

Class 1

# Getting Acquainted with the Vehicle

### Unit 2 Getting Acquainted with the Vehicle

<b>Pre-entry</b>	Chec	kS
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# 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:
  - Broken glass (windows, lights, mirrors) a.
  - Body damage b.
  - Fluid leaks c.
  - Objects that could damage vehicle when moved d.
  - Children and pets e.
  - Snow build up that can block windows and lights f
- 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 auickly.

# The Area Around the Vehicle

### The Area Around the Vehicle

Because of the structural design of the vehicle, the driver is not able to see the spaces immediately around the vehicle. This unnoticeable space consists of the area between the vehicle and the nearest point where the driver can see the ground when seated properly in the driver's seat. This is sometimes referred to as the blind zone.

The blind zone may hide a small child or a retaining wall that is not visible to the driver because of vehicle door height. A driver's field of vision stops where glass and metal meet. Because of these sight limitations drivers may back into an area and strike an object such as a bike, pet, stump or a concrete block.

When properly seated, the driver should be able to see the ground within:

- 12-15 feet or one length of the vehicle to the front,
- 1-1/2-2 car widths to the right side
- 1/2-1 car width to the left side
- 2 lengths of vehicle to the rear (may be nearly 40 feet)

To compensate for this space, it is important to learn where the vehicle's unseen boundaries are, how large they can be, and techniques to help prevent collisions. Proper adjustment of the vehicle's features (mirrors, seat, and head restraint) should help to maximize the drivers view from inside the vehicle in all directions.



# **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.

### 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.

### **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.

### 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.

# 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.

# **Fact Sheet 2.4** Content Information

### Safety, Communication, Comfort, Convenience and Control Devices

Drivers should become familiar with the location and operation of vehicle devices and should practice using the instruments and controls while the vehicle is parked so the instruments can be located and utilized while driving. Familiarity with devices prevents drivers from taking their eyes off the road ahead for more than a few seconds at a time. It is important that drivers know the location, purpose and operation of the various controls, safety, comfort and convenience devices when driving a motor vehicle. However, it is essential that drivers understand the increased risk associated with directing attention to a task other than driving. Inattentiveness lowers one's level of alertness directed to driving and typically has an adverse effect on steering.

# Safety, communication, comfort and convenience devices

- Mirrors
- Safety belts
- Head restraint
- Horn
- Turn signals
- Door locks
- Hazard flasher
- Windshield wipers & washers
- Headlights
- Hood release
- Trunk release
- Heater, defroster, and air conditioner
- Seat adjustment controls

### **Operating vehicle control devices**

- Steering
- Steering wheel adjustment
- Gear selector lever
- Parking brake
- Cruise/Speed control
- Ignition switch
- Accelerator pedal
- Brake pedal
- Clutch pedal

# Fact Sheet 2.4 continued Content Information

### Safety, Communication, Comfort and Convenience Devices

**Mirrors** - Adjustment of the mirrors can be done inside and outside in vehicles equipped with remote controlled outside mirrors. These controls may be located on the left side of the dash, the driver's side arm rest, or center console. However, no matter how the mirrors are adjusted, there are areas that still cannot be seen, requiring that drivers turn their heads to check prior to making a move to the left or right.

**Safety belts** - While safety belts protect occupants in a crash, they serve an equally important role of keeping the driver firmly in place behind the steering wheel, allowing better control of the vehicle. For maximum protection, the safety belt should be positioned as low on the hips as possible. After fastening the belt, grasp the shoulder belt and pull upward to take up the slack in the belt across hips. Make sure that all passengers do the same.

**Head restraint** - All new vehicles are equipped with head restraints (front seats and some rear seats) to help reduce whiplash injuries when struck from the rear. Some vehicles are equipped with head restraints that can be adjusted up or down to position the restraint behind the middle of the occupants head. Other vehicles are equipped with head restraints that are built into the top of the seat and cannot be adjusted.

**Horn** - The horn is generally operated by pressing a button located on a steering wheel cross bar, or on the pad on the lower half of the steering wheel above or below the air bag cover.

**Turn signal lever** - Device used to communicate which direction you plan to turn. Located on the left side of the steering column, the lever is moved up to signal a movement to the right and down for a movement to the left. While the signal will cancel after most turns, the driver may have to cancel the signal manually after a slight turn or a lane change.

**Door locks** - In vehicles equipped with manual locks, each door has its own locking device. An additional master control is usually located on the driver side arm rest in vehicles with electric/power door locks. Child safe rear door locks are an option with the device located on the inside of the rear doors.

**Hazard flasher** - The purpose of the hazard flashers is to warn other drivers of a problem and to increase the driver's awareness of the presence of the vehicle. The switch for the hazard lights is usually located on the top or right side of the steering column or on the dash. When operated, both front and rear turn signal lights flash simultaneously.

**Windshield wipers and washers -** This control is frequently located on the turn signal lever. Two switches are often involved. One controls the speed of the wipers and a second controls the washer fluid.

**Headlights** - This switch may be located on the left side of the instrument panel, on the same lever as the turn signal, or on a separate lever located on the right side of the steering column. The switch controls the headlights, parking lights, taillights, side marker lights and license plate lights. In many vehicles, a separate switch controls the instrument panel, dome lights (interior lights), rheostat (changes the intensity of the dash background lighting), and the automatic headlights.

**Hood release** – Lever used to release the hood of the vehicle. A second latch located under the front edge of the hood must be released to open the hood. This lever is usually located on the left side of the driver's compartment under the dash. In some vehicles it is located under, or just to the left of the steering column.

**Trunk release** - An option on many vehicles, the release may be a lever or button located on the floor just to the left of the driver's seat, on the driver's door, or in the glove box. The release button can also be found on the key fob.

**Heater, defroster and air conditioner** - These control switches are located in a cluster on the instrument panel. Some vehicles have a separate switch located on the instrument panel that operates a rear window defroster.

**Seat adjustment controls** - If manually controlled, the adjustment lever to move the seat forward or backward is typically located at the lower front, left or right side of the driver's seat. A second lever or knob is located on the left side of the seat in some vehicles, allowing the driver to change the angle of the seat back. In vehicles with electric power seats, the controls are usually located on the lower left side of the driver's seat, or in a control cluster located on the driver's side arm rest.

# Fact Sheet 2.4 continued Content Information

# **Operating Vehicle Control Devices**

Regardless of whether the driver's hands grip the wheel in a balanced position on the upper or lower half of the wheel, before one hand releases the wheel to adjust any information, comfort or control device, the hand not performing the action should be moved to the 7-8 or 4-5 o'clock position. It is critical to remember that when operating any vehicle control, comfort, or communication device that the driver's attention must not be diverted from the path of travel for more than an instant. Controls perform the same function in each vehicle. However, location and characteristics vary from one type of vehicle to another.

**Steering** — The steering wheel is always turned in the direction the driver wants the vehicle to move, whether moving forward or in reverse. However, the amount of steering input and energy needed will vary according to the type of steering, to the direction of movement to the front or rear, to the number of turns to lock, to the degree of power assist and to the speed of travel.

**Steering wheel adjustment** — In some vehicles, the angle of the steering wheel is controlled by a lever located on the left or right side of the steering column. Other vehicles permit the driver to change the angle of the steering wheel by adjusting the steering column. An adjustment lever located on the bottom side of the steering column permits the driver to raise or lower the steering column to achieve a better steering wheel angle. When the driver is properly seated, the top of the steering wheel should be no higher than the top of the driver's shoulder.

**Gear selector lever**— This lever allows the driver to shift the transmission and select a gear. In a vehicle with an automatic transmission, the gear selector is located either on the steering column or on a console located between the front seats. In a vehicle with a manual transmission, the gear selector is located on the center console, on the floor to the right of the driver or, in older vehicles, on the right side of the steering column.

**Parking brake** — This brake is sometimes mistakenly referred to as an emergency brake. The primary purpose of the parking brake is to hold a vehicle in place when it is parked and to protect the transmission. The parking brake may be either a foot operated pedal located to the far left side of the driver under the dash, a hand-operated lever located to the right of the steering column, or to the right of the driver on the floor or center console. To set a foot-operated parking brake, push down firmly on the pedal. Depending on the vehicle, one of two methods is used to release the brake. In some vehicles push down on the pedal until a click is heard and then release the pedal. In other vehicles, a brake release lever is located above the foot pedal on the underside of the dashboard. To set a floor or console mounted parking brake, the driver can simply pull back firmly on the lever. To release the brake, the driver can press the button located on the end of the lever with his/her thumb and lower the lever.

**Cruise/speed control -** This device allows a driver to select and travel at a set speed without having to keep his/her foot on the accelerator. The controls are located either on the steering wheel or a stem on the left or right side of the steering column. The control options are as follows: on/off, set/accelerate, coast and resume. Speed control can be cancelled at any time by pressing the brake pedal or touching the off switch.

**Ignition switch** - This switch locks the steering wheel and the gear selector. It also enables the driver to start and turn off the engine or use the radio. It is located on the right side of the steering column or on the dashboard on some vehicles. Some newer vehicles also offer keyless, or push-to-start, ignition systems using a key fob.

Accelerator pedal - This foot-operated pedal is suspended from the firewall on the right side of the driver's foot position. The driver controls speed by adjusting pressure on the pedal.

**Brake pedal -** The brake pedal is located to the left of the accelerator. The driver slows the vehicle by applying downward pressure. The degree of deceleration is determined by the amount of pressure the driver applies to the brake pedal and the friction between the tires and road surface.

**Clutch pedal** – In manual transmission vehicles this pedal is located to the left of the brake pedal. The driver pushes it with the left foot to disengage the transmission.

# **Pre-drive Procedures, Mirrors and Blind Spots**

### **Pre-drive Procedures**

- 1. Lock doors
- 2. Place key in ignition
- 3. Adjust seat for best control so that the top of steering wheel is no higher than the top of the driver's shoulders. There should be 10 12 inches between the driver's chest and the steering wheel. Drivers should use a wedge seat cushion and/or pedal extensions for maximum field of view, if needed.
- 4. Adjust inside and outside mirrors for maximum field of view.
- 5. Fasten and adjust safety belt and confirm that all passengers have fastened their safety belts.
- 6. Adjust head restraints.

# **Pre-drive Procedures, Mirrors and Blind Spots**

# Fact Sheet 2.5 continued Content Information

### **Mirror Settings and Usage**

### **Traditional Mirror Settings**

- Outside mirrors are set so that the driver can see the back edges of the vehicle.
- May be more appropriate for trucks, vans and SUV type vehicles when towing or backing in tight areas. Passenger vehicle side view mirrors are not designed for backing the vehicle.

### **Disadvantages:**

• Limits driver's visibility to the sides of vehicle

### Settings:

• Adjust the left side view mirror to see the left edge of the vehicle and adjust the right side view mirror to see the right edge of the vehicle.

# Left Mirror Using Traditional Mirror Setting



Left mirror set using traditional mirror settings. The back edge of the vehicle is visible. Limits driver's visibility to the sides of the vehicle.

# Right Mirror Using Traditional Mirror Setting



Right mirror set using traditional mirror settings. The back edge of the vehicle is visible. Limits driver's visibility to the sides of the vehicle.

# Pre-drive Procedures, Mirrors and Blind Spots

### Mirror Settings and Usage

### **Enhanced Mirror Settings**

#### Advantages:

- With the side mirrors more slightly angled, the driver will gain increased visual coverage of blind spots. This setting provides the greatest visibility to the side of the vehicle and reduces blind spots.
- Turning to look can be uncomfortable and unsafe in multiple lanes.
- Brief glances to mirrors takes less time than turning head to side.
- Night glare is eliminated until vehicle moves into mirror blind zone.

### **Setting Your Mirrors:**

- Inside mirror becomes primary mirror for view to the rear.
- Outside mirrors should be adjusted to reduce blind spots and to provide maximum visibility to the side and rear on both sides of the vehicle.
- To set the left side mirror, the driver must rest head against the closed window and set the mirror to barely show the rear edge of the vehicle.
- To set the right side mirror, the driver should lean to the right so the head is directly below the rearview mirror or above the center console. The mirror should be adjusted the same way as the left side, so that the edge of the right side of your vehicle can barely be seen.
- The driver will not see the left and right sides of the vehicle when glancing in the outside mirrors; however, this adjustment adds 12 to 16 degrees additional viewing area to each side of the vehicle.

#### **Concerns:**

- Keep in mind vehicles visible in side mirrors will be alongside your vehicle.
- Side mirrors are used in conjunction with primary mirror to view areas to side and rear.
- If the driver needs to see alongside the car, a movement of the head to the left window or to the center of the vehicle will give the traditional view as well as the enhanced mirror view.
- This setting may not work on all vehicles such as cargo vans with no rear window; therefore, the traditional mirror setting may be appropriate.

# Pre-drive Procedures, Mirrors and Blind Spots

### **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**

You cannot see the actual position of the vehicle in relation to the roadway because the driver's view of the road is blocked by the dashboard and the hood of the vehicle. You can use reference points to serve as guides in determining the position of the vehicle in the roadway.

A reference point is some part of the outside or inside of the vehicle, viewed from the driver's seat, which relates to some part of the roadway. Reference points can be developed for the front, side or rear to help you know where the vehicle is located on the roadway.

A standard reference point is the point on the vehicle that is similar for most drivers. This could be a side view mirror, a hood ornament, or the center of the hood. Once drivers learn standard reference points, they can develop their own personal reference points.

A personal reference point is a variation of a standard reference point for a driver's personal vehicle. Drivers will learn to use different parts of the vehicle, such as wiper blades, door handles, or rearview mirrors as guides. When drivers begin to practice parking maneuvers, they will learn which parts of the vehicle to use as personal reference points. Drivers will be able to line up these points with parts of other vehicles to help execute the maneuvers.

When attempting to discover a reference point, drivers should first use the "standard" reference point. If the "standard" reference point was accurate, continue to use it. If any "standard" reference point does not work, drivers should make note of "personal" reference points. These personal reference points will not be more than a few inches away from the "standard" reference point. Once a personal reference point is determined the driver needs to remember the correct picture for future use.

# 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.



# Fact Sheet 2.6 continued Content Information

### 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.



# Fact Sheet 2.6 continued Content Information

### **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 <sup>1</sup>/<sub>4</sub> 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.



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.



# Vehicle Owner's Manual

### The Vehicle Owner's Manual

The owner's manual is a valuable resource for understanding the operation and maintenance of a vehicle. Drivers should read the owner's manual carefully before driving. The manual will provide information to ensure familiarity with controls and maintenance requirements assisting you in the safe operation of your vehicle.

The owner's manual contains helpful information on the following topics:

- Location and operation of controls, gauges, indicator lights Controls, gauges and indicator lights function the same for most vehicles, but they are not in the same location for all vehicles; therefore, it is important to read the owner's manual to become familiar with the location of the controls and devices specific to each vehicle so that drivers can operate them without being distracted from the driving task.
- Adjusting head restraints A vehicle's head restraint is important for guarding against whiplash neck injuries that often accompany a rear-end collision. Restraints need to be high enough to cushion the head above the top of the spine. Many vehicles' head restraints adjust for height. It is important to read your owner's manual to see how to adjust and release the head restraints for your vehicle.
- Safety restraints and child passenger seats The owner's manual gives information on where safety restraints are located in the vehicle, how to use them properly, and how to install child passenger seats properly.
- **Maintenance** The owner's manual gives advice on what should be serviced and when. It is the driver's responsibility to make sure that the scheduled maintenance, as well as general maintenance, is performed. The manual also provides the driver with information on how to troubleshoot the vehicle, how to add fluids, change light bulbs, and check tire pressure.

Manuals should be kept in an accessible, protected place in your vehicle, either in the glove compartment, center console, or in the trunk. Many companies offer online access to the owner's manual in addition to the hard copy manual.