Chapter Two: Occupant Protection and Perceptual Skills

**Occupant Protection Devices**

**Safety Belts**

All fifty states require the use of seatbelts. Texas law requires that all occupants, no matter what their age, are to be secured in a seatbelt at all times, no matter where they are seated in the vehicle. Some of the advantages of wearing seatbelts are:

- **Seatbelts help protect drivers and passengers by absorbing the forces of a crash.**
- **Wearing seatbelts will help the driver maintain better control of the vehicle.**
- **Seatbelts keep drivers and passengers from being thrown from the vehicle during a crash.**
- **Drivers and passengers have a 50% better chance of surviving a crash without severe injuries.**

The facts support that seatbelts save lives and as a result every passenger vehicle manufactured since 1966 are federally mandated to have seatbelts as standard equipment. Vehicles manufactured before 1966 are not required to have seatbelts.

**What happens in a collision?**

**First Collision**—is the collision between the vehicle and whatever it strikes, such as a vehicle, a tree, a bridge, a bush, a utility pole, or any other object.

**Second Collision**—is the collision between the vehicle’s occupants and the interior of the vehicle.

**Third Collision**—is the collision involving the jarring and compression of internal organs and nerves against the skeletal and muscular structure of the human body.

**What are some excuses that you have heard from people who don’t wear their seatbelts?**

- **Excuse #1—I am a good driver.**
- **Excuse #2—I can brace my self in case of a crash.**
- **Excuse #3—I don’t want to be trapped in burning or submerged vehicle.**
- **Excuse #4—I forget sometimes.**

A 10 mph impact has the same force as catching a 200 pound sack of cement dropped from a one story building. If you are thrown from your vehicle, you are 25 times more likely to suffer serious injury or death.

Statistically speaking, less than ½ of 1% of all collisions involve fire or submersion.
**Air Bags**

All new passenger vehicles are now required to have air bags for both the driver and front seat occupants.

- **Advantages:** In addition to safety belts, air bags absorb the forces of crashes. Air bags keep the driver from being smashed into the steering wheel. Air bags also keep front seat passenger from being thrown through the windshield.
- **Location:** Air bags are located in the steering wheel and in the dashboard. Some vehicles now come with side impact devices as well.
- **Material:** Air bags are made of durable materials designed to last the life of the vehicle. The chemical inside the bag, sodium azide, inflates the bag with the breathable gas nitrogen.
- **Inflation:** When it comes to inflation, twelve miles per hour is the magic number. Any collision less than this speed is unlikely to inflate the device. A hammer blow or quick stop will not inflate the bag.
- **Injury:** Contrary to what some might say air bags have not been found to cause hearing damage.

**Child Safety Restraints**

Age and weight are both important determining factors when it comes to choosing which system is best for a child.

- **Newborn to one year and under 20 pound** infants should ride in carriers that face the rear of the vehicle for better protection.
- **One year to eight years or children less than 4’ 9” in height** should ride in auto booster seats facing the front of the vehicle, and the booster seat should be secured with the vehicle’s seatbelts.

Children over eight years of age should be strapped in with the seatbelt provided in the vehicle. Make sure the seatbelt is snug and slung low across the hips and below the stomach. If the shoulder harness does not come to midway between the edge of the shoulder and the neck, put the child in a booster seat. If a booster seat is not available, position the child in the center seat with the seat belt across the hips, not the stomach.

**Leaving a Child in a Vehicle**

It is against the law in the State of Texas to leave a child unattended in a motor vehicle. According to the Penal code:

“(a) A person commits an offense if he intentionally or knowingly leaves a child in a motor vehicle for longer than five minutes, knowing that the child is:
1) Younger than seven years of age; and
2) Not attended by an individual in the vehicle who is 14 years of age or older.
3) An offense under this section is a Class C misdemeanor.” (Penal Code 22.10)
Physical Conditions that can Affect the Driver

Age

Drivers 15 to 25 years of age—people in this group have very fast reaction times but lack experience which sometimes contributes to the driver making a wrong decision.

1. New driver are required to have six months of supervised driving with an adult 21 years or older and complete a driver’s education course.
2. Phase Two of the provisional license regulations required that the driver can not drive alone after midnight or before 5 in the morning.
3. A provisional licensed driver may not operate a wireless communication device while operating a motor vehicle until they are 18 years of age.
4. Teen-ager receiving two traffic tickets while driving with a provisional license, the license can be suspended for 90 days.

Drivers 26 to 54 years of age—drivers in this category are more experience; however, these drivers can be more subject to the stresses of daily life which may affect safe driving.

Drivers-55-above—by the year 2020, twenty percent of all Americans will be over 65 years of age and thirty three percent will be over 55 years.

1. Do not ignore the limitations that age brings.
2. Adjust driving habits to physical abilities and disabilities.
3. Take good care of yourself by getting regular physicals and regular eye exams.
4. Drive within speed limits and be cautious.
5. Avoid fast and heavy traffic areas.

Vision

Of the five senses that we depend on, vision is probably the most important. In fact, 90% of sensory perception is visual. This is especially true when driving. Poor vision can be a real safety hazard while driving. Some of the conditions that can affect safe driving are:

- **Night blindness**—is the inability of the retina to registers images in low light situations.
- **Glare blindness**—occurs when driving at night. This condition is caused when the pupil of the eye dilates and lets in more light than is needed.
- Always dim headlights to oncoming traffic. **Minimum distance** to dim lights is 500 feet for approaching vehicles and 300 feet when approaching a vehicle from the rear.
- **Drug-use can affect vision**—regardless of whether a drug is legal or illegal, it can have an adverse affect on safe driving.
- **Corrective Lenses and Contacts**—unfortunately, many drivers do not comply with vision restriction codes because of vanity or simple neglect.
Hearing

How well a driver hears also plays an important role in safe driving.

- **Cell phone** usage can severely distract driving safety.
- **What phone call is so important that it is worth risking your life and the lives of your passengers?**

Mobility

Physical abilities and disabilities can have an important impact on driving safety.

- **Adjust the seat** to a comfortable position before the engine is started.
- **Adjust all mirrors** and headrest so that movement will not be strained or impeded.
- If necessary, operate only vehicles equipped with **power steering and brakes**.
- Physically challenged drivers may require **special devices** designed to aid in the operation of the vehicle.

Smell

A driver’s nose can play an important role in determining possible hazards.

- The **smell of engine coolant** or the smell of **burning rubber**, or **exhaust fumes** indicates serious hazards that require the attention of the driver.

Road Feeling

How the vehicle handles is often indicated through the road feel of the steering wheel. A shimmy in the steering may indicate some type of wheel alignment problem.

- **Wheel alignment** problems can cause accidents as the handling of the vehicle becomes more difficult as the alignment deteriorates.
- The feel and touch of the steering wheel can also give indications of **low tire pressure**.

Illness

There are times when the driver may not feel well enough to operate a vehicle.

- If a driver is not feeling well, he or she maybe should not drive as **reaction times** and **coordination** can be affected.
- **Never operate a vehicle when taking a prescription drug that advises against driving.**
Fatigue-Drowsiness

Driver fatigue or drowsiness can be a serious problem.
- The driver recognizes his lack or lapses in attention.
- The driver’s mind wanders and is subject to day dreaming.
- The driver’s eye close involuntarily (heavy eyelids).
- Following too closely (tailgating) due to the driver inability to correctly judge distances.
- Missed traffic signals, such as running a red light or failure to stop at a stop sign.

In order to combat driver fatigue, the driver can do a number of things:
- Play the radio.
- Roll down the window to get fresh air.
- Stop the vehicle and get out and walk around.
- Stop at a store and get coffee or a soft drink (never take caffeine pills as once the effects from the pill wears off the driver can easily pass out at the wheel).
- Pull off the road in a safe place and take a short nap, or check into a motel. It’s better to arrive late than never.

Mental Conditions that can affect Drivers

Anger—is a secondary emotion that can affect driving attitudes. This emotional reaction to external or internal stimulus can indicate a reaction of other emotions lurking below the surface. Indications of anger are feelings of intense disappointment, pride, or suspicion.

Stress—is a common problem in the fast-pace modern world. Family pressures, job worries, and financial concerns are only a few of things that might promote “road rage.”

Remember to drive friendly wherever you are bound!

Road Rage Syndrome

According to the AAA’s (America Automobile Association) Foundation for Traffic Safety, three basic guidelines may help avoid becoming a victim of road rage.

Don’t offend—when surveys ask drivers what angers them most while driving, the following was cited as motivating factors.
- Being cut off in traffic. When merging, make sure there is plenty of room.
- Driver driving too slow in the left lane. When driving in the left lane, move over to the right lane to allow faster traffic to pass safely.
- Tailgating to close. Drivers get angry when followed to closely.
- Rude gestures. Almost nothing makes another driver angrier than an obscene gesture.
Don’t Engage—one angry driver can’t start a fight. It takes two willing drivers. Protect yourself against aggressive drivers by refusing to become angry with them. It is good advice to:

• **Steer clear.** Give angry divers lots of room.
• **Avoid eye contact.** If you are aware that another driver is getting angry with you, avoid making eye contact.
• **Get help.** If you believe another driver is following you or is trying to pick a fight, call the police on a cell phone.

Adjust your attitude—by changing your approach to driving. You have the power to make every trip more pleasant. Try these suggestions for a pleasant change:

• **Forget winning.** For some motorists driving becomes a contest.
• **Put yourself in the other driver’s shoes.** Instead of judging other drivers, try to imagine why other drivers might be driving as they are.
• **If you think you have a problem, seek help.** Courses in anger management have been shown to reduce heart attacks.

**Five Good Characteristics of a Defensive Driver**

**Foresight**

Foresight is the ability to anticipate and prepare for hazards by sizing up traffic situations as far ahead of your vehicle as possible. Foresight is;

• the **ability to anticipate** and prepare for hazards;
• **anticipating hazards** that are likely to occur; and
• **making proper preparation** for long trips.

**Knowledge**

Defensive drivers need to know all of the basic traffic laws. If you are driving in another state, be aware that their traffic laws might vary from Texas laws. It is always important to know;

• **traffic laws**;
• **vehicle’s operation and condition**;
• **physical and mental limitation**; and
• **routes**.

**Alertness**

All drivers need to be aware of their physical and mental condition and how those conditions can affect driving alertness. Drivers should check their mirrors every 3-5 seconds. Drivers should give driving 100% of their attention by;

• **staying alert** to the ever-changing traffic situation;
• **scanning intersections** and being prepared to stop; and
• **checking rear view** mirrors every 3-5 seconds.
Judgment

A good defensive driver always keeps his or her driving options open in order to cope with any driving situation that might arise. They always look for potential collision traps and are always in control of their behaviors. Pass only when it is safe to do so and avoid sudden and risky maneuvers. Be a good judge by:

- correctly judging speeds and distances of other vehicles;
- correctly judging following distances; and
- avoiding risky situations.

Skill

A defensive driver must have good skills behind the wheel to operate his or her vehicle properly and safely. Shift gears properly and always give signals when needed. Use skills to:

- smoothly operate the vehicle; and
- safely perform maneuvers within the limits of the law.