

Contents

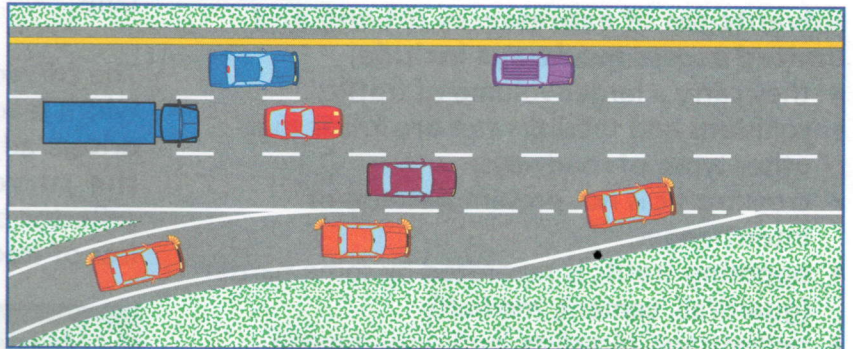
- 17-A
Characteristics
- 17-B
Entering an Expressway
- 17-C
Expressway Driving
- 17-D
Exiting the Expressway
- 17-E
Special Expressway Situations
- 17-F
High Speed Considerations
- Module Six Review

Complex Risk Environments

Having acquired the strategy (the SIPDE System) and visual skills as they apply to every day driving, you must now apply these same skills to interacting with other road users in the expressway environment.

You must understand the characteristics of expressways and adapt your driving techniques to the higher speed. Special skills are required to safely enter the expressway using the various types of entrance ramps. Once you are traveling at speeds up to 75 mph, you must apply critical thinking, utilize problem-solving skills, as well as risk-reduction decision-making to the complex risk environment.

The presence of a wide variety of other road users will also require special adaptations. Your level of experience as a novice driver must also be considered.



AFTER COMPLETING THIS CHAPTER, THE STUDENT MUST BE ABLE TO RECOGNIZE, EVALUATE, AND APPLY RISK-REDUCTION STRATEGIES TO :

- enter and exit the expressway.
- establish speed and lane position while interacting with other road users.
- travel on multi-lane roadways at speeds up to 70 miles per hour.
- adapt to the special expressway situations and high speed considerations.



Characteristics

A complex risk driving environment is limited to speeds under 75 mph in Texas, having controlled or limited access interchanges or intersections in urban, suburban, and rural settings. Traffic flow is heavy and often unpredictable. This does not allow excessive time for the novice driver to identify risks through changes to line of sight or path of travel.

When traveling in this complex risk environment (usually an expressway), the normal traffic speed is higher than other driving environments. Drivers must adapt the SIPDE system to manage time, space and visibility in this controlled environment. Most multiple vehicle collisions occur on expressways due to vehicles following too closely or conflicts



at entrances and exits.

CHARACTERISTICS

- Higher speeds (up to 75 mph in Texas).
- Limited access and exits (controlled access intersections, no crossings).
- Separate roadways (guardrail, cement barrier, grassy median) with multiple lanes (2, 3, 4, or more) moving in the same direction.
- Gentle, banked curves.
- Graded hills.
- Minimum and maximum speed limits.
- High volume of traffic.
- Uninterrupted flow of traffic.
- Vehicle restrictions.
- Low frequency of collisions (high severity rate due to high speeds).

Advantages of expressway driving and limited access roadways include:

- they carry a larger volume of traffic;
- collisions and fatality rates are lower than other types of roadways;
- cross traffic is not present because of interchanges;
- opposing traffic is separated by some barrier (guardrail, cement, median);
- pedestrians, bicyclists, and slow-moving vehicles are not permitted on expressways; and also
- they are designed to help drivers anticipate conditions ahead.

SURVIVAL FEATURES

- Wide, clearly-marked lanes of traffic.
- Break away sign support posts.
- Protected left and right turn bays.
- Banked roadways.
- Grooved roadways.
- Clear highway shoulders.
- Rumble strips.
- New design median barriers.
- Crash attenuators.

INTERCHANGES

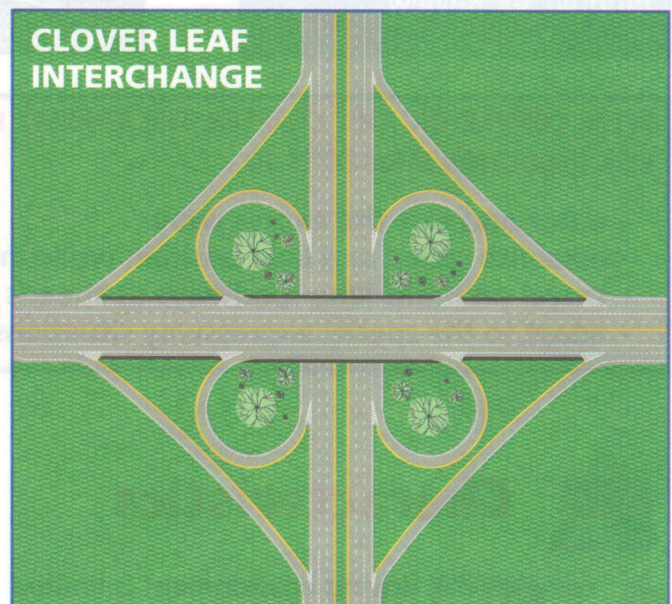
Expressways are designed for traffic moving at higher speeds. As such, the normal intersections with stop signs or traffic lights have been eliminated.

Access is provided by special entry ramps, and drivers exit by special exit ramps. Cross traffic passes under or over the expressway. This permits traffic to merge or to exit with a minimum of disruption of speed or movement. These are, in reality, still intersections; however, because of their special design, they are normally referred to as interchanges.

CLOVER LEAF INTERCHANGE

Allows for the intersection of two expressways with minimal disruption of speed or of movement. It is characterized by an entrance and exit ramp with a sharp curve to replace any left turn maneuvers. The problem with this setup is that vehicles entering (instead of a left turn) and vehicles exiting (instead of a left turn) must share the same extra lane, called a weave lane.

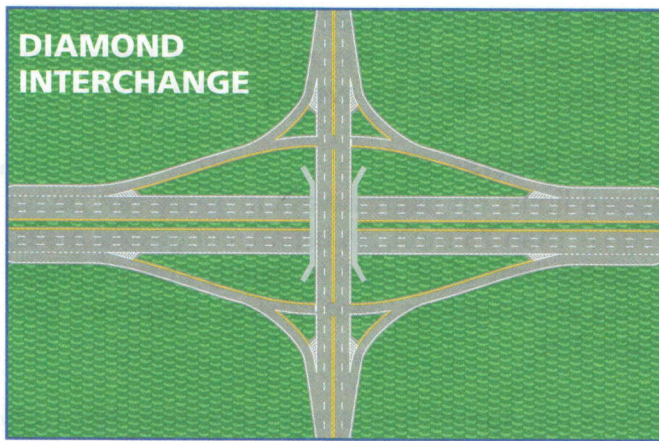
The curved ramps may have banked or flat exits which lead to braking and steering problems as drivers adjust from high speed to the speed of the curve. The curves often are noted by reflector poles which are knocked down due to loss of traction by drivers that did not adapt.



DIAMOND INTERCHANGE

Allows for the interchange of a major expressway with a secondary dual or multi-lane roadway. It may have intersections that are controlled by traffic control devices on the intersecting secondary roadway which permit



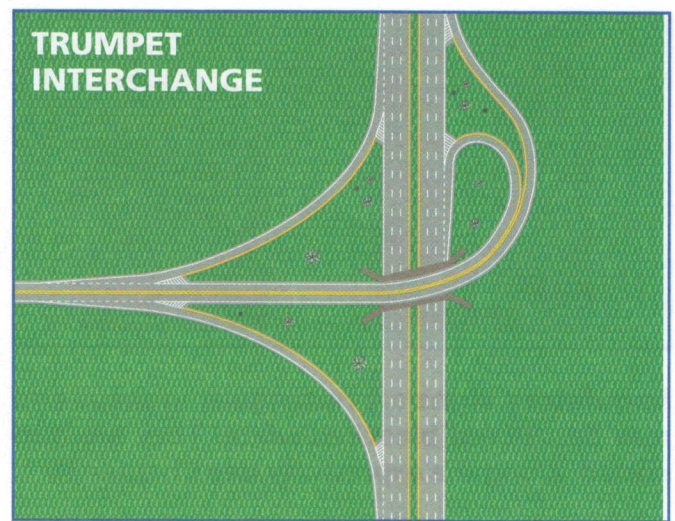
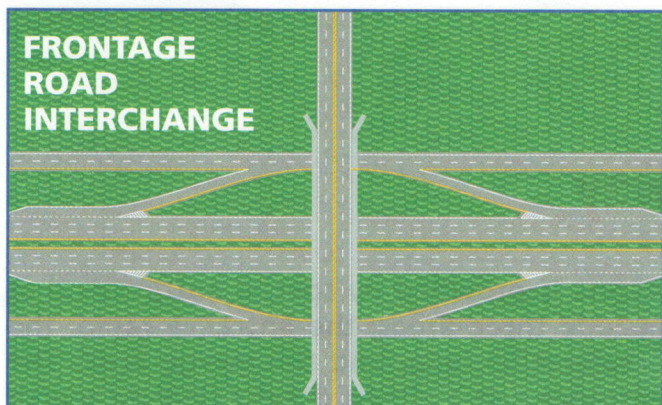


left and right turn maneuvers onto the secondary roadway.

The signals (at the intersections) may be used to allow left turns from the secondary roadway to the entrance ramps of the major multiple roadway. Lane markings may indicate lane position on the approach to the intersection. A diamond interchange will allow the driver to re-enter the primary road by moving across the intersection of the secondary road and entering the entrance ramp on the other side.

FRONTAGE ROAD INTERCHANGE

Allows for the interchange of vehicles using parallel secondary two-way or one-way roadways and a major multiple lane roadway. It permits dense city traffic flows to mix efficiently with higher speed traffic of the multi-lane roadway. Frontage road turnarounds allow drivers to exit the high speed roadway in one direction and then use the opposing frontage road to re-enter the multi-lane roadway in the opposite direction. Yield rules and roadway markers may vary based on the direction of the flow of traffic (two-way or a one-way).



TRUMPET INTERCHANGE

Allows for the interchange of secondary two-way roads to a multiple lane roadway with minimal traffic mix. It is used instead of a T-intersection with no weave lane situations. These intersections are often found when interstate feeder roads stop at the interstate roadway or loop.

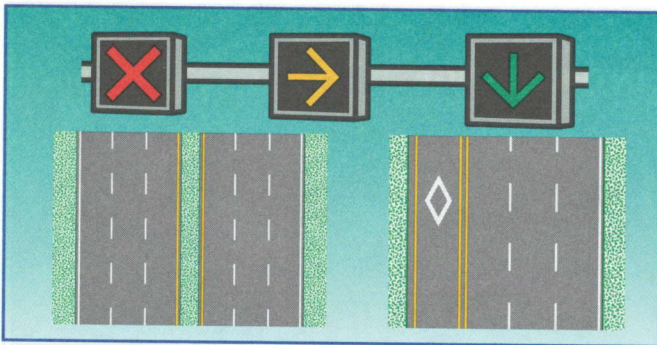
EXPRESSWAY TRAFFIC CONTROL DEVICES

Expressway signs are located either at the side of the roadway or hanging overhead on cross posts. The **“Interstate” sign** is shaped like a shield and is red, white, and blue in color (see Chapter 3).

Guide signs are rectangular and may be green/white, blue/white, or brown/white, depending on where they are guiding the driver (see Chapter 3).

Warning signs are yellow/black or orange/black (in construction zones) depending on the area of warning. They are usually posted at the sides of the roadway (see Chapter 3).





Regulatory signs are rectangular in shape and may be colored black/red/white. They are also posted along the expressway (see Chapter 3).

TRAFFIC SIGNALS

Traffic signals on expressways are rare. They may be used as lane usage signals which are mounted above each lane.

- Green arrow over the lane indicates the lane is open for travel.
- Yellow "X" indicates travel in that lane is about to close or change. You should move one lane to the right when safe to do so. A yellow arrow indicates the direction in which to move.
- Red "X" indicates travel in that lane is closed or prohibited.

LANE MARKINGS

Lane markings are consistent with other roadways (see Pages 3.13 to 3.15).

The solid yellow line should always be to the driver's left. Broken white lines separate lanes of traffic moving in the same direction. Solid white lines mark the right edge of the roadway or entrance and exit lanes. HOV (high occupancy vehicle) lanes are marked with a

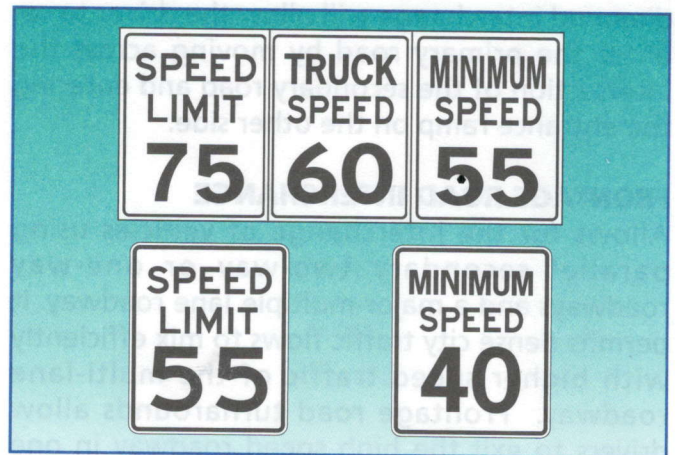
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white diamond painted on the roadway and have restrictions on the number of passengers in the vehicle that is traveling in this lane.

SPEED LIMITS

Speed limits on expressways in Texas can be no higher than 75 mph. In urban, congested areas, a speed limit of 55 mph is usually posted. These limits are based on ideal driving conditions (see Page 3.3).

Minimum speed limits are necessary because driving too slowly on expressways can be just as dangerous as driving too fast. In Texas, it is against the law to operate a vehicle at such a slow speed as to impede the normal and reasonable movement of traffic. The Department of Transportation (TxDOT) or local authorities in Texas determine what minimum limits are necessary.



Driving at the common speed of traffic is the best way to establish and maintain a safe space around your vehicle. Avoid the possibility of exceeding the legal posted speed limit.



Entering an Expressway

Expressways are designed for traffic moving at higher speeds. As such, intersections with stop signs or traffic lights have been eliminated.

Access is provided by special entrances that include three areas: the entrance ramp, the acceleration lane, and the merge area. The **entrance ramp** allows drivers time to search



traffic for flow and gaps, as well as to evaluate speed and space requirements before entering. The **acceleration lane** allows drivers time to adjust speed to the flow of traffic while continuing to search ahead, behind, and for the gap. The **merge area** allows drivers to move onto the expressway into the chosen gap at the speed of traffic.

Many collisions occur in this environment due to conflicts that result from driver errors or inexperience. Sharing the roadway at these interchanges requires applying proper procedures for entering the expressway as well as drivers on the expressway cooperating to reduce risk.

ENTERING THE FREEWAY

Merging with the flow of traffic on an expressway can be a hazardous situation; to avoid unnecessary risk, apply the EPE System, learn the following techniques, and practice them with a professional instructor. Once the skills have been learned, additional practice to develop the skill and the comfort required will be most valuable.

EVALUATE

- Check the access ramp (signs, speed, do not enter, ramp grade - uphill, downhill, level).
- Check traffic on the expressway.
- Check the flow of traffic ahead.
- Check the flow of traffic behind.

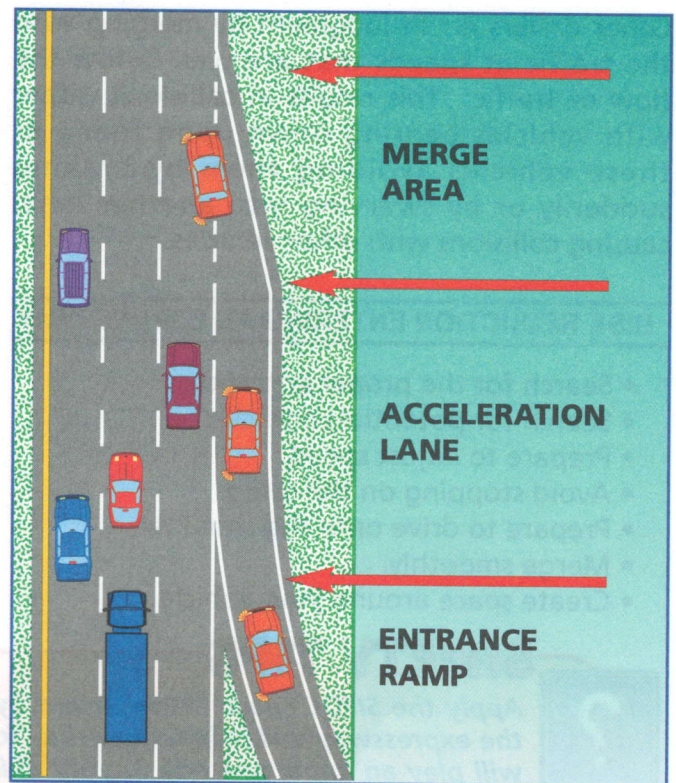
CAN YOU ENTER SAFELY?

PREPARE

- Adjust speed on access ramp (suggested speed, vehicles ahead and behind).
- Check for a gap on the expressway.
- Activate the left turn signal.

EXECUTE

- On the acceleration lane, accelerate to match traffic on the expressway.
- Check mirrors and the left blind spot.
- Match your vehicle with the gap in traffic that you selected on the expressway.
- At the merge area, look ahead, then target



and steer smoothly into the right lane.

- Center your vehicle in the right lane.
- Cancel the left turn signal, or release the lane changer device.
- Adjust speed to the flow of traffic in your lane and create a space cushion.

COMMON DRIVER ERRORS

Many drivers are very uncomfortable when they have to merge onto the expressway. The need to increase speed, check traffic, signal, recheck, and merge with fast moving vehicles in a short distance is very demanding.

To do all of this easily (multi-tasking involving steering control, acceleration control, searching space areas, timing of tasks, and precision) requires practice.

The most common error is to reduce speed or stop while trying to enter. This is usually caused by indecision or failure to check the flow of traffic and find a gap on the expressway as early as possible. The result is usually a collision, as the driver behind checks the traffic on the expressway in his/her mirror or blind spot and he/she plows into the vehicle ahead.



Other drivers err in judgment by merging with the traffic at speeds that are well below the flow of traffic. This results in collisions, either with vehicles bearing down upon them, or these vehicles avoiding them by braking suddenly or by swerving into another lane, causing collisions with other vehicles.

RISK REDUCTION ENTERING AN EXPRESSWAY

- Search for the proper entrance.
- Search for potential conflicts.
- Prepare to adjust speed.
- Avoid stopping on the ramp.
- Prepare to drive onto the shoulder.
- Merge smoothly.
- Create space around your vehicle.

Reducing risk on the entrance ramp

- Search for the proper entrance.
- Search ahead, behind, and on expressway.
- Prepare to adjust speed for blocked ramp.
- Avoid stopping or backing on ramp.

Reducing risk on the acceleration lane

- Search ahead and for gap in traffic.
- Prepare to adjust speed.
- Pull ahead onto the shoulder if no merge is available.

Reducing risk in the merging area

- Search ahead (front space area) and to the side (left rear space area).
- Blend speed with traffic.
- Search for traffic changing lanes at or near the merge area.

SAFETY TIPS



Apply the SIPDE Space Management System when preparing to enter and while entering the expressway will help reduce risk. Your level of experience with this complex maneuver will play an important role in your ability to adapt. Search and evaluate carefully to reduce risk!



Expressway Driving

17

Traveling on expressways, the posted speed limit is higher than urban or rural speed limits. Multiple vehicle crashes occur on expressways. Drivers must adapt to the high-speed driving conditions. You must apply the SIPDE system to manage your time, space, and visibility in this controlled environment.

PLAN THE ROUTE IN ADVANCE

The high speed, the volume of traffic, boredom (highway hypnosis) from an unchanging environment, and the need to remain alert place a constant strain on the driver. Whether driving for a short trip or an extended distance, you must plan a route in advance. Driving is not the time to consult a map or written directions. Know the entrances and exits, the number of the highways and all other pertinent data. On longer trips, plan rest stops and overnight accommodations.

BE FAMILIAR WITH ALTERNATE EXITS

Despite the best plan of action, you must always be ready for unforeseen situations. Construction, collisions, exit closings, or traffic congestion may require you to change your route. Prepare alternate exits and routes in advance for the possible occurrence of these situations. Listen to radio stations that announce traffic reports in the area to assist you in planning ahead. You will save a great deal of anxiety.

GUIDE SIGNS

Guide signs indicating distance/direction are posted to assist travelers to their destination. Prior to each exit, at least three signs are posted within a distance of one mile to give drivers plenty of time to prepare to exit. Signs may indicate that a lane must exit. Choose a lane of travel appropriate to your intentions. An exit sign (gore sign) designates the exact location.

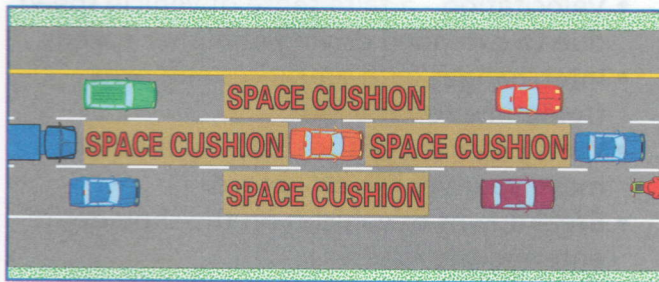


PLAN TIME OF TRAVEL

To avoid unfamiliar or congested traffic situations, plan the time that you are on the road to arrive in a given area while it is still daylight, and not during rush hour traffic. Planning a rest or sight seeing stop so that you enter or cross an urban area after the peak rush hour traffic period may end up saving you time and a great deal of frustration.

DRIVING ON THE FREEWAY

Adjust your speed to the traffic, the speed limit, the road and weather conditions. Search 20 seconds ahead, the full width of the roadway. Identify potential hazards. Keep space around your vehicle; increase your following distance to at least three or preferably four seconds. Maintain an open space area on at least one side of your vehicle. Avoid driving in "packs". Adjust your speed and space early and gently. Avoid large vehicles that block your visibility.



POTENTIAL DANGERS ARE:

- the effect of high speed on your braking distance;
- the effect of high speed on your field of vision;
- the hypnotizing effect of expressway driving (highway hypnosis);
- the velocitation effect of extended high speed driving;
- the presence of slower moving vehicles;
- entrance and exit ramps on the right and sometimes on the left;
- vehicles on the shoulder re-entering the roadway; and also
- windy sections of the roadway.

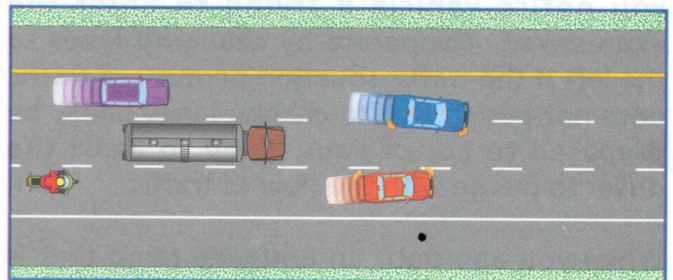
LANE SELECTION

Drive in the right lane (two lane) or the second lane (three or more lanes) as much as possible.

Leave the left lane for passing. Adjust your speed to the traffic, the speed limit, the road and weather conditions. (Minimum and maximum speed limits no longer apply in adverse driving conditions.) Driving at the common speed of traffic, without exceeding the speed limit, is the best way to establish and maintain a safe space around your vehicle.

CHANGING LANES

The need to change lanes on the expressway occurs often. It can be more dangerous when there are more than two lanes going in the same direction. When you change lanes, check the blind spot across the entire roadway, as other vehicles may be changing to the same lane you intend to occupy. **Always change one lane at a time.**



PASSING

Passing is the most dangerous maneuver a driver can attempt. On the expressway, passing can occur on the left or the right. It is much more similar to a couple of lane changes than passing in other driving environments (no oncoming vehicles). However, because of the higher speeds of most of the vehicles and the volume of traffic, extreme care in evaluating the situation prior to deciding, and also when preparing to pass, must be exercised.

It is very easy to misjudge the speed of a vehicle approaching you from the rear, or the vehicle ahead that you are approaching (maybe faster than you realize). Evaluate speed carefully and allow extra space margins in this environment that seems safe. Remember, it is illegal to exceed the speed limit, even when passing.

See Chapters 4-A or 16-E for the correct passing procedures and don't forget to sound the horn as required by Texas law.



If you apply the SIPDE System and get the big picture of the traffic around you, you can minimize lane changes and passing situations while following the flow of traffic safely.

BEING PASSED

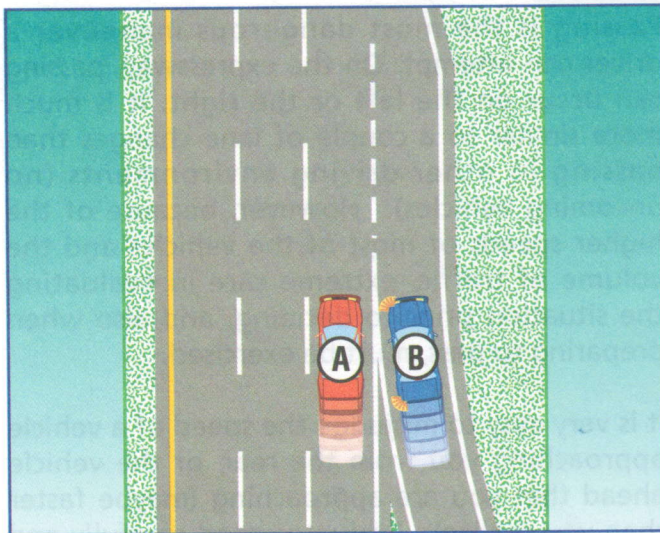
When another vehicle is passing you, you must apply the following risk reducing strategies:

- check the position of the passing vehicle;
- move away from it if too close (change position in your lane);
- do not increase speed; and also
- once passed, adjust speed to regain your correct following distance.

APPROACHING AN ENTRANCE RAMP

When driving in the right lane (vehicle A below), you approach an entrance ramp and you notice vehicle B trying to enter the expressway. Cooperate by changing lanes to the left if the traffic situation permits. If traffic does not permit you to change lanes safely, be prepared to adjust your speed to assist the driver to merge with the flow of traffic.

When you approach an entrance ramp that is not clearly visible - closed line of sight (because of a curve or an overpass), avoid a potential



17

SAFETY TIPS



Applying the SIPDE Space Management System to the freeway environment will help reduce risk. Remember to increase your following distance due to the higher speed (at least 4 seconds for a novice driver).

Your level of experience with this environment will play an important role in your ability to adapt. Stay alert. Search far ahead to reduce risk!

conflict by changing lanes to the left immediately, even though you are not sure that vehicles may be entering. Moreover, on any approach to an entrance, a lane change to the left would eliminate the possibility of a conflict situation arising. (See vehicle A below, a lane change would have eliminated this situation.) Expect the unexpected and stay out of trouble.

INHERENT RISKS ON THE EXPRESSWAY

Inherent risks:

- Higher speeds require a longer distance to stop.
- Higher speeds cause the field of vision to be narrowed.
- Volume of traffic and different types of vehicles present increased chance of collisions.
- Highway hypnosis - a dull or drowsy condition that occurs when driving at a steady speed for long distances.
- Velocitation - a false sense of vehicle speed due to extended driving at higher speeds.
- Interchanges with entrances and exits (sometimes on the left).
- Windy sections of the roadway that may move your vehicle off-course.
- Breakdowns or vehicles on the shoulder re-entering the roadway.
- Two vehicles changing lanes into the same space.
- Passing at higher speeds that may occur on the left or on the right.
- Slow moving vehicles ahead.
- Vehicles driving in "packs" or "convoys."
- Higher speeds may cause tires to hydroplane in wet or snowy conditions.

RISK REDUCTION ON THE EXPRESSWAY

Reducing risk:

- Search further ahead (20 to 30 seconds) to



identify risks early.

- Move your eyes more quickly to compensate for narrower field.
- Adapt and make allowances for characteristics of other road users.
- Increase your following interval (preferable minimum of 4 seconds). Increase further when following large trucks, buses, or motorcycles; when being tailgated; when driving a heavy load or pulling a trailer; or when driving in bad weather.
- Adjust speed or change lanes to facilitate

entry of other users.

- Reduce speed, grip steering wheel firmly and compensate for any wind.
- Identify stalled vehicles early and change lanes to leave extra space.
- Check blind spot across entire road prior to lane change (look out for blocked line of sight - a large truck - that may hide a vehicle passing on the opposite side and intending to move in front of the truck).
- Avoid driving in "packs" or "convoys."
- Reduce speed in wet or snowy road conditions.

SAFETY TIPS



Communication is a major key to risk-reduction in the expressway environment. Use the tools at your disposal (turn signals, hazard flashers, brake lights, horn, hand signals, etc.) to warn other road users of your intentions as well as hazardous situations. They cannot read your mind!



Exiting the Expressway

Plan your route ahead of time; make sure you know the highways and the exits you will be using. At least three signs will be posted to advise you of each exit. Prepare to exit by changing into the right lane (exit at right) about one-half mile (20 to 30 seconds) prior to the exit.

EVALUATE

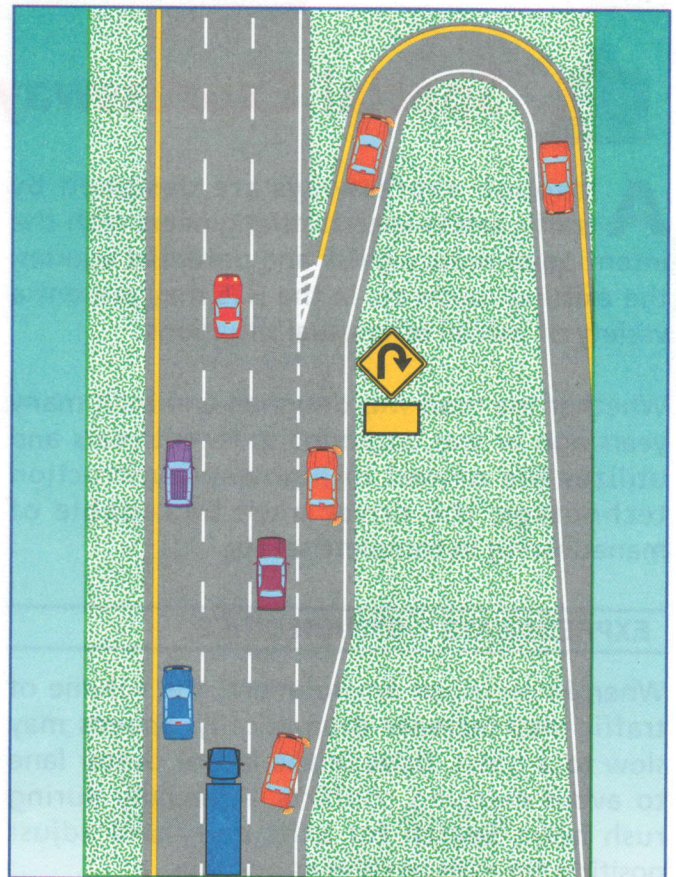
- Verify the type of exit (entrance and exit combined, curved ramp, clover leaf).
- Check for traffic entering.
- Check the exit ramp (advisory speed, curve).
- Check mirrors / blind spot.

PREPARE

- Activate the right turn signal.
- Maintain speed.
- Recheck mirrors / blind spot (at the deceleration lane).

EXECUTE

- Aim and steer smoothly onto the deceleration lane.
- Apply the brakes firmly.



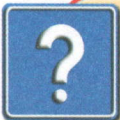
- Verify the speedometer (velocitation, check posted advisory speed).
- Reduce speed to or below the posted limit.
- Check for traffic stopped ahead.
- Steer along the center of the exit ramp (level, uphill, downhill, sharply curved, straight).
- Cancel the turn signal.
- Keep a space cushion ahead and behind.

After exiting the expressway, the extended driving at high speed will have created a false impression of speed (velocitation). Check your speed for several minutes by glancing at the speedometer frequently, this will assist you in readjusting to the slower speed.

RISK REDUCTION EXITING THE EXPRESSWAY

- Search ahead for signs indicating the distance to the exit.
- Search ahead for the exit.
- Search ahead for weave lane conflicts.
- Search traffic on the exit ramp for a gap to use to exit.
- Search for a short deceleration lane.
- Search for ramp suggested speed or speed limit sign.
- Search for ramp design (level, uphill, downhill, curve, straight).
- Reduce speed on the deceleration lane (not on expressway).
- Slow to ramp speed.
- Check speedometer frequently after exiting to compensate for velocitation effect.

SAFETY TIPS



If you miss your exit, continue straight ahead and proceed to the next exit. Then return to your intended exit on the other side of the freeway. Never reverse on the expressway, on the entrance, on exit ramps, or on the shoulder. This is highly dangerous, as well as illegal!



Special Expressway Situations

Although expressways are designed by traffic safety specialists/engineers with the intention of reducing risk and potential injuries, the existing roadways in the HTS may present a variety of special or unusual situations.

Whether the road was designed and built many years ago or was upgraded in recent years and utilizes the newest in highway construction technology, the driver must be capable of maneuvering in complete safety.

EXPRESSWAYS THROUGH CITIES

When in an urban environment, the volume of traffic may increase dramatically. Speeds may slow to a crawl. Drive in the left or center lane to avoid merging conflicts, especially during rush hour. Search for exits early and adjust position for exits as soon as possible.

DISABLED VEHICLES

When you see a disabled vehicle ahead, you must reduce speed and increase the space between your vehicle and the disabled vehicle. This may require that you change lanes. Be alert for tow trucks, pedestrians, and/or police vehicles.

If your vehicle becomes disabled:

- pull off as far as possible onto the shoulder or median;
- activate the emergency flashers;
- raise the hood to signal for assistance;
- stay in the vehicle and lock the doors;
- ask anyone who stops to go to a phone and call for assistance; and
- do not get into a stranger's vehicle.



CONSTRUCTION AREAS

When you see signs warning of a construction area ahead, reduce speed. Search for other warning signs informing of road conditions ahead. Adjust your lane position to maintain space around your vehicle. Be prepared to further adjust your speed to the unusual situation that construction sites present.

TOLL BOOTHS

Some expressways have toll booths that require road users to pay a fee for driving on the roadway. They may have toll areas every so many miles with a set fee, at entrances to bridges, or at each entrance and exit (a ticket is issued as you enter and you pay the fee when you exit). These can create special problems.

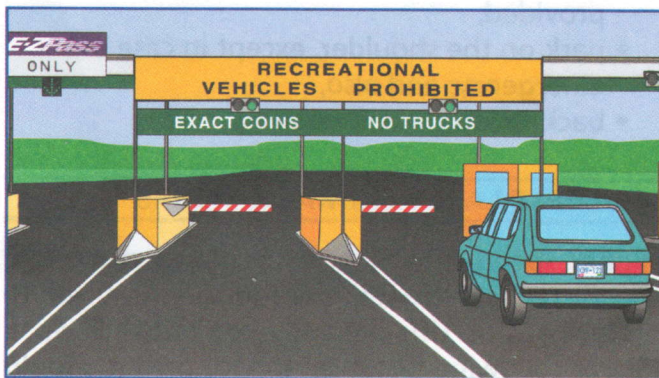
As you approach, begin reducing speed early as traffic may be backed up at the booth. Search for signs indicating the distance ahead, a reduced speed, green lights indicating open booths, exact change automated booths, attendants issuing change and designated lanes for special vehicles. Check for other vehicles making sudden lane changes or stopping unexpectedly.

REDUCED SPEED LIMITS

Reduce speed to the posted limit and check your speedometer (velocitation).

DISTANCE AHEAD

When signs indicate the distance to the toll area, check for correct change (ideally, you should have it prepared ahead of time). As soon as possible, position your vehicle in the correct lane.



DESIGNATED LANES - SPECIAL VEHICLES

Multi-axle vehicles and vehicles towing a trailer are usually required to use designated lanes and booths. Drivers with correct change or tokens may use the automated booths. Cooperate with other drivers who may have to change lanes as they approach because they realize they are in the wrong lane. As you exit the toll booth, check for drivers on either side as they may wish to enter the same lane as you. Cooperate and yield to more aggressive drivers. Accelerate smoothly and re-establish your space cushion.

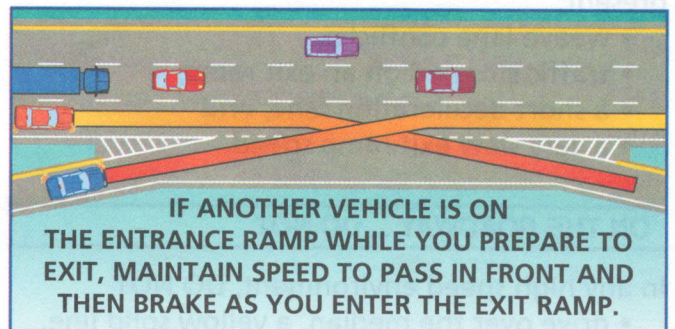
ENTRANCE RAMP ON LEFT

In some cases, an entrance ramp may be to the left of the freeway. The potential for conflict problems is greater. To enter, you must check traffic on your right and to the right rear and then merge with the far left lane which is used by the highest speed traffic. Once on the expressway, you must change lanes to the right. You may have to change more than one lane if your planned speed is less than traffic speed.

If you are driving on the expressway in the left lane, apply the same concepts as when in the right lane near an entrance. That is, be prepared to change lanes or adjust your speed to facilitate entry.

WEAVE LANES

If an entrance and an exit use a common extra lane (acceleration/deceleration) as shown below, this is called a weave lane. This can cause conflicts for both drivers using the lane. Avoid problems by adjusting speed to time your arrival so you can enter or exit when there are no other vehicles approaching



At a weave lane, the driver entering from the entrance ramp should yield the right-of-way to the driver leaving the expressway.

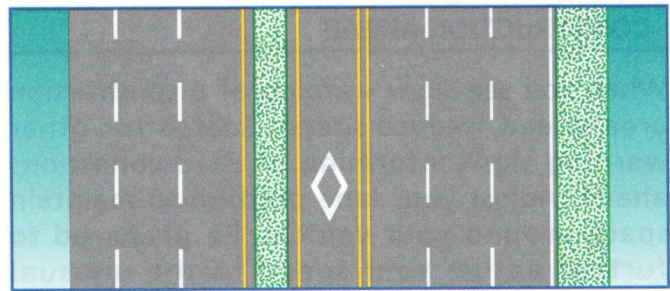
ENTERING DIRECTLY ONTO THE FREEWAY

Some expressway entrances do not have an acceleration lane, or it is shorter than usual. This creates a more difficult situation.

You must use the access ramp to check the traffic as well as to adjust speed. You must find a longer gap than usual in order to merge with expressway traffic. You must accelerate more quickly than usual (use the kickdown) in order to match speed and blend into traffic. Not all vehicles can do this easily.

DIAMOND LANES

A white diamond painted on the road indicates a reserved lane (HOVs [high occupancy vehicles], taxi, etc.). Signs supplement these symbols and designate which vehicles may use the lane (the number of occupants required).



Double yellow lines delineate the lane and may restrict access to specific areas for entering and exiting. Do not drive in these lanes unless your vehicle qualifies, nor cross double yellow lines to enter or exit the designated lane.

RAMP METERING

At the beginning of the acceleration lane, timed signal lights, one red and one green, are posted to control access and to space the vehicles that are entering. Usually, a sign indicates that only one vehicle is permitted to enter on the green signal. On the green light, you must accelerate quickly to blend with the flow of traffic.



High Speed Considerations

17

When you drive in a high speed/multiple lane environment (which includes the expressway), there are many problems that may arise that can create high risk scenarios. You must apply the SIPDE System to reduce risk.

POTENTIAL EXITING PROBLEMS

Consider each of the following and decide how you could reduce the potential risk that they present:

- weave lane conflicts;
- traffic stopped on an exit ramp;
- a short deceleration lane; and
- a very slow exit ramp speed.

ON THE ROADWAY ... DO NOT

In any high speed environment, DO NOT

- drive over the median, a yellow solid line,

- or a raised dividing section;
- make a left turn or a U-turn;
- use the left lane except for passing;
- change lanes without signaling, checking for an open gap, or checking the blind spot across the full width of the roadway;
- drive onto the expressway without using an on-ramp;
- park on the expressway, except at areas provided;
- park on the shoulder, except in case of emergency; and also,
- back up on the expressway.

MULTIPLE LANE ROADWAY DANGERS

Higher speed affects **your braking distance**; the faster you travel, the longer the braking distance. For this reason, you must keep a longer following distance. Novice drivers should



keep a minimum of 4 seconds. **Your vision** is also affected. As your speed increases, your field of vision narrows; tunnel vision can result.

VELOCITATION

Though you will not find this word in the dictionary, it used to describe an incorrect sensation of vehicle speed after driving at expressway speed for an extended length of time. You will be fooled into thinking your vehicle is not really going fast.

An even greater danger occurs after you exit. You will think you could walk faster than you are traveling - **check the speedometer. What a surprise!**

When driving on the expressway, check the speedometer regularly to prevent yourself from continuing to increase speed. When exiting, check it before entering the exit ramp to ensure that you match the posted ramp speed. **After exiting**, check your speedometer more often than usual for several minutes until your system has a chance to readjust to the slower speed. It is a good idea to pull into a service station as soon as you exit the expressway. This short rest will allow your system time to readjust to the slower speeds while you are stopped.

HIGHWAY HYPNOSIS

Driving mile after mile at a steady speed lulls most drivers into a relaxed then progressively more inattentive state of mind. The driver may become hypnotized by constant staring ahead at the roadway, which may result in a dulled, drowsy, trance-like condition (especially when there is little traffic). Some drivers have even fallen asleep. This problem is even more acute at night when the light traffic and headlights compound the problem.

To help avoid drowsiness

- Ventilate your vehicle.
- Rest prior to starting and at regular intervals.
- Force your eyes to scan; move your eyes and head more than normally.
- Change your seating position.
- Converse with passengers, chew gum, etc.
- Avoid eating heavy meals.

The only real solutions are:

- To **stop and rest as long as is necessary** in a safe area.
- To **change drivers** and allow someone who is more alert to drive.

RE-ENTERING THE EXPRESSWAY

To re-enter the expressway when stopped on the shoulder, you must realize that you are starting from a stopped position. The traffic on the expressway is moving at high speed. You cannot accelerate to blend with the traffic in a short distance.

Cancel the hazard signals and activate the left turn signal (right turn signal if you are on the median shoulder). Check the shoulder ahead for hazards. Check traffic approaching from the rear and find a large gap approaching in the lane beside you.

If the shoulder ahead of your vehicle is clear, accelerate on the shoulder until you match the speed of the traffic on the expressway in order to change lanes and blend easily with the flow of traffic.

ANOTHER VEHICLE RE-ENTERING

When another road user ahead is parked on the shoulder and signals to re-enter the roadway, check around your vehicle and make a lane change to the left, if possible. Help create a gap to allow him/her to re-enter. If you cannot change lanes, adjust your speed to create a gap.

TRIPS ON MULTI-LANE ROADWAYS

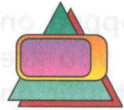
- Check your vehicle - maintenance problems.
- Plan route / time to avoid congestion.
- Check for construction delays or detours.
- When packing consider weight distribution (center of gravity) (access to the spare tire).
- Plan stops for food, rest, and fuel.
- Prepare a map with the planned route clearly marked (passenger to serve as navigator).
- Carry money, travelers checks, or credit cards in case of unforeseen expenses.
- If anyone takes medication, make sure you carry a sufficient supply.
- Carry a spare set of keys.





DRIVING PLAN

The student formulates a Driving Plan incorporating the knowledge and skills of Module Six (Environmental Factors) to endorse, to promote and to sustain lifelong legal and responsible reduced-risk driving practices in the HTS.



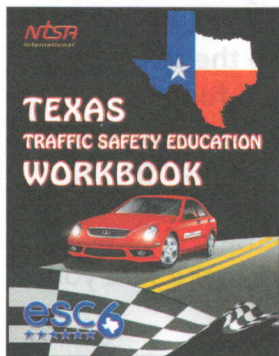
Module Six Review

VOCABULARY - WRITE A SHORT DEFINITION FOR THE FOLLOWING :

- Crowned road
- Lane of least resistance
- Grid lock
- Visual eye-lead-time
- Risk
- Line of sight
- Path of travel
- T-intersections
- Failure to yield
- Count of three technique
- Time-space judgment
- Stale green
- Apex of a curve
- Brake fade
- Staggered stop
- Turn bays
- Rumble strips
- Crash attenuators
- Grid lock
- Turning gap
- Shared left turn lane
- Banked curve
- Speed superiority
- No passing zone
- Clover leaf interchange
- Diamond interchange
- Access ramp
- Acceleration lane
- Merge area
- Time interval
- Highway hypnosis
- Velocitation
- Deceleration lane
- Exit ramp
- Toll booths
- Weave lanes

TEST A- ANSWER THE FOLLOWING QUESTIONS.

1. A) What should you search for in a driving environment?
B) Name some of the risks inherent in a low/medium/high risk environment.
C) What can change the risk level of the driving environment?
2. A) How should you proceed when moving forward at traffic signals?
B) Describe the correct procedure for negotiating a curve.
C) Approaching hills and downgrades, what extra precautions should you take?
3. A) What must you consider before deciding to pass a vehicle ahead?
B) Describe the correct procedure for passing a vehicle ahead.
C) What should you do when another vehicle is trying to pass you?
4. A) What are the procedures for entering an expressway?
B) What special considerations are required to drive on the expressway safely?
C) How should you exit the expressway?



TEXAS TSE STUDENT WORKBOOK

Check your comprehension and mastery of the contents of this Module by completing the corresponding exercises that are found in the complement to the **TEXAS TSE STUDENT MANUAL:**

TEXAS TSE STUDENT WORKBOOK

Complete the assigned questions in the workbook. If necessary, review the chapters when uncertain of an answer and refer to your instructor for further guidance.