

Pre-entry Checks**Fact Sheet 2.1**
Content Information**Pre-entry Checks**

Certain checks and procedures must become habits if drivers are to operate a motor vehicle safely and efficiently. The first habit to develop is to prepare, him/her, the vehicle and passengers for travel. For every drive, it is important that the driver check around the outside of the vehicle. A few simple checks will help prevent trouble on the road.

Drivers should approach the vehicle with key/key fob in hand and be alert for other pedestrians and drivers. Drivers should ensure that they are visible to other drivers. Drivers should also walk well away from parked vehicles. If the vehicle is parked at the curb, drivers should approach the driver's door from the front of the vehicle, facing traffic to increase awareness of oncoming traffic. Before entering the vehicle, drivers should check around the outside of the vehicle.

1. Check around outside of vehicle for the following items:
 - a. Broken glass (windows, lights, mirrors)
 - b. Body damage
 - c. Fluid leaks
 - d. Objects that could damage vehicle when moved
 - e. Children and pets
 - f. Snow build up that can block windows and lights

2. Check tires for the following:
 - a. Condition – ensure that tread is evenly worn and look for cuts or other damage
 - b. Inflation – check for proper inflation with tire gauge
 - c. Direction front tires are turned

After performing these pre-entry checks, drivers should unlock the door and enter the vehicle quickly.

**Pre-drive Procedures, Mirrors and
Blind Spots**
**Fact Sheet 2.5 continued
Content Information**
Mirror Settings and Usage
Mirror Usage

Any time speed or position adjustments are necessary, the driver must consider the location, size and speed of vehicles to the sides and/or rear. While a vehicle is in motion, mirror usage is intended to assist in detection, not in gathering detail. Drivers cannot afford to divert attention from the path ahead for more than a second. Mirror checks can answer three important questions: Are there vehicles present? If yes, what is the location? If yes, what is the size and relative speed of detected vehicles?

When stopping:

- Anytime a driver prepares to slow or stop, the driver's eyes should scan first to the rear view mirror.
- Flash the brake lights to alert any following driver.
- Direct attention to the rear view mirror until two cars have stopped behind the vehicle. Use multiple, quick glances, not a long stare.
- Check the mirrors quickly and allow for extra space ahead, increasing the ability to steer out of the lane if a vehicle from the rear appears to be traveling too fast to stop in time.

When turning:

- When the driver prepares to turn, mirrors should be checked before any change of speed or position is made to enable assessment and control of rear and side space.
- The driver should assess the space to the rear as soon as the turn is completed, and then assess the space to the front.

When changing lanes:

- When a driver is attempting to change lanes, mirrors should be checked before any change of speed or position is made to enable assessment and control of rear and side space. Also it is important to check over the shoulder in the mirror blind spots as well.

Checking mirror blind areas

- Regular side view mirrors, even when angled out an additional 12 to 16 degrees (enhanced setting), do not provide sufficient information to safely make a movement to the side without first making a mirror blind spot check.
- A mirror blind spot check involves making a quick eye movement over the shoulder to the left or right in the direction of intended vehicle movement.

Vehicle Reference Points

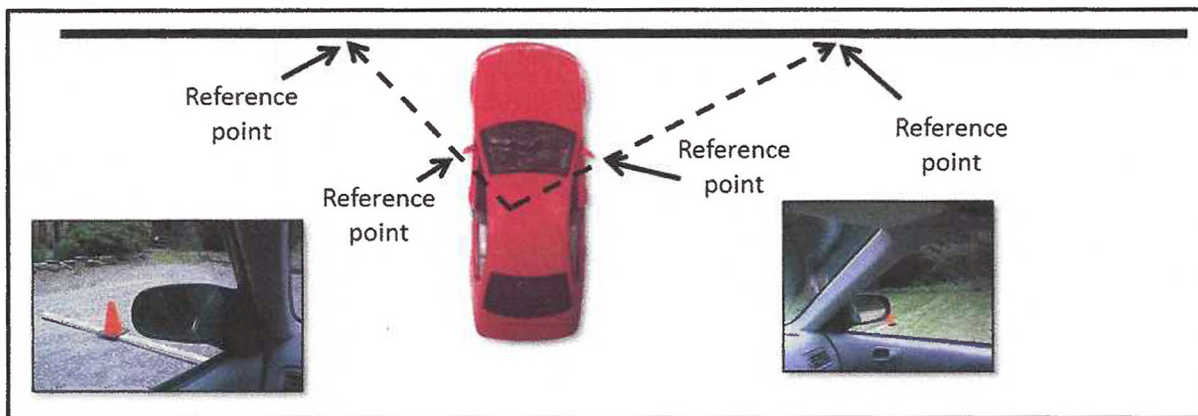
Fact Sheet 2.6 continued

Content Information

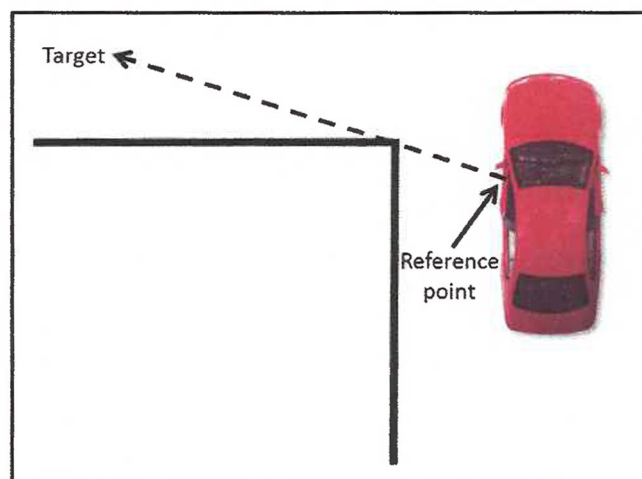
Vehicle Reference Points

Front Vehicle Reference Points

Drivers can develop reference points to determine where the front end of the vehicle is at intersections, where the car should be in a stopped position, where the car should stop in perpendicular parking, or when placing the front of the vehicle even with a line or curb. The curb or line should appear to run under the driver or passenger side view mirror. The front vehicle reference point is a reference point to know where to stop the vehicle.



Drivers can develop reference points to determine when the front end of your vehicle is a few feet beyond the curb line and where you should begin to turn the steering wheel at intersections. The curb or line should appear to run under the driver side view mirror, and the driver can see where to go without the driver's vision cutting across the curb line. This is the point at which the driver should begin to turn the steering wheel to make the left turn.



Vehicle Reference Points

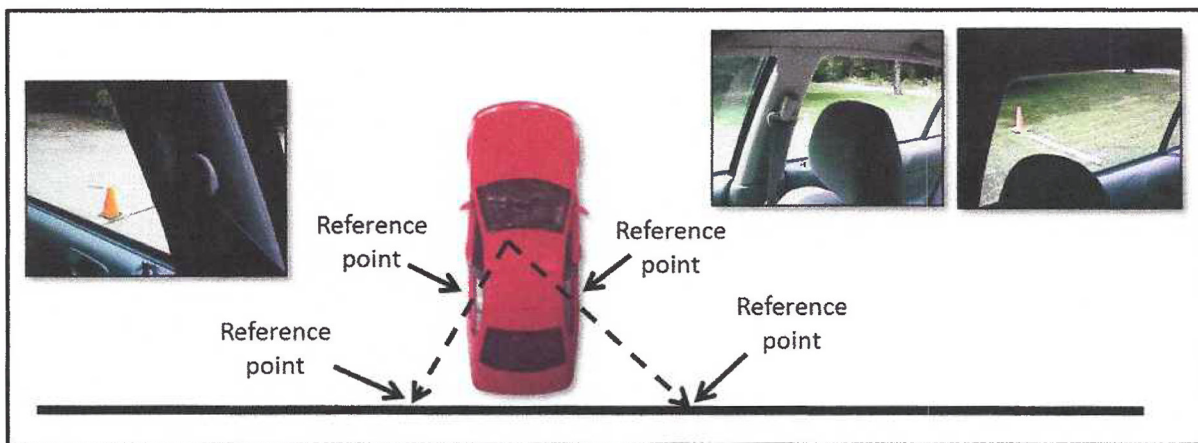
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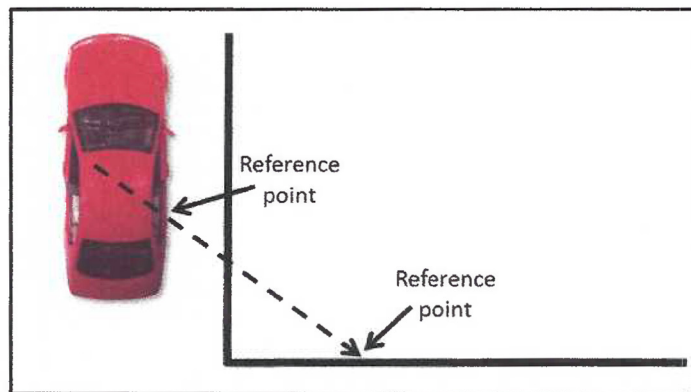
Vehicle Reference Points

Rear Vehicle Reference Points

To determine when the rear of your vehicle is 3-6 inches away from a line when backing, perpendicular parking or placing the rear of the vehicle to a line or curb, the driver can develop reference points. When the driver turns his/her head and looks over the left shoulder, the curb or line should appear to be centered near the bottom of the rear door window.



To determine when the rear of the vehicle is three feet away from a line when backing and turning, drivers can develop reference points. When a driver turns his/her head and looks over the right shoulder, he/she will see the line disappear in the rear window corner post. This is the point where drivers should begin turning the steering wheel when backing around a corner.



Vehicle Reference Points

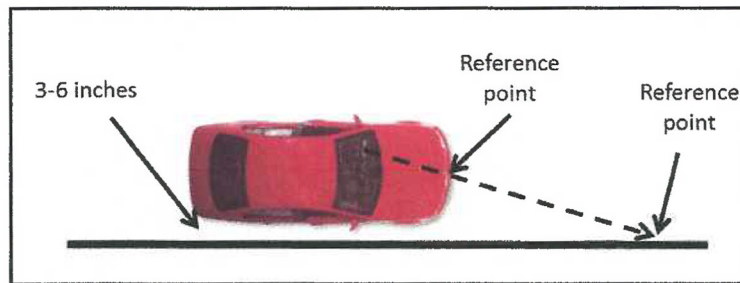
Fact Sheet 2.6 continued

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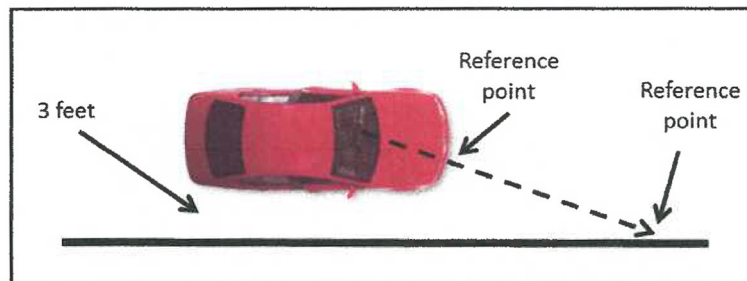
Vehicle Reference Points

Right Side Vehicle Reference Points

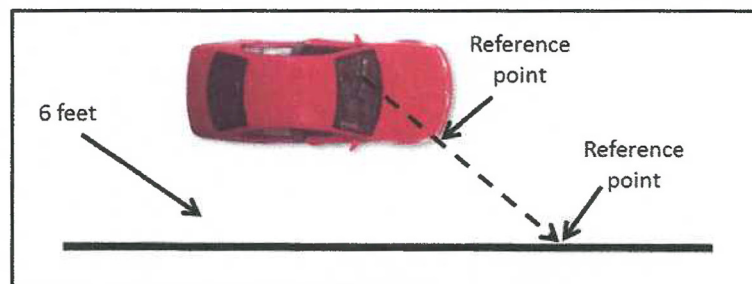
Drivers can develop reference points to determine where the right side of the vehicle is positioned when curb parking on the right side or when placing the vehicle 3-6 inches from a white line or curb. The line of sight reference is to align the center of the vehicle to the curb or the edge line of the roadway.



To determine when the right side of the vehicle is three feet from the curb or line, the line of sight reference is to align the right $\frac{1}{4}$ section of the hood to the curb or the edge line of the roadway.

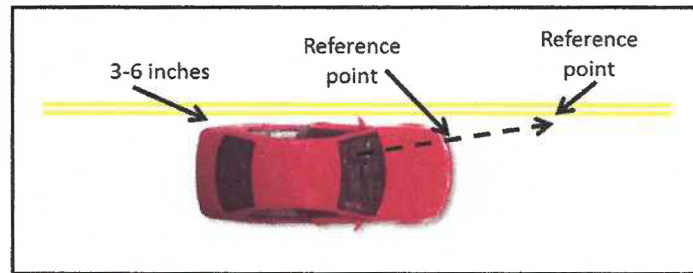


To determine when the right side of your vehicle is six feet from the curb or line, the line of sight reference is to align the right headlight to the curb or the edge line of the roadway.



Vehicle Reference Points**Fact Sheet 2.6 continued**
Content Information**Vehicle Reference Points****Left Side Vehicle Reference Points**

Drivers can develop reference points to determine where the left side of the vehicle is when curb parking on the left side or when placing the vehicle 3-6 inches from a white line, curb, double solid yellow centerline, or broken centerline. The line of sight reference is about one foot from the left side or the crack line between the left fender and the hood of your vehicle to the curb or left side of the vehicle.



Safety Restraints**Fact Sheet 2.3**
Content Information**Safety Restraints**

For most people, the term “occupant protection” refers to safety belts, child restraints, or driver and passenger side air bags. In the context of this lesson, the term “occupant protection” is much more inclusive, incorporating technological advances in vehicle integrity in the event of a crash and response capability.

Adults and Teens**Safety belts**

- When properly adjusted, lap and shoulder belts are among the most important safety features in a motor vehicle. Safety belts are designed to help slow the occupant’s rate of deceleration in a frontal collision. Safety belts also help keep vehicle occupants securely in place, keeping the driver firmly behind the steering wheel. When drivers wear safety belts properly, drivers will also have added comfort, reducing fatigue to help keep the driver more alert.
- Shoulder belts should be worn across the top of shoulder and chest with minimal slack to distribute force in the event of a crash. The belt should not be twisted, and should not be worn under the arm or behind the back.
- The lap belt should be snug and placed low across the hips after fastening so that the belt will be prevented from riding up the abdomen.
- Adjust center post mounting for height, if vehicle is so equipped, to make the safety belt more comfortable.
- Check safety belt frequently for a snug fit.
- Keep seat back in upright position and sit upright with the driver’s back against the seat, with feet on the floor. Improper seating positions, such as slouching, reclining, or resting feet on the dashboard can result in reduced effectiveness of the vehicle’s restraint system and, possibly injury.

Head restraints

- Reduce the risk of neck injury caused by whiplash from the impact of a crash.
- Need to be adjusted high enough to make contact with the back of the head, slightly above the ears, within three inches of the back of the head.
- Are used best when the driver remains seated in a normal, upright position and when the driver avoids leaning forward while driving to reduce the chance of injury.

Safety Restraints

Fact Sheet 2.3 continued
Content Information

Adults and Teens continued

Air bags (dash and steering wheel)

- Work in conjunction with safety belts and help absorb crash forces to minimize impact to the body.
- Protect against head and chest injuries
- May pose dangers to children 12 and under who are safest riding in the back seat.
- Must inflate very rapidly to be effective, therefore, deploying out of the steering wheel or instrument panel with great force.
- May cause minor injuries with contact.
- Help prevent injuries, provided that the driver adjusts the seat so there is 10 - 12 inches between the driver's chest and the steering wheel.
- Need to be directed at the driver's chest and not the face. To ensure proper adjustment the driver may raise seat or use a wedge-shaped cushion, as well as adjust the steering wheel.

Air bags (side impact protection)

- Over the side doors
- In the sides of the seat
- In the door panel

Children and Youth

- Children 12 and under are safest riding in the back seat.
- **Infants** are safest riding in rear facing car seats until they are at least 12 months old and 20 pounds.
- **Toddlers** who are at least 1-year-old, weighing 20-40 pounds, and can no longer ride rear facing because of height and weight can ride in forward facing child car seats.
- **Children** age 4 – 7 should ride in forward facing child car seats with a harness until they reach the height or weight limit. Once they outgrow their car seat they can ride in a booster seat or other appropriate child restraint.
- **Older Children** age 8 – 12 should ride in a booster seat until they are big enough to fit in a safety belt properly.
- Any seat must be installed and used according to the manufacturer's instructions and vehicle owner's manual.
- Lower Anchors and Tethers for Children (LATCH) System consists of attachments on the child car seat and a set of lower or upper tether anchors in the vehicle to hold the child seat safely in place.

Safety Restraints

Fact Sheet 2.3 continued

Content Information

Myths and Facts

1. **MYTH:** Belts are uncomfortable or inconvenient.

FACT: Once the use of safety belts becomes a habit, there is no discomfort or inconvenience. Furthermore, this discomfort and inconvenience does not compare to the serious discomfort and inconvenience of a motor vehicle crash injury.

2. **MYTH:** Unbelted people are safer if thrown clear of the car in a crash.

FACT: Unbelted people are more likely to be severely injured or killed if ejected.

3. **MYTH:** If the car catches fire or is submerged in water, belted people cannot get out.

FACT: Less than one-half of one percent of collisions involves fire or submersion. In the event of a fire involved crash, the belted occupant should detach the belt and escape the vehicle. In the event of a vehicle submersion, belted occupants will have more stabilized bodies if they need to open a door or break a window.

4. **MYTH:** The driving distance is not far or driving slowly will prevent injuries.

FACT: Motor vehicle crashes are the leading cause of preventable death and injury in the United States. Crashes cause about 32,700 deaths a year, affecting any age and type of driver.

5. **MYTH:** Air bags are enough; drivers don't need safety belts.

FACT: Air bags are a supplemental form of protection and most are designed to deploy only in moderate to severe frontal crashes. Safety belts should always be used, even in a vehicle with air bags.

6. **MYTH:** Belts can hurt occupants in a crash.

FACT: When used properly, safety belts reduce the risk of fatal injury to front seat passenger car occupants by 45% and reduce the risk of moderate to critical injury by 50%.

7. **MYTH:** Cautious drivers with good reflexes won't get into a crash.

FACT: Crashes cause about 32,700 deaths a year.

Safety Restraints

Fact Sheet 2.3 continued

Content Information

Advances in Vehicle Safety for Today and Tomorrow

Many new technological advances in vehicle integrity are available in cars to lessen the events of a crash for today's drivers. Some advances are uncommon or will be used in the future.

New Advances in Vehicle Safety Found Today

- **All-wheel drive** – has the capability to apply power to all four of the wheels for added pulling power and in low traction situations.
- **Antilock brakes** – prevents wheels from locking up and skidding during hard braking by monitoring the speed of each wheel and automatically pulsing the brake pressure on any wheel where skidding is detected.
- **Electronic stability control (ESC)** – monitors traction loss and steering angle and automatically applies one or more of the brakes to keep the vehicle on course. ESC helps to prevent the sideways skidding and loss of control that can lead to rollovers, helping drivers to maintain control during emergency maneuvers when their vehicles otherwise might spin out.
- **Telematics (i.e. OnStar)** – uses cellular communications and GPS technology to plot directions, contact and guide 911 operators after a crash. The system can also remotely unlock doors, and track a stolen vehicle.
- **Tire pressure monitoring** – alerts the driver when a tire's air pressure is dangerously low.

Safety Restraints

Fact Sheet 2.3 continued

Content Information

New Advances in Vehicle Safety for Tomorrow

- **Active head restraints** – automatically moves forward upon impact to catch the head and increase neck protection.
- **Adaptive cruise control** – uses radar to monitor and regulate the distance between vehicles. If a crash is imminent, the system will brake, deploy airbags, and tighten safety belts.
- **Adaptive headlights** – illuminates the area around a corner with a 15-degree range of motion.
- **Advanced airbags** – isolates and protects various body parts and, in some systems, deploy at different depths or velocity depending on the occupant's size and position, the severity of the crash, and use of the clasped or unclasped safety belt.
- **Advanced safety belt pretensioners** – tenses up when a collision is imminent and are sometimes paired with seats that automatically adjust for increased crash protection.
- **Fatigue warning** – monitors the driver's eye blink rate and blink duration and alerts the driver if it detects inattention or drowsiness.
- **Forward collision warning systems** – alerts the driver when the vehicle is getting too close to a vehicle in front. Some systems are able to brake the vehicle if the driver doesn't stop or steer clear.
- **Lane departure warning systems** – signals to a driver with alarm or flashing light when the driver's vehicle drifts from its lane by capturing an image of the highway and the lines on either side of the vehicle.
- **Park assist and back over prevention** – helps drivers park and back the vehicle by using cameras and radar to look for objects located behind a vehicle and by alerting drivers to hazards. Some systems are capable of automatically parallel parking the vehicle.
- **Side view assist** – uses sensors to monitor the side of the vehicle for vehicles approaching blind spots. A visual alert appears on the side view mirrors if a vehicle is detected. An audible alert activates if the driver signals a lane change when there is a vehicle in the blind spot.