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# You only hit that car If You Don't Quite Stop In Time

By James R. Davis

It takes most people about 4.5 seconds to read this sentence. 4.5 seconds is not a lot of time - but it could be the rest of your life. 4.5 seconds is also (not really a coincidence) about how long it SHOULD take you to stop your motorcycle after applying your brakes at 60 MPH!

Stopping a motorcycle as fast as possible requires that you master only a few fundamentals:

- **Alertness** - No matter how fast your reflexes are or how skillful you are with your brakes, if you don't see the need to stop, you won't.
- **Reflexes** - First you need time to recognize a threat and decide to react to it, then your fast reflexes take over and make the difference.
- **Skill** - Under-utilizing your brakes is just as dangerous as over-doing it.

Let's get a feel for magnitudes.

It usually takes about .7 seconds to recognize a threat. A person with normal reflexes takes about .3 seconds to start braking from the moment he realizes he has to do so. Combined, that's about 1 full second from the time a threat presents itself to you and you begin to slow down.

At 60 MPH you travel 88 FEET in 1 second!

That it takes you about .7 seconds to recognize the threat is a mental reality. But it does not necessarily take .3 seconds to react to it. The simple practice of always covering your front brake can shave a full tenth of a second (1/3!!) of that time away. That's almost 9 FEET!

Assuming you have read the tips on braking methods earlier, you have a good idea about how to use those brakes. Now let me try to give you a sense of magnitude associated with the skill part of braking.

Traffic Engineers have some rules-of-thumb they developed over time. They, for example, have found that if the street surface is dry, the average person can safely decelerate an automobile at the rate of 15 feet per second per second (fpsps). That is, an average person can slow down at this rate without any real likelihood that they will lose control in the process.

If the surface is wet they assume a deceleration rate of 10 fpsps is safely attainable by almost anyone.

Let's assume a wet street surface and that you are moving at 60 MPH. At a 10 fps deceleration rate it will take you 8.8 seconds to stop after you begin applying your brakes. (A total of 9.8 seconds from the time the threat we earlier talked about presents itself.) The distance you would travel before coming to a complete stop is 475 feet.



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If, however, the road is dry, it would take you only a total of 6.9 seconds to stop, (including the 1 second recognition/reaction delay.) and the distance traveled until you came to rest would be 346 feet.

Clearly the more effective your braking is, the less time it takes to stop, and the less distance traveled.

I think most of you know that your motorcycles can stop more quickly than can an automobile. Indeed, a professional motorcycle racer can obtain a 1g deceleration rate, or more, on his motorcycle. (1g deceleration is 32 fpsps.)

With practice, your braking skills should easily allow you to attain deceleration rates in excess of 20 fpsps. What would that mean in our example threat scenario?

It would mean that you could stop your motorcycle in a total of 5.4 seconds (including the 1 second delay.) and your total stopping distance would be only 281.5 feet!

By enhancing your braking skills with practice you can shave 64.5 feet and 1.5 seconds off 'normal' results. And you could shave off another nearly 9 feet just by covering your brakes. That brings the distance traveled before stopping down by about 73.5 feet.

73.5 feet is about four car-lengths!

The message is clear: You only hit that car if you don't quite stop in time. You might not hit it at all if you cover your brakes and practice your braking skills.