Chapter 5
Interacting with Traffic
Content Notes

Approximate time required to complete this chapter: Three hours

Classroom Concepts:

5.1 Intersections
5.2 Rear Space Control
5.3 Stopping in Traffic
5.4 Managing Space with Timing
5.5 Precision Lane Changes

5.1 - Intersections

Intersections are dynamic and sometimes complicated. 50% of the combined total of fatal and injury crashes occur at or near intersections. You need effective searching habits to prevent problems. Ask the class why they think there is such a high crash rate at intersections.

Background

A common statement made by drivers involved in intersection crashes is "I didn't see..." The most common law violation drivers are cited with at intersection crashes is "failure to yield the right of way." There are a few reasons why drivers "don't see". One reason is many drivers have not learned effective searching skills for locating closed space while going into and through an intersection. Another reason is that an intersection is a location where there is much information to process. Drivers can be very easily distracted into looking at the wrong place at the wrong time. The answer to eliminating intersection crashes is to help drivers acquire effective searching habits.

What is an intersection?

An intersection is simply that point where two or more roads come together. They can be any shape. Some are controlled with signs or traffic lights, others are uncontrolled. In either case, drivers must know and apply yielding laws in order to successfully manage intersections - a 4-second danger zone.

Intersections are the most frequent danger zones a driver encounters. Most drivers don't see intersections as a high-risk location, and often there is very little attention placed upon navigating through one, other than to know if the traffic light is green or red. Some drivers have little or no regard for the legal obedience to whatever traffic control is in force. Many drivers are killed because they should have been allowed the right-of-way at the intersection at the same moment that some other driver failed to grant the right-of-way to them. In most multiple-car crashes, one of the drivers was victimized by their own faulty actions, or by the deviant actions of others.

Intersection Clues

There are many clues that can tip a driver off to the presence of intersections. Here are only a few:

- Traffic Control Devices Turn lanes
- Crosswalk
- Cross traffic
- Warning signs

Approaching Intersections

See Intersection in Target Area

Awareness of an approach to an intersection should begin while looking to the target area and evaluating the path-of-travel.

Check the Rear

Any time there is the possibility of a stop in traffic, check the rear status.

Select Best Lane and Position Options

Based upon the conditions around you and your destination

Search Left, Front, and Right - Use active and aggressive searching techniques

While moving, checks of the left and right are made at a 45-degree angle. Checks at a 90-degree angle are made while stopped. And it is very important to check the front for open space before or while moving.

Speed Control for Line-of-Sight and Path-of-Travel Problems

Cover the brake or apply the brake when a reduction of control in any zone is detected.

Explain the use of aggressive searching

Emphasize the need to make more aggressive searches when there are line-of-sight restrictions that may conceal a pedestrian or a bicyclist. A driver can look in, under, and around parked cars for feet, wheels, shadows, and movement. When done at the proper distance and from a proper lane position, active 45-degree searches will allow you to see pedestrians and bicyclists before they create a surprise. An active search is a slight movement of the eyes and head. A passive search is not a search at all, but rather the assumption (or hope) that one will actually see something “important” out of the corner of the eye.

Roundabouts

- Eliminate the need for traffic lights and stop signs
- Keep traffic moving by eliminating usual traffic back-ups at intersection otherwise controlled by traffic lights.
- All entries are controlled with yield signs. Requires all vehicles entering to slow and/or stop to yield to vehicles in the roundabout and pedestrians.
- Many are designed with reverse curves to slow traffic prior to reaching a yield sign.
- Significantly reduce the chances of a high-speed side impact.
- No turn indicator is required to enter.
- A signal is required to exit.

5.2 - Rear Space Control

To best control your front, you must control the rear. To minimize the chances of being rear-ended, you must be aware of the rear space conditions.

When to Check the Rear

- **After you see a change — especially to the front**
  Check the rear-view mirror to know how to best control the rear space if a slow-down or stop is to take place.
- **Before and After Braking**
  When your foot comes off the accelerator or goes to the brake, check the rear-view mirror.

- **While Stopped**
  As more cars stop in back, the risk of injury from a rear impact decrease. The stopped vehicles in back help protect you from a rear crash.
- **Before and After Making Turns**
  This helps to give an update of rear space conditions immediately before and after entering a new traffic pattern.
- **Before and After Lane Change**
  Look for fast approaching traffic.

What to Look For - Rear Space Conditions (Includes the blind spots)

Open Rear Space

No one closer than four seconds, and at least 15 seconds visual space to the rear, blind spot is unoccupied

Closed Rear Space

Closer than four seconds or line-of-sight to the rear blocked, blind spot is occupied

Keep mirror free of all decorations - they are visual distractions and create dangerous line-of-sight blockages.

Use All Mirrors Effectively

This includes the inside rear-view mirror, and the two-outside side-view mirrors.

Blind Spot Check – Chin to Shoulder

Requires a brief head movement and a rolling of the eyeballs in the direction you intend to move. Only takes 0.3 seconds. This increases the range of your fringe vision to detect vehicles.

Line-of-Sight Restrictions

A large vehicle following closely to your rear will prevent you from detecting vehicles that will be pulling alongside you. When you are stopped around a curve, you may not have a good sight distance to your rear; which may also prevent rear approaching traffic from seeing you.

Taking an effective action in speed adjustment, lane positioning, or communication can increase the control of the rear situation. Effective speed control means taking the best option available (i.e., the worse the rear, the slower the speed).

1. Use of Mirrors
2. Check Blind Areas
3. See Rear Space Changes
4. Be Aware of Rear Condition
5. Take Action for Control
6. Effective Speed Control

5.3 - Stopping in Traffic

Your awareness of how to control space while stopping in traffic requires that you see and control events to the front and rear of your vehicle.

Charging

Failing to reduce speed as you approach a closed space is called charging. Charging increases your chance of a rear end collision, sends late communication, compromises vehicle balance, and causes costly

wear and tear on your vehicle. The sooner you begin the braking process, the more time you have to control the situation

Gradual Approach to Stop Location

A gradual approach into a stop situation puts you in a win-win situation. You will use less fuel, put the least amount of wear on your tires and braking system, and have the best opportunity to control the traffic to your rear. Most of all, you will be developing a good habit that will eventually occur even when you don't think about it.

With a Car in Front, Stop to See Tires

When you are able to see the rear tires of the car in front, you are approximately 12-15 feet to its rear. This gives you independence to get around a stalled car or be pushed into empty space if rear-ended.

Use 2-Second Delay with Start-Up

When the car in front of you moves, wait two seconds before putting your car into motion. There are several advantages to using a 2-second delayed start:

- Gives you enough time to search the intersection effectively
- Begins to establish your four-second following time
- Protects you from false starts by vehicles in front

See Closed Path-of-Travel Ahead

See the condition of your target area. Ask yourself, "Is it open or closed?" If your target area is open, continue to search for the condition of your travel path. When you see a closed path-of-travel in your front space, it should activate your “Alert Switch,” telling you to check your other spaces.

Point of No Return

The point of no return is that point when you can no longer stop without entering any space. An intersection or a parked car, bicyclist, or pedestrian that may open a door or enter your space. It is two seconds away from the stop line, front of parked vehicle. Of course, speed is a factor in determining the point of no return. Faster speed = longer space

- 20 mph = 30 feet per second. If a driver has reached the point of no return, only 3 car lengths of space would be visible between his/her vehicle and the edge of the intersection.
- 40 mph = 60 feet per second. If a driver has reached the point of no return at this speed, he/she would see 5 car lengths of space between the front of vehicle and the edge of the intersection.

Note: At least 1 car length of space to the front of a vehicle is not seen, as that space is blocked from the driver’s view by the body of the vehicle.

Check Rear

When the front is closed, you want to immediately check the rear to determine what your options are.

Try to Time Arrival into Open Space

As you look to your target area and see that the front is closed, you are in an excellent strategic position to make slight adjustments in your speed that will give the closed space time to open for your vehicle. If you make an attempt to enter an open space, you will gain independence from what other traffic is doing. Very often, one driver after another plays follow-the-leader, and they drive at the same speed into a closed space because the mind was never engaged, and a bad rather than good habit made the driver feel okay about his performance.

Communicate to the Rear - Tap Brake Lights

When the front is closed and you see a car to your rear, you have an opportunity to detect whether the driver is a tailgater. You have a wonderful opportunity to test the effectiveness of tapping the brake pedal as a communication that you will be slowing or stopping. Observe how the driver responds to your communication.

5.4 - Managing Space with Timing

Traffic Lights Timing and/or Turning

You have a red traffic light that you are attempting to time. Why is timing a light a good habit to develop?

The red light is a closed front. By treating it as a closed front rather than a red light, drivers have the opportunity to practice a set of behavioral patterns that can be very valuable in a number of other closed front space situations.

An example of a related situation is when you are on a highway and all traffic comes to a sudden stop caused by construction or a crash. That becomes a high-risk moment and a very good opportunity to practice.

When you see a red light as a closed front, you gain opportunities to apply several principals of the SIM System, such as:

- Locate your target area
- Evaluate its condition
- Determine best approach speed and best positioning
- Visualize the space your vehicle will occupy at least 12 seconds ahead
- Adjust speed to arrive at an open space

Most drivers only learn that a red light means stop. By setting a higher standard (i.e., to arrive in the intersection with a green light rather than a red light), we are able to give ourselves test situations where we can have success or failure. There will be thousands of red traffic lights that you will be approaching in a very short period of your driving career. That will give you thousands of opportunities to have success!

The traffic light just changed from red to green; there are five cars stopped ahead of you. How long will it take for the vehicle in front of you to move? It will take at least five seconds. It takes one second per vehicle before movement can take place. If a driver is not alert, it may take longer. With five cars ahead, it will take five seconds for the vehicle directly in front of us to move. After the vehicle does move, delay your movement for two seconds to build your following time and to avoid a false start by the front vehicle. Have success and avoid stress!

Four Types of Turns

There are four types of turns that a student can make. Listing them from easiest to most difficult to perform, they are:

- Left turns from a stopped position
- Right turns from a stopped position
- Left turns from a moving position
- Right turns from a moving position

Turns from a stopped position usually occur when a vehicle is entering a traffic flow from a side street. Moving turns take place when a vehicle is leaving a traffic flow by turning into a side street. Right turns

require twice as much turning of the steering wheel than left turns because the turning radius of a right turn is twice as tight. The greatest danger of crash exposure occurs while making a moving left turn.

Timing a side space is the ability to create and maintain open space to the side.

1. **Fixed Side Space**
   A fixed space is one that is not moving and is not likely to move before you reach its location. A parked car is an example of a fixed side space.
2. **Moving Side Space**
   An example of a moving side space is an oncoming vehicle. By changing your speed, you can alter the location where you pass each other.
3. **Time Left Space with Fixed Right Space**
   To time the left space, which is the moving space, you will pass the moving car and the fixed parked car separately.
4. **Time Right Space with Fixed Left Space**
   To time the right space, you would need to change your speed to arrive alongside each space, the fixed and the moving, at separate times.
5. **Improve Lane Position Away from Closed Space**
   Take a lane position that will give you the best separation from the space closure.
6. **With Closed Left and Right, Reduce Speed**
   With a closed left and a closed right front space, you have no option to move away from the closed space. Your only option is to take a braking action. The habit of reducing speed when a closed left and right space is present will give you more time to evaluate the situation and increase your control.
7. **Lane Change, Time Open Side Space**
   When making a lane change, avoid moving into a closed space.
8. **While Passing, Time Open Side Space**
   While passing, try to avoid passing the vehicle at a time when it is passing a fixed or moving closed space.
9. **Communicate for Best Control**
   When a fixed or moving side space is not stable (you're not sure what is going to happen), use an effective communication technique in a timely manner to stabilize the situation.
10. **Get Best Speed Control**
    Evaluate an effective speed.

5.5 - Precision Lane Changes

A lane change can be a risky maneuver, especially in heavy traffic or at highway speeds. Accurate perception is the key to managing those risks. Lane changes are simply moving left or right into another lane. The key is to Identify open space, communicate, and move smoothly.

Reasons to Change Lanes

Lane is ending/merge; prepare for a turn; create open space to the side, front, or rear; prepare to enter or exit highway or expressway; move in or away from curb; to prepare to perform a turnabout maneuver

Steps in a Lane Change

1. **Check front and rear for line-of-sight and path-of-travel blockages - look for a stable gap.**

   - Intersections, slow moving traffic, pedestrians, etc.

- Know space conditions alongside the new lane
- Are oncoming cars passing cyclists, pedestrians, or stopped vehicles on the shoulder?
- What lane position is oncoming traffic using?
- Plan arrival for open spaces
- Use your mirrors to see the rear

2. Signal your intentions and get the best lane position for communication.

- Get a commitment – stable rear space

3. Do a chin-to-shoulder blind spot check.

4. Aim to the target area and keep a shallow angle as you move

5. Maintain speed- don't slow unnecessarily

6. Cancel your signal

7. Re-evaluate the rear space

8. Get the best lane position and speed control options