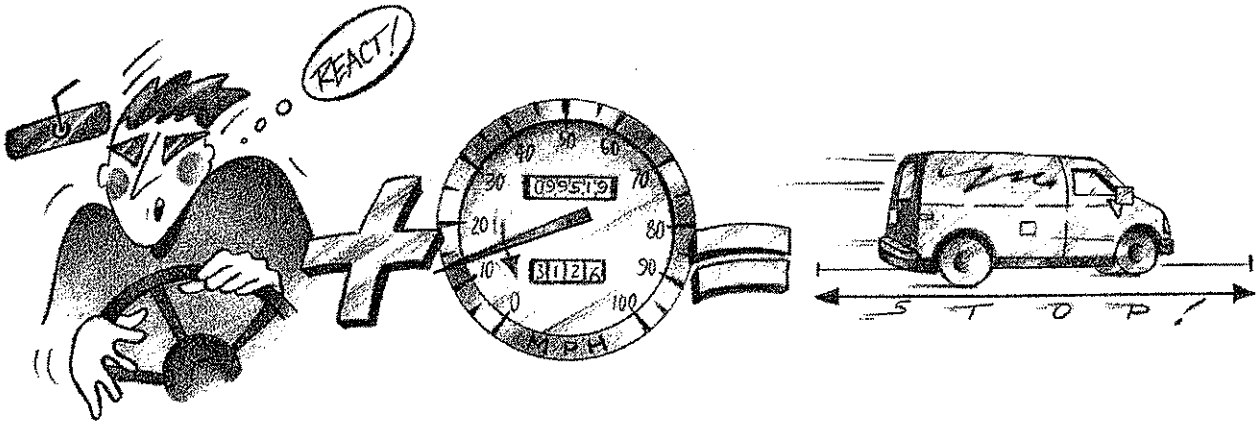
Stopping Distance Formula



Reaction Distance + Braking Distance = Stopping Distance

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

Speed	+	First Digit	=	Reaction Distance
20 mph	+	2	=	22 feet

In other words, at 20 miles per hour, your vehicle will travel 22 feet in the time it takes you to 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	=	Reaction Distance
55 mph	+	5	=	60 feet
65 mph	+	6	=	71 feet

Braking distance is also determined by speed. Here are braking distances for some speeds:

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...	Reaction Distance	+	Braking Distance	=	Stopping Distance
20 mph	22 feet	+	18 to 22 feet	=	40 to 44 feet
55 mph	60 feet	+	192 to 224 feet	=	252 to 284 feet
65 mph	71 feet	+	267 to 316 feet	=	338 to 387 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.

Following Distance Worksheet

Do you know how much distance you should allow between you and the vehicle in front of you in all conditions? See if you can compute the correct following distance in seconds for these driving situations. Remember that you must allow a minimum of two seconds following distance under ideal driving conditions, plus extra seconds for certain road conditions and vehicles.

1. It's a rainy night.

Correct following distance in seconds:_____

2. You're driving in the fog. Another car is tailgating behind you.

Correct following distance in seconds:_____

3. You're following a motorcycle and towing a small trailer.

Correct following distance in seconds:_____

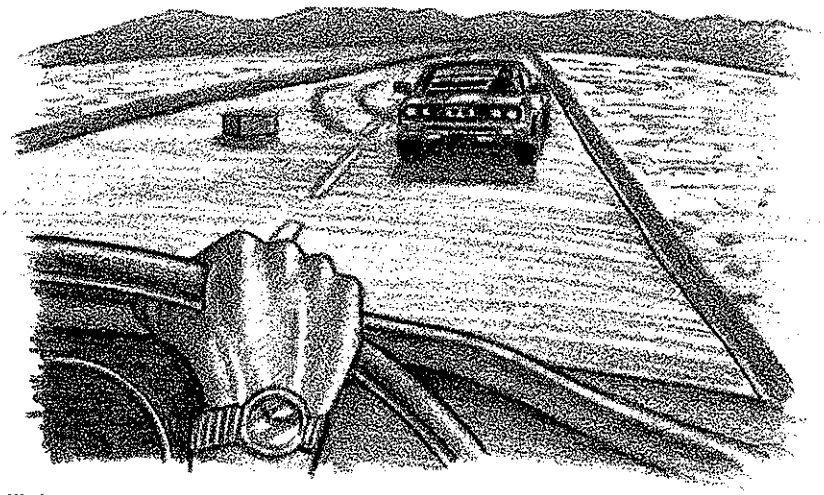
4. You are driving on an interstate into late afternoon sun.

Correct following distance in seconds:_____

Answers

1. **Four seconds** (two seconds plus one second for night driving and one second for wet pavement)
2. **Five seconds** (two seconds plus one second for the fog, and two more seconds for the tailgater, because you will need extra space so the tailgater won't push you into the vehicle in front of you if you must stop suddenly)
3. **Five seconds** (two seconds plus one second for the motorcycle, and two more seconds for the trailer, because the extra weight of the trailer increases the time it takes to stop)
4. **Five seconds** (two seconds plus two seconds for speeds greater than 40 mph plus one second for reduced visibility)

What Is a PREVENTABLE Collision?



A preventable collision, according to the National Safety Council, is "a collision in which the driver failed to do everything reasonable to avoid it." The National Safety Council advises drivers to follow three simple rules for preventing collisions.

1. Recognize the hazard.

Scan the road ahead, to the next intersection in cities, or to the next hill or curve on the highway. Check the traffic to the side and behind by looking in the rearview and side mirrors every five seconds. Recognizing a hazard in advance gives you time to avoid it.

2. Understand the defense.

Once you recognize a possible hazard, use your knowledge of defensive driving principles to choose the best way to avoid a collision in each situation.

3. Act correctly and in time.

After you've chosen the best defense against the hazard, take correct action, in time to avoid a collision. This is where your alertness and driving skill pay off.

You can see that the five characteristics of a defensive driver—knowledge, foresight, alertness, judgment and skill—all play a role in avoiding preventable collisions. Take some time to educate yourself on how to react to various hazardous situations. And always practice safe driving. By obeying speed limits, keeping a safe distance between you and the next driver, and using the proper signals, you are more likely to stay clear of hazardous conditions, and to make sure you don't become a hazard for someone else to avoid.

5 Characteristics of a Defensive Driver

Defensive driving does not require a high degree of special training. The characteristics of a defensive driver are the same characteristics that apply to many aspects of our lives. Let's look at the five most important requirements for defensive driving.

1 Knowledge

Defensive drivers take time to educate themselves about safe driving techniques. They know how to recognize hazards and avoid collisions. They know the traffic laws in their area. This knowledge helps them know how to act correctly and quickly in traffic situations. They also know how to properly maintain their vehicles in a safe operating condition.

2 Alertness

Defensive drivers are alert, both to traffic conditions and to how their own mental and physical conditions may affect their driving. They pay attention to the traffic situation to the front, sides and rear, glancing in rear- and sideview mirrors many times a minute. They give all their attention to the task of driving.

3 Foresight

Defensive drivers know that their worst enemy is the unexpected. They never assume the other driver will do the right thing. They anticipate hazards by scanning the road to size up the traffic situation as far ahead as possible. In this way they are able to prepare for hazards rather than simply react to them. They practice long-range foresight by keeping their vehicles well-maintained, by checking them before driving, and by always wearing a safety belt.

4 Judgment

Good drivers use common sense and knowledge to make decisions wisely and quickly. They maintain control of their behavior, resisting the temptation to make risky maneuvers to get somewhere faster or to outmaneuver other drivers. They pass only when it is safe, and always look for the safest, rather than the speediest, alternatives in any traffic situation. They are courteous, even when other drivers are not.

5 Skill

Defensive drivers develop the skills necessary to operate a vehicle properly and safely. They know the safe and legal way to make turns, change gears, brake and pass. They can "listen" to their cars for signs of engine trouble, and they can perform simple emergency repairs, such as changing a tire.

You don't have to have lightning fast reflexes or unusual mental and physical abilities to be a defensive driver. Defensive driving is simply a matter of common sense, education and a safe attitude on the road.

VEHICLE FIRE/EVACUATION PROCEDURES

1. At first indication of fire on the vehicle, proceeds as follows: PULL TO SAFE LOCATION, STOP the vehicle immediately, SHUT OFF ENGINE, open all doors, contact dispatcher to request emergency services assistance and evacuate passengers.

2. Evacuate passengers in an orderly manner. Assist disabled passengers first. safety of all passengers is your first consideration.

3. If possible, use the fire extinguisher located on the vehicle. If the fire is extinguished, notify dispatcher for further instruction.

4. If fire cannot be controlled by fire extinguisher, notify dispatcher immediately giving vehicle location on vehicle. Do not re-board vehicle. Await assistance and tend to passenger needs. Passengers will be loaded on to another vehicle.

VEHICLE EVACUATION PROCEDURES

Being prepared to deal with evacuation emergencies will make it easier for you to successfully evacuate your passengers.

Evacuate your passengers under the following circumstances:

--you are given evacuation orders from management, the police or the fire department
--a fire occurs
--a fuel leak occurs
--the vehicle is in an unsafe position

Familiarize yourself with the guidelines below:

- Regularly practice your evacuation procedures.
- Remain calm during an evacuation.
- Turn on your emergency lights.
- Pull the vehicle to the side of the road.
- Turn off the engine and set the parking brake.
- Call the operations base for assistance.
- If time and conditions permit, calmly tell the passengers that there is an emergency and explain to them what they must do to evacuate the vehicle. Indicate that help is on the way and encourage passengers to adopt a buddy for shared support through emergency. Continued reassurance may be helpful in reducing panic.
- Unlock the doors and unbuckle any restrained passengers.
- Ask wheelchair passengers how to best evacuate them from the vehicle.
- Evacuate other passengers in the vehicle one row at a time. Assist passengers leaving the vehicle and have passengers gather in a safe location away from the vehicle.
- Collect emergency information and compile a list of passengers.

VEHICLE EVACUATION PLAN

In an existing or imminent fire or smoke condition, as the vehicle driver, EVACUATE IMMEDIATELY using the following guidelines:

1. Quickly compose yourself, be a leader. Inform passengers that the emergency is under control and that you are in charge and that help is on the way.

2. Visually assess the situation quickly:
   - Fire/Smoke condition.
   - Passenger condition.
   - Number of passengers using wheelchairs.
   - Availability of help.
   - Vehicle condition.
   - Available exits.

   Do not fight a vehicle fire under any circumstance. Leave fire suppression and extinguishing to the fire fighters. You are responsible for the evacuation of passengers and yourself.

3. Throw the radio microphone out of the window. This will allow you to communicate with the dispatcher from outside the vehicle.

4. Tell ambulatory capable passengers to help evacuate injured and non-ambulatory passengers. Remain calm and give clear concise instructions.

5. Lead and participate in evacuation.

   - Evacuation is the most critical step in saving lives. Don't perform any evacuation maneuver that will cause you injury.
   - Instruct all passengers to release their seat belts. For those who can't release them or cut them with the belt cutter.
   - For passengers using wheel chairs only the safety belt should be released or cut. Wheel chairs and other assistive devices should be left on the vehicle. They may be recovered later.
   - Lead to the most usable exit.
   - Assist ambulatory passengers first. Passengers that can self evacuate can assist others from the vehicle to the ground.
   - Assist non-ambulatory passengers. This will take additional planning, time and physical movement. The critical element is time because of how quickly a vehicle can fill with smoke.

6. Verify all passengers have been evacuated and move passengers a safe distance from the vehicle and other traffic.

7. Contact dispatcher.
   - Once passengers are contained, use the radio to contact the dispatcher.
     a. State your name.
     b. Vehicle number.
     c. Current location.
     d. Description of emergency.
     e. Request for help. The clearer the description the quicker the rescue response.

   If the radio is unavailable distribute a Good Samaritan card or Emergency Notification card to passer-by motorist.

8. Place Warning Devices
   - If evacuated passengers are contained, place triangular reflectors at specified locations to warn other motorist of emergency.

9. Provide support to evacuated passengers.
   - Keep passengers calm. Once rescuers arrive they assume jurisdiction over the evacuation process. Cooperate with the rescuers and provide them with all appropriate information.