

Safe Braking

The Motorcycle Safety Foundation (MSF) says “Improper braking technique remains a significant contributing factor in many motorcycle crashes.” The purpose of this article is to emphasize that good braking skills are essential for safe riding and to encourage all of us to continue to improve them.

Braking techniques are best learned with a certified instructor. At least get a good book such as MSF’s *Guide to Motorcycling Excellence* and practice braking maneuvers in a parking lot. Practice exercises are illustrated in MSF’s *Riding Tips* booklet which can be viewed on website www.msf-usa.org.

Three elements are associated with stopping a bike, i.e., Perception, Reaction, and Braking. Each of these elements takes time, which relates to distance as the bike travels before stopping. Perception distance relates to the time it takes for the rider to recognize that a situation exists that will require braking. Reaction distance is covered during the time from when the problem is perceived until the brakes are applied. Braking distance is covered from the time the brakes are applied until the bike stops. Since at only 30 mph a bike will travel 44 feet in one second, the importance of reducing these times is apparent. Perception distance can be reduced by using effective visual techniques to scan well ahead for possible hazards. Reaction distance can be reduced by anticipating problems and being prepared to brake, including covering your brakes. Braking distance can be improved by having good braking skills and well maintained brakes.

Covering your brakes is an important safety practice. It is recommended that riders cover their brakes in any situation where one might have to reduce speed quickly. The dexterity to efficiently manipulate the throttle at the same time that your fingers are extended over the front brake lever is worth developing. This saves valuable reaction time in applying the brakes and facilitates throttle-brake-throttle transitions.

The primary defensive riding strategy of SEE, i.e., Search, Evaluate, Execute, has us looking ahead and allows us to anticipate in advance that braking will be required. This anticipation allows extra time and space for the braking process. This brings some major benefits. We can avoid the need for hard braking. We can check on following vehicles and signal our intentions to slow or stop. We can cover our brakes to reduce reaction time. We can shift to lower gears to use engine braking. We can look for surface traction concerns and avoid braking on them. We can position our motorcycle as we stop and address the safety concerns of being able to see, to be seen, and to have space cushions and escape paths. All of this is available with anticipation. However, if our cue to stop is the brake light of the vehicle immediately in front of us, then we stop abruptly and lose all of this. We have forfeited our safety options. Let’s not do that.

Recommendations for safe braking include:

Maximum braking At times a rider must stop quickly to avoid a collision. The hard application of the brakes can cause locking up of the front or rear wheel. This can lead to

a skid which, if not handled properly, can lead to a crash. There are techniques to avoid this. They should be learned and practiced. Antilock Braking Systems (ABS) pulsate the brakes and prevent their locking up. If you don't have ABS on your bike, seriously consider it for your next one. Even with ABS, braking practice is a good idea. Also, MSF notes that using both the front and rear brakes together provides maximum stopping power. It recommends that riders develop the habit of using them together so that their joint use will be automatic when you really need their combined effectiveness.

Braking with reduced traction Many surface factors can reduce traction and require cautious braking. Gravel, leaves, and other debris can be hazardous. When the road surface is wet from rain, traction is reduced and brakes should be applied more gently and farther in advance. Steel plates, manhole covers, plastic directional arrows and similar things on the road become very slippery when wet and should be avoided when braking. (Also avoid putting your foot down on these slippery surfaces.) ABS can help you maintain control when the bike is straight up but caution is still advised.

Braking in a curve It is recommended that we avoid hard braking while the bike is leaned over in a curve. The combined traction requirements of leaning and braking may exceed the amount of traction that is available and lead to a crash. Stand up the bike before applying hard braking. Some light braking can be applied while the bike is leaning if done carefully. These techniques should also be practiced under controlled conditions. Traction concerns also apply when the rider swerves the bike to avoid some hazard. In this case, however, all braking should be done either before the swerve or after it, but never during it. The advantage of ABS that serves us when the bike is straight up is not there when the bike is leaned over.

Braking with a passenger The extra weight of a passenger will require more stopping distance or increased braking pressure to stop in the same distance. Braking practice with the passenger on board is a good idea.

Braking with a flat tire When you feel a tire going flat it is necessary to get to the side of the road in a controlled manner. Hard braking should be avoided. Light application of the brake on only the good wheel can be applied.

Braking during slow speed maneuvers While maneuvering the bike at slow speeds in parking lots, during U-turns, etc., light pressure on the rear brake while the bike is under power is useful to help keep the bike upright. On the other hand, applying the front brake at slow speeds while the front wheel is turned will cause the bike to go down.

Braking in a group When we ride in formation, we should look ahead and anticipate when we will have to brake. Focusing on the brake lights of the rider ahead of us really limits our time to react and brake. When approaching an intersection and the light turns yellow, we should anticipate stopping and cover our brakes. If the rider in front of us abruptly stops for the light, we should be prepared to stop also and not blast by him into the intersection. Like most braking situations, the key is anticipation and braking skills.

Ernie Staples Sr.
Safety Officer
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