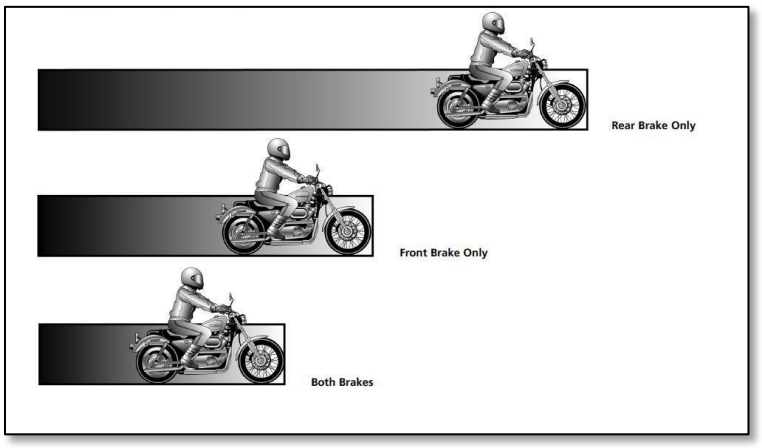
MAXIMUM BRAKING

Applying the Skill

The term “maximum braking” is used when both brakes are applied as firmly as possible without locking up either wheel, typically in an emergency situation. During maximum braking, keep the motorcycle as straight as possible to reduce lean angle and the likelihood of the tires losing traction, keep your body centered over the motorcycle, and look forward not down. Be sure to apply the brakes smoothly without being harsh – you don’t want to cause a skid or upset the balance of the motorcycle. As with other critical skills, keep practicing!

Common Errors

In an emergency situation, studies have found that a motorcyclist typically overbrakes the rear and underbrakes the front, even though the **front brake provides 70% or more of the stopping power for your motorcycle.** Both brakes should be applied at the same time when stopping, as using both brakes stops the motorcycle in the shortest distance (see diagram left). It is important to develop the habit of using both brakes so that your reflexes will be ready to respond quickly and properly when an emergency situation occurs.



Overbraking the front or rear tire can lead to a total loss of control. If the rear wheel is locked, the rider typically loses steering control because the weight of the motorcycle and rider is transferred away from the rear wheel and to the front, reducing the traction available to the rear tire (see diagram below). The biggest danger in any rear-tire skid is releasing the rear brake when the rear wheel is out of alignment with the front wheel. If the rear wheel stops skidding and resumes rolling when it is out of line with the direction of travel, the motorcycle will immediately straighten and could result in loss of control and the rider could be thrown off in what is commonly called a “high-side” fall, and it is very likely to produce serious injury. To prevent a “high-side,” **keep the rear brake locked** and skid to a stop. If the front wheel locks, the rider is likely to crash due to loss of stability. If such a front-tire skid occurs, immediately **release the front brake to allow the wheel to resume rolling, and then reapply the brake properly.** Improper application could lead to a “low side” fall.

As the front brake is applied, weight transfers to the front tire, which causes available traction to vary as weight shifts requiring the rider to adjust pressure on each brake control in a maximum-performance stop.

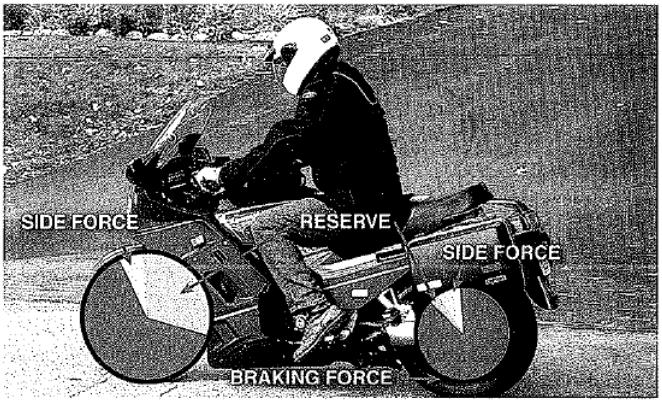


Diagram 12-3: Under deceleration, available force at the rear tire is reduced as weight is transferred to the front tire. Braking forces consume more traction at both tires.

Information and diagrams taken from the MSF’s Guide to Motorcycling Excellence and the MSF’s Student Handbook.