



## Basic Emergency Vehicle Operators Course

**Expressway / Interstate Operation**  
**Non-Emergency & Emergency Mode**

Q1





# Expressway / Interstate Operation

## Objectives:

By the end of this module, students will be able to:

Give an accurate explanation of what a “YIELD” sign means

Will be able to select the correct siren use techniques for entering or exiting expressways / interstates.

Identify acceleration and deceleration lanes





# Expressway / Interstate Operation

---

## Guidelines:

**The term expressway / interstate as used here includes limited access multi-lane highways, usually involving a toll charge**

**Entering and exiting expressways / interstates are maneuvers that place a big demand on the operator to make fast, accurate decisions in rapid succession.**

**Driving on expressways / interstates requires constant awareness of the road and traffic environment**





# Expressway / Interstate Operation

## Types:

**Cloverleaf**

**Beltway**

**Tunnels**

**HOV Lanes**

**Metered Ramps**

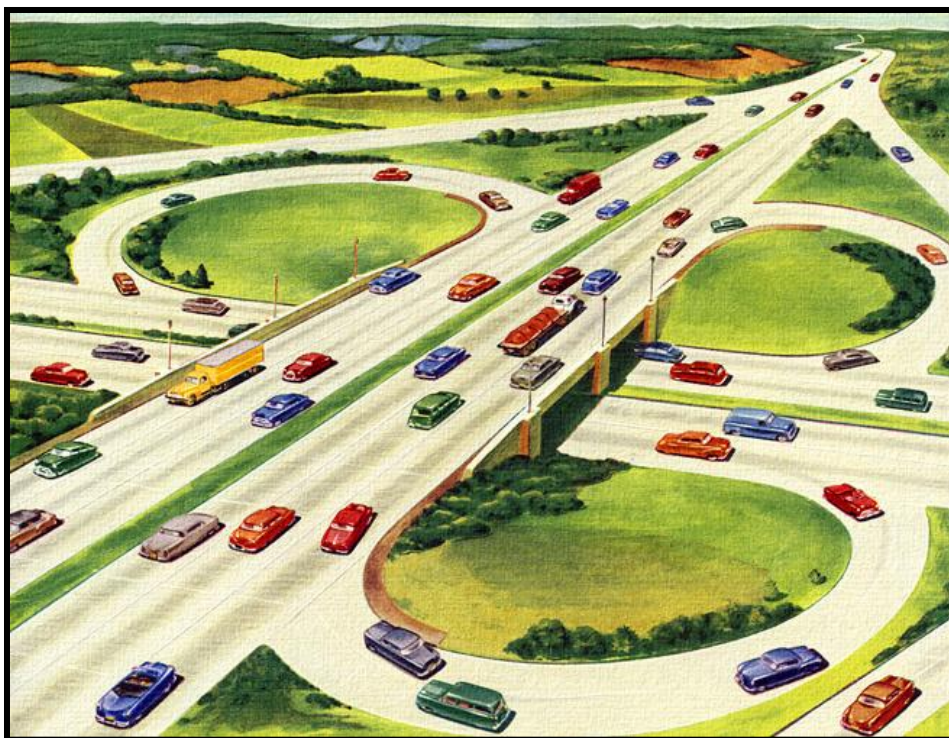






# Expressway / Interstate Operation

Entering & Exiting:  
Cloverleaf



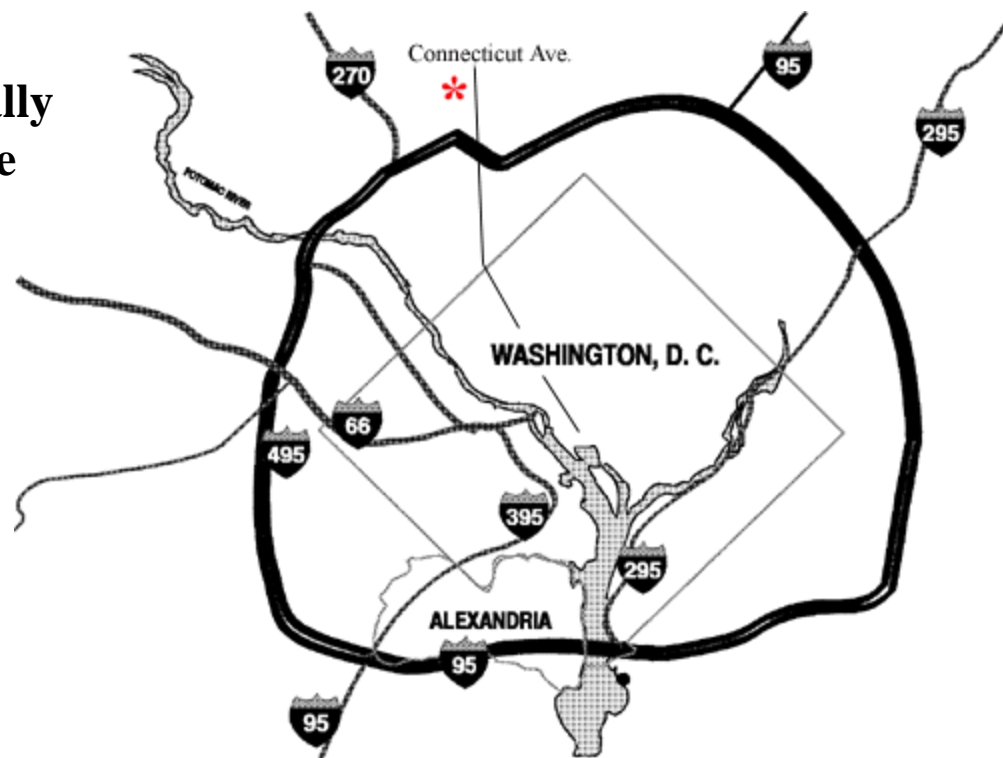


# Expressway / Interstate Operation

## Entering & Exiting:

### Beltway

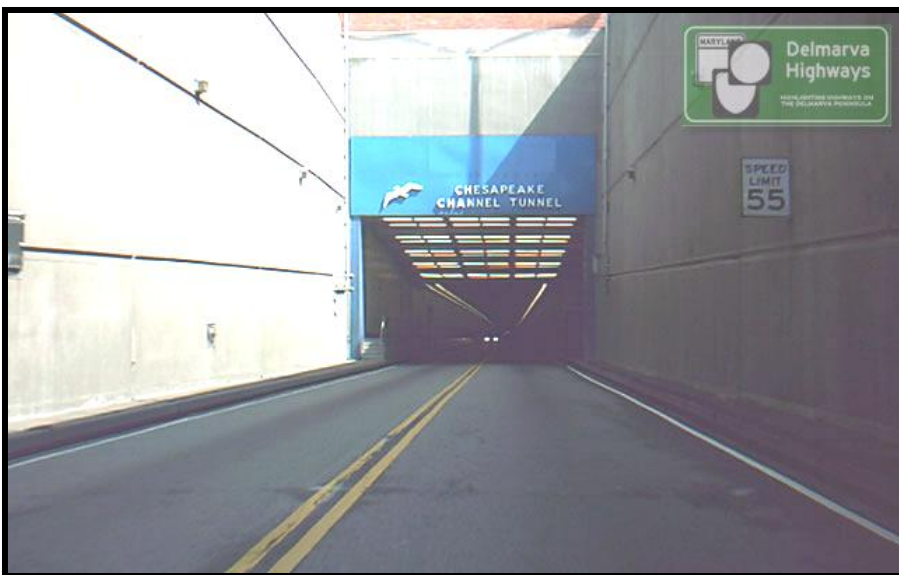
A continuous loop expressway, generally surrounding a large metropolitan area.





# Expressway / Interstate Operation

## Entering & Exiting: Tunnels





# Expressway / Interstate Operation

## Entering & Exiting: HOV Lanes

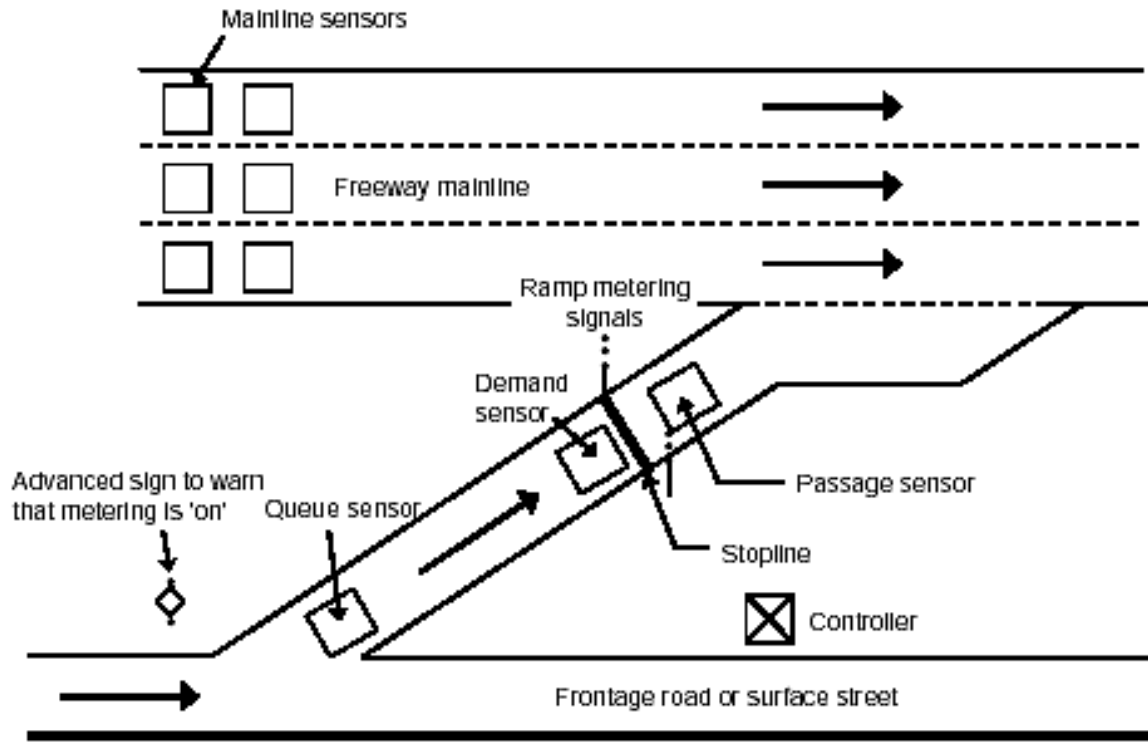






# Expressway / Interstate Operation

## Entering & Exiting: Metered Ramps





# Expressway / Interstate Operation

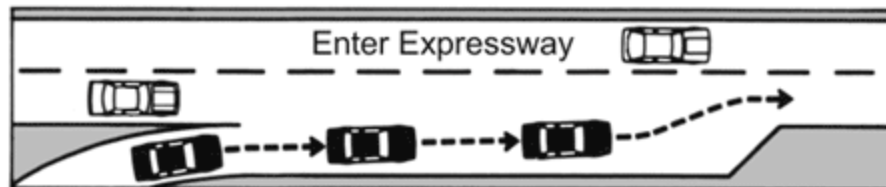
## Entering & Exiting:

### Steps to follow for merging

**While on the ramp, search the through lane for a safe gap in traffic.**

**Maintain a proper space margin from cars that are on the ramp with you. Continue searching ahead and to the direction you intend to merge**

**As you near the acceleration lane, signal and accelerate to the speed of traffic**





# Expressway / Interstate Operation

## Entering & Exiting:

### Steps to follow for merging

**Keep checking for a gap and any following vehicles**

**Adjust speed near the end of the ramp or at the beginning of the acceleration lane**

**Pull into the selected gap and cancel the turn signal**





# Expressway / Interstate Operation

## Entering & Exiting:

### Leaving the expressway

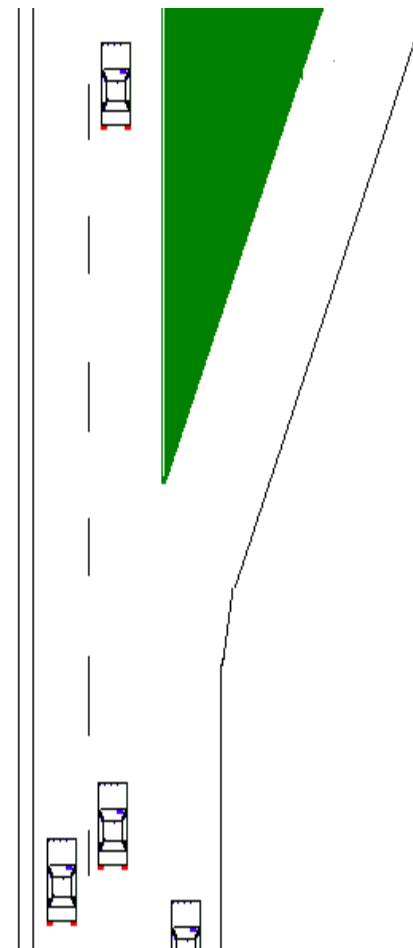
Select the proper lane to leave well before you near your exit

Signal and steer into the deceleration lane as soon as you reach it and reduce speed

If no or limited deceleration lanes signal your intentions and reduce speed only as much as needed to safely exit the expressway.

Checking rear-view and side view mirrors regularly

Brake gradually to allow the following driver as much time as possible to slow or stop







# Expressway / Interstate Operation

---

## Driving

Selecting the best speed

Speed and managing time and space

Reasonable and proper speed

Adjusting speed to road conditions





# Expressway / Interstate Operation

---

## Driving

### Selecting the best speed

Look far ahead

Look beyond the car just in front of you

Match the EV's speed to the cars around you

Use your mirrors

Signal lane changes well in advance

Don't travel with the pack

Be aware of the surrounding traffic





# Expressway / Interstate Operation

---

## Use of Lights and Siren

**Avoid use of the siren on entrance/exit ramps**

**Make a normal entry**

**Assess traffic flow conditions and choose a lane of travel before activating lights and siren**

**Avoid weaving from lane to lane with lights and siren on**

**Motorist may be unaware that the EV is in emergency mode**





# Expressway / Interstate Operation

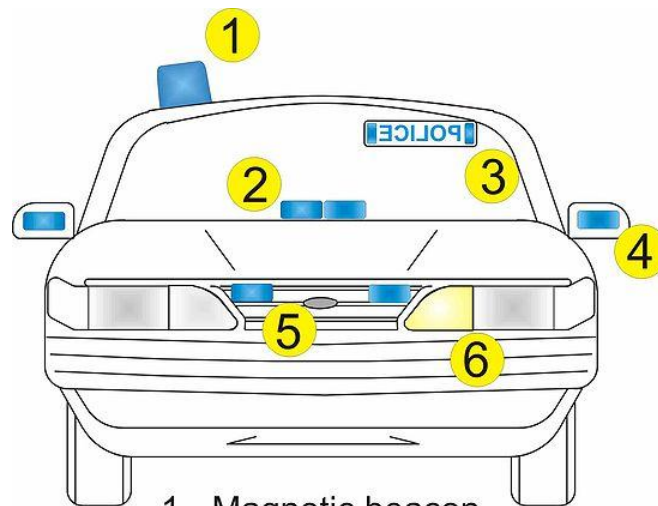
## Use of Lights and Siren

### Emergency Lighting

It is estimated that more than 90% of the sensory input to a motor vehicle driver is obtained visually

Visibility takes into account an object's visual size, luminance, color contrast (of object and background), and glare.

Motorist must be aware that the EV is in emergency mode



- 1 - Magnetic beacon
- 2 - Dash flashers
- 3 - Visor sign
- 4 - Wingmirror flashers
- 5 - Grille flashers
- 6 - 'Wig-wag' headlights







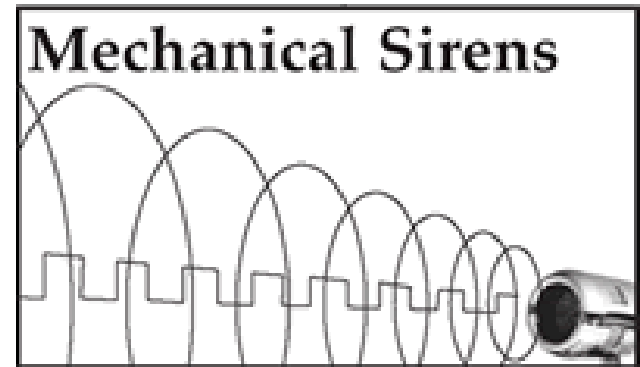
# Expressway / Interstate Operation

## Use of Lights and Siren

### Sirens (Mechanical vs. Electronic)

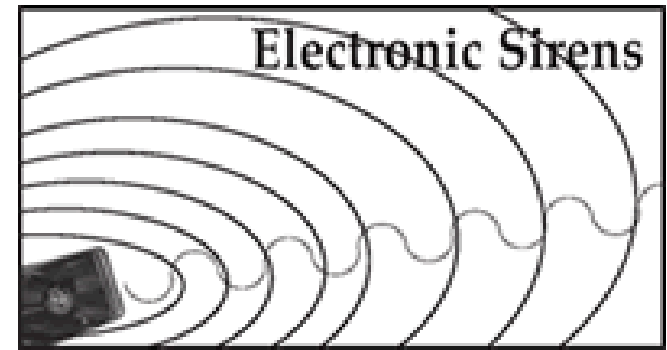
#### Mechanical

- A mechanical siren produces a spiraling square wave, thus offering a very strong and focused pattern.



#### Electronic

- Electronic sirens are notorious for having dead spots and creating noise pollution without direct sound penetration making them less effective.





# Expressway / Interstate Operation

## Use of Lights and Siren

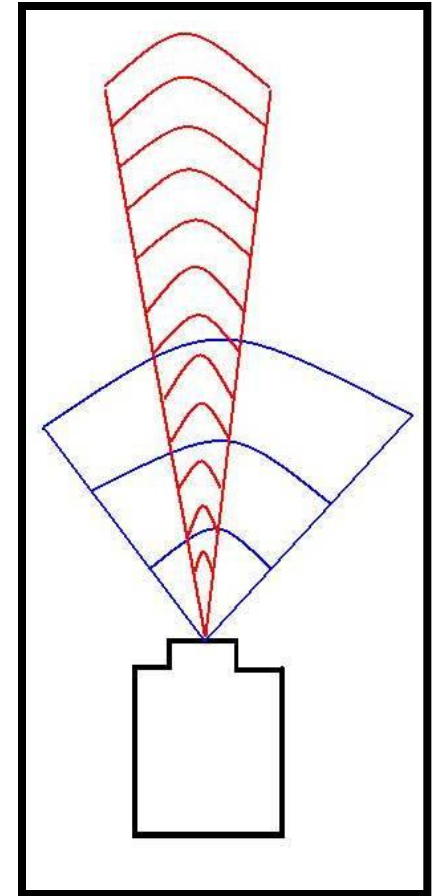
### Siren Use - (Guidelines)

Hearing is considered to be a primary warning sense. A loud auditory signal may exert an immediate arousing effect.

Reaction time to a visual signal improved when an audible warning signal was included

Sirens and other audible warning devices have long been in use on emergency vehicles, and most state laws require their use during emergency runs.

To be effective, a siren signal must compete with the masking noise generated by the road, car radios, and ventilation fans and must overcome modern sound insulation techniques.





# Expressway / Interstate Operation

## Location, Location, Location

Clear communication is required

Dispatched to scene or expressway

Determine direction of travel

Determine proper on-ramp to use





# Expressway / Interstate Operation

## Location, Location, Location

Clear communication is required

Are there any local names used for expressways?

Are the names misleading?

Does the name refer to the direction on the expressway  
or to a section of it?







# Expressway / Interstate Operation

**Other items to think about?**

**Know your area**

**What are the rush hour peculiarities?**

**Are there places where turnarounds can be accomplished safely?**

**Where are the hospital exits?**

**Are there any toll booths?**





## Summary

**Driving too fast or too slowly on the interstate may create a dangerous situation. Regardless of the posted speed limit, weather and traffic conditions may make it necessary to drive more slowly. However, driving too slowly also can be dangerous. Your speed should be adjusted for the conditions and match the flow of traffic, as long as it does not surpass the maximum posted speed.**





## REVIEW QUESTIONS

1) Name the five different types of expressway/interstate designs?

2) What are some of the steps to follow when merging onto the expressway/interstate?

3) What is the most appropriate siren use for entering or exiting the expressway/interstate?

4) What other noises must a siren compete with to be effective?

