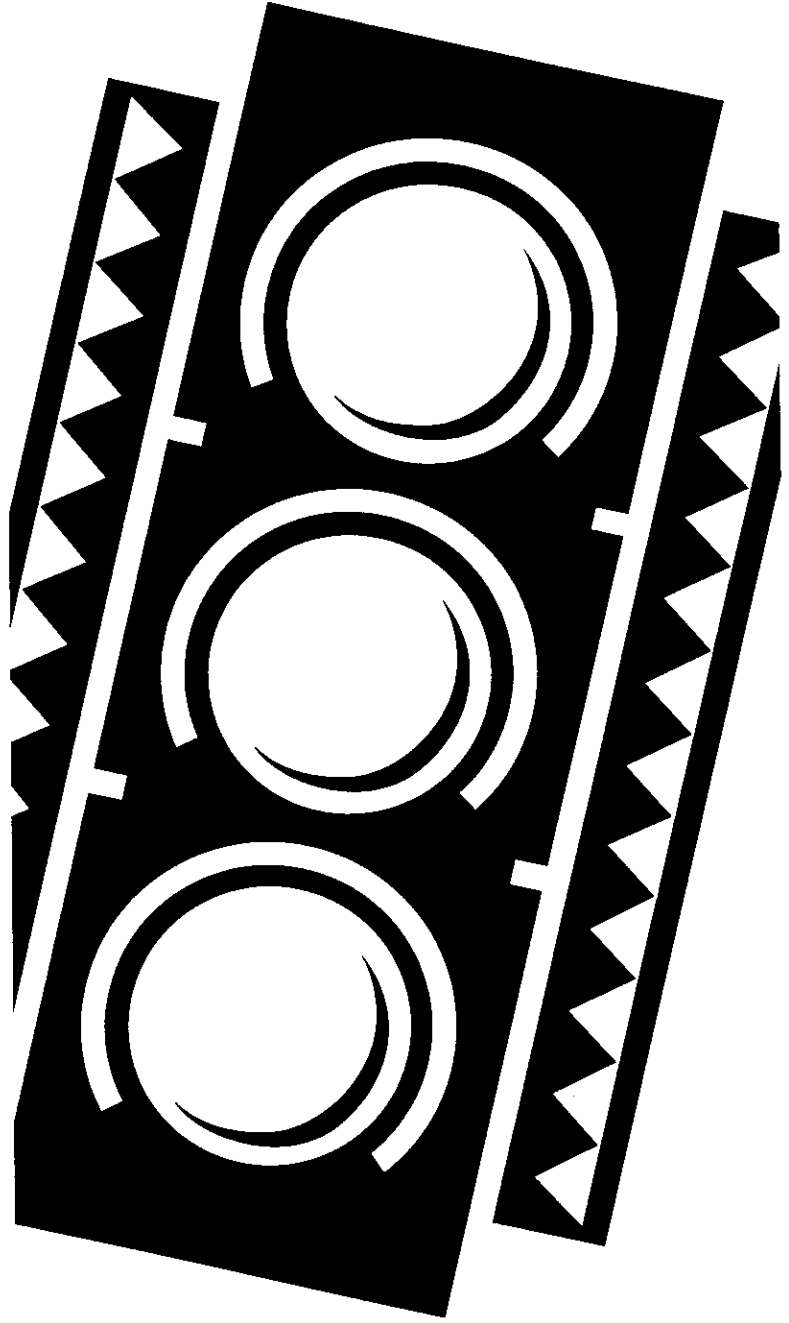


DEFENSIVE DRIVING



*A Core Element of the Safety
and Industrial Hygiene Process.*

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Defensive drivers guard against other drivers' mistakes and try to avoid making mistakes themselves. Most collisions could be prevented by at least one of the drivers involved. By learning to drive defensively, you will be able to recognize hazards and prevent collisions.

The National Safety Council defines defensive driving as "driving to save lives, time, and money in spite of the conditions around you and the actions of others." The key to making this definition work for you is being aware of conditions around your vehicle as you drive.

The primary factors affecting everyone's safety on the road are the conditions of the drivers and their vehicles, the road, the weather, and visibility. This booklet can help you understand how each factor relates to driving and what you can do to drive safely. You can control each of these factors to some degree through:

- your commitment to defensive driving
- advance preparation for road and traffic hazards
- increased caution under adverse environmental conditions
- proper vehicle maintenance

In 1993, traffic accidents resulted in 42,000 fatalities in the United States, up 3 percent from the previous year. That means an average of 115 people died each day from traffic accidents on U.S. streets and highways. More than two million people were victims of disabling injuries received in motor-vehicle collisions.

During the same period in Texas, 3,037 people were killed in traffic accidents. This represents a 7 percent decrease from the 3,250 deaths in 1992 and is the lowest number since 1965. Many of these fatalities could have been prevented if more motorists practiced defensive driving techniques.

Motorists who practice defensive driving reduce their likelihood of being involved in a serious collision. This booklet can help drivers protect themselves as well as others who share the road.

Defensive driving is a core element of the Safety and Industrial Hygiene Process.

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YOUR COMMITMENT TO DEFENSIVE DRIVING

Drivers who are committed to driving defensively follow company driving rules and obey state and local traffic laws. Good defensive drivers also are willing to learn improved driving skills:

- Stay alert.
- Keep emotions under control.
- Never mix driving with alcohol or drug use.
- Always wear a safety belt.
- Maintain a safe speed.
- Keep a safe distance.
- Pass with care.
- Be careful while backing up.
- Share the road with others.
- Park safely.

STAY ALERT

The first step in defensive driving is staying alert, which means being free of distractions and focused on the factors affecting your vehicle. When you spot potential hazards early, you have a better chance of avoiding them.

Always scan the road ahead of you and check both your side and rearview mirrors every five seconds. Be aware of the vehicles around you and be ready for them to take unexpected actions. If a driver changes lanes in front of you or runs a stop light, adjust your speed or take evasive action to avoid a collision.

Avoid "highway hypnosis," a form of drowsiness caused by driving alone or driving on straight, monotonous roads. If you begin to lose attention, open the window for fresh air, listen to the radio, or take a break from driving until you regain your focus.

KEEP EMOTIONS UNDER CONTROL

We have all seen drivers take unnecessary chances when their emotions are out of control. If you lose control of your emotions, your chances of having a collision increase drastically.

The reasons for losing control make no difference. If you are angry, impatient, or preoccupied, you may not focus attention on driving. You also may be distracted by pleasant emotions, such as joy.

Think about your emotions before getting behind the wheel. If you are feeling out of control, take a few minutes to calm down before driving. These few minutes may determine whether or not you get to your destination safely.

NEVER MIX DRIVING WITH ALCOHOL OR DRUG USE

Statistics from the National Safety Council indicate that at any given time, at least one driver in 50 is intoxicated. An intoxicated driver is 15 times more likely to be involved in a crash than a sober driver. Intoxicated drivers cause about half of all traffic fatalities.

Alcohol affects a driver's judgment, vision, hearing, and coordination. Ordinary driving tasks, such as passing or staying within lane markings, become difficult. Impaired drivers cannot maintain a consistent speed or judge where to stop when approaching an intersection.

The legal blood alcohol level in Texas is presently .10 percent, though this level

may be lowered by the legislature. As of January 1, 1995, the legal level for drivers with a commercial license is .04 percent.

Alcohol is not the only drug that affects driving. Many drivers are impaired by prescription drugs such as antihistamines, tranquilizers, and barbiturates. Some over-the-counter medications also make driving unsafe. And illegal drugs such as marijuana, cocaine, hallucinogens, and narcotics may impair a driver as long as 12 hours after use.

Like alcohol, these drugs affect the central nervous system and hinder a driver's judgment, vision, hearing, and coordination. In addition, illegal drugs may impair short-term memory and distort a driver's sense of time and distance.

If you are taking prescription drugs, check with a physician or pharmacist before driving. If you are taking over-the-counter medications, read the label and follow all directions and warnings.

Learn to identify and avoid drivers who may be using drugs or alcohol. Look for these warning signs:

- improper lane movements
- driving without lights at night
- failure to dim lights when approaching another vehicle
- jerky starts or stops
- driving well below the posted speed limit or too fast for conditions
- stopping far behind or overshooting traffic signals
- delayed response times

ALWAYS WEAR YOUR SAFETY BELT

Safety belts are designed to keep drivers and passengers secure in their seats, which is the safest place to be in a collision or rollover accident. Children under four years old must use child restraint devices designed to give them added protection.

Drivers who don't wear safety belts are more likely to have serious injuries during a collision. Drivers or passengers who are thrown from the vehicle because they aren't wearing safety belts are 25 times more likely to be seriously injured or killed than those who wear safety belts.

Air bags are safety systems that provide added protection in a frontal collision—they do not replace wearing a safety belt. Air bags are of limited value in broadside, rear-end, or rollover collisions, so keep your safety belt on.

MAINTAIN A SAFE SPEED

Speeding is a common cause of traffic collisions. Your chances of being killed in a motor vehicle collision double with every 10 mph you travel over 50 mph. For example, if you are traveling 80 mph, your chances of being killed are six times greater than if you are traveling 50 mph.

Even if you are below the speed limit, you may still be driving too fast for existing conditions. For instance, slow down *before* entering a curve. This can help you avoid crossing the center stripe, which may lead to a head-on collision with an oncoming vehicle. Reducing speed on curves also helps

prevent you from running off the roadway and losing control of your vehicle.

If you drive too fast at night, you may overdrive your headlights. This means that your stopping distance is greater than the distance your headlights allow you to see. By the time you see an upcoming hazard, it is too late to avoid it by stopping. In addition, especially in rural areas, you must be on the lookout for deer, cattle, or other animals on the roadway.

KEEP A SAFE DISTANCE

The faster you drive, the longer it takes to stop. The total stopping distance for a car traveling 55 mph is 284 feet. With just a 10 mph increase to 65 mph, the total stopping distance is 387 feet.

Use the “two second plus” rule to determine a safe distance to follow another vehicle. Pick a fixed object and watch the vehicle in front of you pass it. When its back bumper passes the object, count “one thousand and one, one thousand and two.” If the front of your vehicle passes the object before you finish counting, you are following too close. If you are following a motorcycle or other light vehicle, extend your following distance to at least three seconds because lighter vehicles need less distance to come to a sudden stop.

This rule assumes that your vehicle’s brakes and tires are in good condition, the road is dry, and visibility is clear. When driving at night or in rain or snow, add at least one second of following distance for each of the conditions. For instance, add an additional second for slick pavement and

another second for reduced visibility in rainy conditions. Your total safe following distance will then be at least four seconds.

The two second plus rule is important in any driving situation, but will be a challenge to carry out in congested city driving. Always be sure you have enough distance to stop safely even if the driver ahead of you has to make an emergency stop.

PASS WITH CARE

Passing is a normal part of driving, but is not allowed in certain situations. For instance, it is illegal to pass if you are in a no passing zone or school zone. It is illegal to pass if the road is marked with a solid white or yellow line in your lane. It also is illegal to pass within 100 feet of railroad crossings, road intersections, and some bridges.

There are five steps to a safe pass:

Step one: While maintaining a safe following distance, look ahead to make sure there is no oncoming traffic and look behind your car to make sure another driver is not attempting to pass.

Remember your blind spots and do not rely entirely on your mirrors.

Step two: Use your turn signal to let other drivers know you want to pass.

Step three: Move into the passing lane and increase your speed, staying within the legal speed limit.

Step four: Pass as quickly as possible and prepare to move back into the correct lane of traffic when you can look in your rearview

mirror and see pavement in front of the vehicle you passed.

Step five: Use your turn signal to announce your intentions to move back into the correct lane of traffic, move smoothly back into the traffic lane, and resume normal speed.

BE CAREFUL WHILE BACKING

Backing a vehicle can be one of the most dangerous driving maneuvers. A driver is seven times more likely to have a collision while backing. Walk around your vehicle before getting into it to make sure the area is clear. Always back slowly and keep looking behind you until you are finished backing and come to a complete stop.

SHARE THE ROAD WITH OTHERS

Many types of vehicles share the roadways. Trucks and buses, with their great weight, have much longer stopping distances than standard passenger cars. Their large size also may make them appear to be traveling more slowly than they actually are. When you change lanes, be careful not to cut too closely in front of trucks or buses; they may not be able to make a safe emergency stop behind you.

Remember that trucks make wide right turns and have large blind spots that hide other vehicles. When trucks make a right turn, expect to see the driver signal right but move to the left just prior to making the right turn. Make sure you allow space for the truck to complete the turn.

Children who ride school buses are often anxious to get on or off the bus, and sometimes don't use the best judgment when crossing streets. That's why the bus driver flashes the amber lights when preparing to stop and pick up or drop off children. These lights signal other drivers so they can prepare to stop.

When a bus flashes red lights, all vehicles must stop and wait until the bus has completed its stop. The driver will then turn off the red lights and drivers may proceed with caution. Always watch out for children who may still be on or near the roadway.

If you are behind a school bus as it approaches a railroad crossing, be prepared to stop since school buses are required to stop at all crossings, even if the crossing's warning signals are not activated.

When an emergency vehicle with flashing lights approaches you, immediately move to the right of your lane, another lane, or the shoulder of the road. If it is impossible to move right, stay as far right in your lane as possible. Never move to the left since this is the path the driver of the emergency vehicle will take to avoid traffic.

Small cars and motorcycles are easy to lose sight of in your blind spots. Remember, a smaller vehicle's stopping distance is less than that of an average-size car so increase your distance when following them.

Drivers often must share the road with bicyclists and pedestrians, who also are required to obey traffic laws but sometimes do not. Bicyclists and pedestrians using alcohol or drugs are frequently injured or killed by unwary drivers.

Children do not always understand or obey the laws. Consequently, those under the age of 15 account for 25 percent of all pedestrian fatalities each year. The elderly are also vulnerable to auto-pedestrian collisions because of limited mobility and poor vision or hearing.

When approaching a cyclist or pedestrian from the rear, tap your horn lightly to get their attention. Be especially careful at night as many bicycles do not have proper lighting and many pedestrians wear clothing that is difficult to see.

PARK SAFELY

To avoid having your vehicle damaged or vandalized while you are parked, practice “defensive parking.” Parking off the street is safer than curb-side parking. If possible, pick a parking space that you can leave without backing and park as close to the center of the space as possible. For personal safety, park in a well-lit area.

You cannot change the roads you drive on, but you can adjust your driving to compensate for hazards posed by traffic, people, animals in the roadway, and the road itself. Preparing in advance helps you avoid these hazards.

Different types of road surfaces affect steering and braking. Always adjust your speed to compensate for wet, icy, or unfamiliar roadways, and scan the road and shoulder ahead of you to find escape routes to use in an emergency.

Whether you drive in the city or on a country road can make a difference in the hazards you may face. For instance, city driving is often stop and go, and delays can make drivers impatient or discourteous. Drivers who weave in and out of traffic pose an additional hazard. Stay alert to traffic flow and the actions of drivers around you.

Rural drivers are more likely to speed since there is less traffic. You also must watch out for slow-moving vehicles, such as tractors and combines. Slow down as you approach these vehicles and wait for an opportunity to pass safely.

Country roads are usually narrow, so avoiding hazards is sometimes more difficult. Blind intersections, farm machinery, large animals, and poorly marked roadways add to the normal hazards of driving.

ADVANCE PREPARATION FOR ROAD AND TRAFFIC HAZARDS

Some hazards are present no matter where you drive. Three major areas require you to think carefully about your next action:

- intersections
- railroad crossings
- construction zones

INTERSECTIONS

Most accidents, including those involving bicyclists and pedestrians, happen at intersections. Approach intersections with your foot poised over the brake. This “covering the brake” technique will reduce your reaction time in the event of a potential collision.

If two vehicles on different roads approach an intersection with no traffic signals, the driver on the left must yield the right-of-way to the vehicle on the right. But be prepared to yield the right-of-way at any time to avoid colliding with another vehicle or pedestrian. Remember, you only have the right of way if it is yielded to you.

When making a turn through cross traffic, always check the intersection to see that it is clear of vehicles and pedestrians. Signal your intention to turn in advance and proceed with caution. If you are turning left, turn into the lane nearest the center line. If turning right, stay as near the curb as possible.

Most intersections are regulated by traffic signals or signs. A stop sign or light means that you must come to a complete stop behind the stop line or crosswalk. A yellow light means to stop if you can safely do so; it does not mean speed up to beat a red light. Nevertheless, when your light turns

green you should watch out for vehicles coming through the intersection against their red light.

A right turn on a red light is permissible in most places. A left on red is permissible in Texas if you are turning from one one-way road to another. You must always come to a complete stop before turning and you should check for signs indicating where turns on a red light are not allowed.

RAILROAD CROSSINGS

Many drivers become complacent about railroad crossings they drive over frequently. That’s why most drivers who are killed in collisions with trains are within 25 miles of their homes. The speed of a train is hard to judge, especially at night. The parallel lines of the tracks converging toward the horizon also create a visual illusion which makes them appear farther away than they actually are.

To avoid a collision with a train, watch for warning devices and be ready to stop. Look both directions and listen for the train whistle. Once you are committed to crossing the tracks, do so quickly to avoid stalling your vehicle. At multiple track crossings, watch out for an approaching train that is blocked from your view by one that is not moving.

CONSTRUCTION ZONES

As you approach a section of road under construction, be prepared for drastic road changes. Slow down and increase following distance because lanes may be narrower and markings may have changed. Also watch out for changes in the contours and surface of the road.

Expect lower speed limits in construction zones and slow down to avoid a collision.

Sometimes drivers are upset by delays and act out of frustration. Remember to keep control of your emotions. Construction workers are the ones who frequently suffer the consequences of impatient drivers' actions. All too often these workers are severely injured or killed by careless drivers.

INCREASED CAUTION UNDER ADVERSE ENVIRONMENTAL CONDITIONS

Adverse conditions—whether from bad weather or blinding glare—require defensive drivers to use increased caution. Increased caution means you must be aware of conditions and give yourself an extra cushion of safety.

WEATHER

Adverse weather conditions include rain, sleet, snow, ice, fog, blowing dust, and smoke. Driver fatigue, other vehicles, pedestrians, and stray animals pose additional hazards under such conditions. Remember, posted speed limits are for ideal conditions. When conditions are less than ideal, slow down, use low-beam headlights, and increase following distance.

Hydroplaning, when a cushion of water or other material causes the tire's tread surface to lose contact with the road's surface, is one of the hazards of driving in wet conditions. Tires that have good tread and proper air pressure decrease the possibility of hydroplaning, but you should slow down and increase your following distance as well. Also remember to slow down when driving on snow and ice.

If blowing dust, smoke, or fog decreases visibility, be prepared to avoid vehicles that stray into your lane or stop suddenly in front of you. Also, drive on the right portion of your lane to reduce the likelihood of a head-on collision with an oncoming vehicle that strays over the center line.

LIGHT

More than half of all traffic fatalities occur at night, but adverse lighting conditions at dawn and dusk, and conditions created by glare also make driving difficult. Use sunglasses and your sun visor to cut down the glare from reflected sunlight.

Periodically check your headlights to make sure they are clean and properly adjusted. Remember, misadjusted headlights can blind oncoming drivers, especially if you are using high beams. Be courteous and dim your lights when a vehicle approaches. Using your low beam headlights at dawn and dusk makes you more visible to other drivers.

PROPER VEHICLE MAINTENANCE

A well-maintained vehicle is more likely to perform well under hazardous conditions than an abused vehicle. Follow the maintenance schedule recommended in your vehicle manual, but don't rely on that alone. Take the time to make the regular inspections shown on the following checklist.

INSPECT THE FOLLOWING

DAILY:

- tire pressure and condition
- turn signals
- lights
- horn
- fuel tank level

INSPECT THE FOLLOWING

WEEKLY:

- oil level
- battery fluid level
- coolant level
- windshield washer fluid level

INSPECT THE FOLLOWING

MONTHLY:

- belts and hoses
- brake fluid level
- transmission fluid level

INSPECT THE FOLLOWING

EVERY SIX MONTHS:

- wiper blades
- battery terminals
- shock absorbers
- tire rotation

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