Chapter 7

Negotiating Intersections
Chapter 7 Overview

Chapter 7 discusses the knowledge and skills needed to search and negotiate intersections safely. It describes proper searching techniques and judgments involving time, space, and distance related to intersections and railroad crossings. Students also will learn about yielding the right of way and judging gaps.
7.1: Searching Intersections

- This section focuses on the knowledge and skills needed to negotiate intersections safely. Students will learn how to identify and search intersections. The point-of-no-return is explained.

- **Section 1 Objectives:** *Following this section, I will be able to:*
  1. Explain how to search an intersection after it has been identified.
  2. Tell when you are at the point-of-no-return.
  3. Describe what you should do when you have a closed front zone at an intersection.
7.1: Vocabulary

- Following the conclusion of this section, I will be able to define:
  - 1. Traffic circle
  - 2. Point-of-no-return
7.1: Searching Intersections

- The chances of a collision are greater at intersections that at any other point on a roadway.
- More than 1/3 of all collisions occur at intersections.
- More than ¼ of all fatal collisions take place at intersections.
- Why do you think this is the case?
Searching Intersections

- One reason for intersection collisions is that drivers fail to identify a safe path of travel through the intersection.
- **Clues for identifying and locating the intersection:**
  - Street signs and street lights
  - Roadway markings
  - Crossing traffic
  - Parked vehicles in cross streets
  - Turning traffic
  - Rows of fences and mailboxes
  - Traffic stopping
  - Power lines
Searching Intersections

- Intersections may have various designs:
  - +
  - X
  - Y
  - Traffic circle
Approaching an Intersection

- Search your 3 front zones to see if they are open.
- Check your line-of-sight restrictions (What could cause restrictions?) If they are restricted, make more frequent zone checks.
- When within 4-6 seconds of the intersection, widen your search pattern to the right and left. (see picture on p. 131)
- When searching, briefly pause at each zone to detect objects in that location. Do not move your eyes in a constant scan as you could miss objects as large as a car.
Continue Moving Forward

- **Point-of-no-return**: point beyond which you can no longer stop safely without entering the intersections. Normally it is about 2 seconds from the intersection (see picture on p. 132).

- Once you have passed the point-of-no-return, you should continue through the intersection.

- If you have a line-of-sight restriction, you may want to change your lane position or reduce your speed.

- **REMEMBER**: You are not allowed to make lane changes within an intersection.
Deciding to Stop

- If you have identified a closed zone at an intersection, you will need to prepare to reduce your speed or stop.
- Check your rear zone. If it is open, begin to brake. If it closed, tap on your brake pedal to communicate to the driver behind you your intention to stop.
Moving After a Stop

- After having stopped and your front zone is clear, search 90-degree angles to the right and left before moving. Pause briefly at each target area to get a clear view. (see picture on p. 133)

- When turning, your last check should be in the direction of your intended path of travel (i.e., left turn would call for a L/R/L check).

- When stopped behind another vehicle, wait 1 second after it moves before you move. This gives you time to react to any sudden stop by vehicle in front of you.
Review

1. Which zones should you search when approaching an intersection?

2. Where is your point-of-no-return?

3. What should you do when you identify a closed front zone at the next intersection?
This section discusses the knowledge and skills needed to negotiate controlled intersections safely. It describes judgments involving time, space, and distance related to intersections and railroad crossing. You will also learn about unprotected left turns and turns on red.

Section 2 Objectives: Following this section, I will be able to:
1. Explain how to approach a controlled intersection.
2. Tell how to move from a STOP sign when your view is blocked.
3. Describe how to make a right turns and left turns at controlled intersections.
7.2: Vocabulary

Following the conclusion of this section, I will be able to define:

3. controlled intersection,
4. controlled railroad crossing
5. delayed green light
6. fresh green light
7. protected left turn
8. stale green light
9. unprotected left turn.
7.2 Controlled Intersections

- Controlled intersection— one at which traffic signals or signs determine the right of way.

- Obey all signs and traffic signals when you approach a controlled intersection. Yield to through traffic.
Controlled Intersections with Signs

- Two kinds of signs control intersections:
  - STOP - you must come to a full stop for a stop sign, crosswalk, or stop line.
  - Yield - slow and yield the right of way to vehicles on the through street.
Blocked View at Stop Sign

- Check intersection as you approach
- Make complete stop at proper area and then inch forward but not into path of travel of crossing traffic
- Right follow curb
- Left - go straight forward
Joining Traffic—Right Turn

- (see middle picture on p. 135)
- 1. Search front zones for pedestrians and traffic turning onto your street. Check rear zone and stop. (car #1)
- 2. Pull up and stop with front bumper even with curb. Do 90-degree check to left and right. Check front zones and target path. If no line-of-sight restrictions and at least a 7 second gap, begin your turn. Turn head toward target, begin to accelerate, and turn steering wheel. (car #2)
- 3. Straighten wheel so that you end up 3-4 feet away from curb. Accelerate to traffic flow and check rear zone. (car #3)
Joining Traffic—Left Turn

- (see bottom picture on p. 135)
- 1. Search front zones for pedestrians and traffic turning onto your street. Check rear zone and stop. (car #1)
- 2. Pull up and stop with front bumper even with curb. Check front zones and target path. If no line-of-sight restrictions and at least a 7 second gap, begin your turn. Move forward until body is even with curbline. Check the front zone areas. Turn head toward target, begin to accelerate, and turn steering wheel. (car #2)
- 3. Make left turn when front of vehicle is about in middle of intersection. Accelerate to adjust to traffic. Check rear zone.
Controlled Intersections with Signals

- Traffic signals usually 3 lights (red, yellow green) but can have a 4\(^\text{th}\) or 5\(^\text{th}\) light (yellow arrow or green arrow).
- When approaching a controlled intersection consider if light is about to change.
- Search 12-15 seconds ahead. Evaluate each upcoming intersection for the color of that signal light.
- Check for cross traffic.
- Before needing to stop, check your front zones and for light color. If front zone is closed, check rear zone, reduce speed, and be prepared to stop.
Signals

- Use the IPDE Process to handle traffic signals properly.
- Stale green light- (be prepared to stop, check rearview mirror)
- Fresh green light- (check for open zone, make sure no one is running red light from cross traffic lane)
- Yellow light- check for point-of-no-return, stop if safe to do so, check rearview mirror)
- Red light- (stop, check rearview mirror as you slow down, keep checking rear zone)
Facts and Figures

- Rear-end collisions account for about 30% of all intersection collisions. A vehicle stopped at an intersection is vulnerable to a high-impact rear-end force until there are at least two vehicles stopped to its rear. The more vehicles stopped to the rear, the less the impact force will be.
Unprotected Left Turns

- Made at a signal-controlled intersection that does not have a special left-turn light. You must yield to oncoming traffic.
Protected Left Turns

- Can be made when a special left-turn light, green arrow, or delayed green light let you turn left while oncoming traffic is stopped.

- When the left-turn signal ends you must treat it as you would an unprotected left turn.
Protected Left Turns

- 3 types of protected left turns
  - 1. Left-turn light- may be located over turn lane
  - 2. Green arrow- may appear with normal red, yellow, green signals
  - 3. Delayed green light- allows traffic to turn left or go straight while the oncoming traffic has a red light
Turns on Red

- All states allow turns on red.
- A few local governments may not, so watch for signs posted that prohibit turning on red.
- Right on red- must come to a full stop, move forward to see clearly, search front zones for opening, must yield to any vehicle or pedestrian that is approaching the intersection, complete your turn into nearest right lane when clear to do so.
Controlled Railroad Crossings

- Usually have red lights along with crossing gates.
- Make a complete stop when lights are flashing and/or gates are down. Remain stopped until lights stop flashing and the gates have raised. Proceed cautiously when the crossing is clear.
- *It is illegal, unsafe, and costly to drive around gates.*
Background

- There are nearly 4,000 collisions at railroad crossings each year. More than 50% of these collisions occur where active warning devices exist (gates, lights, and/or bells).
- There is only one way drivers can be guaranteed that a train will not run into their vehicle, and that is to make a 90-degree search to the left and right to see open zones before crossing the tracks. With proper practice, drivers become aware of line-of-sight restrictions at intersections. (continued)
This will give the driver the correct behavior to look way down the track—same as 90-degree searches at intersections—rather than to rely only upon the fact that the red crossing lights are not flashing. Drivers have gotten into car-train collisions because the flashing lights malfunctioned, the flashing lights were ignored, or the sun prevented the driver from seeing the lights. If a driver is able to see open zones in both directions, there will not be a car-train collision.
Review

- 1. How should you approach a controlled intersection?
- 2. When your view is blocked at a STOP sign, what should you do?
- 3. How would you make a right turn or a left turn at a controlled intersection?
7.3: Uncontrolled Intersections

- This section discusses the knowledge and skills needed to negotiate uncontrolled intersections safely. It describes judgments involving time, space, and distance related to intersections and railroad crossings.

- **Section 3 Objectives:** Following this section, I will be able to:
  - 1. Tell how to identify an uncontrolled intersection.
  - 2. Explain the procedures to follow at an uncontrolled intersection.
  - 3. Describe the proper procedures for crossing uncontrolled railroad tracks.
7.3 Vocabulary

- At the conclusion of this section, I will be able to define:
  10. cross-buck
  11. uncontrolled intersection
  12. uncontrolled railroad crossing
Uncontrolled Intersections

- Have no signs or signals to regulate traffic.
- Usually these are quiet intersections but can be very dangerous.
- Drivers sometimes fail to recognize that an intersection is uncontrolled.
- If you do not see a traffic sign or signal, assume that it is uncontrolled and be prepared to slow down and stop.
Approaching Uncontrolled Intersections

- Upon identifying an uncontrolled intersection, check your rearview mirror and then determine if you have an open zone to travel through the intersection.

- Check for line-of-sight restrictions and be aware of zone changes.

- If there is a line-of-sight restriction or a closed zone, check your rearview mirror, take foot off of accelerator and be prepared to cover or apply the brake.
Approaching Uncontrolled Intersections

- If a vehicle is coming from the right or left, the driver on the left must yield to the driver on the right.

- *Never assume that the other driver will yield.* The only safe action is to slow and stop.

- Treat an uncontrolled intersection like you would a YIELD sign and be prepared to stop.
Approaching Uncontrolled Intersections

- In a traffic circle, you must yield to vehicles already in the circle. They will be coming from your left front zone.
- When in the traffic circle, be aware of vehicles entering from your right front zone.
- Pedestrians- Always let pedestrians go first, regardless of where the pedestrian is crossing, even if they are breaking a traffic law.
Uncontrolled Railroad Crossings

- Do not have flashing red lights or crossing gates. However, nearly all crossings are marked with a round, yellow railroad-crossing sign. In cities and towns, the sign is about 250’ before the crossing and about 750’ in rural areas.
- A cross-buck (large white X-shaped sign) is located beside the crossing.
- Many times a large white X is painted on the roadway near the crossing.
- Treat uncontrolled crossings like a YIELD sign. Slow and be prepared to stop.
Crossing Railroad Tracks

1. Slow down and check tracks to both sides along with rearview mirror as you approach the crossing sign.
2. Turn off the radio, air conditioner or heater fan to listen for train sounds. Open window if area is noisy.
3. Reduce speed to handle rough crossing or line-of-sight restrictions. Note the number of tracks.
4. Stop at a safe distance before the tracks if a train is approaching.
5. Wait for train to clear. Carefully check the crossing. Be sure another train is not approaching.
6. If safe to cross, increase your speed to 20 mph so your vehicle will roll across tracks in case the engine should stall.
Crossing Railroad Tracks

7. If you have a stick-shift, shift to lower gear before crossing tracks to prevent stalling on the tracks. Never shift while crossing the tracks.

8. Only enter the track area when you have enough space and speed to clear the tracks. Never stop on tracks while waiting for traffic ahead to move.

9. Be prepared to stop when following a bus or a vehicle hauling flammable contents as many states require such vehicles to stop before crossing railroad tracks.
Review

1. How can you identify and uncontrolled intersection?
2. What should you do at an uncontrolled intersection?
3. What are the procedures to use when going through an uncontrolled railroad crossing?
7.4: Determining Right of Way and Judging Gaps

- This section continues to focus on the knowledge and skills needed to negotiate intersections safely. Students will learn about yielding the right of way and judging gaps.

- **Section 4 Objectives:** Following this section, I will be able to:
  
  1. Define right of way.
  2. Describe situations in which you, the driver, must yield the right of way.
  3. Identify how long it takes to cross and join traffic.
At the conclusion of this section, I will be able to identify:

- 13. gap
Determining Right of Way and Judging Gaps

- Conflicts can occur at intersections at any time.
- Safe drivers know this and are prepared to handle these conflicts.
- To be a safe driver, you need to know when to yield the right of way.
What is Right of Way?

- The privilege of having immediate use of a certain part of the roadway.
- You have the right of way when given to you by another driver. It is not something you can take.
- To be safe, you may need to let others go first (yield). You may need to yield to avoid a collision or as an act of courtesy.
- Most of the time, laws determine who should yield the right of way.
Situations When You Must Yield

- Review all pictures on pp. 142 & 143
Remember These Points in Yield Situations

- Your action should not cause others you should yield to slow, stop, or change their intended path of travel.
- Traffic signs and signals only show who should yield. They do not stop traffic.
- Do not assume others will always yield.
- Many times it is better to yield the right of way even when the law requires the other driver to yield.
- Failure to yield the right of way is one of the most frequent violations in fatal collisions.
- Knowing right-of-way laws will help you make safe decisions.
Judging the Size of a Gap

- Gap - the distance between vehicles.
- Joining traffic - turning right or left into lanes of other traffic.
- You must be able to judge the gaps between vehicles and how long it takes to pass through or enter intersecting traffic lanes. (see chart on p. 144)
- Crossing a two-lane street - about 4-5 seconds
- Turning right and accelerating to 30 mph - about 6 seconds
- Turning left and accelerating to 30 mph - about 7 seconds; more dangerous than right turn
Review

1. What is meant by “yielding the right of way”?

2. Give six examples of when you should yield the right of way?

3. How many seconds does it take to cross traffic?