Mod 6

Characteristics of Expressways
Entering & Exiting
High Speed Considerations
Characteristics of an Expressway

- Controlled access (limited entry and exit)
- High speed (up to 65 mph)
- Divided by a barrier or median
- Multiple lanes
- May have minimum speed limit
- Only for motorized vehicles
As speed increases,

- Steering input to maneuver the vehicle **DECREASES**
- The faster you travel the less you have to steer
A cloverleaf interchange has a series of entrance and exit ramps that resemble the outline of a four leaf clover.

This design:
- Allows for the interchange of two expressways or major roadways.
- Has shared entrance and exit weave lanes.

Traffic is permitted to move ONLY in the direction indicated by the arrows.
A diamond interchange is designed to be used when a road with slower speeds crosses a busy expressway.

This design allows:
- for the interchange of a major roadway with a secondary dual or multiple lane roadway.

Traffic is permitted to move ONLY in the direction indicated by the arrows.
A *trumpet interchange* is used when an intersecting side road forms a T intersection with the expressway.

**This design:**
- accommodates the T-intersection flow of traffic at the junction of two roadways.
- allows for traffic on a secondary two-way street to merge onto a multiple lane roadway.

Traffic is permitted to move ONLY in the direction indicated by the arrows.
**Frontage Road Interchange**

*Frontage Road Interchanges* allow vehicles using parallel secondary two-way or one-way roadways to merge onto a major multiple lane roadway.

**This design allows:**

- drivers to exit a multiple lane roadway and use the parallel frontage road.
- secondary road traffic flows to mix efficiently with higher speed traffic flows on the multiple lane roadway.

Traffic is permitted to move ONLY in the direction indicated by the arrows.
A major contributor to your decision as to how you will maintain a safe path of travel, proper lane position, and your lane choice, is based on the information provided by the road signs and lane markings.
Entrance Ramps

Entrance ramps provide one-way directional access to an expressway.

The ramp is divided into three sections:

1. **The Entrance or Access Ramp** — gives the driver time to begin evaluating traffic conditions.
2. **The Acceleration Lane** — allows a driver to adjust vehicle speed to the speed of traffic on the expressway.
3. **The Merging Area** — allows the driver to merge onto the expressway.

*Search for: entrance # & direction

wrong way or do not enter signs
Accelration Lane

➤ Use the left-lane signal indicator
➤ Accelerate to the speed of traffic
➤ Monitor gap on expressway
➤ Never STOP!
Reduced Risk Lane Changes

Reasons for changing lanes include:

- Entering or exiting
- Allowing another driver to enter
- Following large or slow-moving vehicles
- Lane ahead becomes blocked
- Being tailgated
- Animals
- Passing
Choosing Lanes at Exit or Entrance

**Right Lane:**
- Heavier and slower vehicles
- Vehicles entering the expressway
- Vehicles getting ready to exit

**Center Lane:**
- Long distance or passing

**Left Lane:**
- Higher speed and passing traffic
An expressway exit has two components:

1. The Deceleration Lane — gives the driver the time and space needed to adjust his/her vehicle’s speed to the slower posted ramp speed without disrupting the flow of traffic on the expressway.

2. The Exit Ramp — allows traffic to enter an adjoining roadway.

**Slow down!**
There may be a STOP sign or a traffic light at the end of the exit ramp. The driver must adjust from a fast speed to a STOP in a short distance.

- “Weave” lane conflicts
- Short deceleration lane
- Sharp curve on ramp
- Traffic stopped on the exit ramp
Weave Lane

Traffic entering and exiting the expressway uses the same lane.

To avoid a conflict, the driver in the BLUE car entering from the entrance ramp must yield the right-of-way to the driver in the RED car who is leaving the expressway (entering yields to exiting).

R.O.W. = RED car is already on the road!
1. If you miss your exit on the interstate, you must exit & re-enter going the correct direction.

2. If you miss your exit, you should continue the next one.

3. Where are U-turns allowed on expressways? NO WHERE

4. Pack driving is when vehicles get “bunched up.”
   -- Dangerous because driver’s have no space cushion. No time to avoid crash

5. No space & no escape routes cause chain reaction collisions.
Highway Hypnosis

Is a dulled or drowsy condition that can occur when driving long distances.

Situation becomes worse when the driver’s eyes focus on the center line.

Plan breaks and rest stops to combat highway hypnosis or go to a safe area for rest or sleep when tired.
Ramp Metering

- Used to control large volumes of traffic entering expressways
- Uses a system of lights and sensors
- Allows only a few cars at a time to enter congested limited access highways
How does Urban differ from Rural?

- A lot more traffic in urban areas.
- Slower speeds, too.
Special Roadway Conditions

Expressways through cities
• Avoid driving in the right lane when vehicles are merging
• Search for signs, signals, and roadway markings
• Search for exits early and adjust position in adequate time to exit safely
• Don’t make last minute lane changes to gain access to an exit
• Monitor the zones around your vehicle and adjust position to create space cushions

Disabled vehicles
• Don’t be a “rubber necker”
• Give the disabled vehicle plenty of room
• Pull as far off the roadway as possible if your vehicle becomes disabled
Short Trips on Expressways

- Know the name, route, and number of the entrance and exit to be used
- In VA mile markers = Exit numbers
- Take a local map

Plan a time to travel to avoid congestion around major cities
Identify the Exit Early

- Exits are marked with guide signs, usually one to two miles before the exit.

- You can determine if an exit is a right exit or a left exit by the position of the exit number on the sign. So, Exit 45A is a right exit, because in this picture the exit number on the upper right-hand side of the sign.

- In Virginia, exit numbers correspond with mile marker numbers.

- About one-half mile (20- to 30-seconds) before the exit, signal and move to the lane closest to the deceleration lane.
<table>
<thead>
<tr>
<th>Multiple Lane Roadway Dangers</th>
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<tbody>
<tr>
<td>Vehicles moving onto the shoulder or re-entering the roadway</td>
</tr>
<tr>
<td>Windy and/or wet sections of the roadway</td>
</tr>
<tr>
<td>Two vehicles changing lanes at the same time into same lane</td>
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<tr>
<td>Slow moving vehicles ahead or “Pack Driving”</td>
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<tr>
<td>Tires losing traction and hydroplaning during wet weather conditions</td>
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</tbody>
</table>