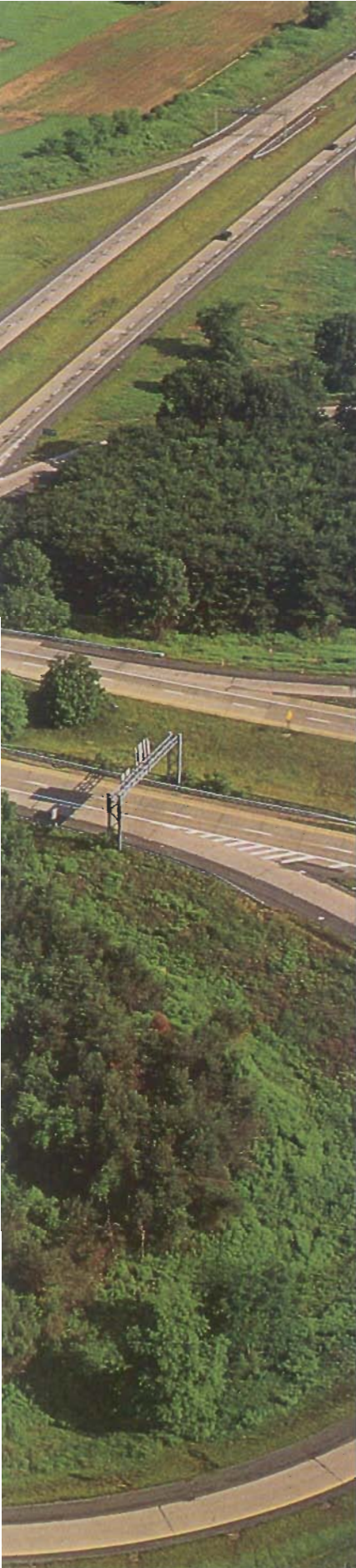




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CHAPTER 11

Driving Environments

Whether you drive on a quiet country road or a busy four-lane highway, you must be alert to an increase in the level of risk. Learning how to manage visibility, time, and space in different environments will help you minimize risk.

LESSON ONE

Managing Visibility, Time, and Space

LESSON TWO

Visibility, Time, and Space on Urban Streets

LESSON THREE

Visibility, Time, and Space on Rural Roads

LESSON FOUR

Visibility, Time, and Space on Multiple-Lane Highways

OBJECTIVES

1. Describe how to manage visibility as a driver.
2. Describe ways that you can manage time as a driver.
3. Describe how to manage space as a driver.

KEY TERMS

visibility
braking distance
total stopping distance
tailgate

Managing Visibility, Time, and Space

Whenever you drive, the risk of collision is **always present**. However, you can minimize that risk by learning to manage **visibility, time, and space**.

As you read about visibility, time, and space, **keep in mind that** they are closely related. To become a **safe driver**, you **must understand** how visibility, time, and space work together in all driving situations.

How Can You Manage Visibility?

Visibility refers to your ability to **see and to be seen** by other roadway users. You can take specific actions to **maximize visibility** both before you begin driving and once you are on the road.

Advance Preparations

Take these steps to manage visibility **before you begin driving**.

- Clear and clean the inside and outside of your **vehicle windows**.
- Make sure all vehicle lights are **clean and in good working order**.
- Make sure your defroster and windshield wipers and washer work properly.
- Adjust rearview and sideview mirrors for **maximum visibility**. Also adjust the driver's seat properly.
- Obtain and keep handy any items you might need to improve visibility, such as sunglasses, a flashlight, and a windshield scraper.
- Remove obstructions inside the vehicle, such as ornaments that hang from the rearview mirror or packages that **block your view**.

Behind-the-Wheel Actions

The first step in making your vehicle **more visible** while you are driving is to turn on your headlights whenever you **drive, day or night**. Driving with your low beams on in daylight **makes your vehicle visible** to drivers and pedestrians more than **2,200 feet** sooner than it would be with no headlights.

Maximize your visibility to other roadway users **by signaling your intentions** well in advance. Also avoid driving in **another driver's blind spot**.

To help ensure your ability to see the roadway, **always wear glasses** or contact lenses if you need them. To shield your eyes from glare, put on sunglasses or use your sun visors.

♦ *To reduce risk and manage visibility, clean your headlights regularly.*



How Can You Manage Time?

By managing time wisely, you increase your control over driving situations and help reduce risk. Decreasing or increasing your vehicle's speed, for instance, can enable you to avoid colliding with other vehicles or a pedestrian.

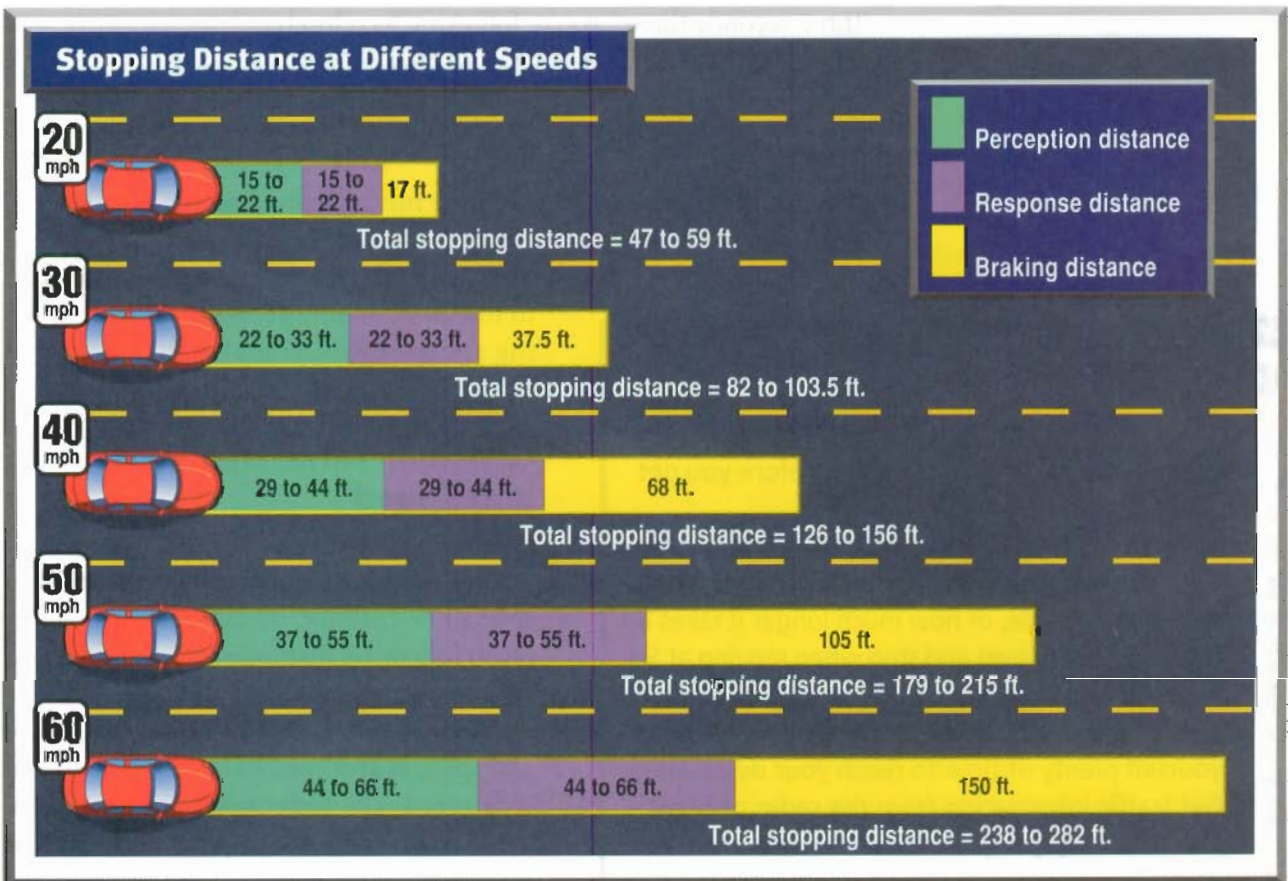
To manage time effectively while driving, always keep in mind that time, speed, and distance are closely linked. For example, the amount of time and distance you need to stop your vehicle increases with your speed. Similarly, the time and distance required to pass depends on how fast your vehicle and the other vehicle are traveling.

Initial driver reaction time to a roadway problem, once the problem is spotted, is generally one-half to three-fourths of a second. During that time, your vehicle continues to move forward. The **braking distance** is the distance your vehicle travels until it stops, after you apply your brakes. **Total stopping distance** includes the distance traveled from the moment you recognize and respond to a problem plus the braking distance.



◆ *Drive with your low-beams on, even in the daytime, to enable other drivers to see you better.*

◆ *Stopping distance depends on many factors, including the size of your car, the condition of the road, and the car's speed.*



FYI

Dirty headlights limit visibility. Road grime on the headlights can reduce illumination as much as 90 percent.

In Chapter 1 you learned how you can use the SIPDE process to reduce risk. By helping you identify threatening objects or conditions as early as possible, the SIPDE process maximizes the amount of time available for you to take whatever evasive action may be required.

Here are some guidelines for managing time. Note how managing time and space, and distance are the same.

Search ahead 20 to 30 seconds as you drive for information that can help you select a safe path of travel. Twenty to 30 seconds equals about 1½ to 2 blocks at 25 to 30 mph in the city, and about ½ mile at 50 to 65 mph on the highway.

Identify objects or conditions within 12 to 15 seconds ahead that could increase the level of risk. Objects or conditions 12 to 15 seconds ahead are at a distance equal to about 1 city block or ¼ mile when you're on the highway.

Keep a minimum 3-second following distance between your vehicle and the vehicle ahead. You need at least 3 seconds to steer evasively. To figure the distance between your vehicle and the vehicle ahead, notice when the rear of the vehicle ahead passes a fixed point, such as a sign or tree. Count "one-second-one, two-seconds-two, three-seconds-three." If the front of your vehicle passes the point before you finish counting "three-seconds-three," you're following too closely.

How Can You Manage Space?

Managing space when you drive means managing the distance between your vehicle and the vehicles ahead, behind, and to the sides.

Your goal is to allow yourself enough space to maneuver safely at all times. By managing space wisely, you also increase your ability to see and be seen.

TIPS

FOR NEW DRIVERS

Managing Time

Effective time management begins before you get behind the wheel. Here are some tips.

- **Make a conscious effort to understand and learn to judge time and speed factors.** Try to develop a sense, for example, of how much longer it takes a vehicle to slow down and stop when moving at 50 mph than at 20 mph.
- **Plan your route in advance, and always allow yourself plenty of time to reach your destination.**
- **Get traffic information from the radio or other source to help you plan the best route of travel.**

Consider Time, Distance, and Speed

In learning to manage time, you have already learned a great deal about managing space. For example, by maintaining a minimum following distance of 3 seconds, you are managing both time *and* space.

The close link between managing time and space is also clear in terms of your vehicle's speed. The faster you're traveling, the more time *and* distance you need to brake to a stop.

In fact, if you double your speed, you need *four* times the distance to brake to a stop. Moving at 30 mph on a dry road after you apply the brakes, for instance, you need about 37.5 feet to stop. At 60 mph, however, you need at least 150 feet (4×37.5). In mathematical terms, the braking distance increase (in feet) equals the square of the increase in speed.

Assess and Adjust the Space Around Your Vehicle

Having ample space around your vehicle gives you time to observe, think, decide, and act or react. By adjusting your vehicle's position to maintain a safe margin of space, you can generally avoid the need to brake, accelerate, or swerve suddenly. A cushion of space also gives you room to steer in case of emergency.

Here are some guidelines for managing space.

Adjust your following distance as needed. Leave at least 3 seconds distance between your vehicle and the one ahead. Leave 4 to 5 seconds at speeds of 40 mph or more plus another 5 to 6 seconds if the road is slippery or you're behind a vehicle that blocks your view.

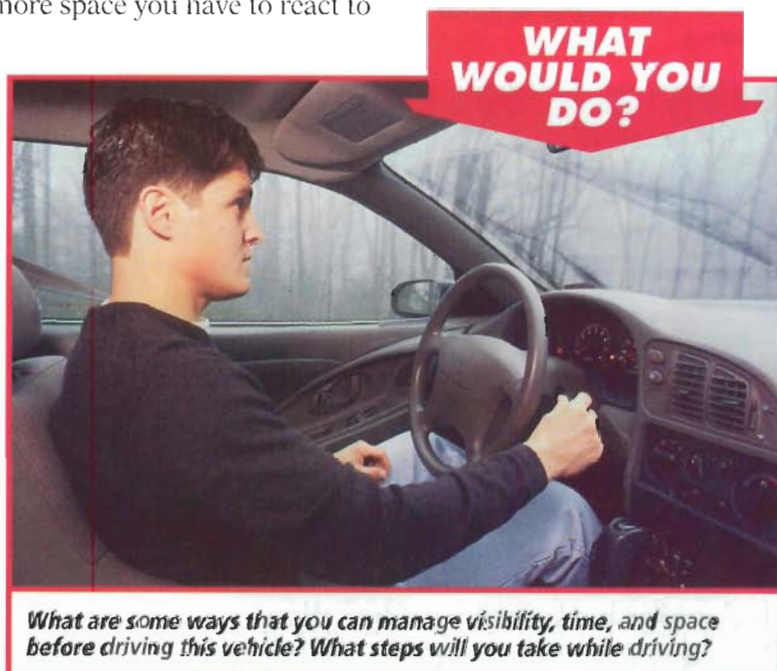
Try to keep a 3-second distance behind your vehicle. Distance behind your vehicle is the hardest to maintain because other vehicles may **tailgate**, or follow too closely. If you are being tailgated, *increase*—do *not* decrease—the space between you and the vehicle ahead to make up for the lack of space behind you. If possible, let the tailgater pass.

Whenever possible, try to keep as much as 8 feet on either side of you. At the very least, keep a vehicle's width to one side of you. The more room you have around your vehicle, the more space you have to react to threatening situations.

If there is insufficient space ahead, behind, or to the side of your vehicle, take prompt action to increase the space. For example, if you're boxed in by vehicles, adjust your speed to move away from the pack.

Lesson 1 Review

1. In what ways can you manage visibility while driving?
2. How can you manage time while driving?
3. What actions can you take to manage space when you drive?



OBJECTIVES

1. Describe the special factors that affect driving on city streets.
2. List ways to manage visibility, time, and space when driving in the city.

SAFETY TIPS

Never speed up to “beat” a changing traffic signal. If an impatient driver accelerates into the intersection just as the red light turns green, your vehicles will collide.

◆ *City streets, crowded with vehicles and pedestrians, demand an extra degree of driver alertness.*

Visibility, Time, and Space on Urban Streets

The hustle and bustle of city streets can make driving a real challenge, especially for new drivers. By understanding the factors that affect driving in the city and by managing visibility, time, and space effectively, you can meet the demands of urban driving.

What Special Factors Affect City Driving?

Cities can be hectic places. Pedestrians fill the sidewalks and cross the street at any time, while cars, buses, and other vehicles crowd the streets. Double-parked vehicles often block visibility, and potholes may interrupt traffic flow.

Traffic Density

In city traffic, you will generally be driving among many more vehicles than you will in suburban or highway driving. The traffic is dense and often slow moving, and threatening situations can occur more frequently. Maintaining a margin of space around your vehicle can be difficult.

Number of Pedestrians

At times, large cities seem to overflow with people: workers, shoppers, children, and others. Expect to encounter pedestrians anywhere and everywhere. Never assume that pedestrians will see you or that they will obey traffic rules or signals.

Intersections

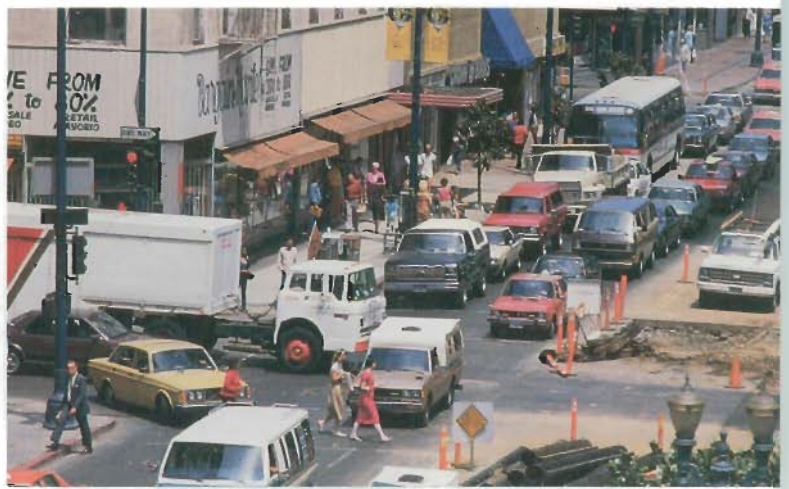
Cities are filled with intersections. In the city, intersections are frequently jammed with both vehicles and pedestrians moving in all directions. When approaching or crossing any intersection, you need to use maximum care.



Slow or Irregular Traffic Flow

On congested city streets, vehicles often move in packs or lines. The movement may be in a steady stream or with frequent starts and stops.

Vehicles stopping to park or parked vehicles pulling away from the curb may interrupt the flow of traffic. Roadwork or construction can also slow traffic. While you may move more slowly than you'd like to when you drive in a city, it is usually dangerous to try to move any faster.



Lower Speed Limits

City speed limits are lower than suburban or highway speed limits. In addition, they may change in different parts of a city.

Sight Obstructions

Several factors tend to limit visibility in city driving. Double-parked vehicles as well as parked vehicles can partially block your view, as can buses, trucks, and vans.

Potholes and Other Road Defects

In cities with heavy traffic, streets take a lot of wear and tear. Potholes and rough surfaces may develop. They slow traffic and pose a potential danger to drivers, pedestrians, and cyclists.

How Can You Manage Visibility, Time, and Space in City Driving?

By knowing the special factors to be alert for when driving in the city, you can manage visibility, time, and space to minimize risk.

Guidelines for Managing Visibility in the City

Here is how you can manage visibility on urban streets.

- Search 1 to 2 blocks, or 20 to 30 seconds, ahead and from one side of the street to the other. Do not focus on any one object in your path.
- Keep your low-beam headlights on at all times.
- Check your rearview and sideview mirrors to monitor traffic every time you approach an intersection or when you intend to slow or stop.
- Signal your intention to turn or pull over well ahead of time.

◆ Congested city streets severely limit your ability to search ahead and manage time and space.

Energy Tips

Avoid “jackrabbit” starts when traffic signals first turn green. Search the intersection before proceeding on a fresh green light. Accelerating gradually saves fuel—and is safer.



◆ *In the city, search carefully for pedestrians, cyclists, and other cars at intersections. Before entering an intersection, make sure nothing is blocking your intended path of travel.*

- Keep alert to the movement of vehicles four or five vehicles ahead of you so that you can anticipate when other drivers are braking or planning to turn. However, always be prepared for unexpected stops or turns.
- Be alert for pedestrians darting out from between parked vehicles or crossing streets illegally.
- Be on the lookout for warning signs and signals. Also be alert for the sirens and flashing lights of police vehicles, ambulances, fire engines, and other emergency vehicles.

- Be aware of entrances and exits for apartment buildings, parking lots, and the like. Often they are not visible until the last moment.

TIPS FOR NEW DRIVERS

Problem Behavior

When you search the roadway, observe the behavior of other drivers for clues to potential problems. Watch for drivers:

- taking their eyes off the road while talking with others.
- using cellular phones.
- smoking, eating, reading, or looking at a map.
- with unusual postures at the wheel, which may indicate intoxication.
- signaling late or not at all.
- moving too slowly or too rapidly or following too closely (tailgating).
- drifting from side to side in their lane.
- whose view may be obstructed by packages, other objects, or tall passengers.
- with **out-of-state** license plates, who may be searching for an **address** or unaccustomed to driving in your area.

Guidelines for Managing Time in the City

Follow these guidelines for managing time while driving in the city.

- Drive at a moderate speed. Use the SIPDE process to help you identify objects or conditions that could increase the level of risk, particularly as you approach intersections.
- Dense traffic makes some drivers tense and impatient—and sometimes reckless. Always be ready to stop or steer to avoid a collision.
- Often braking is the only response you can make in city traffic to avoid a collision. When you spot a possible threatening condition but are not sure if you'll have to stop, take your

foot off the accelerator and place it just over the brake pedal without pushing down. By “covering the brake” in this manner, you reduce reaction time if you need to slow or stop.

- To give drivers and pedestrians maximum time to see and react to you, drive with your low-beam headlights on, and always signal your intentions well in advance.
- Give yourself extra time for driving in city traffic, particularly during rush hours and other busy periods. Know what route you’ll be traveling, and listen to the radio for traffic information before setting out.

Guidelines for Managing Space in the City

Use these guidelines to manage space in city traffic.

- Do not follow other vehicles too closely, even in bumper-to-bumper traffic. Never follow less than 2 seconds behind.
- When stopping behind a vehicle, stop well back—20 to 30 feet—and watch the rearview mirror until two or three vehicles have stopped behind you. Then you can move up slightly. Always leave extra space in front in case the vehicle ahead stops suddenly or you have to steer out of your lane to avoid being struck from the rear. Wait for the vehicle ahead to move before you start moving forward.
- Keep as wide a margin of space as possible between your vehicle and parked vehicles. Watch for people leaving parked vehicles and for vehicles pulling out suddenly.
- Avoid driving in the blind spot of other vehicles on multiple-lane streets. Either move ahead of the other vehicles or drop back.
- Keep as much space as you can between your vehicle and vehicles in the oncoming lanes.

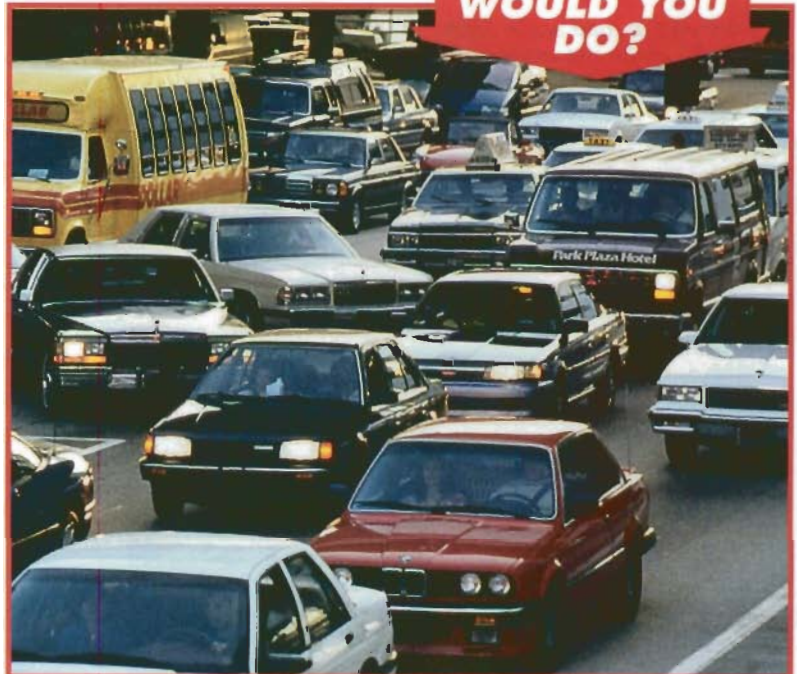
Lesson 2 Review

1. What are some special factors that affect city driving?
2. What actions can you take to manage visibility, time, and space when you are driving in the city?

SAFETY TIPS

Rear-end crashes are more common than any other kind. Leave enough following distance. Too often drivers follow more closely than they should and are unable to stop in time. The increased chance of being struck in the rear while driving in the city makes it all the more important to monitor your mirrors effectively.

WHAT WOULD YOU DO?



You are driving through the city during rush hour. What steps will you take to manage visibility, time, and space?

OBJECTIVES

1. Describe the special factors that affect driving on rural roads.
2. List ways to manage visibility, time, and space when driving on rural roads.

Visibility, Time, and Space on Rural Roads

Country driving often seems easier than city driving. Traffic is generally lighter, and there are fewer pedestrians and not as many distractions. However, driving in rural areas poses a special challenge. A majority of occupant fatalities occur on country roads.

What Special Factors Affect Driving on Rural Roads?

When driving on rural roads, be especially alert for off-road conditions that limit your ability to see or maneuver.

Road Conditions

Many rural roads are two-lane, two-way roadways. Curves may be sharper and hills may be steeper than on many city streets. Roads may have concrete, asphalt, gravel, or dirt surfaces, with or without a shoulder. Many rural roads may even have drainage ditches close to both sides. At night, most rural roads are poorly lit—or not lit at all. Drivers must exercise special care, for example, when passing other vehicles and when driving on loose, low-traction road surfaces.

◆ *Snow on the road and a ditch alongside make maneuvering on this roadway difficult.*



Higher Speed, Fewer Controls

Sound judgment is more important than ever when driving in rural areas. Country roads typically have higher speed limits than city streets. You'll encounter fewer traffic lights and stop signs. At railroad crossings, there may be no signs, signals, or gates. Drivers must remain alert for traffic crossing the roadway.

Slow-Moving Vehicles

Tractors and other farm vehicles travel at much slower speeds than other vehicles. As a result, drivers on rural roads often have to pass such slow-moving vehicles. Some farm

vehicles, such as harvesters, are very wide, limiting the visibility of following drivers and making passing extremely difficult, if not impossible.

Sight Obstructions

Trees, bushes, and tall crops growing close by the road all limit visibility for drivers on country roads. These obstructions can make driving even more challenging on narrow, winding, or sharply curving roads.

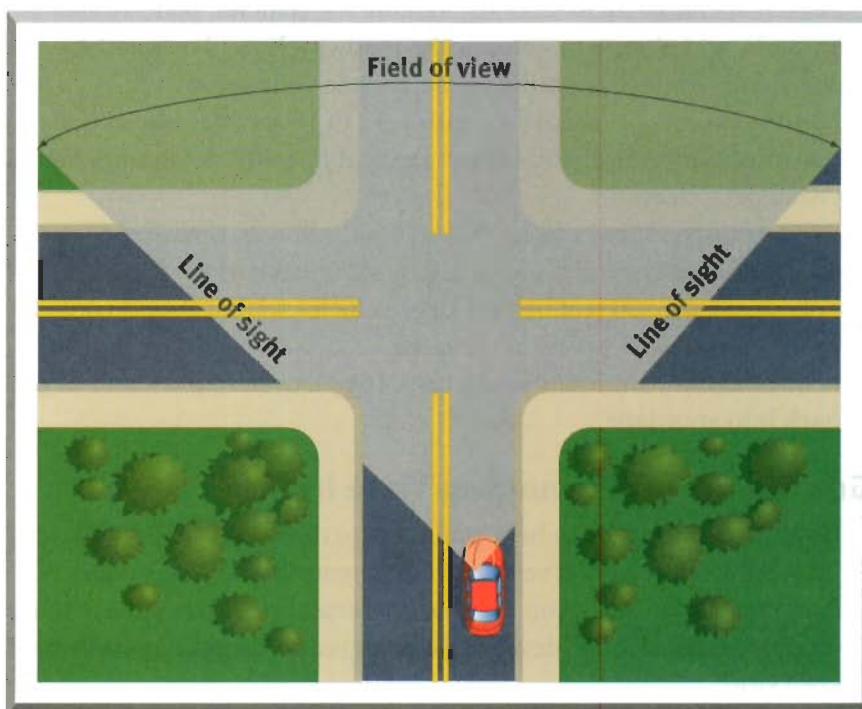
Hills, too, can reduce visibility. As you near the top of a hill, your view of the road ahead will be limited. The steeper the grade, the less you can see.

Animals and Objects on the Road

Deer, raccoons, cows, and other animals, both wild and domestic, frequently cross rural roads. To learn more about the very real dangers posed by animals on the roadway, see Chapter 13. Other possible threatening conditions on rural roads include fallen rocks, tree branches, and wet leaves.



◆ You may encounter slow-moving vehicles more frequently in rural areas.



SAFETY TIPS

Search the roadway and off-road area ahead. If you see a rider on horseback, reduce your speed and pass slowly, giving horse and rider as much leeway as possible. Never sound your horn to warn of your approach.

◆ Trees close to the road limit visibility. To have a wider field of view, the driver must move closer to the intersection.



How Can You Manage Visibility, Time, and Space in Rural Driving?

Because of less traffic, many drivers are less attentive when driving on rural roads than on city streets. You must remain fully attentive at all times. Just as you would while driving on city streets, use the SIPDE process, and be ready to deal with the unexpected. More than 50 percent of occupant fatalities on rural roads and highways involve only one vehicle. The driver drifts or steers off the road and loses control.

◆ When driving on low-traction roadways, lower your speed to manage risk.

SAFETY TIPS

Do not underestimate the risks of rural driving. In the city, there is a greater danger of colliding with another vehicle. In the country, there is a greater chance of your vehicle going out of control and colliding with a fixed object or overturning. Drive cautiously at all times. Use low-beam headlights during daylight hours to make it easier for other vehicles to see you when trees and brush block visibility.

Guidelines for Managing Visibility in Rural Areas

Here are some guidelines to help you manage visibility on country roads.

- During the day, always drive with low-beam headlights on. Use high beams at night on very dark roads when there are no other vehicles around.
- Search ahead 20 to 30 seconds, looking for vehicles, pedestrians, animals, and objects on or near the roadway. If road or weather conditions limit your ability to see, reduce your speed.
- Identify objects or conditions within 12 to 15 seconds ahead that may pose a danger. If you cannot see that far, slow down until your visual path clears.
- Drive at a speed that will let you respond safely to threatening conditions that may be just over a hill or around a curve.
- Follow at least 200 feet behind large vehicles so that they do not block your view of potential dangers.
- Always signal your intention to turn, to pull over, to pass, and to get back into your lane.

Guidelines for Managing Time in Rural Areas

Use these guidelines to help you manage time on rural roads.

- Watch for slow-moving vehicles. Adjust your speed as needed.
- Reduce your speed as you approach intersections, particularly those without traffic control devices. Be prepared to slow down further or even stop.

- Allow extra time for driving on unfamiliar roads. Plan your route in advance.
- Reduce your **speed when driving** on gravel, dirt, or other low-traction road surfaces.
- When **approaching or passing an animal on or near the road**, drive slowly in case the **animal bolts across your path**.

Guidelines for Managing Space in Rural Areas

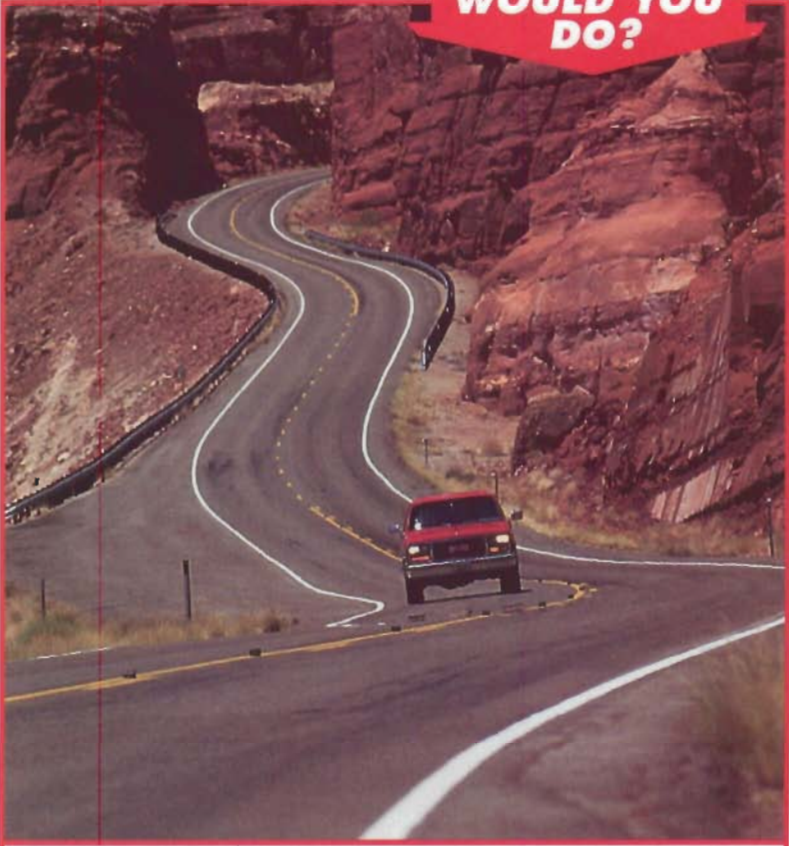
Follow these guidelines for managing space on rural roads.

- Adjust following distance for **speed, traffic, roadway, and off-road conditions** that affect your **ability to see**. **Identify an escape path** to which you can steer.
- If a vehicle is tailgating you, give it as much space as possible to pass and pull in front of you. If there is a vehicle ahead of you, increase your following distance.
- On two-lane roads, keep as much space as possible between your vehicle and oncoming traffic.
- **Never pass** on curves or hills when you do not have a clear path ahead in which to complete the pass.
- As you search the road for vehicles, animals, or objects that could threaten your safety, weigh the consequences of acting to avoid the threat against the danger of collision.

Lesson 3 Review

1. What are some special factors that affect rural driving?
2. What actions can you take to manage visibility, time, and space when you drive on rural roads?

WHAT WOULD YOU DO?



You are traveling on a two-way hilly road that has many sharp curves. What special factors affect visibility? What are some ways to manage time and space?

OBJECTIVES

1. Describe the special factors that affect driving on multiple-lane and limited-access highways.
2. List ways to manage visibility, time, and space when driving on multiple-lane and limited-access highways.

KEY TERMS

limited-access highway
interchange

Visibility, Time, and Space on Multiple-Lane Highways

Traveling on multiple-lane highways and expressways is usually faster than traveling on local roads. Driving at higher speeds is demanding, however. You need to concentrate fully in order to manage visibility, time, and space.

This section focuses on expressways and other multiple-lane and limited-access highways, including freeways, interstate highways, parkways, and turnpikes and other toll roads. **Limited-access** or controlled-access **highways** allow vehicles to enter and exit only at specific places.

What Special Factors Affect Driving on Multiple-Lane Highways?

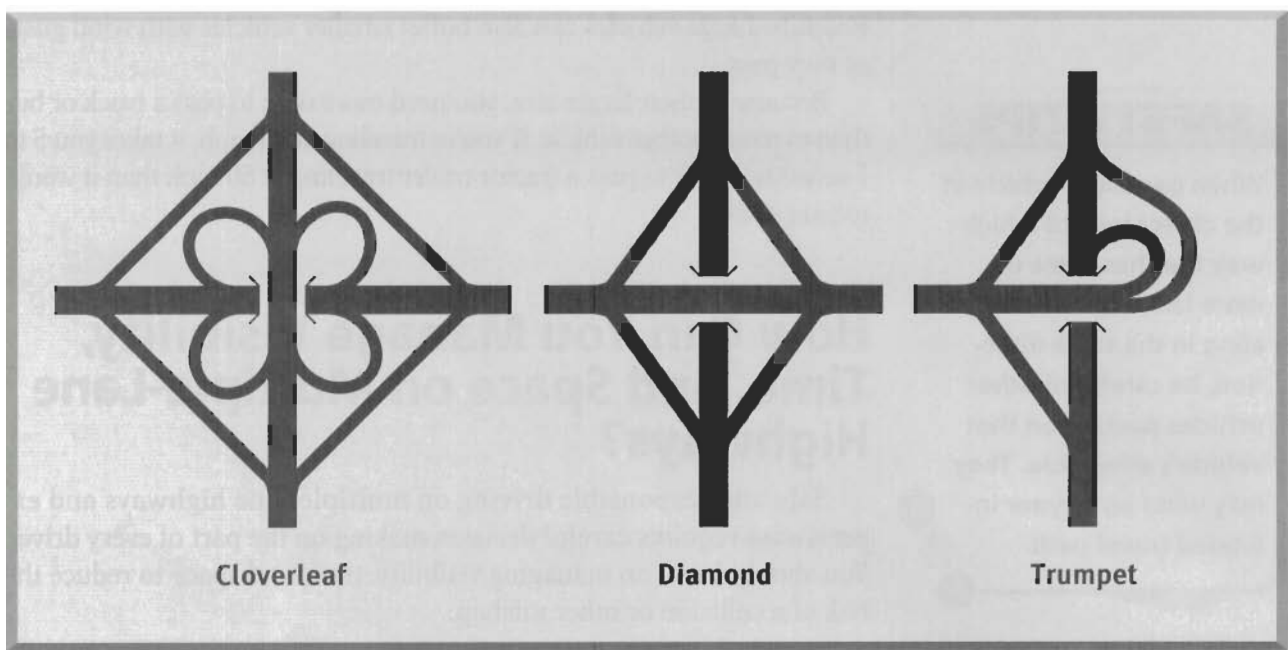
Driving on an expressway or other high-speed roadway is quite different from driving on urban streets or rural roads. There are usually two or more lanes of traffic moving in the same direction. Cars, trucks, buses and other vehicles pass you at high speeds. The scenery seems to whiz by—along with route **markers** and other road **signs** containing all sorts of information.

◆ *Traveling on multiple-lane, high-speed highways poses special challenges for the driver.*



Higher Speed Limits

Expressway speed limits are always higher than those on city streets and most rural roads. Higher speeds mean that drivers must manage time and space with particular care when following and passing vehicles, changing lanes, and reducing speed. High-speed collisions result in more damage and serious injuries than those occurring at lower speeds.



Limited Entrances and Exits

Entrance and exit ramps on limited-access highways may be many miles apart. Entrances and exits are usually made from the extreme right-hand lane. However, there are entrance and exit ramps located in the extreme left-hand lane.

Signs posted along the highway tell drivers when they are approaching an exit or interchange. Interchanges are points where you can enter or leave the expressway or connect with a highway going in another direction.

Interchanges are made up of through lanes, ramps, and speed-change lanes. Ramps are short, one-way roads connecting two highways. Speed limits on ramps typically range from 25 to 45 mph. Speed-change lanes are short lanes next to the main travel lanes of a highway. A deceleration lane allows vehicles to reduce speed to exit; an acceleration lane lets vehicles increase speed to merge with traffic.

Frequent Passing

Passing other vehicles and having other vehicles pass you is an integral part of driving on multiple-lane highways. Depending on the roadway and on your lane position and speed, you may find yourself being passed on your left, on your right, or on both sides simultaneously.

Trucks and Other Large Vehicles

Trucks, tractor-trailers, buses, and other large vehicles add additional challenges to driving on multiple-lane highways because they hamper

◆ Three common interchange designs are the cloverleaf, the diamond, and the trumpet.

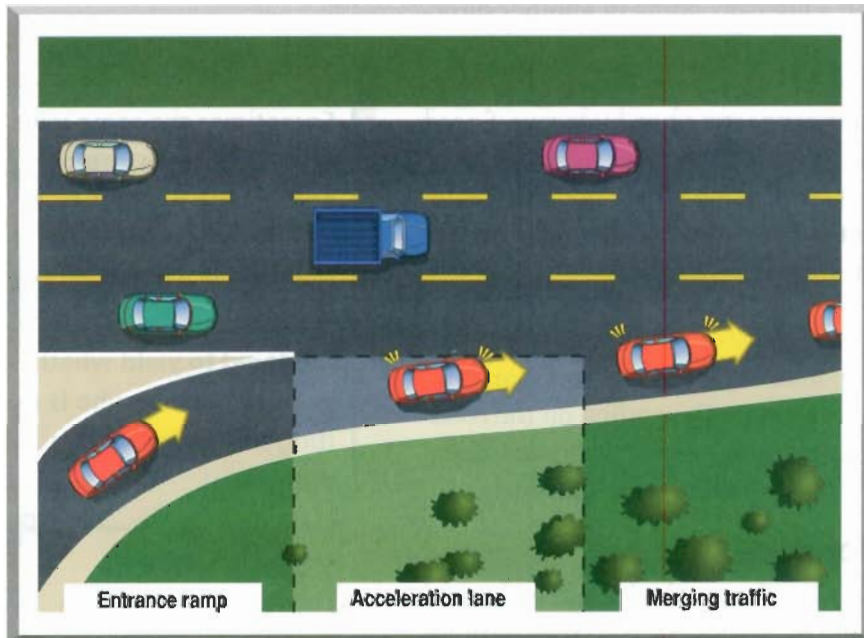
SAFETY TIPS

Sometimes the same lane is used for both entering and exiting a highway. It may be less risky to let the vehicle getting on the highway go first, but be prepared to yield whether you are the one who is exiting or the one who is entering.

SAFETY TIPS

When passing a vehicle in the center lane of a highway that has three or more lanes of traffic traveling in the same direction, be careful of other vehicles passing on that vehicle's other side. They may wind up in your intended travel path.

◆ Always signal while still in the acceleration lane and before merging into highway traffic.



visibility. Large vehicles can also buffet smaller vehicles with wind gusts as they pass.

Because of their larger size, you need more time to pass a truck or bus than to pass another vehicle. If you're traveling at 60 mph, it takes you 5 to 7 seconds longer to pass a tractor-trailer traveling at 50 mph than it would to pass a car.

How Can You Manage Visibility, Time, and Space on Multiple-Lane Highways?

Safe and responsible driving on multiple-lane highways and expressways requires careful decision making on the part of every driver. You should focus on managing visibility, time, and space to reduce the risk of a collision or other mishap.

Guidelines for Managing Visibility on Highways

Here are some guidelines for managing visibility on multiple-lane and limited-access highways.

- Search 20 to 30 seconds ahead for vehicles, objects, animals, and even pedestrians on or near the roadway.
- Be alert for the dangers of entrances and exits. Drivers may merge too slowly or without looking or cut across lanes at the last moment.
 - Check your rearview and sideview mirrors frequently to monitor the position of traffic around you, especially before changing lanes or exiting a highway.
 - Always signal your intention to change lanes, merge, or exit well in advance of the move.
 - Drive with your low beams on at all times. Use your high beams on very dark highways, but only when there are no other vehicles around.

- Check the movement of vehicles several vehicles ahead to know when other drivers are slowing down or planning to pass or change lanes.
- Position your vehicle so that large vehicles do not block your view of the roadway ahead or to the sides.
- Look for road signs to learn what the speed limit is and to know when your exit is approaching and which side it is on.

Guidelines for Managing Time on Highways

Use these guidelines to help you manage time on highways.

- Use the SIPDE process to help you identify threatening conditions within 12 to 15 seconds ahead.
- Always adjust your speed and following distance so that you have at least 4 to 5 seconds to stop or steer evasively in case of an emergency.
- When you merge into traffic, try to enter the stream of vehicles at the speed they are traveling.
- When exiting an expressway, move over toward the exit lane as soon as you can. Wait until you're actually in the exit lane before reducing your speed.
- Adjust your speed to avoid traveling in packs of vehicles.
- Watch for vehicles that may have trouble keeping up with the speed of traffic. Adjust your speed or position in advance.
- Plan your route ahead of time. Know which highways you'll be traveling on and where to exit.
- Avoid driving on congested highways during peak traffic periods or in bad weather. Listen to the radio for roadway information before starting out. Allow extra time if you must drive.

Guidelines for Managing Space on Highways

Follow these guidelines to manage space on multiple-lane and limited-access roadways.

- Adjust your vehicle's position for the speed that you and other drivers are traveling and for road and weather conditions. Allow yourself a margin of space to accelerate, brake, and steer.
- Allow yourself a gap of at least 4 seconds when merging with other traffic, changing lanes, or entering an expressway from an entrance lane.
- To change lanes, turn the steering wheel slightly. Oversteering, or steering too sharply into another lane, can lead to loss of control at higher speeds.
- If you must cross several lanes, move over one lane at a time, signaling each time.

SAFETY TIPS

There may be more lanes at toll plazas than on the highway itself. Choose a lane with a green signal well in advance and stay in that lane. Be especially alert to drivers ahead of you who switch lanes suddenly.

SAFETY TIPS

At highway speeds of 40 to 65 mph, you'll need at least 4 to 5 seconds to react to a threatening situation and brake your vehicle to a stop. Therefore, you must be able to see ahead at all times an absolute minimum of 4 to 5 seconds. Furthermore, if a vehicle is tailgating you or a large vehicle is behind you, you should identify an escape path for evasive steering. Too often such vehicles cannot stop in time to avoid rear-ending the smaller vehicle in front of them.

ADVICE FROM THE EXPERTS



Bill Wen

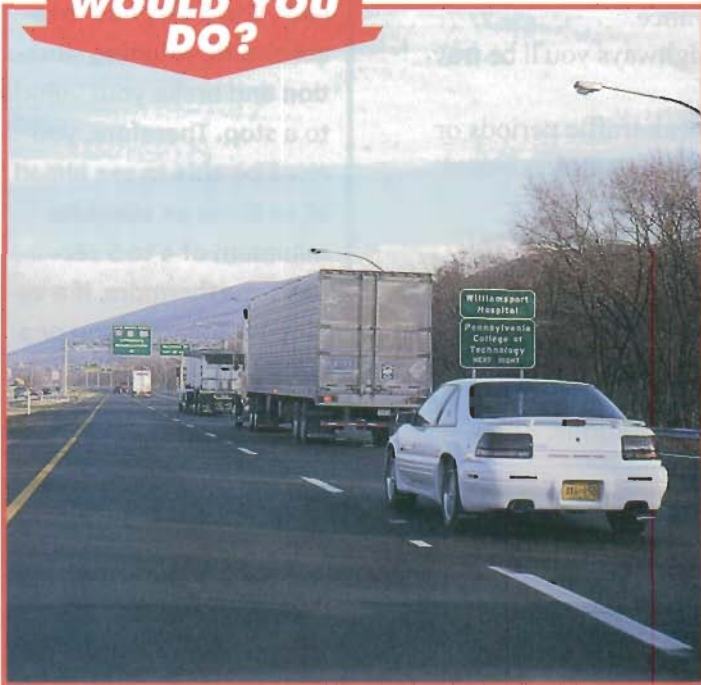
Manager, Driver Training and Professional Development, AAA

Ask yourself three questions while driving: (1) What can I do to reduce the probability of a dangerous event? (2) How can I increase my opportunity to manage a dangerous event should one occur? (3) If a collision is unavoidable, how can I reduce its consequences?

Regardless of the driving environment, the first objective is to prevent a high-risk situation from developing by improving your visibility to others and by giving yourself enough time and space.

- Make room for vehicles entering expressways. If there are no vehicles in the lane next to you, move over a lane as you approach an entrance ramp.
- If a vehicle is tailgating you, change lanes—when it is safe—to let the vehicle pass. In the meantime, increase your following distance behind vehicles ahead.

WHAT WOULD YOU DO?



You are in the left lane of a crowded multiple-lane highway. Suddenly you realize you are approaching your exit, which is all the way over on the right. How will you handle this?

- Never cut in too soon in front of a vehicle you are passing.
- When passing a large truck or other wide vehicle, keep in mind that you have less space to the side between your vehicle and the large vehicle than you do when passing a car.
- Be alert for places where highways may narrow—when approaching tunnels or bridges, for example. Reduce your speed and proceed cautiously.
- When crossing bridges or driving in hills and mountains, be alert for strong crosswinds that can buffet your vehicle.

Lesson 4 Review

1. What factors affect driving on multiple-lane and limited-access highways?
2. What actions can a driver take to manage visibility, time, and space on an expressway?

Names and Meanings of Roadways

A route in a rural area is generally described as a road. A roadway within an urban area is usually called a street. Streets are usually paved and have more traffic, while rural routes are usually less traveled.

The roadways that connect cities and towns have many names, which vary somewhat in meaning. A highway is a main public roadway, especially one that runs between cities. An expressway is a high-speed divided highway with limited access that has more than one lane running in each direction. A freeway, sometimes called a superhighway, is generally a synonym for expressway, but usually refers to a highway that has no tolls.

A turnpike is a road, usually an expressway, that requires drivers to pay a toll. The word "turnpike" comes from early days when travelers on a road stopped at gates made of logs or pikes. When a toll was paid, the pike was opened or turned, allowing the travelers to pass through. A toll road may also be called a tollway.

A beltway is a highway that goes around an urban area. A parkway is a wide, landscaped highway that may be limited to non-commercial vehicles. Except for occasional rest stops, there may be few or no commercial establishments such as stores or office buildings on a parkway.

What Do You Think Now?

What do names and meanings of roadways tell you about the road systems in the United States?



CHAPTER 11 REVIEW

KEY POINTS

Lesson One

1. In addition to making advance preparations, you can manage visibility by keeping your low beams on (even in daylight), signaling intentions well in advance, and avoiding driving in another driver's blind spots.
2. You can manage time by being aware of the link among time, speed, and distance and by using the SIPDE process.
3. You can manage space by allowing enough distance between your vehicle and other vehicles to the front, rear, and sides.

Lesson Two

1. Special factors that affect city driving are traffic density, number of pedestrians, number of intersections, slow or irregular traffic flow, lower speed limits, sight obstructions, and potholes and other road defects.
2. Some ways to manage visibility, time, and space on city streets are to search 1 to 2 blocks ahead, use your mirrors to monitor traffic, signal early, be ready for pedestrians and hidden exits, always be prepared to steer or stop, use the SIPDE process, and keep a margin of space around your vehicle.

Lesson Three

1. Factors that affect driving on rural roads are road conditions, higher speeds, fewer traffic controls, slow-moving vehicles, sight obstructions, and animals and objects on the road.
2. Among the ways to manage visibility, time, and space on rural roads are to identify dangerous objects 12 to 15 seconds ahead, drive slowly if an animal is nearby, avoid passing if your view is not clear, and use the SIPDE process.

Lesson Four

1. Special factors that affect visibility, time, and space on multiple-lane and limited-access highways are higher speed limits, limited entrances and exits, frequent passing, and the presence of trucks and other large vehicles.
2. Some ways to manage visibility, time, and space on multiple-lane and limited-access highways are to use the SIPDE process, signal when changing lanes, position your vehicle so that you can see and be seen, adjust your speed to avoid traveling in packs, and plan your route ahead of time.

PROJECTS

1. Use a road map to plan a trip from one city to another. List the highways you would travel on, and the numbers of the exits you would use. Take the trip as a driver or passenger, and compare the accuracy of your plan to what you actually experience on the trip.
2. Compare city driving and driving on a rural road. Observe differences in road surfaces, traffic signs and signals, density of traffic, and visibility.

interNET CONNECTION



Use the Web to learn more about stopping distances at different speeds. Investigate how time is related to these total stopping distances.
drivedred.glencoe.com

CHAPTER TEST

Write the letter of the answer that best completes each sentence.

1. A limited-access highway
 - a. allows vehicles to enter or exit only at certain places.
 - b. does not permit trucks or buses.
 - c. has no shoulders.
2. When you spot a threatening traffic condition in city traffic, you should
 - a. shut your windows.
 - b. cover the brake.
 - c. use the total stopping method.
3. One way to manage time and space is to
 - a. drive parallel to other vehicles.
 - b. ride a bicycle.
 - c. maintain a margin of space around your vehicle.
4. Speed limits on country roads are typically
 - a. lower than those on urban roads.
 - b. higher than those on urban roads.
 - c. between 15 and 30 miles per hour.
5. Managing space while you drive means
 - a. managing the distance between your vehicle and vehicles around you.
 - b. reaching your destination safely.
 - c. successfully passing other vehicles on multiple-lane highways.
6. As you near the top of a hill,
 - a. your view of the road ahead is limited.
 - b. your view of the road behind you is limited.
 - c. you should accelerate.
7. When driving on a dirt road, you should
 - a. pull over to the right side.
 - b. increase your speed.
 - c. reduce your speed.
8. The first step in managing visibility while driving is to
 - a. stay away from large obstructions.
 - b. turn on your low-beam headlights.
 - c. look in your blind spots.
9. During urban driving, you should
 - a. look at least 1 block ahead.
 - b. look at least 5 blocks ahead.
 - c. use your high-beam headlights.
10. On multiple-lane highways, passing other vehicles
 - a. should be avoided.
 - b. is an integral part of driving.
 - c. is a method of staying alert.

Write the word or phrase that best completes each sentence.

distance	interchange	expressway
lead time	margin of space	rural road

11. The faster you travel, the more time and _____ you need to come to a stop.
12. Always keep a(n) _____ around your vehicle.
13. A(n) _____ may have drainage ditches alongside of it.
14. A freeway is one example of a(n) _____.
15. A(n) _____ is made up of through lanes, ramps, and speed-change lanes.

DRIVER'S LOG

In this chapter, you have learned about managing visibility, time, and space in different driving environments. Write two paragraphs in response to these questions:

In which driving environment do you think you will have the most difficulty managing visibility, time, and space? What steps will you take to overcome this difficulty?