

CHAPTER 10 OBJECTIVES

LESSON ONE



Managing Visibility, Time, and Space

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.

LESSON TWO



Visibility, Time, and Space on Urban Streets

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

LESSON THREE



Visibility, Time, and Space on Rural Roads

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

LESSON FOUR



Visibility, Time, and Space on Multiple-Lane Highways

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

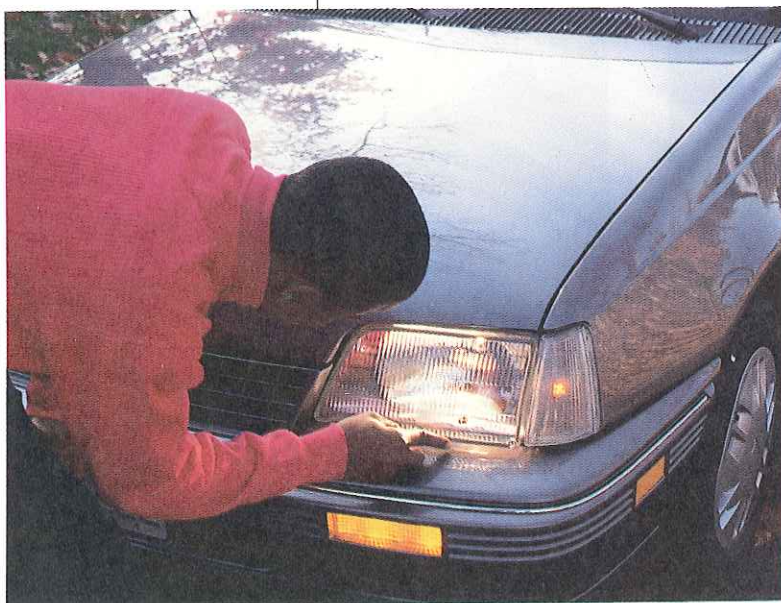
Whenever you drive, the risk of collision is always present. However, you can minimize that risk by learning to manage visibility, time, and space.

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.



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

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



How Can You Manage Visibility?

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

Advance Preparations

Take these steps to manage visibility before you begin driving.

- ◆ Clear and clean the inside and outside of your car windows.
- ◆ Make sure all car lights are clean and in good working order.
- ◆ Make sure your defroster and windshield wipers and washer work properly.
- ◆ Adjust rearview and side-view 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 scraper.
- ◆ Remove obstructions inside the car, such as ornaments that hang from the rearview mirror or packages that block your view.

Behind-the-Wheel Actions

The first step to managing visibility while driving is to turn on your headlights, day or night. Driving with your low beams on in daylight makes your car 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.

How Can You Manage Time?

By managing time wisely, you increase your control over driving situations and help to reduce risk. Decreasing or increasing your car's speed, for instance, can enable you to avoid colliding with a vehicle or 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 car increases with your speed. Similarly, the time and distance required to pass a car depends on how fast your car and the other car are traveling.

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

In Chapter 1 you learned how you can use the SIPDE process to reduce risk. By helping you to 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, or distance, are the same.

Scan 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 $1\frac{1}{2}$ to 2 blocks at 25 to 30 mph in the city, and about one-half mile at 50 to 65 mph on the highway.

Identify objects or conditions within 12 to 15 seconds ahead that

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

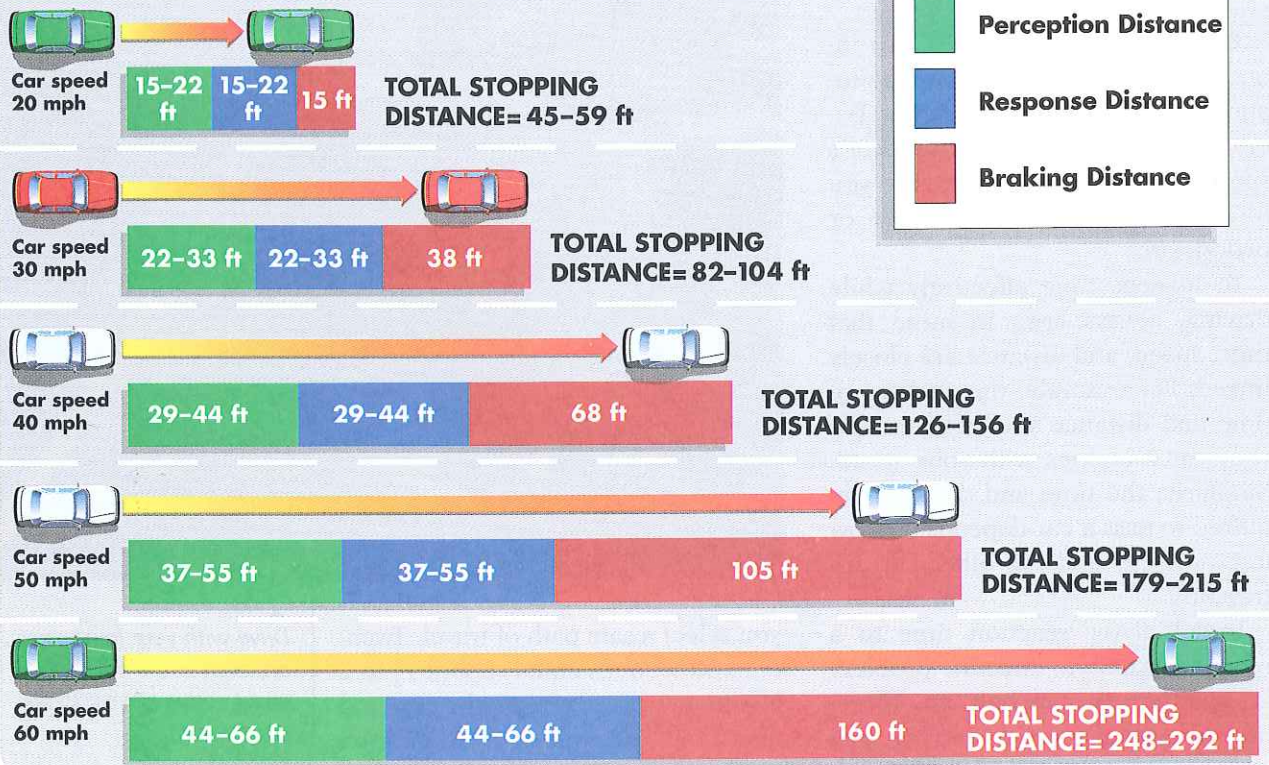
Tips for New Drivers

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 car 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.

STOPPING DISTANCE AT DIFFERENT SPEEDS



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

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 one-quarter mile when you're on the highway.

Keep a minimum 2- to 3-second following distance between your car and the car ahead. You need at least 2 to 3 seconds to steer evasively. To figure the distance between your car and the vehicle ahead, notice when the rear of the vehicle passes a fixed point, such as a sign or tree. Count "one-second-one, two-seconds-two." If the front of your car passes the point before you finish "two-seconds-two," you're following too closely.

How Can You Manage Space?

Managing space when you drive means managing the distance between your car 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.

Consider Time, Distance, and Speed

In learning to manage time, you've already learned a great deal about

managing space. For example, by maintaining a minimum following distance of 2 to 3 seconds, you're managing both time *and* space.

The close link between managing time and space is also clear in terms of your car'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 stop. Moving at 30 mph on a dry road, for instance, you need about 44 feet to stop. At 60 mph, however, you need at least 176 feet (4×44). In mathematical terms, the braking distance increase (in feet) equals the square of the increase in speed.

Assess and Adjust the Space Around Your Car

Having ample space around your car gives you time to observe, think, decide, and act or react. By adjusting your car'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 2 to 3 seconds distance between your car 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 2-second distance behind your car. Distance behind your car is the hardest to maintain because other vehicles may *tailgate*, or follow too closely. If you're being

tailgated, increase—do *not* decrease—the space between you and the car ahead. 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 car's width to one side of you. The more room you have around your car, the more space you have to react to threatening situations.

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

CHECKPOINT

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?



WHAT WOULD YOU DO?

What are some ways you can manage visibility, time, and space before driving this car? What steps would you take while driving?



Avoid “jackrabbit” starts when traffic signals turn green. Accelerating gradually saves fuel—and is safer.

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

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 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 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 occur more frequently. Maintaining a margin of space around your car can be difficult.

Number of Pedestrians

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 typically jammed with both vehicles and pedestrians moving in all directions. When approaching or crossing a city intersection, you need to use maximum care.

Slow or Irregular Traffic Flow

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

Cars stopping to park or parked cars 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. Parked and double-parked vehicles can partially block your view, as can nearby buses, trucks, and vans. Smog and pollution also may reduce your ability to see.

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.

▲ Double-parked cars on urban streets severely limit your ability to scan ahead.

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 are some guidelines to help you manage visibility on urban streets.

- ◆ Scan one to two blocks ahead and from one side of the street to the other. Don't focus on any one object in your path.
- ◆ Keep your low-beam headlights on at all times.



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 cars will collide.

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.

- ◆ Check your rearview and side-view 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.
- ◆ Keep alert to the taillights of 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 ready for pedestrians darting out from between parked cars or crossing streets illegally.
- ◆ Be on the lookout for warning signs and signals. Also be alert for the sirens and flashing lights of police cars, 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.

Guidelines for Managing Time in the City

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

- ◆ Reduce speed. Use the SIPDE process to help you identify threatening conditions early, particularly as you approach intersections.
- ◆ Dense traffic can make 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're ready to slow or stop if you need to.
- ◆ 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.

Tips for New Drivers

Problem Behavior

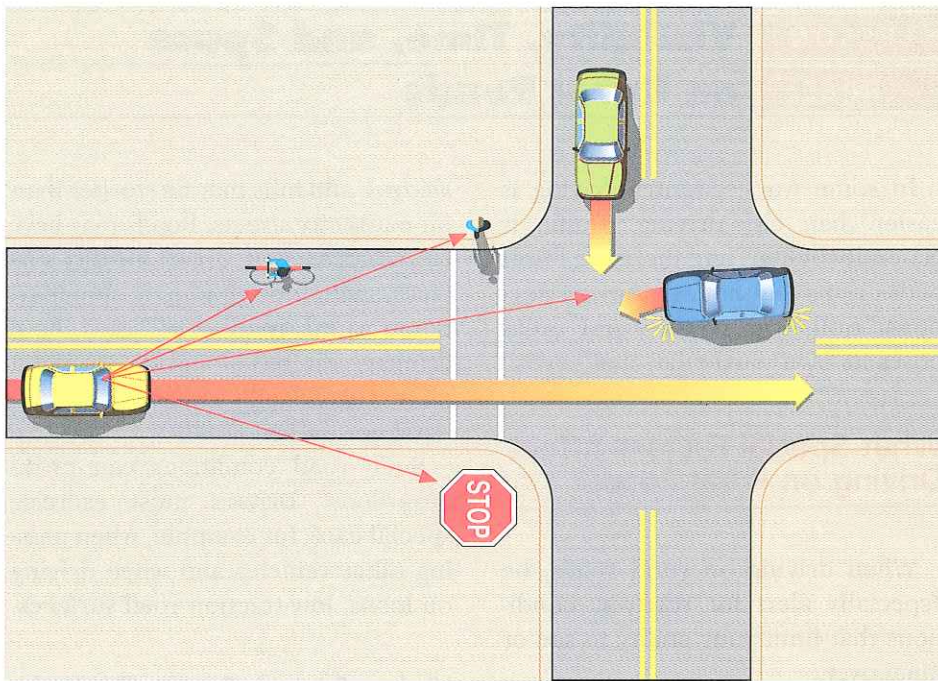
When you scan the roadway, observe the behavior of other drivers for clues to potential problems. Watch for drivers:

- 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, 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 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



◀ In the city, scan carefully for pedestrians, cyclists, and other cars at intersections. Before entering an intersection, make sure no cars or people are blocking your intended path of travel. Otherwise, you may be caught in the intersection when the light changes.

traffic. Never follow less than 2 seconds behind.

◆ When stopping behind a car, stop well back—20 to 30 feet—until two or three cars have stopped behind you. Then you can move up slightly. Always leave an extra margin of space in case the car ahead stops suddenly, or you have to steer out of your lane to avoid being struck from the rear. Wait for the car ahead to move before you start moving forward.

◆ Keep as wide a margin of space as possible between your car and parked cars. Watch for people leaving parked cars and for cars pulling out suddenly.

◆ Avoid driving side-by-side in the blind spot of other cars on multiple-lane streets. Either move ahead of the other cars or drop back.

◆ Keep as much space as you can between your car and vehicles in the oncoming lanes.

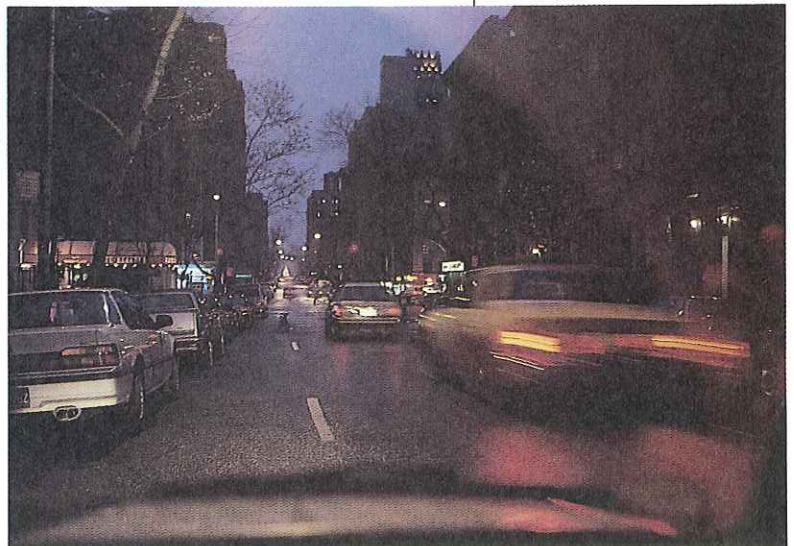
CHECKPOINT

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



WHAT WOULD YOU DO?

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



In some ways, country driving is easier than city driving. Traffic is generally lighter, and there are fewer pedestrians and not as many distractions. Still, driving in rural areas poses its own particular challenges.

What Special Factors Affect Driving on Rural Roads?

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

Road Conditions

Many rural roads are two-lane, two-way roadways. Curves may be

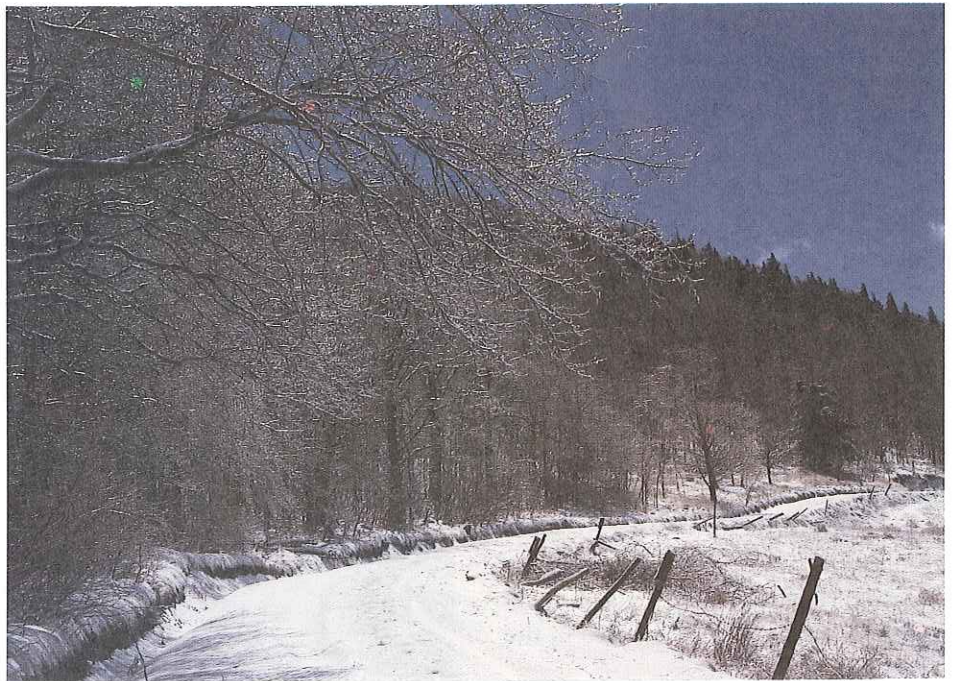
sharper and hills may be steeper than on many city streets. Roads may have concrete, asphalt, gravel, or dirt surfaces, with or without a shoulder. Some rural roads may even have drainage ditches alongside. At night, many rural roads are poorly lighted—or not lighted at all.

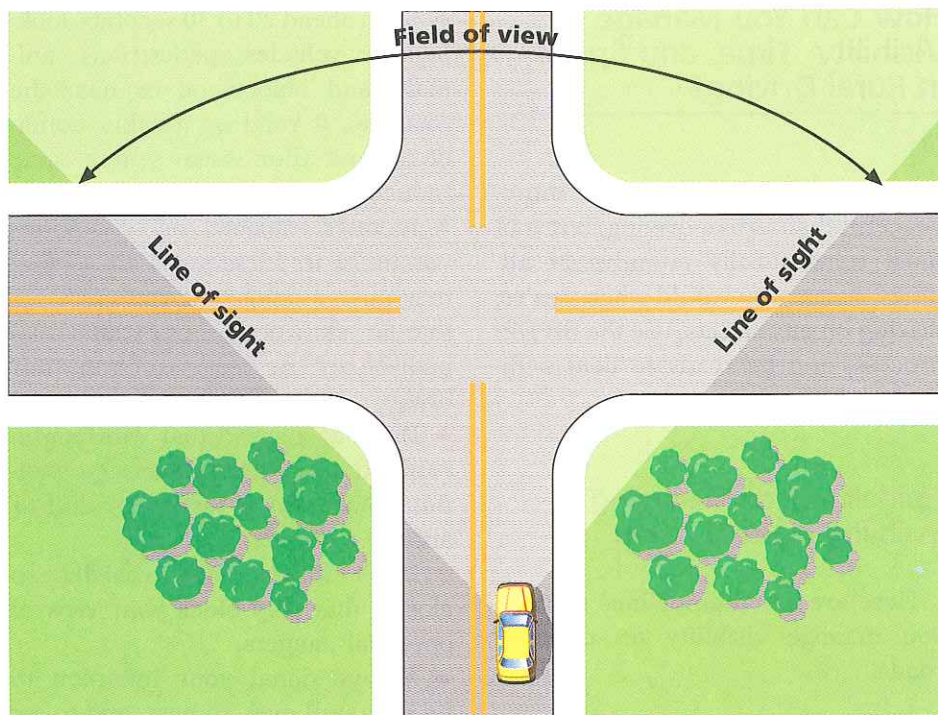
Such road conditions can prove hazardous. Drivers must exercise special care, for example, when passing other vehicles and when driving on loose, low-traction road surfaces.

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.

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





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

Moreover, you'll encounter fewer traffic lights and stop signs on rural roads than on city streets. 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 do not travel at the same speeds as cars do. 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 visi-

bility for drivers on country roads. These obstructions can make driving even more challenging on narrow, winding, or sharply curving roads, many of which are common in rural areas.

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 12. Other possible threatening conditions on rural roads include fallen rocks and tree branches and wet leaves.



Don't 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 car 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.

SAFETY TIPS

Scan 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.

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



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

Rural driving may seem more peaceful than urban driving, but you must remain fully attentive at all times. Just as you would when you're driving on city streets, use the SIPDE process, and be ready to deal with the unexpected.

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 cars around.

- ◆ Scan ahead 20 to 30 seconds, looking for vehicles, pedestrians, animals, and objects on or near the roadway. If road or weather conditions limit your visual search time, reduce your speed.

- ◆ Identify objects or conditions within 12 to 15 seconds ahead that may pose a danger. If you can't see that far, slow down until your visual path clears. Be ready to cover your brake.

- ◆ Drive at a speed that will let you respond safely to threatening conditions that may be just over a hill or around a curve.

- ◆ Don't follow large vehicles so closely that they 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.



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



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?

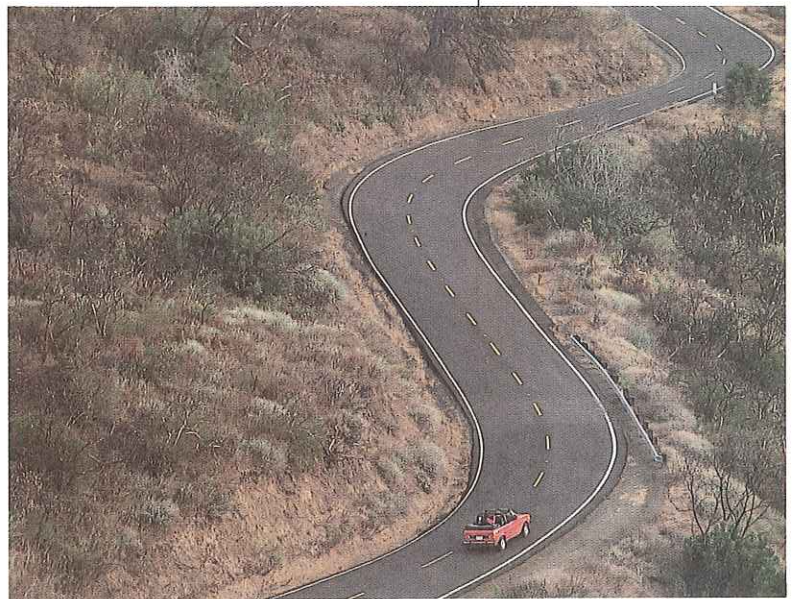
Guidelines for Managing Space in Rural Areas

Follow these guidelines for managing space on rural roads.

- ◆ Adjust following distance for speed, traffic, roadway, and off-road conditions that can affect your ability to see or to steer evasively. Identify an escape path.
- ◆ If a vehicle is tailgating you, give it as much space as possible to pass and pull in front of you. If there's a car ahead of you, increase your following distance.
- ◆ On two-lane roads, keep as much space as possible between your car and oncoming traffic.
- ◆ Never pass on any uphill grade when you don't 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.

CHECKPOINT

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





LESSON **Visibility, Time, and Space on**
FOUR **Multiple-Lane Highways**

S **SAFETY TIPS**

At highway speeds of 40 to 65 mph, you'll need 4 to 5 seconds to react to a threatening situation and brake your car 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 car in front of them.

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

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- or controlled-access* highways allow vehicles to enter and exit only at specific places.

What Special Factors Affect Driving on Multiple-Lane Highways?

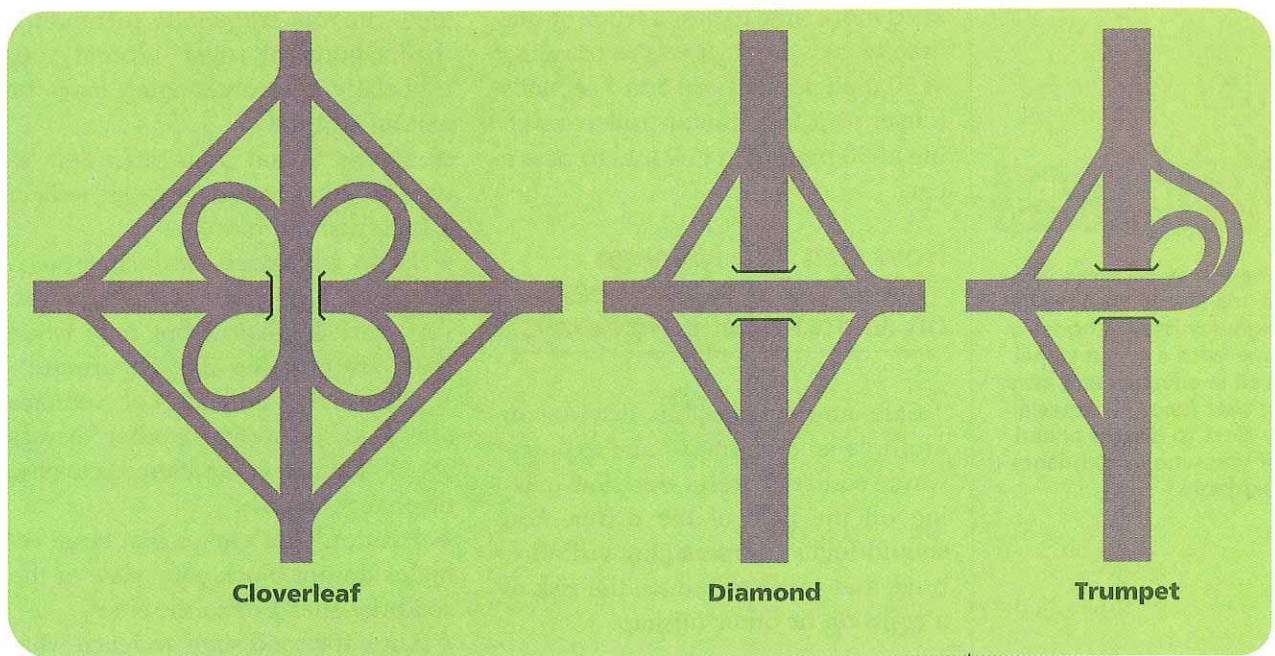
Driving on an expressway or other high-speed road is very different

from driving on urban streets or rural roads. There may be one or more lanes of traffic moving in the same direction that you are. Cars, trucks, and other vehicles zip past you at high speeds. The scenery seems to whiz by—along with route markers and other road signs containing all sorts of information.

Higher Speed Limits

Expressway speed limits are generally higher than those on city streets, or 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 are far more damaging than those occurring at lower speeds.





Limited Entrances and Exits

Entrance and exit ramps on controlled-access highways may be many miles apart. Entrances and exits are usually made from the extreme right-hand lane. However, there are many 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 challenge to driving on multiple-lane highways because they hamper visibility. Large vehicles can also buffet your car with wind gusts as they rumble past.

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



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

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.

Because of their larger size, you need more time to pass a truck or bus than to pass a car. 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 the 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 guidelines for managing visibility on multiple-lane and limited-access highways.

- ◆ Scan 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 can merge too slowly or without looking or cut across lanes at the last moment.

- ◆ Check your rearview and side-view 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 taillights of vehicles ahead to know when other drivers are slowing down or planning to pass or change lanes.
- ◆ Position your car 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's on.

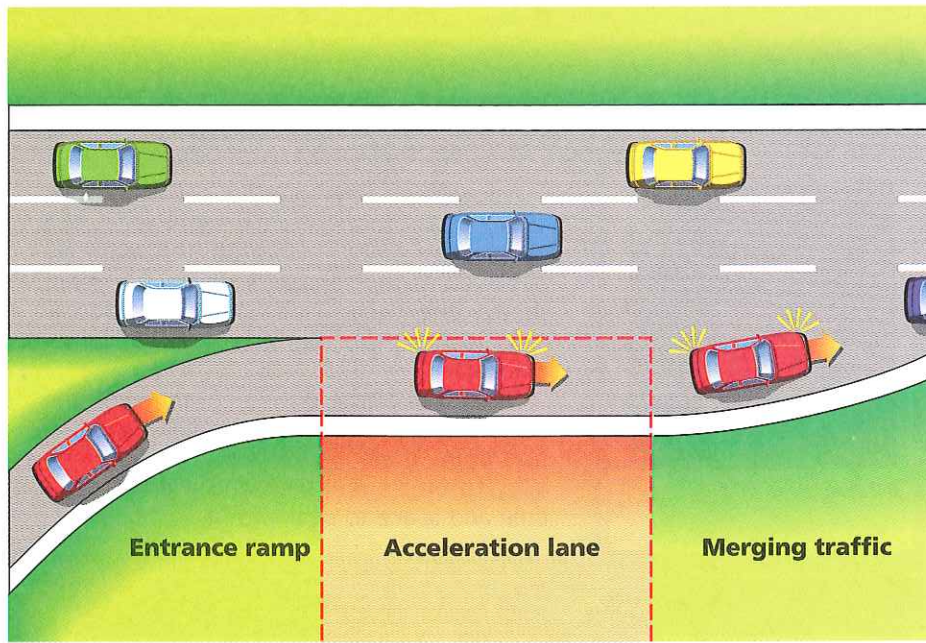
Guidelines for Managing Time on Highways

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 fol-

THE LANGUAGE CONNECTION

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 divided highway with limited access that has more than one lane running in each direction. A *turnpike* is a road, usually an expressway, that requires drivers to pay a toll. *Freeway* is generally a synonym for *expressway*, but it can also refer to a highway that is not a toll road. 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.



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

lowing 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 cars.
- ◆ 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 car'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 gradually. 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.
- ◆ Make room for cars entering expressways. If there are no vehicles in

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 cars passing on the vehicle's *other* side. They may wind up in your intended travel path.

Advice From the Experts

Bill Wen, Director, ATE Ryder,
Alexandria, Virginia



WHAT WOULD YOU DO?

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



Bill Wen

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? and 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 more time and space to deal with it.

the lane next to you, move over a lane before you approach an entrance ramp.

◆ If a vehicle is tailgating you, change lanes—when it's safe—to let the vehicle pass. In the meantime,

increase your following distance behind cars ahead.

◆ Never cut in too soon in front of a vehicle you're passing.

◆ When passing a truck or other wide vehicle, keep in mind that you have less space to the side between your car and the 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.

CHECKPOINT

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

CHAPTER 10 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 car and other vehicles to the front, rear, and sides.

LESSON TWO

4. 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.
5. Some ways to manage visibility, time, and space on city streets are to scan one to two blocks ahead, use your mirrors to monitor traffic, signal early, be ready for pedestrians and hidden exits, always be ready to steer or stop, use the SIPDE process, and keep a margin of space around your car.

LESSON THREE

6. 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.
7. 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 on an uphill grade if your view is not clear, and use the SIPDE process.

LESSON FOUR

8. 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.
9. 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 car 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 write the numbers of the highway exits you would use. If possible, take the trip as a driver or passenger, and compare the accuracy of your plan to what you actually experience on the trip.
2. Make your own comparison between city driving and driving on a rural road or highway. Observe differences in road surfaces, traffic signs and signals, density of traffic, and visibility.

CHAPTER 10 REVIEW



BUILDING CRITICAL THINKING SKILLS

America's First "Highway Transportation System"

Imagine a bustling town carved into a canyon in the desert. Fields of corn, squash, and beans grow in once-dry fields made fertile by an irrigation system of rainwater channeled over high cliffs and running into the canyon. Imagine an 800-room multistory sandstone dwelling that houses over 1,000 people built against the side of the canyon. The rooms of the dwelling face inward toward a system of patios and plazas that provide access to circular chambers used as meeting halls. Then imagine a series of roadways leading out of the canyon. It is more than 1,000 years ago and you are in Pueblo Bonito in Chaco Canyon, located in what is now New Mexico.

Long before Europeans came to the Americas, Pueblo Bonito was the center of one of the most sophisticated settlements in the prehistoric southwest. From around A.D. 900 to the middle of the

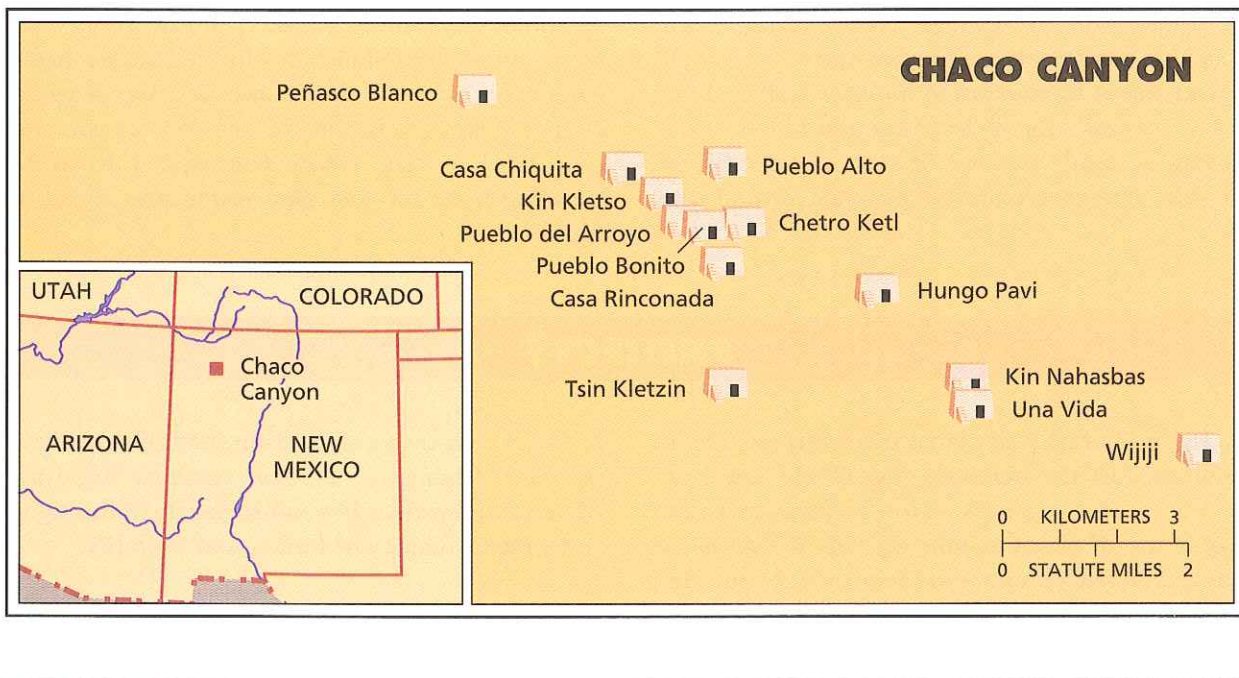
15th century, a civilization called the Anasazi or "Ancient Ones" lived in settlements in what is now called the Four-Corners region, with Pueblo Bonito at their hub.

Almost four centuries before the voyages of Columbus, the Anasazi were using a network of wide roadways connecting Pueblo Bonito with nearly 100 outlying communities such as Pueblo Alto. Goods were carried across what might very well be one of the first highway transportation systems between Pueblo Bonito and outlying settlements scattered over 40,000 square miles.

The remarkable civilization of the Anasazi left Chaco Canyon in the mid 1200s. Their descendants still live nearby. They are the Navajo.

What Do You Think Now?

How does what you have read about the peoples of Chaco Canyon change your ideas of America before the arrival of Christopher Columbus?



CHAPTER 10 REVIEW

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 cars on multiple-lane streets.
 - b. ride a bicycle.
 - c. maintain a margin of space around your car.
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 car and vehicles around you.
 - b. reaching your destination quickly and 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 or gravel road, you should
 - a. pull over to the right side.
 - b. increase your speed.
 - c. reduce your speed.
8. The first step to 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.

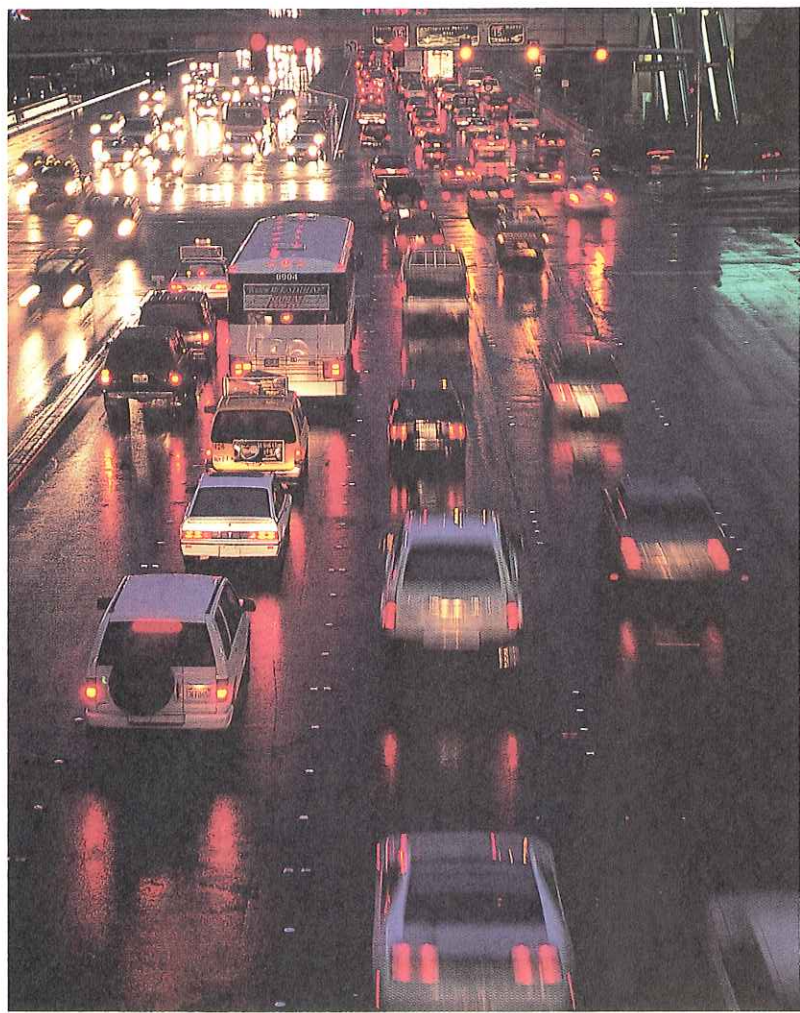
Write the word or phrase that best completes each sentence.

- distance expressway interchanges
lead time margin of space rural roads
11. The faster you travel, the more time and _____ you need to come to a stop.
 12. Always keep a _____ around your car.
 13. Some _____ may have drainage ditches alongside.
 14. A freeway is one example of a(n) _____.
 15. _____ are 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 this question:

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?



CHAPTER ♦ 11

LIGHT AND WEATHER CONDITIONS

Good drivers are prepared for any kind of light or weather conditions. It is important for you to understand how to manage visibility, time, and space in order to minimize the risk caused by poor light or inclement weather.