 mph. As the **FRONT** wheel passes the cups, apply **BOTH** brakes simultaneously. Keep your eyes up and look straight ahead. The observer now marks the line where the front axle is. You will notice it is considerably closer to the cups than the previous two lines.

***TIPS:***

If you keep your **eyes and head UP and look STRAIGHT ahead**, you will stop **straight**. If you look down or to one side, you will stop crooked. If you were in second gear when you stopped; you should have downshifted to first, and your **left foot** should touch the ground first.

The whole point of these exercises is to point out to those old experienced riders that never use the front brake that maximum braking is achieved by apply both brakes simultaneously, to the point where your wheels are about to lock. Apply firm even pressure, **do not grab!**

These are among many of the techniques taught in the MSF Experienced Rider Course (ERC) available to all members. This Safety Corner bulletin is not a substitute for the ERC. The situations outlined do not ensure you have learned the proper techniques. Only by taking an ERC, with proper coaching by a MSF trained instructor, can you be presented with the proper riding skills to make you a safer rider. I urge every member to enroll in one of the available ERC courses as soon as possible.

Ride safe y'all,

