ISRI Safety
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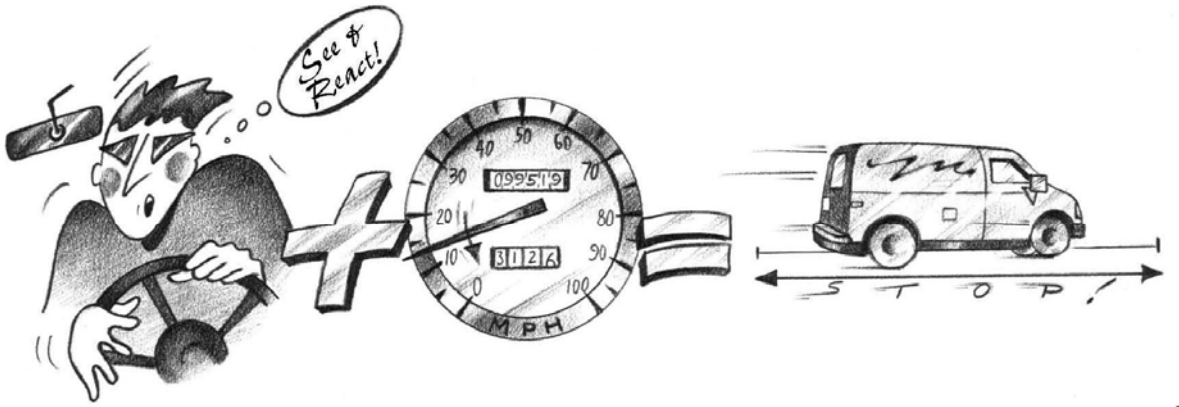
Stopping Distance Formula



Perception/Reaction Distance + Braking Distance = Stopping Distance

All drivers take a fraction of a second to perceive a hazard, and a fraction of a second to react before putting on the brakes. This time translates into perception and reaction distance—the distance your vehicle will travel in the time it takes you to perceive the hazard and to move your foot from the accelerator to the brake pedal. To figure your perception and reaction distance in feet, take the first digit of your speed, add it to the total speed and double it.

Speed	+	First Digit	=	Perception/Reaction Distance				
20 mph	+	2	=	22 feet	x	2	=	44 feet

In other words, at 20 miles per hour, your vehicle will travel 44 feet in the time it takes you to see a hazard and move your foot from the accelerator to the brake pedal.

The faster you're going, the further your vehicle will travel before you can hit the brakes.

Speed	+	First Digit	=	Perception/Reaction Distance				
55 mph	+	5	=	60 feet	x	2	=	120 feet
65 mph	+	6	=	71 feet	x	2	=	142 feet

Braking distance is also determined by speed. Here are braking distances for some speeds for a passenger car with well-maintained brakes on flat pavement in dry weather:

At...	Braking distance is...
20 mph	18 to 22 feet
55 mph	192 to 224 feet
65 mph	267 to 316 feet

Now we can calculate the stopping distance for these speeds:

At...	Perception/ Reaction Distance	+	Braking Distance	=	Stopping Distance
20 mph	44 feet	+	18 to 22 feet	=	62 to 66 feet
55 mph	120 feet	+	192 to 224 feet	=	312 to 344 feet
65 mph	142 feet	+	267 to 316 feet	=	404 to 458 feet

It's easy to see that stopping distance is very much greater at high speeds than at low speeds. The faster you are going, the greater the distance you must allow between you and the car in front of you for safety. Wet conditions can double the stopping distance; icy conditions can make it ten times higher.