Module 7 Lesson Plan

Strategies for Mixing With Traffic

Content

Essential Knowledge and Skills 13—15

- Searching for and Identifying Intersections
- Approaching Intersections
- Right-of-Way
- Signs and Signals at Controlled Intersections
- Staggered Stops for Space Management
- Right Turns at Intersections
- Left Turns at Intersections
- Traffic Circles
- Uncontrolled Intersections
- U-Turns at Intersections
- Traffic Circles
- Designated Share Lanes for Turning
- Changing Lanes
- Passing and Being Passed
- Crossing Rail Grade Intersections
- Good Communication Habits
- Assignment
- Assessment

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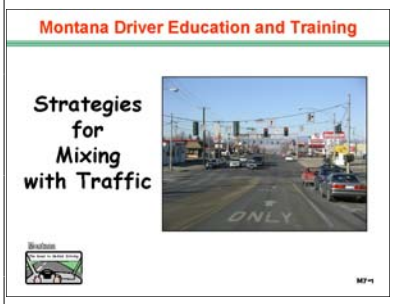
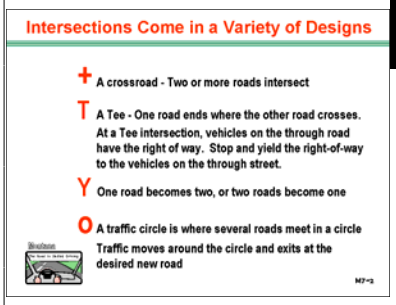
M 7—Strategies for Mixing with Traffic

Lesson Objective: The student will utilize critical thinking skills to search for different types of intersections, navigate them safely, perform legal and safe lane changes and passing maneuvers.

Instructional Topic	Content	Slide
SEARCHING FOR AND IDENTIFYING INTERSECTIONS	Introduce, model, practice, and discuss Intersections are one of the most dangerous areas of travel because many drivers fail to search and identify a safe path of travel when approaching an intersection. • Drivers with good driving habits manage risk by using space management skills to search for intersections in the path of travel • Intersections occur when at least two roads come together. They come in a variety of designs. Search for clues to identify intersection types.	T 7-1
	• A crossroad + is when two or more roads intersect • A Tee T is when one road ends where the other road crosses … At a Tee intersection, vehicles on the through road have the right of way. Stop and yield the right-of-way to the vehicles on the through street. • A Y is when one road becomes two, or two roads become one • A traffic circle O is when several roads meet in a circle. Traffic moves around the circle and exits at the desired new road. Some intersections may culminate with multiple roads containing a median • The median can be a few inches or several feet in width • Medians may have overgrown bushes or concrete bunkers hiding other vehicles, pedestrians, animals, bicyclists, etc. • Search in and around the median for any line of sight restrictions	T 7-2
◆ Intersection Clues	Search at least 20-30 seconds ahead for intersection clues such as: • Street signs/lights • Roadway markings • Stop signs • Signal lights • Crossing traffic • Parked vehicles on cross streets • Turning traffic • Traffic preparing to stop or stopped • Changes in road surface • Power lines	T 7-3

Student Learning Activities	Resources





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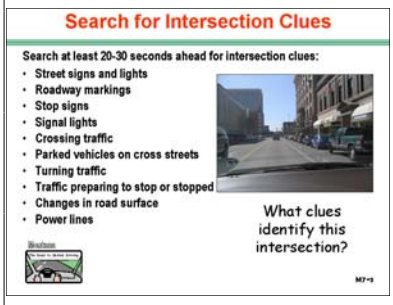
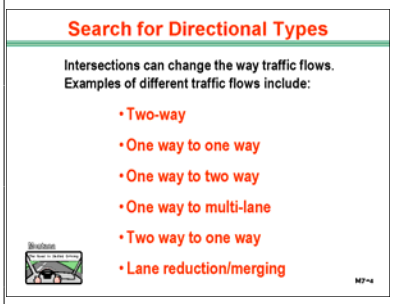
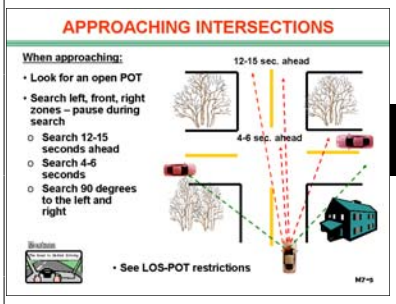


Instructional Topic	Content	Slide
◆ Directional Types	Intersections can change the way traffic flows. Examples of different traffic flows include: • Two-way • One way to one way • One way to two way • One way to multi-lane • Two way to one way • Lane reduction/merging	T 7-4
APPROACHING INTERSECTIONS	Introduce, model, practice, and discuss • Is a clear path of travel available through the intersection? Use visual skills to: Search the left, front, right zones, pause during the search to gather information … Search 12-15 seconds ahead and at least 45 degrees to either side … Search 4-6 seconds ahead; search up to 90 degrees to either side … Know if a line of sight or path of travel restriction exists • Search the rear zone immediately after seeing the intersection, when braking, and while stopped • When a LOS restriction occurs, increase searching in that area—move into a lane position that provides the best LOS Examples include: parked vehicle, moving vehicles, buildings, large bushes, groups of pedestrians • Be prepared to make a speed or position change with clear communication • The sequence of the search will depend upon the LOS-POT … When there is a LOS restriction, again search this area last before entering the intersection	T 7-5
RIGHT OF WAY	Right of way is always given, not taken. Follow these simple rules: • The first vehicle arriving at an uncontrolled or Yield sign intersection should have the right of way • If vehicles arrive at the same time, the vehicle on the left yields to the vehicle on the right • During 2005, failure to yield the right of way caused approximately ___of all the collisions in Montana • Apply the right-of-way rules when needed at intersections • If a vehicle fails to yield, use good driving habits and wait until the right of way is given • Do not assume the other driver will yield	T 7-6
SIGNS AND SIGNALS AT CONTROLLED INTERSECTIONS	Introduce, model, practice, and discuss Intersections can be controlled by STOP signs, YIELD signs or TRAFFIC SIGNALS Montana requires a legal, full stop at one of the following, whichever occurs first: • Stop line • Pedestrian crosswalk • Before entering the intersection	T 7-7

Student Learning Activities	Resources





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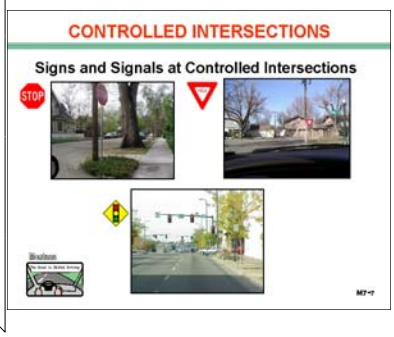


Instructional Topic	Content	Slide
◆ Traffic Signals	TRAFFIC SIGNALS tell when to stop, go, and which direction to turn • A fresh green light is when the light has just turned green … Watch for crossing traffic running the red light … When the light turns green, delay moving for two seconds—use this time to search the intersection for open zones before committing to moving • A stale green light is a light that was green when first seen and has been green for awhile … A steady burning red pedestrian crossing light is one clue the light is about to change … Expect the light to turn to yellow any time … Prepare to slow or stop • A yellow light will soon be a red light. Decide if enough time is available to clear the intersection. … Decide before the "point of no return" which is about two seconds before the intersection is reached … At this point a decision must be made to stop or go through the intersection • A red lights mean a legal stop must be made … Control the front zone by stopping where the rear tires of the vehicle ahead can be seen touching the road … If first in line, stop at the legal stop … A flashing red light is the same as a stop sign—a stop must be made	T 7-8
—Right on Red	Right on red is permitted in all states and the District of Columbia except where prohibited … Before turning right on red, a full stop must be made … Yield the right of way to any pedestrians or vehicles	T 7-9
—Left on Red	Left on red is permitted when turning onto a one-way street • Montana permits turning left on red from a one-way street onto a one-way street	T 7-10
—Pedestrian Crossing	Pedestrian Crossing signs burn steadily when a pedestrian may cross • Flashing pedestrian lights warn the traffic light is preparing to turn red … Lights can be words or pedestrian symbols • Lights can help decide the duration of the green light and if there is time to cross … Communities may have crossing lights with a clock that counts down the time before the light turns red … Crossing lights may include sounds to help the visually impaired • Communities are using a variety of crossing methods to help protect pedestrians … Sun Valley, Idaho uses pedestrian flags … Crossings may be mid-block, not at the intersection	T 7-11 T 7-12 T 7-13
—Computerized Signals	Computerized Signals are traffic actuated with 6' x 6' foot wire loops embedded in the pavement (also known as detection loops) … The sensors detect vehicles as they approach a traffic signal … The traffic controller assigns most of the available green time to the heaviest traffic movements … Motorcycles may not detected by the sensors because of their small size	T 7-14

Student Learning Activities

Resources

SIGNAL LIGHTS

How should a driver treat a "fresh" green light and a "stale" green light?

What is the "point of no return" when approaching a yellow light?

RIGHT ON RED

Permitted in all states and the District of Columbia, except where prohibited

Did the driver in the white SUV yield the right of way?

LEFT ON RED

Can a driver approaching this intersection make a left turn on a red light?

PEDESTRIAN CROSSING LIGHTS

Crossing signs burn steadily when a pedestrian may cross

The light flashes to warn the light is preparing to turn red

Don't walk signals burn steadily when crossing is not permitted

PEDESTRIAN CROSSINGS

Pedestrians carry highly visible flags while in the crosswalk

Clock counts down seconds letting pedestrians know available time to cross

PEDESTRIAN CROSSINGS

Watch for pedestrians crossing in the middle of a block

COMPUTERIZED SIGNAL SENSORS

Sensors imbedded in the pavement

- Traffic signals are actuated from 6' x 6' wire loops embedded in the pavement
- Also known as traffic detection loops
- The loops detect vehicles as they approach the traffic signal and send information to a control cabinet located on a corner near the intersection
- The traffic control cabinet then assigns most of the available green time to the heaviest traffic movements

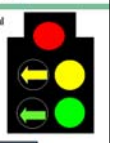
M 7

Instructional Topic	Content	Slide
—Doghouse Signal	**"Doghouse" signal** is a new type of left turn signal to improve traffic flow at major intersections • A five light display incorporates both a green and yellow left turn arrow • The green arrow (indicating a protected turn) will turn yellow while the solid green light remains … A vehicle may now make an **unprotected** left turn if a sufficient traffic gap is available	T 7-15
STAGGERED STOPS FOR SPACE MANAGEMENT	A staggered stop gives more room for vehicles turning left into the lane next to you • Typically provides about 15 feet of space to the front • Increases space for vehicles turning left into the next lane—creating more separation from others • Heavily traveled intersections may have the stop line painted as a staggered stop	T 7-16 T 7-17
RIGHT TURNS AT INTERSECTIONS ◆ Good Habits When Turning Right	**Introduce, model, practice and discuss** **Turning right often requires joining other traffic** Right turns require more time for turning than a left turn because right turns are usually tighter and made at slower speeds • Position the vehicle in the correct lane at least one block before turning • Before slowing, check the rear zone • When turning right and merging with traffic, the time and gap needed … at 30 mph is at least 8 seconds (one block) … at 55 mph a gap of 11 seconds or more is needed (three blocks) • Signal at least 100 feet in urban areas and 300 feet in rural areas before turning … Do **not** assume that all drivers will signal intent, or that signaling is a commitment to turning • A signal must be given even if no other vehicles are around • Do **not** enter the intersection unless enough time is allowed to clear it safely • Search the left, front, right zones … Search for vehicles moving toward the intersection. Determine if the vehicle will turn away or move into the intended path of travel … Vehicles moving from the left are more dangerous than vehicles moving from the right because the lane is closer to the driver than the right lane … Search and yield to pedestrians in and near crosswalks at all times … Search for bicyclists in the right zones who may cross the intersection as a right turn is being made … Search for line of sight or path of travel restrictions and adjust position to gain the best LOS-POT • If a LOS-POT restriction is encountered, reduce speed … Before slowing, check the rear zone ... The last search is made in the direction of the turn	T 7-18 T 7-19 T 7-20

Student Learning Activities	Resources

"Dog House" Signals

- The Doghouse" signal is a new type of left turn signal to improve traffic flow at major intersections
- A five light display incorporates both a green and yellow left turn arrow
- The green arrow (indicating a protected turn) will turn yellow while the solid green light remains.



- When the green arrow goes off, an unprotected left turn is still allowed

STAGGERED STOPS

A staggered stop gives more room for cars turning left in front of you as shown in the picture below

RIGHT TURNS AT INTERSECTIONS

- Usually requires more time than turning left
- Usually requires merging with other traffic
- Enter correct lane position one block prior to turning
- Signal at least 100 feet, preferably 5 seconds before the turn
- Check rear zone before slowing

Is this driver making a legal right turn?

RIGHT TURNS AT INTERSECTIONS

Time and Gap Needs for a Right Turn

- Merging with traffic moving at 30 mph requires at least 6-7 seconds (one block gap)
- Merging with traffic moving at 55 mph requires at least a 3 block gap

Did the driver in the white truck have a safe gap for a right turn?

RIGHT TURNS AT INTERSECTIONS

Search Intersections for:

- Vehicles approaching the intersection
- Pedestrians
- Bicyclists
- LOS-POT Restrictions

RIGHT TURNS AT INTERSECTIONS

Searching Intersections

If there is a LOS or POT restriction – REDUCE SPEED

Final search is in the direction of the turn

Confirm an open zone exists

Exit and enter corresponding lanes

Be alert to drivers drifting in their lane

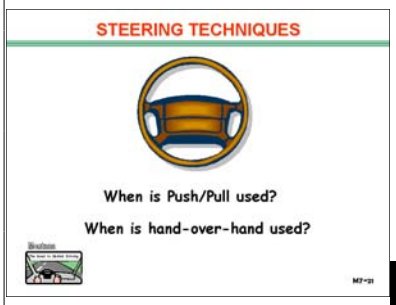
Cancel signal

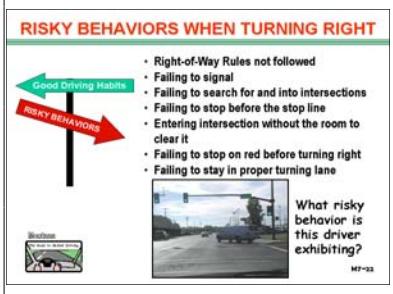
Describe the conditions at this intersection

M 7

Instructional Topic	Content	Slide
◆ Good Habits When Turning Right (Cont.)	• Commit to the turn only after confirming an open path of travel exists • When more than one right turn lane is available, exit and enter the corresponding lane • Be alert for drivers crossing or drifting into the wrong turning lane • Be sure to cancel the turn signal	
◆ Steering Techniques	Push/Pull (also called hand-to-hand) steering This steering technique is used for precision maneuvers, steering through curves, intersection entries and exits • This steering technique permits steering inputs ranging from minor (1-2 degrees) up to a half turn of the wheel, while keeping both hands on the wheel for precision adjustments Hand-over-hand steering This technique is used when steering speed is critical, and at speeds below 15 mph • Helpful when turning into an alley with limited visibility to the path of travel or during a tight turn at a visually hidden intersection	T 7-21
◆ Risky Behavior When Turning Right	Avoid these risky behaviors: • Not complying with right-of-way rules • Failing to signal • Failing to search for and into intersections • Failing to stop before the stop line • Entering the intersection without room to clear—blocking other traffic • Failing to stop first before turning right on red • Failing to stay within the proper turning lane	T 7-22
◆ Right Turn Lane Merge Areas	Some intersections provide a right turn lane for drivers to merge into the new lane These lanes help move traffic in an orderly fashion, but have their own risks • Use these good habits when turning right from a merge lane … Signal for a right turn … Search for stopped traffic in the merge lane due to heavy traffic in the lane … Is the signal going to stop traffic at the intersection giving more time and space to make the right turn or will it turn green and release traffic into the new lane?	T 7-23

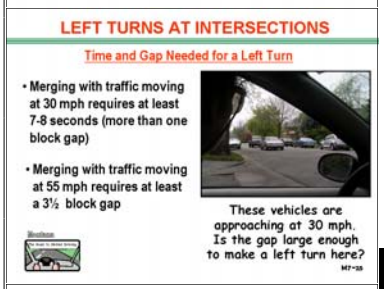
Student Learning Activities	Resources

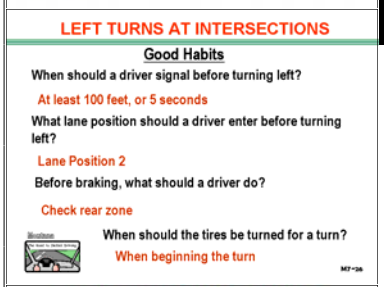


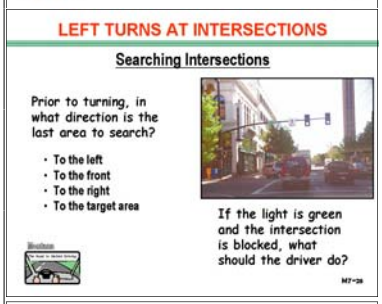


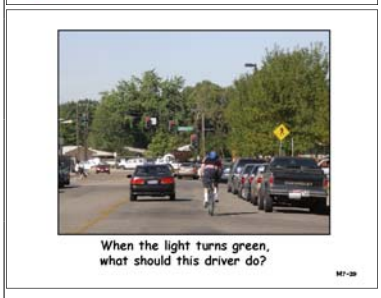
Instructional Topic	Content	Slide
LEFT TURNS AT INTERSECTIONS ◆ Good Habits When Turning Left	Introduce, model, practice and discuss Left turns present more risks because the vehicle is in the intersection for a longer duration and multiple lanes must be crossed • Be in the correct lane at least one block before turning • Protected left turn lanes are less risky than those without turn lanes and controlled left turn lights • When turning left and joining traffic … At 30 mph, 7-8 seconds are needed to turn left on a two-lane road (look for vehicles more than a block away) … At 55 mph, 14 seconds or more are needed (look for vehicles at least 3½ blocks away) … Signal at least 100 feet when in town and 300 feet when out of town • Before slowing, check the rear zone • Prepare to turn from LP2 • Controlled left turn lanes help provide protection • Without a protected lane, yield to oncoming traffic • Keep the tires straight until the turn has begun ... In the event the vehicle is rear-ended, the car will be pushed straight ahead, not into oncoming traffic • Search the left, front, right zones ... Is sufficient time available to clear the intersection? … Is an open zone available to enter? … Is there a LOS-POT restriction? … How fast is traffic moving? … Is the on-coming vehicle turning right or crossing the intersection? … Is the gap between vehicles sufficient for a safe turn? • The last search is in the direction of the turn—turn head, look to the target area • Even if the traffic light is green, wait to enter the intersection until space is available for your vehicle on the other side of the intersection • Where legal, move into the intersection for the left turn and wait for a gap and open left zone to turn into • If the intersection can't be cleared before the light changes, do not enter … Blocking intersections is dangerous and illegal • Turn into the closest lane … When more than one turning lane is available, stay in the corresponding lane … Some turning lanes permit the use of two new lanes in the new direction … After turning, check the rear zone • Some turn lanes have multiple arrows indicating permission to turn left, right or go straight—these lanes are separated from through lanes with solid white lines • Use visual skills to identify the lane needed before entering the intersection	T 7-24 T 7-25 T 7-26 T 7-27 T 7-28 T 7-29

Student Learning Activities	Resources





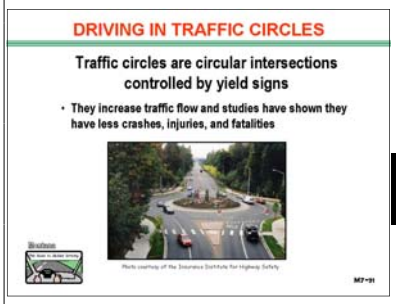


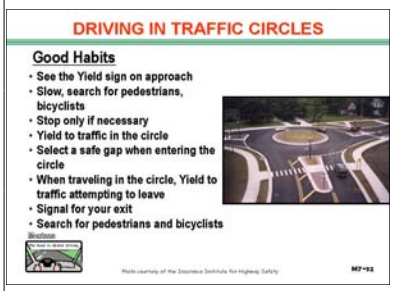


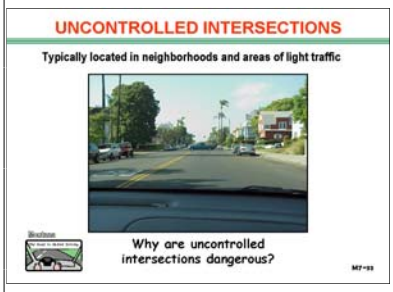
M 7

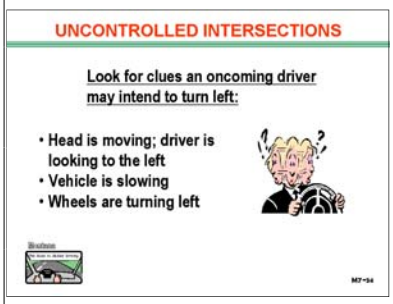
Instructional Topic	Content	Slide
◆ Risky Behaviors When Turning Left	Risky behaviors include: • Running red lights • Failing to signal • Failing to stop before the stop line • Entering the intersection on a stale green light and blocking the intersection causing grid lock • Stealing a left turn by tailgating the vehicle in front and making a left turn on red • Not complying with right-of-way rules • Failing to stay within the turning lane • Failing to judge gaps accurately, causing other drivers to initiate avoidance techniques by changing speed or direction	T 7-30
TRAFFIC CIRCLES	Introduce, model, practice and discuss A traffic circle is a circular intersection controlled by yield signs • Entries and exits into and out of the circle can be at multiple locations • Traffic circles increase traffic flows because drivers don't always have to stop … By yielding at the entry rather than stopping and waiting for a green light, or stopping at a stop sign, delay is significantly reduced • Studies have shown they can reduce crashes, injuries, and fatalities • Traffic in the circle drives to the left around the circle	T 7-31 T 7-32
◆ Good Habits in Traffic Circles	Good habits include: • See the yield sign on the approach to the circle • Slow—watch for pedestrians and bicyclists—be prepared to stop • Yield to traffic in the circle, traveling from the left … Do not stop if the way is clear • When in the circle yield to vehicles attempting to leave the circle • Select a safe gap and enter the circle • Prior to the planned exit, signal right • Watch for pedestrians and bicyclists when exiting	
UNCONTROLLED INTERSECTIONS	Introduce, model, practice and discuss Uncontrolled intersections lack signs or signals	T7-33
◆ Strategies for Negotiating Uncontrolled Intersections	• Typically found in neighborhoods and areas of light traffic—these intersections are very dangerous because other drivers fail to identify crossing traffic • Before entering the intersection, search for oncoming drivers wanting to turn left • Some drivers fail to signal—look for clues; the driver may intend to turn … The driver's head is moving right and/or left and the driver appears to be looking for something • Driver is slowing … The wheels are turned in the direction of the intended turn	T7-34

Student Learning Activities	Resources









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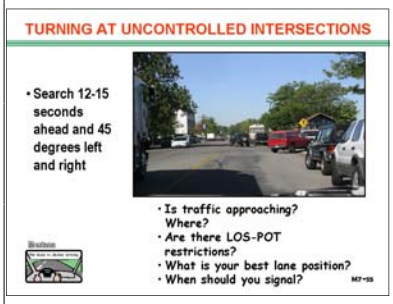
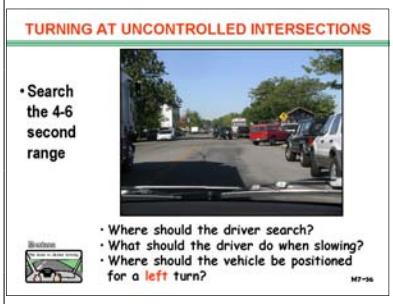
Instructional Topic	Content	Slide
◆ Strategies for Negotiating Uncontrolled Intersections (Cont.)	• When crossing an intersection, critical time and space management judgments must be made … Search left, front, right for anything that affects the path of travel or line of sight … Vehicles moving into the path of travel are more dangerous than those moving away … Be prepared to stop if pedestrians are in a marked or unmarked crosswalk … Check rear zone • When stopping, make a legal stop, then a safety stop, if needed, to improve the LOS … When stopped, search 90 degrees left and right, search deep into the intersection • If the LOS is blocked, improve lane position … Move to LP2 for parked cars … Move to the intersection curb line (check front limits Reference Points) to increase LOS … Move to a LP farthest away from the LOS restriction to improve the line-of-sight … If a stop is needed, ease off the accelerator and cover the brake for quick reaction … Get a sufficient size gap to cross the intersection • To pass through an intersection from a stopped position with traffic moving at 30 mph the following minimum times are needed … 5-6 seconds or more to cross a two lane roadway from a stop without interfering with traffic flow (look for vehicles almost a block away) … 7-8 seconds to cross a four-lane intersection … At 55 mph approaching vehicles need to be more than 1½ blocks away • When the intersection is clear, check rear zone	
◆ Strategies for Turning at Uncontrolled Intersections	Uncontrolled intersections leave a driver vulnerable to crossing traffic • Use visual searching skills to search the critical locations • Search 12-15 seconds ahead and at a 45 degree angle to the left and right … Identify the intersection as uncontrolled … Search for traffic approaching the intersection … Look for LOS-POT conditions … Know the correct lane position for a turn … Signal intention to turn • At the 4-6 second range … Slow and check the rear view mirror … Position the vehicle for turning	T 7-35 T 7-36

Student Learning Activities	Resources

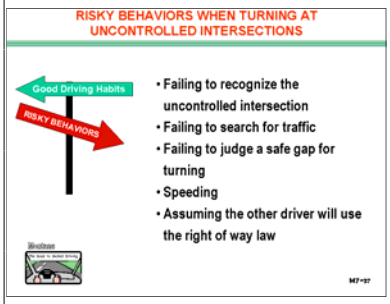


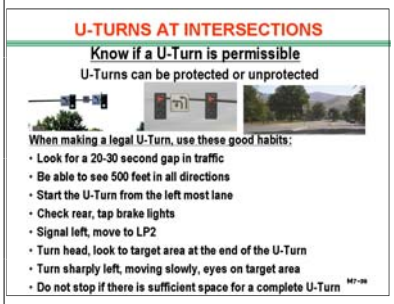


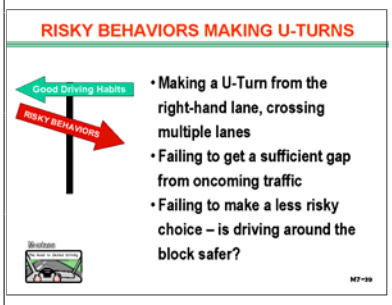
Instructional Topic	Content	Slide
◆ Strategies for Turning at Uncontrolled Intersections (Cont.)	… Search deep (90 degrees) into the cross streets for approaching traffic … Use the right-of way-rule to determine which vehicle goes through the intersection first	
◆ Risky Behaviors When Turning at Uncontrolled Intersections	Risky behaviors include: • Failing to recognize the uncontrolled intersection • Failing to search for traffic approaching or entering the intersection • Failing to signal your intention to turn • Failing to check and check again for a safe gap before turning • Excessive speed • Assuming the other driver is going to follow the right-of-way law	T7-37
U-TURNS AT INTERSECTIONS ◆ Good Habits for U-Turns at Intersections	Introduce, model, practice and discuss U-turn signs may be posted to indicate if a U-turn is permissible at locations where traffic is heavy • U-turns in an uncontrolled intersection can be hazardous • Know if a U-turn is legal at intersections without a posted sign or traffic lights, consider other choices • Look for a gap at least 20-30 seconds ahead if the U-turn is legal … Be able to see 500 feet in all directions … Search for drivers turning right on red into your planned path of travel … Start the U-turn from the left most lane … Check rear, tap brake lights … Signal left, move to LP2 … Turn head and look to target area at the end of the U-turn … Turn sharply left while moving slowly, keeping eyes on the target area … Do not stop if there is sufficient space to complete the turn	T 7-38
◆ Risky Behaviors When Making U-Turns	Risky behaviors include: • Making a U-turn from the right-hand lane, crossing multiple lanes • Failing to get a sufficient gap from oncoming traffic • Failure to recognize the lane is too narrow requiring multiple adjustments to clear the turn • Failing to recognize when another driver is making a right on red into your planned path of travel A U-turn may not be the best choice—is there a less risky choice available … Would driving around the block be safer?	T 7-39

Student Learning Activities	Resources

oncoming traffic lane





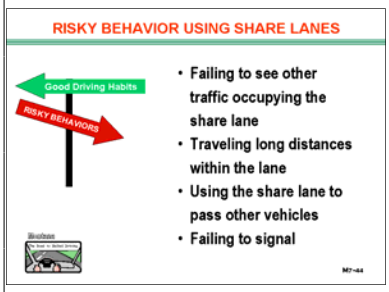


Instructional Topic	Content	Slide
DESIGNATED SHARE LANES FOR TURNING	Introduce, model, practice and discuss Share lanes help to keep traffic moving by giving left turning drivers a designated share lane in the center of the roadway • Share lanes are in the center of traffic lanes … Marked by double yellow lines on each side—the inner line is broken … White turn arrows indicate drivers in either direction can use the share lane • If a center left turn share lane is provided, it must be used • Signal before entering the share lane • Share lanes may be used to start and complete left turns and start U-turns from either direction of traffic • Don't stop part way into the lane with the vehicle blocking the through traffic • Share lanes can become hazardous if drivers become preoccupied with turning and fail to see another driver traveling in the same share lane—collisions can occur • Some communities have laws regarding how far a car can travel in a designated share lane • Know what the law requires in your community • Entering too soon, may interfere with another driver's use of the lane • It is against the law to use a share lane to pass another vehicle • Do not travel in a share lane to access a left turn lane at an intersection	T7-40
◆ Good Habits Turning into a Share Lane from Moving Traffic	When traveling straight, use correct lane change procedures to move into the center share lane • If necessary, stop and wait in the share lane for a safe gap before making a left turn … Check the shared left turn lane for vehicles already stopped waiting to turn from or onto the highway … Check ahead to the right to see if anyone wanting to make a left turn onto the roadway will be entering the shared left turn lane … Check oncoming traffic for vehicles signaling a left turn … Check the driveway to the left for any vehicle signaling a left turn with intentions of moving into the share lane while waiting for a gap in traffic to the right … Check traffic to the rear and signal intention to turn left • To merge with traffic from a share lane, use good habits for a lane change	T7-41
◆ Good Habits for Crossing Traffic to Enter a Share Lane	Before crossing traffic to enter a share lane for a left turn, get a safe gap from traffic traveling from the left • Signal a left turn and stop at the edge of the roadway • Check for drivers on the opposite side of the roadway preparing to turn left • Check for drivers approaching from the right, preparing to turn left	T7-42

Student Learning Activities	Resources

Instructional Topic	Content	Slide
◆ Good Habits for Using A Share Lane to enter a Street from a Drive-way (Cont.)	• Check for a safe gap in traffic to the left • If traffic is clear in both directions, enter the nearest through lane in the direction of the intended path of travel Do not travel or stop in the shared left turn lane to enter the through lane • If a gap is to the left but not to the right, turn into the shared left turn lane, stop, and use the right turn indicator • When traffic in the lane to the right is clear, use correct lane change procedure and merge into the nearest traffic lane	T7-43
◆ Risky Behaviors When Occupying Share Lanes	Risky behaviors include: • Failing to see other traffic occupying the share lane • Traveling long distances within the lane • Using the share lane to pass other vehicles • Not signaling intentions	T7-44
CHANGING LANES	Introduce, model, practice and discuss Lane changes are used when two or more lanes are available for traveling in the same direction • Precision drivers use good habits to make smooth lane changes • A lane change maneuver should not disrupt other drivers' legal speed and lane position • When preparing to change lanes, ask these questions: … Is a lane change needed? … Is it safe? … Is it legal? The need to change lanes may include: … A slow-moving vehicle is blocking the path of travel … The lane ends … The destination requires a turn … Pedestrians, animals, or bicycles are in the lane … A vehicle is blocking the view	T7-45

Student Learning Activities	Resources



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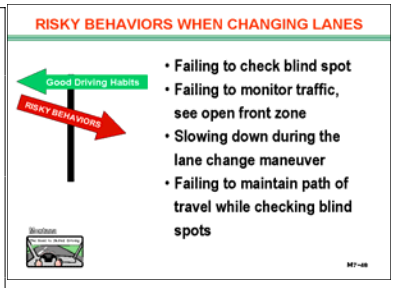
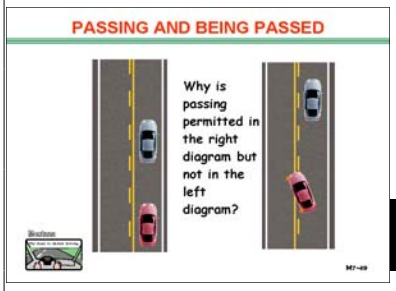
Instructional Topic	Content	Slide
◆ Good Habits for Changing Lanes	Use vision control skills to search the front, side, and rear zones • Identify possible hazards: … Is the vehicle behind preparing to pass? … Are two lanes merging into one lane? … Is an open zone available in the new lane? … Is traffic to the rear going faster? … Is a safe gap available to merge into the next lane? • Steering control is critical for a safe lane change … For all lane change maneuvers, use smooth steering … Turning the wheel too much or too quickly can result in a dangerous over-correction … Large, quick steering input can result in loss of control and roll-overs … At higher speeds, a slight steering input can move the vehicle over multiple lanes	T7-46
	• Perform a smooth, controlled lane change … Check traffic to the front, sides, rear, get a safe gap and open path of travel … Use the turn signal lever to show intent to change lanes … Check and confirm the blind spot is clear … When changing lanes, maintain speed, increase or decrease speed, as needed … Look to the target area • Consciously think of how the vehicle is moving from each lane position to the next in a controlled, smooth maneuver • Disengage the turn signal • Adjust speed to traffic • Get an update on your rear zone • When making lane changes, move one lane at a time … It is illegal (and dangerous) to cross multiple lanes in one continuous maneuver • Plan turns ahead to avoid making last minute lane changes	T7-47

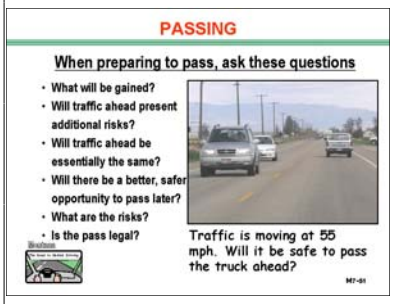
Student Learning Activities	Resources

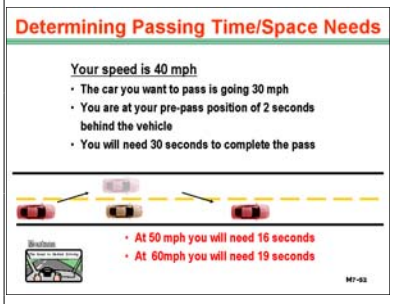
Instructional Topic	Content	Slide
◆ Risky Behaviors When Changing Lanes	Risky behaviors include: • Failure to check blind spot • Failure to monitor traffic in the new intended lane • Failure to maintain proper speed—slowing down • Failing to maintain path of travel while checking blind spots	T7-48
PASSING AND BEING PASSED	Introduce, model, practice and discuss • Know your lane markings and signs for a legal pass	T7-49
	• Head-on collisions typically involve a passing maneuver … Nationally, this maneuver accounts for almost 20 percent of all traffic fatalities • While some crashes occur due to impatience or illegal actions, many occur due to lack of knowledge about the time and space needed to safely pass • Impatience, errors in timing and poor space judgment are the leading causes of head-on crashes • Before initiating the passing maneuver, ask: … What will be gained by passing? … Will the traffic ahead present additional risks if a pass is attempted? … Will the pass result in even more passing maneuvers to “get ahead?” … Will the traffic ahead be essentially the same if the pass isn’t made? … Will there be a better, safer opportunity to pass later? … What are the risks? … Is the pass legal?	T7-50
◆ Determine Passing Time/Space Needs	A driver traveling 40 mph, passing a vehicle traveling 30 mph, starting the pass at the 2-second following distance will need about 13 seconds to complete the pass … At 50 mph about 16 seconds will be needed … At 60 mph about 19 seconds will be needed • If oncoming traffic is traveling at 60 mph, the combined distance needed to pass at 60mph is 38 seconds, or 3,344 feet (two-thirds of a mile)!	T7-51 T7-52

Student Learning Activities	Resources









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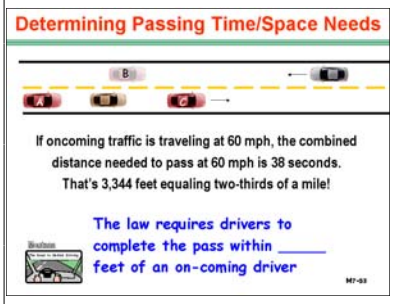
Instructional Topic	Content	Slide
◆ Determine Passing Time/Space Needs (Cont)	• If the passing maneuver is started from three seconds behind the vehicle, with both vehicles traveling at the same speed, the passing driver will have to accelerate to a speed 15 mph faster than the vehicle to be passed to complete the pass in the same time limits	T7-53
	• Will the driver being passed speed up, changing the time and space required?	T7-54
	• To estimate the time and distance of an oncoming vehicle, begin counting 1,000 one, 1,000 two, etc. … Stop counting when the approaching vehicle is opposite your vehicle … Continue practicing until accuracy at estimating necessary passing time is achieved	
◆ Increase Visibility with Daytime Headlights	Using headlights during the day is critical for safe passing maneuvers Without headlights on, an approaching vehicle may not become visible until it is within 2,200 to 2,500 feet • Headlights or daytime running lights illuminate the road about 4,500 feet … The difference in enhanced visibility can be critical	
◆ Passing Laws	Passing is not permitted: • When a solid yellow line is on the driver's side of the road	T7-55
	• When a sign indicates a no passing zone (sign is on the left side of the road)	T7-56
	• When a school bus is stopped to load or unload passengers on a two lane road	
	• If the vehicle must leave the pavement or roadway to pass	
	• When a vehicle ahead of you has stopped at a marked or unmarked crosswalk to let a pedestrian cross	
	• Exceeding the speed limit is needed in order to pass	
	Additional passing laws: • A passing vehicle must complete the pass before coming within 200 feet of any approaching vehicle • It is against the law to speed up when being passed MCA 61-8-323 (2) • Maintain speed and lane position	
	Note to teachers: Exceeding the speed limit by 10 mph is permitted on Montana's two-lane highways except for Highway 93	

Student Learning Activities	Resources



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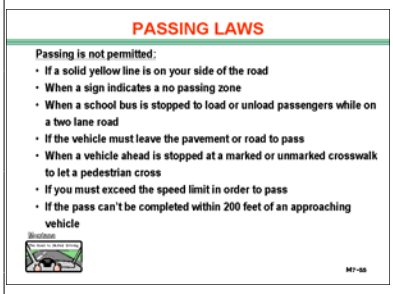
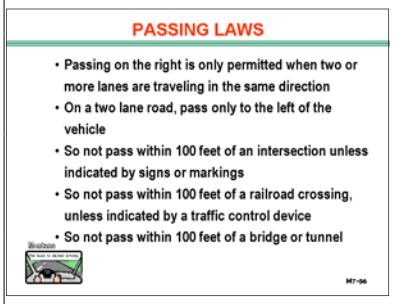
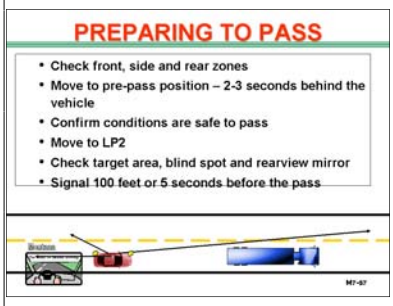




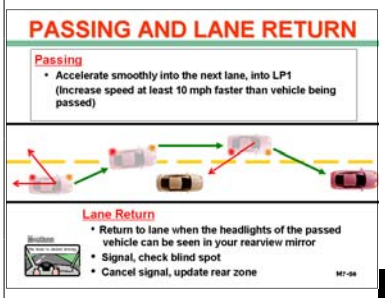
Instructional Topic	Content	Slide
◆ Passing Laws (Cont.)	• Passing on the right is only permitted when two or more lanes are for traveling in the same direction • When overtaking and passing another vehicle traveling in the same direction on a two-lane road, pass only to the left of the vehicle • A hill, curve or obstruction prevents oncoming vehicles from being seen, therefore passing is restricted when … The LOS is obstructed so another vehicle cannot be seen approaching in the opposite direction … Within 100 feet of an intersection, unless indicated by a traffic control device … Within 100 feet of a railroad crossing, unless indicated by a traffic control device … Within 100 feet of a bridge or tunnel when the view is obstructed	
◆ Good Habits for Passing	Passing is basically a lane change maneuver. Good habits for passing maneuvers include asking these questions: • What will be gained? Is it necessary? Is it legal? Is it safe? • Check the front, side and rear zones … Is an open zone available? … Do any LOS-POT restrictions exist? … Is traffic to the rear moving faster? • Wait for traffic to pass • How many vehicles are ahead? Is the space between vehicles large enough to allow passing one vehicle at a time? … How large is the vehicle being passed? Larger vehicles take more time to pass … Is there an intersection ahead? Does it have traffic control signs? … Is traffic traveling at the speed limit? … If a driver appears to be preparing for a left turn, reduce speed in time to confirm the maneuver will or will not be made	T7-57

Student Learning Activities	Resources



Instructional Topic	Content	Slide
◆ Good Habits for Passing (Cont.)	… Is there a No-Passing Zone ahead? Is enough time and space available to make the pass? … What is the condition of the roadway? Slippery? Uneven? Other? • If conditions support a passing maneuver, move to the pre-pass position … 2-3 seconds behind the vehicle being passed … Move to LP2 … Check target area, blind spot and rearview mirror • Signal at least 100 feet before passing • When traffic is heavy and passing seems impossible, signaling at least five seconds in advance alerts other drivers of your need to pass. Friendly drivers will open up space … Make a quick head-check to the blind spot … Accelerate at least 10 mph faster than the vehicle being passed … Smoothly move into the next lane, into LP1 • When the headlights of the vehicle being passed can be seen in the inside rearview mirror, enough space is available to return to the lane … Signal for a right lane change, check the blind spot and smoothly return to the lane; maintain speed … Cancel signal, update rear zone • Do not slow down after passing a vehicle as this behavior contributes to aggressive driving and road rage	T7-58
◆ Risky Behaviors When Passing	Risky behaviors include: • Failure to signal • Failure to check blind area • Slowing down during the maneuver • Moving the steering wheel too quickly and/or too much • Passing in a No Passing Zone • Exceeding the speed limit (teacher note: Montana allows 10 mph over the limit except for Highway 93) • Returning to the lane too soon, cutting off the other driver	T7-59

Student Learning Activities	Resources



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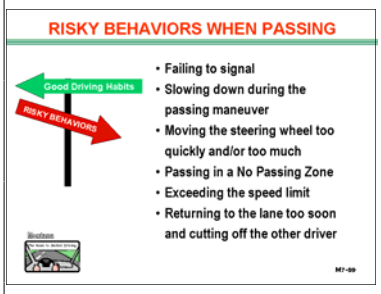
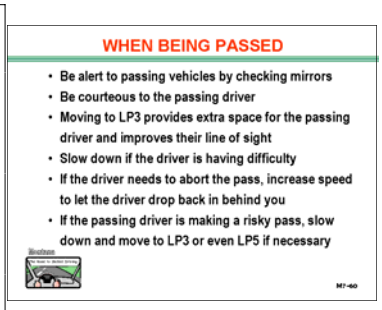
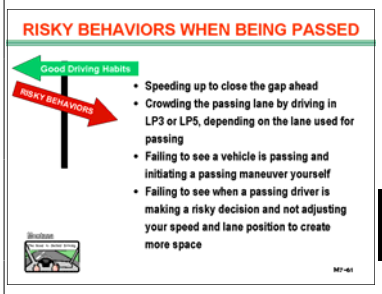
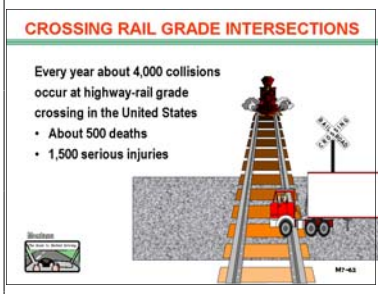


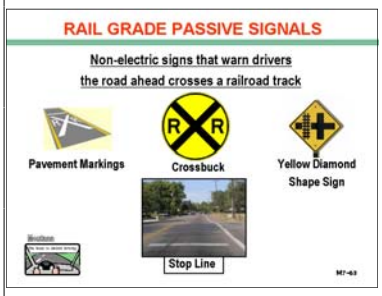
Instructional Topic	Content	Slide
◆ When Being Passed	• Checking mirrors will alert the driver that one or more vehicles are preparing to pass • Be courteous to the passing driver • Moving to LP3 provides an extra space cushion and gives the passing driver a better line of sight • If the driver is having a difficult time trying to pass, be courteous and slow down—never speed up to prevent the pass because it's dangerous and illegal • If the driver decides not to pass, increase speed to let the driver drop back in behind • If on-coming traffic is coming quickly and the passing driver is determined to pass, slow down and move to LP3 or even LP5 if necessary	T7-60
◆ Risky Behaviors When Being Passed	Risky behaviors include: • Failure to check to the rear for passing vehicles • Staying in LP3— reducing the space between you and the passing vehicle • Increasing speed while being passed • Failure to recognize and react to increasing risk during the passing maneuver	T7-61
CROSSING RAIL GRADE INTERSECTIONS	Introduce, model, practice and discuss Note: The Operation Lifesaver Program provides support to driver education by offering presentations in the classroom • Montana has about 3,550 miles of railroad track • Each year about 4,000 collisions occur at highway-rail grade crossings in the United States with nearly 500 deaths and 1,500 serious injuries • Signs and traffic control devices are installed to regulate, warn or guide traffic … They alert drivers to the presence of railroad tracks and the possibility of an approaching train • When approaching a public highway-rail grade crossing, drivers will see the round, yellow advance warning sign	T7-62
◆ Passive and Active Signals	Passive and active traffic control devices are placed along the roads near railroad tracks to regulate, warn or guide traffic. These devices alert drivers to the presence of railroad tracks and to the possibility of an approaching train. They also remind drivers of safety messages and laws. Passive signs are non-electric signs that warn drivers the road ahead crosses a railroad track • Pavement markings are the same as the advance warning sign, but the letters are painted on the road surface and generally start at the advance warning sign and end with a stop bar near the crossing • The Stop Line is painted across the lane on paved roads and identifies the safe place to stop and look for an approaching train … On gravel roads there are no pavement markings or stop lines and the driver must stop behind the crossbuck sign or signal at the crossing	T7-63

Student Learning Activities	Resources









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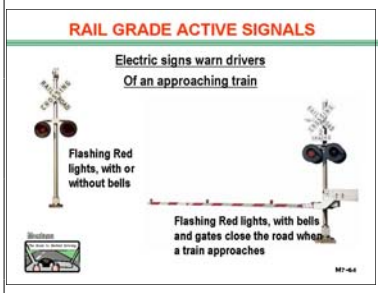
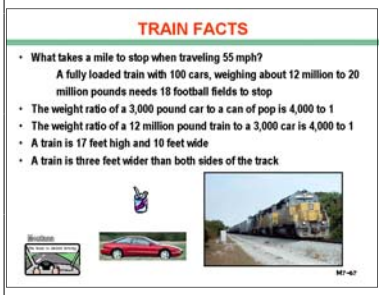
Instructional Topic	Content	Slide
◆ Passive Signals (Cont.)	• The Yellow Diamond-Shaped parallel track sign identifies highway-rail grade intersections that appear immediately after making either a right or a left turn • The Crossbuck is the most common sign at public highway-rail intersections. It marks the crossing and should be considered the same as a Yield sign. … If there is more than one track, a sign below the Crossbuck indicates the number of tracks present … After one train has passed, look and listen for another train coming from EITHER direction • The rules of the road for Stop and Yield signs are the same for highway intersections • Always Yield to a train – they always have the right of way • Montana Law … When you are required to stop, you must stop as close as possible, but no less than 15 feet from the nearest rail of the crossing	
◆ Active Signals	Active signals are electric devices that warn of an approaching train	T7-64
	• Flashing Red Lights – with or without bells – warn of an approaching train … Stop and wait for the train to pass	T7-65
	• Flashing Red Lights – with Bells and Gates – close the road when a train approaches … It is illegal to go around the gates. If a collision occurs resulting in injury, death, or property damage, the vehicle driver is legally liable	T7-66
◆ Train Facts	A fully loaded freight train of 100 cars, weighing approximately 12-20 million pounds, traveling at 55 mph requires a mile or more to stop, after applying the brakes. This is at least 18 football fields!	T7-67
	• The average car weighs 3,000 pounds. A 12-ounce can of pop is totally flattened when a car runs over it. The weight ratio of the car to the soda can is 4,000 to 1. The average freight train weighing 12 million pounds outweighs a car by the same ratio of 4,000 to 1. A train hitting a car will destroy it like a can of pop! • A train is about 17 feet high and 10 feet wide • A train is three feet wider than the tracks on both sides • Because of the huge size it appears to be traveling much slower that we think • Railroad tracks also add to the optical illusion … Parallel lines of the rails converge toward the horizon and fool the mind into thinking the train is farther away … Reality check! The train is much closer and going quite fast; it's easy to misjudge the distance and speed of a train • School buses are required to stop at all railroad crossings, and open the doors to listen for a train … The flashing lights alert others the bus has stopped • All vehicles hauling flammables, explosives, or hazardous materials must stop before entering the crossing	

Student Learning Activities	Resources





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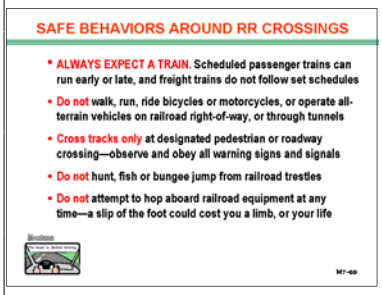
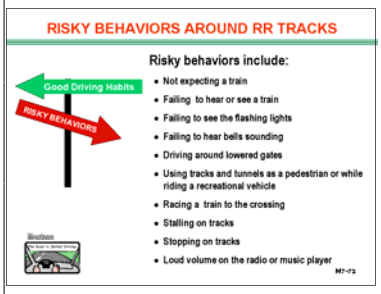
Instructional Topic	Content	Slide
◆ Train Facts (Cont.)	• Railroad tunnels are hazardous for pedestrians … Sidewalks don't exist … There's about 14 inches clearance from the side of the train to the tunnel walls—not enough to fit a person • A train strikes a vehicle or a pedestrian somewhere in the United States approximately every two hours—that's 12 incidents a day! • Unfortunately, joggers, hikers, people walking pets and all-terrain vehicle riders think it is safe to walk on train tracks … Trains can run on tracks in any direction and at any time • Nearly 50 percent of collisions at public grade crossings occur where active warning devices (gates, lights, bells) exist • Most incidents occur within 25 miles of the victim's home • The majority of highway-rail grade crossing collisions occur when the train is traveling 30mph or less • About 25 percent of the crashes occur when a driver runs into the side of a train • Cars can stop—trains can't! The engineer lets drivers know the train is approaching a crossing … The train whistle is blown one-quarter mile from the public crossing … Headlights are on bright	T7-68
◆ Safe Behaviors Around Railroad Crossings and Tracks	Follow these safe behaviors any time you are around railroad crossings and tracks, always remember a train can appear at any time • ALWAYS EXPECT A TRAIN. Scheduled passenger trains can run early or late, and freight trains do not follow set schedules • Do not walk, run, ride bicycles or motorcycles, or operate all-terrain vehicles on railroad right-of-way, or through tunnels • Cross tracks only at designated pedestrian or roadway crossing—observe and obey all warning signs and signals • Do not hunt, fish or bungee jump from railroad trestles • Do not attempt to hop aboard railroad equipment at any time—a slip of the foot could cost you a limb, or your life • Never drive around lowered gates—it's illegal and deadly. If you suspect a signal is malfunctioning, call the 1-800 number posted on or near the crossing signal or your local law enforcement agency • Never race a train to the crossing—even if you tie, you lose • Do not get trapped on the tracks … Only proceed through a highway-rail grade crossing if you are sure you can completely clear the crossing without stopping • If your vehicle stalls on a crossing, immediately get everyone out and far away from the tracks … Move away from the tracks in the direction from which the train is approaching—debris will move away from you, not toward you … Call your local law enforcement agency for assistance	T7-69 T7-70

Student Learning Activities	Resources



Instructional Topic	Content	Slide
◆ Safe Behaviors Around Railroad Crossings and Tracks (Cont.)	• At a multiple track crossing while waiting for a train to pass, search for a second train on the other tracks, approaching from either direction • Do not shift gears on railroad tracks; your vehicle may stall • STOP … If there is a stop sign … If the gates are going down … If the lights are flashing and bells are sounding … If a train is approaching • LOOK both ways as you approach a railroad crossing, even if the flasher is not flashing—it may be broken • Turn off the radio when approaching a crossing—LISTEN for a train! • Large NO TRESPASSING signs are at bridges, tunnels, trestles, railroad right-of-way and railroad yards. It is unlawful to walk, hike, or ride any vehicle in these areas. Violators can be arrested and fined.	T7-71
◆ Risky Behaviors Around Railroad Crossings and Tracks	Risky behaviors include: • Not expecting a train • Failing to hear or see a train • Failing to see the flashing lights • Failing to hear bells sounding • Driving around lowered gates • Using tracks and tunnels as a pedestrian or while riding a recreational vehicle • Racing a train to the crossing • Stalling on tracks • Stopping on tracks • Loud volume on the radio or music player	T7-72
GOOD COMMUNICATION HABITS	Effective communication techniques helps drivers move in and out of traffic smoothly and in control • Receiving communications from others is just as important as sending to them Practice these good habits: • Signal intention to turn at an intersection 5 seconds in advance or 100 feet before • Signal all lane changes 3-5 seconds in advance, longer if traffic is heavy • If intending to turn into a driveway immediately after an intersection, start signaling when the vehicle is in the intersection • Tap brake pedal to alert following drivers • Use the horn sparingly and lightly to gain attention to a dangerous situation • Use headlights during daytime and flash lights to warn others • Use lane positions to communicate intention to move from your lane • Watch for drivers reducing or increasing speed indicating lane changes or turning	T7-73

Student Learning Activities	Resources



Instructional Topic	Content	Slide
ASSIGNMENT		
ASSESSMENT		

Student Learning Activities	Resources