See Path Before Putting the Car in Motion

2

- **See that the Targeting Path you intend to use is clear.**
- **Turn head in direction of intended movement before turning steering wheel.**

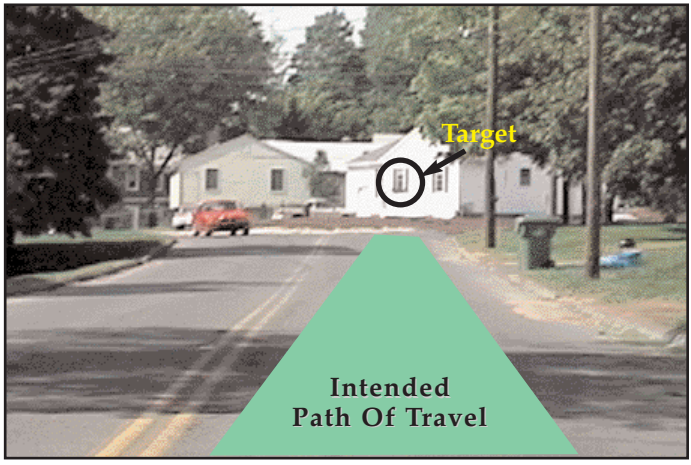
Targeting is the habit of searching as far as your target location to determine if your path of travel will be safe. Targeting is a powerful concept that gives you the automatic ability to be mentally ahead of the path you expect the car to travel. You will be able to see potentially dangerous conditions while there is still plenty of time to respond. To learn the system, we begin with the concept of "targets".

A Target is a fixed object seen in the center of the path you intend to drive.

To learn target usage: Project your vision as far ahead as possible to select a stationary object in the center of the path you will travel. *Selecting a specific target allows you to acquire the practice of projecting your vision.* Once you have your vision projected to the target, you will then be able to visualize and evaluate the path the car will take to get to the target. The average driver sees 3-5 seconds into the path he will take. By looking ahead to the target you will search the maximum distance available and gain the following advantages:

Target Usage Advantages:

- Helps to visualize the space you intend to occupy.
- Helps you to develop a systematic searching process.
- Helps you to search and plan your moves far in advance.
- Gives you a focal point for steering accuracy.
- Gives you the ability to spontaneously correct a skid.



This photo is taken from the driver's seat.

The target is the window on the house.

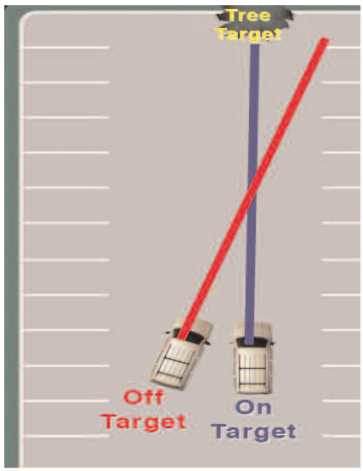
2 Practice On and Off Target Steering

We are in a parking lot to practice seeing a target in relation to our steering wheel.

We will use the pole as our practice target. This photo shows ***the car is on target*** for the pole. When the target appears in the center of the steering wheel, the car is on target.

To correct for loss of traction to the rear wheels, turn toward the target.

The car is off target to the right. If a correction is not made the car will go towards the stop sign. To get back on target, steer left.



Practicing in a parking lot will give you time and opportunity to discover how to use your central and fringe vision.

You will be able to clearly see when the vehicle is on target, or off target. This practice can make the difference when there is a sudden out of balance condition that you are confronted with, such as: when making an off-road recovery, when the vehicle begins to hydroplane, when taking an evasive steering action, and/or during any situation that creates a loss of traction.

The target is seen with central vision. The car is seen in relationship to the target, and in relationship to the road, with fringe vision.

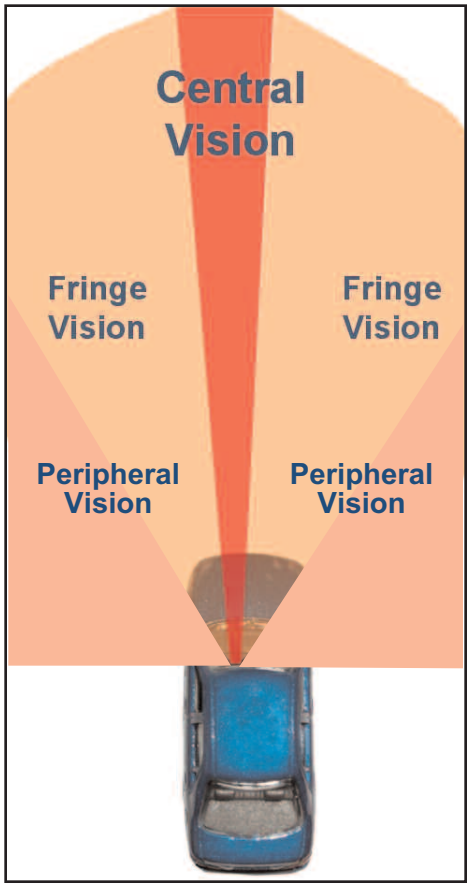
Three Parts of Vision

There are three major parts of vision that we use while driving:

Central Vision is a narrow cone of 5-10 degrees, which is used to identify objects. It is the part of vision that we use for searching, to see a target, and to find LOS-POT blockages. The farther ahead we search the more information we can see with clarity.

Peripheral Vision is the vision surrounding central vision that gives us a 180-degree field of view. The inner part of peripheral vision is what we call "fringe vision." The outer part of peripheral vision is used to detect motion of other vehicles and highway users.

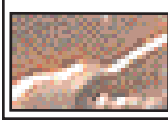
Fringe Vision is the part of peripheral vision that is closest to the area of central vision. This is the most useful part of peripheral vision. It is used to monitor things that have been identified by central vision.



2 Search to the Target Area

While actually driving on-street we project our vision as far as needed to see a stationary object. In this situation we can see some trees as a target. Most important, we need to know what is in the area of the target, which we will refer to as the Target Area. **The Target Area is the driving environment where the target is located.** For this photo, the car is on target. The target, or target area, appears to be aligned with the center of the steering wheel. While looking to the target area you can see the steering wheel aligned to it with your lower peripheral vision. The car will travel toward what is aligned with the center of the steering wheel.

Targeting Path is your intended path-of-travel to the target area.

This is a photo of a familiar subject. Can you tell what it is?  See answer on page 18.

Targeting Path

The targeting path helps you to see the actual space you expect your car will travel on the roadway, from the point where you are located when you first see the target, to when you arrive into the target area. It gives you the ability to see elements that can affect your movement. The targeting path is continually monitored to ascertain that your POT will remain clear of problems. For this situation the intersection on the right, the bicyclist on the left, and the oncoming car can affect the control of your POT.

We can see a house in our target area, which tells us that there is an intersection or a curve at that point. Evaluating our path-of-travel, we see a car entering it. This tips us off to look for other vehicles that may also enter.

Evaluate Your Targeting Path

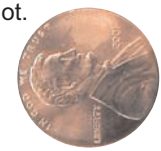
Once you visualize the path your car will be traveling, en route to the target area, it is easy to evaluate a LOS-POT (Line-Of-Sight, Path-Of-Travel) blockage. For this situation there are LOS blockages to the left and to the right caused by the bus and the parked truck, which could conceal something that may come into your travel path. Further ahead, there is an oncoming vehicle close to the center line that could enter your path. Evaluating your targeting path gives you opportunity to see many potential problems in a timely manner, to best detect and eliminate them from becoming actual problems.

2 Turn Head Before Steering

Turn Head in Direction of Intended Movement Before Turning Steering Wheel.

The car is positioned to make a right turn. The photo shows the driver's view looking to the target area.

Did you recognize Lincoln's nose in the previous challenge? Most likely not.



In order to make accurate decisions we need to have complete information. Turning your head before steering, and looking to the target area, will help you get complete information.

Whether making a left or right turn or entering a curve, you will be alerted to potential problems in a timely manner if you turn your head in the direction you will be steering *before* you turn the steering wheel. When making a turn to enter an intersection, if your head is turned before steering you are able to search deep into your intended path-of-travel to be mentally ahead of the car's movement, eliminating high risk reactions. Turning your head before beginning your steering actions will get you to see the condition of your targeting path before you commit to it.

Case Study

A well known athlete with exceptional reaction time failed to reduce speed and stop at a stop sign controlled tee intersection. He attempted to make a left turn while traveling over 60 m.p.h.. With the excessive speed the car was not able to make the turn. It crashed into a stone wall, went airborne and was split in half when it hit a tree. If he had the habit of looking to the target area it would have been easy to reduce speed prior to turning the steering wheel. **Factors:** night, tired, over-estimated driving skills, short-wheelbase vehicle, intoxication, no safety belt used, not seeing to target area, late brake application, and excessive speed.

Keep the Car in Balance

3

- Make smooth and effective starts, stops, and steering.
- Use transition pegs for effective transfer of braking, acceleration and steering forces.

What Causes the Car to Get Out Of Balance?

The car is constantly subjected to pitch and roll forces that cause it to be in, and out, of balance. When the car gets out of balance there is a change to the grip the tires have on the roadway. When the tires lose their grip, the monster breaks out of its cage, making for a challenging experience. The most common out-of-balance condition occurs while braking. Did you ever notice how the front of the car dips down when there is a hard braking action? When the front goes down, the rear comes up, causing the rear tires to lose some contact with the road.

Making Smooth Stops

As you step on the brake pedal and apply pressure, the front of the vehicle is pulled in a downward pitch. When the vehicle comes to a complete rest, the front is no longer held down, so it bounces up to its normal, non-braking position and gives a jerky sensation to occupants. To get a smooth braking result, release some of the braking pressure one or two seconds before the vehicle's motion stops. You only need to release about a half-inch of pressure from the brake pedal. With the ball of your foot on the brake pedal, **curl your toes back** just before the vehicle comes to a complete rest. This will release a slight amount of braking pressure to allow the pitch to come up smoothly.

Why a Smooth Braking Habit?

A smooth braking action will give comfort to passengers and give you a highly refined feedback system. If routine braking consistently results in jerky braking actions, you become accustomed to that feeling. It feels normal. Then when a surprise traffic situation requires a harsh, unplanned, jerky braking response, it doesn't seem extraordinary, so there is no feedback that something went wrong with your management of space!

However, when a driver who routinely makes smooth stops is surprised into a harsh braking action, it gives a gut-level feedback that something went wrong. The driver's awareness is peaked!

The skill of releasing slight braking pressure to make a smooth stop is the same action necessary to achieve a maximum threshold braking effort.

Threshold Braking Panic Stops

With the ten driving habits, surprise situations are minimized. But, if you *get behind the eight ball* and must make a critical maximum efficiency braking action, the brakes should be applied as hard as possible without causing the wheels to lock-up and slide. When you don't have an ABS (anti-lock braking system) equipped vehicle, you have to be your own computer. You can apply the brakes hard, and then as soon as you feel or hear the wheels sliding, slightly release braking pressure (similar to the technique used for making smooth stops). This is referred to as threshold braking. **Do not pump the brakes.** A constant pressure on the brake pedal should be used.

ABS Braking

If your vehicle is equipped with ABS, your wheels will be prevented from locking up by the ABS sensors. Hold the pedal fully down without fear of wheel lock-up. When the ABS system activates you may feel a pulsating movement from the brake pedal. This is normal. **Do not let up.** Keep applying a firm braking pressure. To make a smooth stop with ABS, use the same technique as you would without ABS; release a slight amount of pressure the last one or two seconds before coming to a stop.

Smooth Acceleration

When ready to move from a stopped position, take your foot off the brake and allow the car to move by its idle speed for a brief second before pressing the accelerator pedal. This will give a smooth movement by allowing a gradual transition of the pitch forces. When the car is accelerated there is a downward pitch on the rear tires. With rapid acceleration, occupants feel their body pushed against the back of the seat. The more rapid the acceleration from a stopped position, the greater the pitch forces are out of balance, resulting in less car control.

Steering Control Habits

Most of the time, any method of using the steering wheel will "work." However, you need good steering habits when a critical situation develops. One critical situation may be caused by a tire blow-out. Another may occur during rainy conditions, when the car begins to hydroplane, or when a large truck or bus passes, creating a buffet of wind which could push your car into another lane. When these and other critical situations do occur, good steering habits are important in order to avoid losing control and to keep the monster caged.

Steering Techniques

Best hand position when traveling straight is to hold the steering wheel with two hands in a balanced position. If you look at the steering wheel as the face of a clock, a 9-3 position or an 8-4 position would be best. Avoid holding your hands higher. A lower position keeps them out of the way of a deploying air bag and eliminates serious injuries.

Avoid wrapping your thumbs around the wheel. Always keep your knuckles on the outside of the wheel.

When steering into curves and turns you can use a hand-to-hand method whereby each hand stays on its side of the steering wheel, one pulling down while the other pushes up. This method prevents your hands from getting into the path of the airbag.

Evasive Steering

An evasive maneuver requires three steering actions. To avoid the error of too much steering on the initial turn, keep both hands on the steering wheel at the 9-3 position. Focus on the path you want the vehicle to travel. On the second and third steering action turn as necessary to return to your intended path of travel. Look where you want the car to go, not at the object you are evading.

When Backing

Having the left hand at the 12 position allows you to turn the steering wheel from the top down in the direction you want the back of the vehicle to go. Then use the right hand to continue turning if more is needed.

When Backing a Trailer

Begin with the left hand at the bottom of the wheel, in the 6 position. Move the hand up in the direction you want the trailer to go.

Transition Pegs

A transition peg gives you a visual reference to determine the precise moment at which to make a change (transition) in steering, acceleration, or braking that will best keep the car in balance.

- **The transition peg for making a right turn** *is when your vision, and the rearview mirror, are aligned with the target area.*
- **The transition peg for making a left turn** *is when your vision, and the driver's side corner post, are aligned with the target area.*

To use transition pegs, you must turn your head to look to the target area before turning the steering wheel, and keep your focus there. As the car is moving into the turn, your head is rotated in order for vision to stay focused on the target area. When your head rotates to the point where vision is blocked by the rearview mirror, or by the corner post, the car will be at the transition peg — 30 degrees away from being on target. That is the precise moment to take the following actions:

- **Transition Peg For Steering:** is the moment, while making a turn, that the steering wheel should begin to return to a straight (recovery) position.
- **Transition Peg For Braking into turns:** is the moment, while making a turn, when the foot can come off the brake and acceleration can take place.
- **Transition Peg For Acceleration:** is the moment, while making a turn, that an increase in acceleration will have a positive effect upon the vehicle's movement.

In photo 1, we are in a parking lot practicing the use of Transition Pegs. The tree is the target.

Photo 2 shows the *transition peg for making a right turn recovery.* The driver sees the center of the rearview mirror lined up with the target.

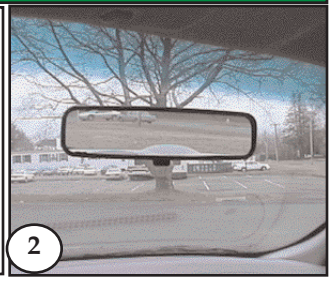
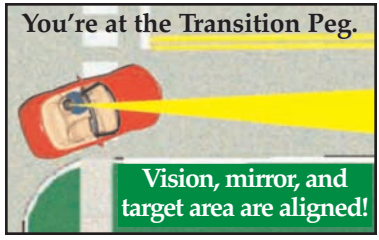
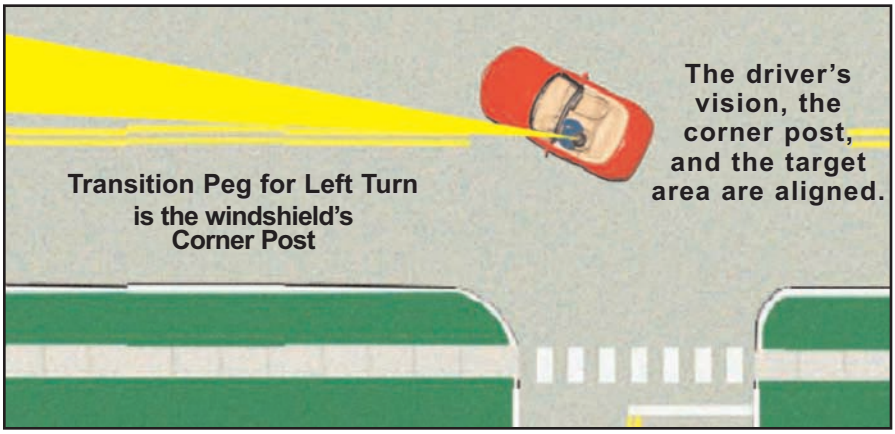
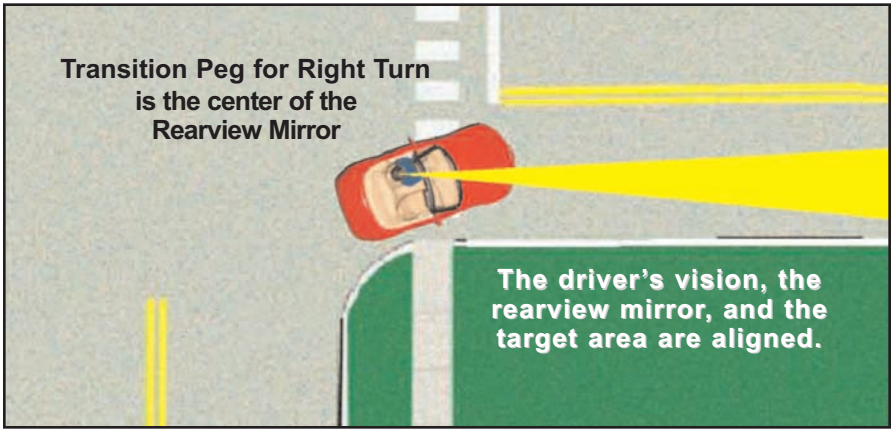
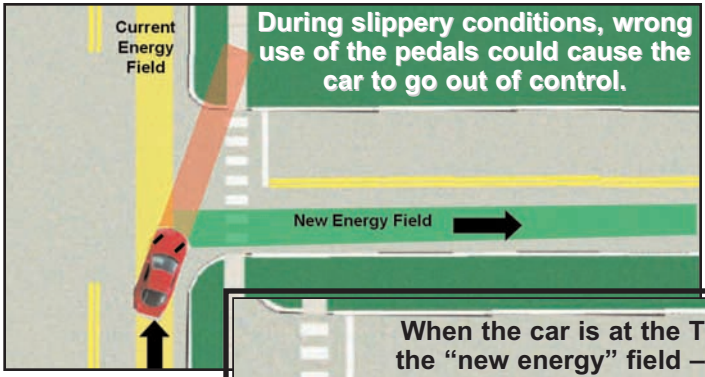


Photo 3 shows the *transition peg for making a left turn recovery.* The target (tree) is concealed by the corner post. The driver's vision, the corner post, and the target are in alignment.









Effective use of the Transition Peg (TPeg) lets your vision tell you when to use the gas or brake pedal.

Releasing the brake, or accelerating, before the TPeg puts more energy in the wrong field.