

## Chapter 13

# Handling Emergencies



### You Are the Driver!

Imagine that you are driving the red car in this situation. The gray car on your left pulls out in front of you. What should you do? What should you do if a collision occurs?

Vehicle malfunctions, driver errors, and roadway hazards can cause emergencies. In all cases, you must be prepared to act quickly to avoid or minimize a collision.

In this chapter you will learn how to handle many kinds of emergencies, and what steps to take if you are involved in a collision.

### 13.1

## Vehicle Malfunctions

### 13.2

## Driver Errors

### 13.3

## Roadway Hazards

### 13.4

## Collisions



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## Objectives

1. List actions to take if a tire blows out.
2. List the proper steps to follow if the brakes fail.
3. Explain what to do if your accelerator sticks.
4. Describe what to do in case of steering failure.

**P**roper maintenance can prevent most vehicle malfunctions. When your vehicle gives you any warning signs, promptly make the necessary repairs.

Vehicle equipment sometimes will malfunction with no warning. A sudden malfunction can create an emergency. If prepared for an emergency, you will reduce your risk of serious trouble in traffic.

### Tire Failure

Tires wear more quickly under unfavorable driving and poor maintenance conditions. Abrupt braking and sharp steering shorten tire life. Bumps, potholes, and poor roadway surfaces add to tire stress and can cause sudden damage to tires. Unbalanced wheels and poor alignment can cause tires to wear unevenly. Underinflation and overinflation are other causes of tire wear.

### Blowout

A **blowout** occurs when a tire loses air pressure suddenly. A blowout might occur if the tire hits an object on the roadway or a pothole. Older, badly worn, or underinflated tires are more likely to blow out.

When a front tire blows out, the vehicle quickly pulls in the direction of the deflated tire. You must steer firmly against the pull of the vehicle. A left-front tire blowout is especially dangerous, since the vehicle will pull toward the lane of oncoming traffic.

When a rear tire blows out, the back of the vehicle can fishtail. When fishtailing occurs, the rear of the vehicle swerves back and forth. Handle a rear blowout like a skid.

Take the following actions when a tire blows out:

1. Grip the steering wheel firmly.
2. Ease up on the accelerator to slow the vehicle. *Do not brake.* Braking can cause the vehicle to swerve.
3. Check the traffic situation as you gain control of the vehicle.
4. Drive off the roadway slowly, braking gently.
5. Turn on hazard flashers. Drive slowly until you find a safe location to stop.

### Changing a Tire

Even if you are an auto club member, you should know how to change a tire. Tire-changing instructions are included in the owner's manual for your vehicle. Practice changing a tire in a safe place.

To change a tire, you will need a **jack**, a hand-operated device used to lift and hold one corner or side of the vehicle. An elevated vehicle might slip off a jack. Never put yourself in a position where the vehicle could fall on you.

Follow these steps to change a tire:

1. Park on a level area away from traffic. Turn on the hazard flashers. Put the selector lever in **PARK**; use **REVERSE** in a stick-shift vehicle.

2. Set the parking brake.
3. Block the wheel that is diagonally opposite the flat tire. Carry two blocks of wood or two bricks in your trunk for this purpose. Place one block in front of the wheel and another block firmly behind the wheel. Blocking helps keep the vehicle from rolling once it is raised up by the jack.



If a left-front tire blows out, the vehicle might pull toward oncoming traffic.

4. Ask your passengers to get out of the vehicle and move to a safe place away from the roadway.
5. Take out the spare tire, jack, and lug wrench.
6. Assemble the jack. Position it under the vehicle.
7. Jack up the vehicle partway. The flat tire should touch the ground so that the wheel cannot turn.
8. Remove the wheel cover. Loosen the **lug nuts**, the devices that hold the wheel to the vehicle.
9. Jack up the vehicle until the tire completely clears the ground.
10. Use the lug wrench to remove the lug nuts. Place them in a safe place, such as your pocket.

11. Remove the wheel with the flat tire. Place the wheel to the side.
12. Mount the wheel with the spare tire. Rock it gently into position.
13. Replace and tighten the lug nuts.
14. Lower the vehicle slowly and remove the jack.
15. Use the lug wrench to tighten all the lug nuts again.
16. Leave the wheel cover off as a reminder to fix the flat. Put the wheel cover, flat tire, and tire changing equipment into the trunk. Remove the blocks.  
Replace or repair the flat tire as soon as possible. If your spare tire is



Rock the spare tire into position as you mount it.



## SAFE DRIVING

A quick look around your vehicle before driving may help you identify a worn tire, burned out light, or other problem—before a vehicle failure occurs.

a temporary or compact spare, drive on it only as necessary under the manufacturer's conditions of its use.

### Brake Failure

Vehicles are required to have a two-part braking system. If one part fails, the other part still brakes two wheels. The brake warning light signals a brake failure. If both braking parts fail at the same time, your foot brake will have no braking power at all.

### Total Brake Failure

Total brake failure rarely happens. When it does occur, the driver is usually braking hard for a stop.

Follow these steps immediately if your brakes fail:

1. Pump the brake pedal. Pumping might temporarily restore enough brake-fluid pressure to slow or stop your vehicle. You will know after three or four pumps if your brakes are going to hold.
2. Downshift to a lower gear. This uses the braking power of the engine to slow.



If your brakes fail, apply the parking brake, but hold the button at “Off” or hold the release lever out.

3. Pull and hold the parking-brake release lever out or hold the parking-brake button at “Off.” Apply the parking brake. You can quickly release the parking brake for a moment if the vehicle begins to skid.
4. Search for an open zone. You can still steer. As a last resort, rub the wheels against a curb to reduce speed. If a collision is unavoidable, steer for a sideswipe rather than colliding head-on into something solid.

**Power Brake Failure** Brake “failure” with power or power-assisted brakes is usually the loss of power that helps you brake. The power stops if the engine stops, but the brakes have not failed. You must push the brake pedal harder.

### Other Brake Failures

When brakes overheat, they can lose effectiveness. This condition, called **brake fade**, occurs after continuous hard braking. To regain full braking ability, stop the vehicle and let the brakes cool. Overheating can warp the rotors on disc brakes. As a result, braking becomes uneven, and the vehicle might surge forward as you brake. To restore smooth braking, you might need to have the rotors repaired.

Driving through water also can cause temporary brake failure. Gently brake after you leave the water. Friction can help generate heat to dry the brakes. Test them again to be sure they work properly.

## Accelerator Malfunctions

You can lose control of your engine's speed when the accelerator malfunctions. Some problems can cause your vehicle to accelerate more than you intend, and other problems can keep your vehicle from accelerating.

### Broken Spring

A broken accelerator spring is a serious problem. The accelerator pedal might be flat on the floor. You can no longer control engine speed with the accelerator.

If you have this problem, shift to NEUTRAL. Put on your hazard flashers, check traffic, and brake safely to the side of the road. Do not drive the vehicle until the spring is repaired.

### Stuck Accelerator

The accelerator is stuck if the engine does not return to idling speed when you release the accelerator. One cause of a stuck accelerator is a wadded floor mat around the pedal.

A stuck accelerator is a critical emergency. While driving at a steady speed, you have no warning that the accelerator is stuck. You discover that there is a problem when you need to turn or stop.

Take these actions if your accelerator sticks:

1. Kick the side of the accelerator once to try to jar it free.
2. Apply the brakes.
3. Choose an escape path that leads to an open zone off the roadway. Continue braking.
4. If you are steering into a sharp curve or turn, shift to NEUTRAL. Depress the clutch in a stickshift



While stopped or driving in light traffic, you can try to free a stuck accelerator by putting your toe under it and lifting.

vehicle. The engine will race, but power is removed from the wheels. You might damage the engine or transmission in an automatic transmission, but you might also avoid a collision.

5. Follow your escape path off the roadway.
6. Turn off the ignition once you are off the roadway.

If you are in a light-traffic area, you might try to free a stuck accelerator while driving. Put your toe under the accelerator pedal and lift. *Never reach down with your hand to lift the pedal while driving.* You cannot see or drive safely from this position.

After stopping, take these actions:

- Remove any obstructions around, under, or over the accelerator.
- Tap the accelerator repeatedly.
- Put your toe or hand under the accelerator and lift.

After freeing the accelerator, test it before you drive. If a broken spring is the problem, do not drive until it is repaired.

## Engine Failure

Usually you have very little warning that your engine is going to sputter or stop. With a stalled engine, you can still steer your vehicle. If you have power steering, you will have to steer harder.

Follow these steps if your engine stops suddenly:

1. Shift to **NEUTRAL** when the engine first sputters or stops.
2. Begin moving out of traffic to the nearest shoulder. Turn on the hazard flashers. Do not brake.
3. Try to restart the engine while you are moving. If the engine starts, shift into a forward gear and proceed. If it does not start, move onto the shoulder or to the curb, if possible. Steering will be harder when power is lost by engine failure. Try again to start the engine.
4. If the engine still fails to start, raise the hood and leave the hazard flashers on. Go for help. If you have a cellular phone, use it to secure assistance.

If your vehicle becomes disabled in risky locations, set flares or other

warning devices to alert other roadway users.

## Flooded Engine

When too much fuel and not enough air reach the engine, it becomes flooded. You can flood the engine if you pump the accelerator when trying to start the vehicle.

Follow these steps to start a flooded engine:

1. Hold the accelerator pedal to the floor to let air in and to clear excess fuel from engine.
2. While holding the accelerator down, turn the ignition switch on steadily for five seconds. If the engine does not start, wait several minutes, and try again.
3. When the engine starts, release the accelerator gradually to help clear excess fuel from the engine.

## Overheated Engine

Sometimes even a well maintained engine overheats in hot weather or in stop-and-go traffic. Driving up long hills with the air conditioner on also can cause overheating. The temperature light or gauge warns you if the engine overheats.

Take these steps if your engine overheats:

1. Turn off the air conditioner.
2. Turn on the heater to draw heat from the engine. You might be uncomfortable, but this will lower engine temperature.
3. During stops, shift to **NEUTRAL**. Press the accelerator gently to speed up the engine slightly.
4. If the temperature light stays on or if the gauge points to *hot*,



If your engine fails, turn on the hazard flashers, move safely off the roadway, and raise the hood to signal you need help.

move to a safe place. Stop, turn off the engine, raise the hood, and let the engine cool. Do not add water to the radiator until the engine has cooled.



If your hood flies up, look through the space below the open hood and steer to a safe place.

## Steering Failure

Complete steering-system failure seldom occurs but is extremely serious.

### Total Steering Failure

Take these actions if your steering fails completely:

1. Use your horn and hazard flashers to communicate your emergency.
2. Stop as quickly and safely as possible. Lift your foot from the accelerator. *Do not brake.* Braking could cause the vehicle to skid. Use the parking brake. Hold the parking brake release “Off” and use a quick on-off action.
3. Shift to a lower gear.

hood is vibrating. Release the hood and secure it.

Take these actions if the hood flies up while you are driving:

1. Slouch down in your seat to look through the crack below the open hood. Check the rear zone.
2. If you cannot see under the hood, roll down your window. Look in the direction that you are driving.
3. Turn on the hazard flashers. Pump the brakes gently to warn other drivers of your emergency.
4. Slow down, and drive out of the traffic flow to a safe location.

### Power-Steering Failure

Power-steering failure occurs when the engine dies, when the power-steering fluid level is low, or when a drive belt slips or breaks. The steering mechanism still works, but you must exert more effort to steer.

### Loss of Forward Vision

If you have lost forward vision, you must act promptly to regain your driving view. Slow and continue to drive in your path of travel.

### The Hood Flies Up

This rare emergency usually occurs because the hood is not securely latched. Stop your vehicle if the

### Headlights Fail

If you are driving at night and your headlights flicker, move quickly off the roadway to a safe place.

Follow these steps if your headlights fail entirely:

1. Turn on your right turn signal to light up an escape path to the right.
2. Immediately slow down and bring your vehicle to a safe stop.
3. Try the dimmer switch, parking lights, and hazard flashers. Some circuits might still work. If so, use

parking or hazard lights to help you drive off the roadway to a safe location.

4. Use the light from street lights, signs, buildings, or other vehicles to help you see. Move off the roadway to a safe location when the vehicle has slowed. Use a flashlight to check fuses or fuse clips. If necessary, replace or reseat the fuse before proceeding.

### Splashed Windshield

Your windshield might be splashed with snow, slush, or mud. Immediately turn on your windshield wipers. Slow, and try to maintain your path of travel until you regain visibility. If you anticipate that your windshield will be splashed, turn on wipers before you lose vision.

### Vehicle on Fire

A vehicle fire can be dangerous. The fire can involve fuel, oil, grease, ordinary combustibles, electrical

equipment, or a combination of sources. Carry an A-B-C-type fire extinguisher that is designed to control such fires. Notify the fire department of any vehicle fires.

### Engine Compartment Fire

Most vehicle fires start in the engine compartment. Take these actions in case of fire:

1. Quickly steer the vehicle off the roadway to a safe, open area. Stay away from buildings and service stations. Turn off the ignition.
2. Have passengers move at least 100 feet away from the vehicle.
3. Estimate how serious the fire is. You might see flames and smoke around the hood. Do not try to put out the fire. Leave the hood closed. Move away from the vehicle while you wait for the fire department. The fuel tank could explode.

If you think that the fire is small enough to control and you have an A-B-C-type fire extinguisher, you should take these steps:

1. Use gloves or a rag to protect your hands. Turn your face away to protect yourself from the heat and flames. Carefully open the hood. Once the hood is up, the fire will burn freely.
2. Direct the extinguisher on the fire. Water will not put out oil and fuel fires and can spread the fire.
3. Never try to disconnect the battery or work with your hands under the hood while it is still hot.

Fire is possible in any collision where the engine compartment is smashed. Turn off the ignition, and



Do not open the hood if smoke is coming from under it.





### **You Are the Driver!**

Your car is stalled on the railroad tracks with a train approaching. What direction should you run when you abandon the car?

get passengers out and away from the vehicle.

### **Passenger Compartment Fire**

A passenger compartment fire usually is caused by a carelessly handled match or burning tobacco product. Pull off the roadway. Use water or a fire extinguisher, and make sure the fire is completely out. Upholstery fires often restart.

### **Vehicle Stalls on Railroad Tracks**

Weather, driver, or roadway conditions may cause a vehicle's engine to stall while crossing railroad tracks. Take these actions if your vehicle stalls on the tracks:

1. Check carefully to be sure no train is coming. Try to restart the vehicle. If the engine floods, hold the accelerator to the floor as you restart the engine.
2. If you cannot restart the engine, have passengers leave the vehicle. Have one passenger watch for trains, and ask others to help you.

3. Shift to **NEUTRAL** and push the vehicle off the tracks.
4. If a train is coming, abandon your vehicle. Move away from the tracks in the direction the train is approaching. This helps you avoid injury from flying fragments.

### **Review It**

1. What actions should you take if a tire blows out?
2. What should you do if the brakes fail?
3. What actions should you take if the accelerator sticks?
4. What actions should you take if your steering fails?

## 13.2 Driver Errors

### Objectives

1. Describe how to return to the roadway if your vehicle runs off the roadway.
2. Explain when to use an emergency swerve.

**D**river errors cause many more emergencies than do vehicle malfunctions. Errors due to inexperience, lack of attention, or poor decisions often create driving emergencies. Any driver can be put in an emergency situation by the unpredictable act of another driver.

Developing automatic responses to emergencies is a critical part of the total driving task. Identifying an emergency, predicting its consequences, making correct decisions, and executing decisions quickly will help you avoid a collision.

### Driving Off the Road

When a front wheel leaves the edge of the roadway, returning to the roadway can be easy if the shoulder is paved and in good condition. However, the shoulder is often lower than the roadway or is not paved. Many fatal one-vehicle collisions result when drivers brake and return suddenly to the roadway. In such a situation, the vehicle often rolls over. Other collisions can occur when drivers quickly return to the roadway and abruptly cross into other traffic.

### Off-Road Recovery

Use your targeting skills and reference points to get back on the roadway when a front wheel leaves the pavement. Avoid quick steering. Regain control of your vehicle before returning to the lane of travel.

You should take the following actions for a safe off-road recovery:

1. Hold the steering wheel firmly on the top half with both hands. The greater the drop-off between roadway and shoulder, the greater amount of steering control you need. Keep your vehicle heading straight toward your target.



Straddle the roadway edge.



Turn sharply to get back on the pavement.



Countersteer when the front tire reaches the roadway.

2. Let up on the accelerator and brake gently to 5 or 10 mph. Avoid hard braking.
3. Position your vehicle so it straddles the roadway edge.
4. Select a place to return to the roadway where the shoulder is nearest the level of the roadway.
5. Check for traffic. Signal, check your blind spot, and return to the roadway.
6. Steer  $\frac{1}{8}$  to  $\frac{1}{4}$  of a turn toward the roadway to return. If the drop off is severe, you might need to slow more and turn very sharply to get back onto the pavement.
7. Countersteer sharply the instant the front tire touches the roadway. You **countersteer** when you steer in the opposite direction.
8. Center the vehicle in lane position 1 and reestablish your target. Cancel your signal. Accelerate to match the flow of traffic.

If traffic is heavy when you go off the roadway, drive entirely off the roadway. Stop and wait for a large gap in traffic before you reenter.

Sometimes an obstruction, such as a bridge or guardrail, might be on the shoulder ahead. In this case, you must make a quick recovery. Grip the steering wheel firmly. Countersteer *immediately* when the front wheel touches the roadway.

### Emergency Swerving

Swerving is a last-second emergency means of avoiding a collision. Swerve only when you believe that braking will not prevent a collision. At speeds over 30 mph, you can usually swerve

to a new path in less distance than the distance you needed to stop safely.

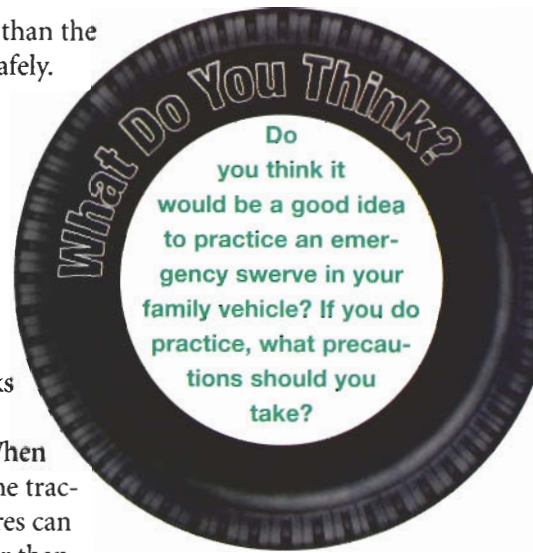
### The Stop-Swerve Decision

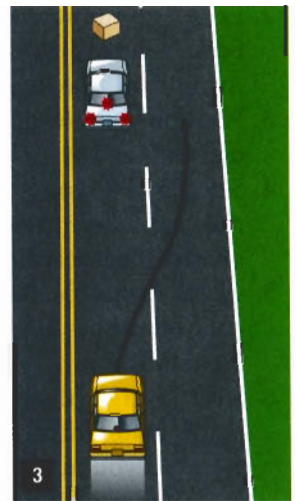
The picture below shows a dangerous situation. The driver of the yellow vehicle might hit the brakes to stop. In some situations, this action will be the only choice. However, if the driver hits and locks the brakes, the vehicle might slide into the vehicle ahead. When moving at 30 mph or more, the traction created by the vehicle's tires can turn the vehicle sideways faster than braking traction can stop it.

When deciding whether to swerve around an object, be sure that no other vehicle is in the lane that you will enter.



Should the driver of the yellow car stop or swerve?





1. You must swerve sharply around a close object. 2. When the object is farther away, swerve less sharply. 3. The swerve is less sharp at a greater distance.

The stop-sswerve decision is not an easy one to make. Any sudden action should be used only as a last resort. If a pedestrian steps in front of you, you might be forced to make a stop-sswerve decision.

Use the IPDE Process and Zone Control System to protect yourself in stop-sswerve situations. In addition, allow at least three seconds between yourself and the vehicle ahead.

### Executing an Emergency Swerve

Follow these steps if you decide to swerve:

1. Identify the escape path.
2. Grip the steering wheel firmly and turn the wheel sharply in the direction of the swerve.
3. In the same rhythmic motion, countersteer to stabilize your vehicle. Straighten the wheel, and continue to steer in your path.

### How Sharply to Swerve?

The amount of time available to swerve determines how sharply you must swerve. Consider two factors—distance and speed—when determining how much time is available. When the stopped vehicle is farther away, as shown above, the swerve will be less severe and easier to execute.

As speed increases, the less time you have to swerve. For example, you have about 2 seconds to swerve at 40 mph. You have just 1 second at 60 mph.

### Review It

1. How should you return safely to the roadway if your vehicle runs off the roadway?
2. Under what conditions should you make an emergency swerve?

Unusual and unexpected roadway hazards can cause you to lose control of your vehicle. Driving into deep water, sharp curves, and objects on the roadway can result in emergency situations.

### Potholes in the Roadway

Potholes can develop as water collects in cracks in the roadway. The water can freeze and thaw, causing the cracks to expand. As vehicles drive over these water-filled cracks, they break up the roadway even more.

Potholes often have sharp edges which can severely damage tires. You can lose control of your vehicle—and severely damage it—if you hit a pothole at a fast speed.

Watch for potholes and avoid hitting them whenever possible. Drive carefully around or straddle a pothole. Stay in your own lane and check front zones as you try to avoid potholes in the roadway.



Drive slowly through potholes to prevent tire damage.

If you must drive through a pothole, slow down to prevent tire damage. By driving slowly, you can better keep control of your vehicle.

### Sharp Curve

Driving around a curve fast is dangerous. Poor road conditions or crossing the center line might lead to a collision. The standard warning sign may not indicate exactly how sharp the curve is. Also, the warning sign might not have an advisory speed sign.

Take these actions if you enter a curve too fast:

1. Brake gently as soon as you realize your problem. If you are not yet in the curve, brake more firmly. If you are already in the curve, brake, but do not lock the wheels.
2. About halfway through the curve, look to your target and accelerate gently to help stabilize your vehicle.

### Object on the Roadway

An object on the roadway creates a hazard, whether it is an object, leaves, an animal, or a person. A cardboard box in the street might not appear to be dangerous. Neither does a pile of leaves raked from a yard. However, avoid these and other objects on the roadway. You might not be able to identify the contents of the box. You cannot see a rake or other object in the leaf pile.

## Objectives

1. Describe how to minimize vehicle damage caused by potholes.
2. Explain what to do if you enter a curve too fast.
3. Tell how to escape from a vehicle that is sinking in water.



## You Are the Driver!

Should you steer around, brake, straddle, or drive over the object?

First check traffic, and then decide whether to steer around, brake, straddle, or drive over the object. Choose to straddle the object only if your vehicle can clear it and you cannot safely steer around it. Avoid swerving left across the center line because you could encounter other traffic. *Drive over an object only as a last resort.*

## Vehicle in Deep Water

Do not attempt to drive through deep water on the roadway. Turn around or take another route.

Take these actions if your vehicle goes into deep water:

1. Open the window that is the most out of the water. Power windows might short circuit in water so open these windows immediately.
2. Unfasten your safety belt. Check your passengers, and have them unfasten their safety belts.
3. Exit promptly through the open window.

If the windows will not open, attempt to exit through a door. Do not panic if the door is slow to

open. Pressure will equalize as water enters your vehicle. You then can open the door.

If your vehicle is totally submerged underwater, some air will be trapped for a brief time toward the highest point of the vehicle. Try to get a full breath or two of air while locating a window or door that is facing up. Open the window or door and leave your vehicle.

If you become trapped in your vehicle underwater, turn on your headlights. This can help rescuers find your vehicle more quickly.

## Review It

1. What should you do if you see a pothole in your path of travel?
2. What actions should you take if you enter a curve too fast?
3. How should you escape a vehicle that is sinking in deep water?

## 13.4 Collisions

**M**ost drivers are involved in a collision at some time during their lives. If you know in advance how to react, you can lessen the effects of a collision.

### Minimizing Effects of a Collision

Suddenly, a vehicle emerges from a driveway and enters your path of travel. You know that you cannot avoid a collision. What should you do? If a collision is about to occur, act as follows:

- Above all, *do not give up*. Keep control of your vehicle. Any change of speed or direction that lessens the impact will help.
- Steer for something “soft” if you leave the roadway. Look for bushes or an open field.
- Avoid objects, such as trees and parked vehicles.
- Get yourself and passengers out and away from your vehicle if there is a chance of another vehicle colliding with yours.

### Threat of a Head-on Collision

Because a head-on collision produces the greatest force of impact of any

collision, serious injuries and/or death are more likely to occur. Take these steps if you are threatened with a head-on collision:

1. Maintain vehicle control.  
Brake hard, but do not lock the wheels. Slowing lessens the force of impact and gives the other driver space and time to recover control.
2. Blow the horn and flash the headlights. These actions might alert an impaired driver. Continue braking and move to the right if the driver does not heed your warning.
3. Steer right toward the shoulder.  
*Do not steer left.* The other driver likely will try to steer back into the proper lane. Prepare to drive entirely off the roadway to the right, if necessary.

### Threat of a Side-Impact Collision

Take these steps to avoid or lessen the effect of a side-impact collision:

1. Brake or accelerate quickly. Do whichever seems more likely to lessen the collision impact.

### Objectives

1. Explain how to avoid or minimize head-on, side-impact, and rear-end collisions.
2. List the immediate steps to take if a collision occurs.
3. Describe other follow-up steps needed after a collision.



Steer to the right if a head-on collision seems about to occur.



What can the driver of the white car do to minimize the effects of a second collision on the passengers?

2. Blow the horn to alert the other driver.
3. Change lanes or swerve away from the impact. Be aware of the constantly changing traffic situation around you.

The driver of the white car crossing the road in the picture above might find it difficult to avoid being hit from the side. However, by accelerating, the driver might avoid having the passenger compartment crushed. An impact to the passenger compartment often causes a second

collision between passengers and the inside of the vehicle.

### Threat of a Rear-End Collision

You are nearly defenseless against a rear-end collision when your vehicle is stopped. If your vehicle is in motion, you might not realize that a vehicle approaching from the rear is coming too fast and might not be able to avoid hitting your vehicle.

Take these actions if you are threatened with a rear-end collision:

1. Flash your brake lights early to alert the driver behind you.
2. As the vehicle nears, check your front zones for open space and move forward, if possible. This precaution gives the driver approaching from the rear more time and space to stop safely.
3. If the intersection is clear, accelerate to give the other driver more space to stop. If your path is not clear, turn right.
4. If a collision is unavoidable, release your brakes just before the collision occurs. This helps



### SAFE DRIVING

Most states have what is known as a "Good Samaritan Law." These laws help protect people giving first aid at a collision scene.



What would you do if you saw this car approaching from the rear?





What procedures should you follow in a collision, even before help arrives?

soften the impact. Brake immediately after the collision to avoid sliding into another traffic lane.

Maintaining a 3-second following distance and stopping so that you see the tires of the vehicle ahead are good habits. These actions often can help you avoid being hit from behind.

### If You Have a Collision

If you collide with another vehicle, a pedestrian, or someone's property, you are legally required to follow specific procedures.

### Your First Steps

Each state has specific procedures that you must follow immediately when involved in a collision. All states require you to take these five steps.

**1. Stop Immediately.** Failure to stop is a serious offense. Move your vehicle to the side of the road. Do not leave your vehicle where it can block traffic unless it is so damaged it cannot be moved. Turn off ignition.

If you damage a parked vehicle even slightly, try to find the owner. If

you cannot, write your name, address, and phone number on a note. Leave the note under a windshield wiper. Notify the police.

**2. Aid the Injured.** *Never move an injured person unless there is danger of fire or another collision.* Send for paramedics if anyone is seriously injured. Administer basic first aid for injuries such as severe bleeding, shock, and breathing stoppage only if you have completed a certified first-aid course.



**DIALING 911** Dialing 911 to report emergencies is a relatively new system. As late as the mid-1980s, you had to call the full number for the service you wanted. As recent as the late 1960s, you may have called the local funeral home for ambulance service. Dialing 911 gets you fast, appropriate service when it is needed.



Exchange information with all drivers involved in a collision.

**3. Prevent Further Damage.** Warn oncoming traffic with flares or reflectors placed at least 100 feet ahead of and behind the collision site (500 feet away in high-speed traffic). If you do not have such devices, another person might stand in advance of the site and direct vehicles around the collision. Do not put yourself or others in danger while directing traffic.

**4. Send for Police.** You must call the police if anyone is injured or killed. Some states require you to call the police for any collision, even if no personal injuries are evident.

**5. Exchange Information.** Get and provide this following information from other drivers involved in the collision: names, addresses, driver's license numbers, license plate numbers, and insurance company names and addresses.

Note the names and addresses of passengers, the positions in which they were sitting, and the extent of their injuries. Getting and giving this information is your responsibility.

### **Additional Steps**

Take these additional steps after a collision:

**Record Witnesses' Names and Addresses** Note the names and addresses of any witnesses to the collision. Make a sketch of the collision scene or take a photo. Record such facts as time, date, location, weather, and driving conditions. Note the name of the hospital to which any injured persons were taken. Note the name and badge number of the police officer at the collision scene.

**Give Police the Facts** Provide honest, accurate facts. Never argue about who was to blame, and never admit blame. Stay at the scene until all information has been recorded. Take your vehicle to a repair shop for any necessary repairs. You generally need two repair estimates for insurance purposes. Keep all bills.

**File Necessary Reports** Each state requires drivers involved in a collision to file a written report if someone was killed or injured, or if property damage exceeds a set amount. Some states require that a report be filed within 24 hours of the collision.

You must also produce proof of financial responsibility by showing a card that lists your current insurance coverage, or a bond card. Finally, notify your insurance agent promptly. If you fail to do this within the time specified in your policy, the company might refuse to pay your claim.

## **Review It**

1. How can you minimize the impact of a head-on collision? a side-impact collision? a rear-end collision?
2. What steps should you take immediately if you are involved in a collision?
3. What additional steps should you take following a collision?

# Chapter 13

## Review

### Reviewing Chapter Objectives

#### 1. Vehicle Malfunctions

1. What actions should you take if a tire blows out? (268–269)
2. What are the proper steps to follow if the brakes fail? (270)
3. What should you do if your accelerator sticks? (271)
4. What should you do in case of steering failure? (273)

#### 2. Driver Errors

5. If your vehicle runs off the roadway, how should you return it to the roadway? (276–277)
6. When should you use an emergency swerve? (277–278)

#### 3. Roadway Hazards

7. How could you minimize vehicle damage caused by potholes? (279)
8. What should you do if you enter a curve too fast? (279)
9. How would you escape a vehicle that is sinking in water? (280)

#### 4. Collisions

10. How do you avoid or minimize head-on, side-impact, and rear-end collisions? (281–282)
11. What are the immediate steps you should take if a collision occurs? (283–284)
12. What are the follow-up steps you should take after a collision? (284)

### Projects

#### Individuals

**Investigate** Research the specific procedures you must follow when involved in a collision in your state. Write a report of your findings.

**Observe** As a passenger in a vehicle, look for hazards in the roadway for a week. Make a list of the hazards you see. Discuss the hazards with your class.

**Interview** Visit a local vehicle repair shop. Obtain the manager's permission to interview a mechanic. Ask the mechanic to explain the most common causes of engine failure. Report your results to the class.

#### Groups

**Practice** As a group, practice changing a tire on a vehicle provided by your instructor for this purpose. Group members should take turns performing the various steps.

**Demonstrate** List the possible vehicle malfunctions described in this chapter on separate pieces of paper. Each group member should draw one piece of paper, then explain to the group what should be done if faced with that malfunction.

# Chapter 13

# Review

## Chapter Test

### Check Your Knowledge

**Multiple Choice** Copy the number of each sentence below on a sheet of paper. Choose the letter that best completes the statement or answers the question.

- If you have a blowout, which action should you avoid?
  - ease up on accelerator
  - pull off onto the shoulder slowly
  - brake hard
  - turn on hazard lights
- Which action should you take first if the accelerator sticks while you are driving?
  - shift into a lower gear
  - turn off the ignition
  - apply the parking brake
  - kick the side of the accelerator
- To avoid a side-impact collision, you should
  - lock your brakes.
  - brake or accelerate quickly.
  - steer to the left.
  - steer to the right.

**Completion** Copy the number of each sentence below. After each number, write the word or words that complete the sentence correctly.

- An engine \_\_\_\_\_ when it has too much fuel and not enough air.
- Vehicle fires generally start in the \_\_\_\_\_.
- When water collects in roadway cracks, \_\_\_\_\_ can develop.
- A \_\_\_\_\_ collision produces the greatest force of impact of any collision.

### Review Vocabulary

Copy the number of each definition in List A. Match the definition in List A with the term it defines in List B.

#### List A

- devices that hold the wheel to the vehicle
- steer in the opposite direction
- sudden loss of tire air pressure while driving
- hand-operated device used to lift and hold one corner or side of the vehicle
- loss of braking effectiveness caused by overheating of the brakes after long, continuous, hard braking
- back and forth swerving of the rear of a vehicle

#### List B

- |                |                 |
|----------------|-----------------|
| a. jack        | d. brake fade   |
| b. fishtailing | e. countersteer |
| c. lug nuts    | f. blowout      |

### Think Critically

Write a paragraph to answer each question.

- You are driving in a residential area and identify a vehicle in your right-front zone backing out of a driveway. You hit your brakes hard, but your vehicle does not slow or stop. What steps should you take?
- You are involved in a collision on the freeway in a neighboring state. You are not hurt but are not sure about the driver of the other vehicle. What should you do?

## Decision Making



1. This car just had a right-front tire blowout. What steps should the driver take to handle this emergency safely?



2. You are traveling at 30 mph. You brake for the stop ahead, but then realize that your brakes do not work. What should you do to stop the vehicle?



3. The driver cannot possibly stop in time to avoid hitting the bicyclist. What should the driver do?



4. You are driving the gray car. Both you and the driver in the white car are traveling 30 mph. The other driver is not aware of your car. What can you do to prevent a collision or keep the collision from being too serious?