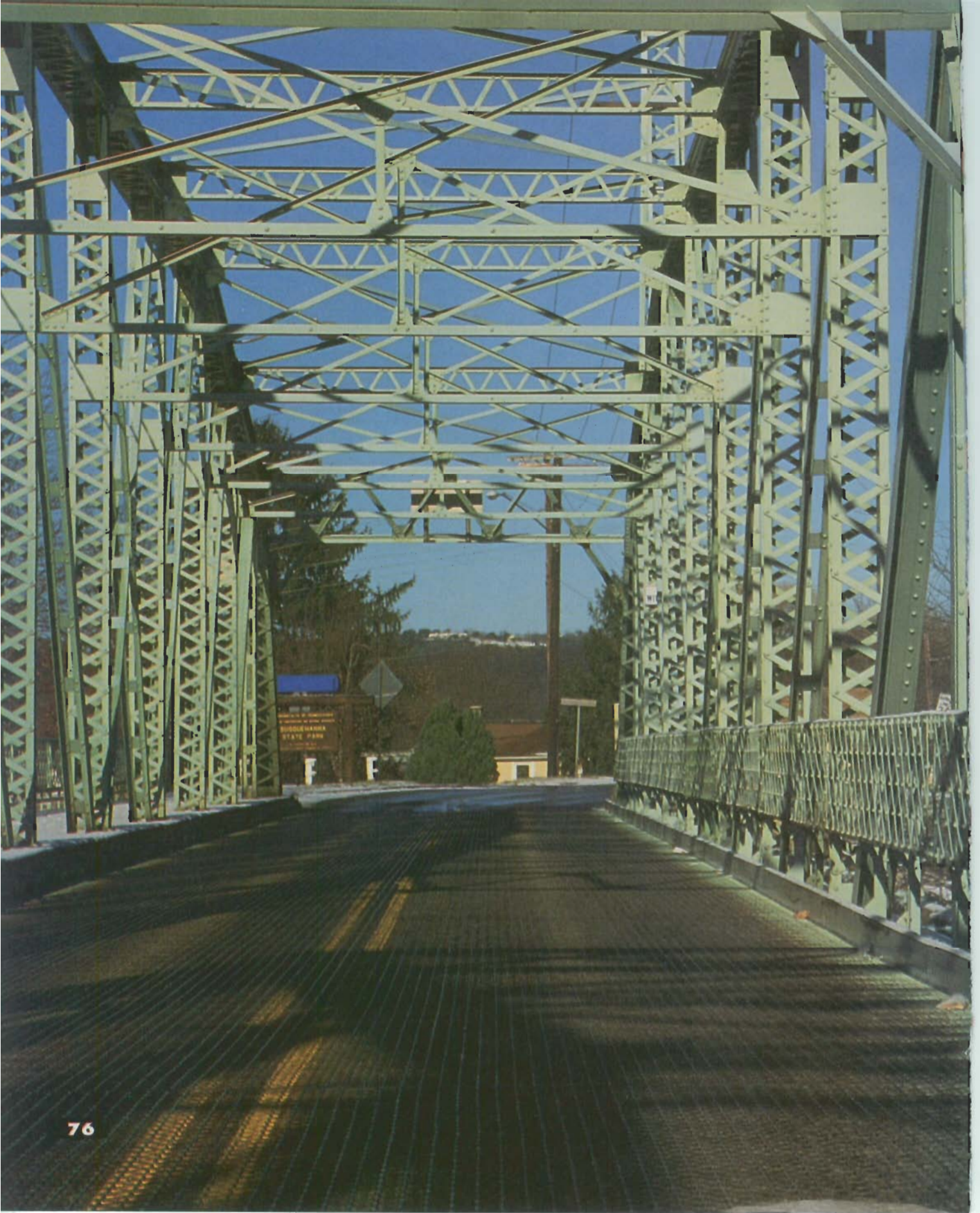


# UNIT 2

## Learning the Basics

The fundamentals of driving are second nature to good drivers. These basics should become second nature to you as well. This unit will help you learn the first steps toward becoming a good driver.





# CHAPTER 5

## Signs, Signals, and Markings

**G**ood drivers understand the role of communication. The signs, signals, and markings you see on the roadway are a vital means of communication. It is important that you understand the messages that they communicate.

### **LESSON ONE**

**Understanding Regulatory and  
Warning Signs**

### **LESSON TWO**

**Guide and International Signs**

### **LESSON THREE**

**Understanding the Purpose of  
Pavement Markings**

### **LESSON FOUR**

**Responding to Traffic Control Signals**

**OBJECTIVES**

1. Identify and describe the purpose of regulatory signs.
2. Describe the actions to take at regulatory signs.
3. Identify the purpose of warning signs.
4. Describe how to respond to warning signs.

**KEY TERMS**

regulatory sign  
yield sign  
warning sign

# Understanding Regulatory and Warning Signs

Highways and streets would be difficult to use without signs that give drivers information and warnings and tell them what to do and what not to do. If there were no signs, how would you know you were on the right road? Imagine how difficult it would be to manage risk if there were no speed limits or rules regulating when or where to yield. Roadway signs provide important information about where you are, where you are going, and what rules or laws to follow.

## What Are Regulatory Signs?

A **regulatory sign** regulates or controls the movement of traffic. These signs tell you and other drivers what you must do and what you must not do when you drive. Regulatory signs are red, white, black, green on white, or white on black. Most regulatory signs have square, vertical rectangular, or horizontal rectangular shapes. A red circle with a red slash on any of these signs means *NO*. You can recognize regulatory signs by their color and shape.

## What Actions Should You Take at Regulatory Signs?

Regulatory signs give commands or set limits. When you see a stop sign, you must stop. When you see a **yield sign**, you must slow and yield (give way) to traffic on the crossroad or the road onto which you are merging. A speed limit sign indicates the maximum speed you may drive under ideal conditions.

### Stop Signs

Most often you will see a stop sign at the intersection of two roadways. There may be stop signs on all four corners or on only one or two corners of an intersection. In

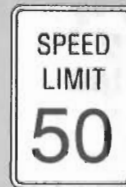
◆ *Stop signs are most frequently placed at one or more corners of an intersection.*



## REGULATORY SIGNS



Yield  
Triangle  
Red



Speed limit  
Vertical rectangle  
White



One way  
Horizontal rectangle  
Black



Stop  
Octagon  
Red



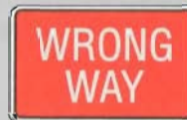
Do not enter  
Square  
Red



Railroad crossing  
Crossbuck  
White



Divided highway  
Horizontal rectangle  
White



Wrong way  
Horizontal rectangle  
Red

## GENERAL REGULATORY SIGNS



Square or horizontal rectangle  
White



Square  
White



Vertical rectangle  
White

# WARNING SIGNS



Intersections



Changes in width



Traffic



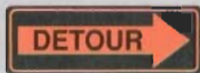
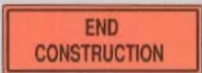
Crossings



Conditions



Curves



Construction

# WARNING SIGNS

			<b>Intersections</b>
			<b>Changes in width</b>
			<b>Traffic</b>
			<b>Crossings</b>
			<b>Conditions</b>
			<b>Curves</b>
			<b>Construction</b>

some places, stop signs are located in the middle of the block; these indicate crosswalks.

You must come to a full stop at a stop sign. Often a white stop line is painted on the pavement in line with the sign. There may be two white lines indicating a pedestrian crosswalk just beyond the stop line, or there may be walk lines and no stop line. You are required to stop in front of the first white line you come to. If there are no lines, stop just in front of or in line with the sign.

After you stop, if there is no traffic from the right or left you may proceed. When there is traffic on the other roadway, you must decide what to do. If there are stop signs for cross traffic and another vehicle has reached its stop sign before you reach yours, you must let it go first. If you and the other vehicle arrive at the same time, the driver on the left must let the vehicle on the right go first. If you are the driver of the vehicle on the right, make sure the driver of the vehicle on the left is going to wait. Then proceed cautiously.

## Yield Signs

At a yield sign, you move from one roadway onto or across another one. As you approach the yield sign, slow down and check oncoming traffic and the traffic behind you. Search right and left for cross and oncoming traffic. If a vehicle is coming toward you, you'll have to judge its distance and speed and decide whether you can safely enter or cross the road. You may need to stop and wait until the roadway is clear of traffic before you proceed.

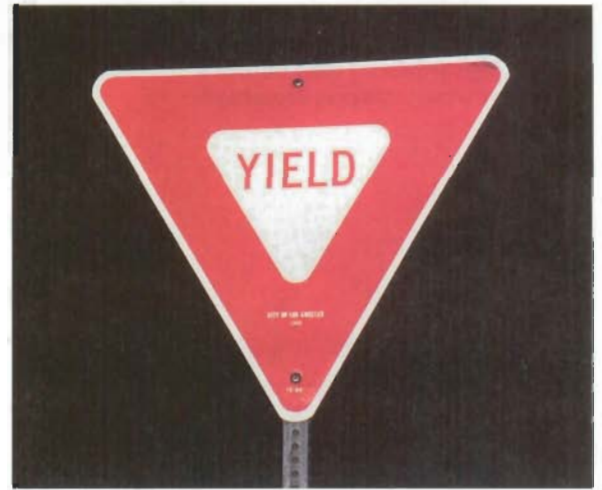
## Speed Limit Signs

Speed limit signs show the maximum, or fastest, speed allowed on a roadway. Driving faster than the posted speed is illegal. Some speed limit signs also post minimum speeds. These signs are usually on expressways. You should not travel more slowly than the minimum speed posted, unless road or weather conditions make it unsafe to travel at that speed.

## Railroad Crossbuck

A railroad crossing crossbuck is located where railroad tracks cross the roadway. On multiple-lane roadways and in heavy traffic areas, signal bells, flashing red lights, and railroad gates may also warn and protect drivers. Regardless of whether or not lights or gates are present, if a train is coming, you must stop.

◆ Yield signs and speed limit signs are two examples of regulatory traffic signs.







◆ A railroad advance warning sign is placed well before a railroad crossing crossbuck.

## What Are Warning Signs?

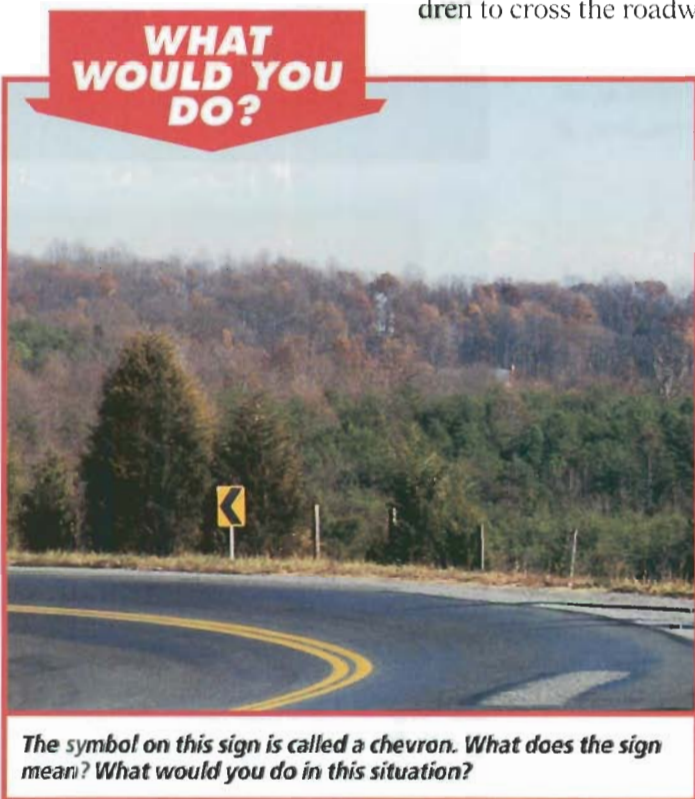
A **warning sign** alerts you to changes in the condition or use of the road ahead. Warning signs include those that tell you about road construction and maintenance, school zones and crossings, railroad crossings, curves, intersections, changes in road width, and deer crossings. All warning signs are either yellow or orange with black symbols or letters, and most are diamond-shaped.

## What Actions Should You Take at Warning Signs?

When you see a warning sign, increase your level of alertness to changes in the roadway, in traffic, or in environmental conditions. Always proceed with caution. Be especially careful when you see a school zone sign or a railroad advance warning sign.

### School Area Signs

When you see a school zone or school crossing sign, you must slow down and proceed with caution. Children may be playing nearby and may dart into the street. At a school crossing sign, stop and wait for children to cross the roadway.



### Railroad Advance Warning Signs

Be especially careful when you come to a railroad advance warning sign. Slow down before you reach the tracks, and be prepared to stop. Look in both directions to see if a train is approaching.

## Lesson 1 Review

1. How can you tell which roadway signs are regulatory signs?
2. What should you do when you see a stop sign? A yield sign? A railroad crossing crossbuck?
3. How do you know which signs are warning signs?
4. How should you proceed at school zone or school crossing signs and railroad advance warning signs?

# Guide and International Signs

Highway signs do more than just warn you and tell you what you can and cannot do. Signs can provide information about where you are, where you are going, how to get there, how far you have to go, and what services and sites are available to help make your trip comfortable and enjoyable.

As you drive, you will see signs that convey information through color, shape, and symbols instead of words.

## OBJECTIVES

1. Identify and describe the purpose of informational or guide signs.
2. Identify and describe the design and function of three international signs used in the United States.

## KEY TERMS

guide sign  
international sign

## What Are the Functions of Guide Signs?

As you travel along the roadways, you'll see four kinds of guide signs. A **guide sign** gives information about roadways and routes; the mileage to certain destinations; roadside services such as rest stops, service stations, and campsites; and recreational areas and nearby points of interest.

### Route Markers

Routes are the numbered roadways that crisscross the continent. Interstate routes that lead *into* cities have three digits and begin with an odd digit (195, 395, and so on). If a three-digit route begins with an even digit (295, 684), the route goes *around* a city or connects to interstate highways at both ends.

### Destination and Mileage Signs

You will often see destination and mileage signs mounted over highway lanes. They tell you **where you are**, which lane to take to get to your destination, what exits are coming up, and how far away the exits are. Smaller



## OTHER GUIDE SIGNS

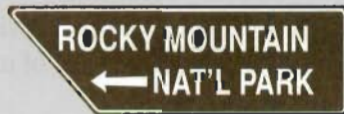
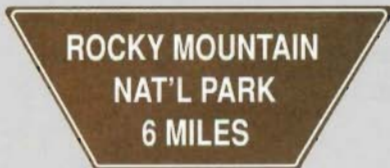
US 38	5
Greenville	40
St. Louis	125



Destination and mileage



Roadside services



Recreation areas

## INTERNATIONAL TRAFFIC SIGNS



No entry for cycles



Falling rocks



No U-turn



First aid station



Telephone



Gas station



One of the most important traffic safety devices is the automatic traffic signal. It is responsible for the orderly movement of millions of vehicles and pedestrians in today's cities and towns. The three-way traffic signal was invented in 1923 by Garrett A. Morgan. He sold the rights to his invention to the General Electric Company for \$40,000.

Morgan earned a far more important reward for another of his safety devices. In 1916, two

dozen men were trapped by an explosion in a tunnel 228 feet below Lake Erie near Cleveland, Ohio. The tunnel was filled with smoke, natural gases, dust, and debris. The situation seemed hopeless because no one could survive going down into the tunnel to rescue the trapped men. However, by using his new invention—the gas inhalator, an early gas mask—Morgan was able to lead a rescue party to reach the men and to save the lives of many of them. In 1963, the city of Cleveland awarded this courageous African American a gold medal for his heroism.

signs on the side of the road also tell you how far you are from different places. Destination and mileage signs are either white or green.

### Roadside Services

When you want to stop for gas or food or make a phone call, look for blue signs with white lettering.

### Recreational Areas

Some informational signs are brown with white lettering. These signs guide you to state and national parks, historic sites, and other places of interest.

## What International Signs Are Used in the United States?

An **international sign** is one that you can understand without knowing another language. The meaning is conveyed by colors, shapes, symbols, and numbers.

### Lesson 2 Review

1. Which signs are guide signs?
2. What kinds of international signs are used in the United States?

### WHAT WOULD YOU DO?



*What does the sign mean? What should you be alert to when you see this sign?*

**OBJECTIVES**

1. Identify the meaning of yellow and white roadway lane markings.
2. Describe the meaning of arrows and other non-lane roadway markings.

**KEY TERM**

shared left-turn lane

# Understanding the Purpose of Pavement Markings

You have probably noticed lines, arrows, and words painted on streets and highways. These markings give drivers and pedestrians important information, directions, and warnings about roadway travel. You need to understand pavement markings in order to control and reduce risk.

## What Do Yellow or White Lines on the Roadway Mean?

Yellow and white roadway lines provide directions or warnings for drivers. Yellow lines divide traffic traveling in opposite directions. White lines parallel to the roadway separate same-direction traffic into lanes. White lines perpendicular to the roadway indicate crosswalks, railroad crossings, and stop signs at intersections.

◆ *Double broken yellow lines mark lanes in which traffic changes direction at different times of the day.*



### Yellow Lines

Traffic that is traveling in opposite directions on a roadway is separated by a broken yellow line, double solid yellow lines, or a combination of broken and solid yellow lines. On divided highways, a **single solid yellow line** marks the left edge of the roadway.

If the solid line of the combination solid-broken yellow lines is the first one to your left, you may not cross it to pass another vehicle. If the broken yellow line is the first one to your left, you may cross it (and the solid yellow line) to pass a vehicle

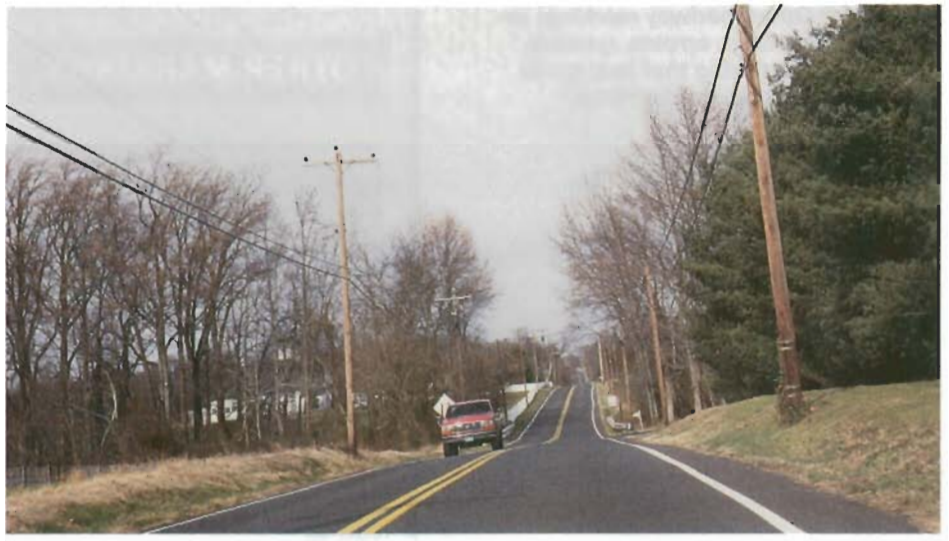
when it is safe to do so. When two solid yellow lines divide a road, neither you nor drivers traveling in the opposite direction can cross them to pass another vehicle. You may, however, turn left across them to turn into a driveway.

## White Lines

White lines that are parallel to the roadway mark the lanes for traffic moving in the same direction. If the lines are broken, you can move from lane to lane when it is safe to do so.

Single white lines between lanes of traffic moving in the same direction are meant to discourage passing at high-risk locations but do not prohibit passing.

Solid white lines are used to indicate the right side of the roadway. These lines are especially helpful at night because they mark the outer edges of the road, which are otherwise hard to see. A solid white line may also mark a bicycle or breakdown lane on the right side of the roadway.




◆ *You may not pass on a two-way road divided by solid yellow lines.*

◆ *The broken white lines indicate that you may change lanes or pass. This solid white edge line marks a breakdown lane. You should not travel in a breakdown lane.*




◆ Other roadway markings include lines, arrows, symbols, and lettering that help guide drivers and pedestrians.


### OTHER MARKINGS




Shared left-turn lane




Stop line



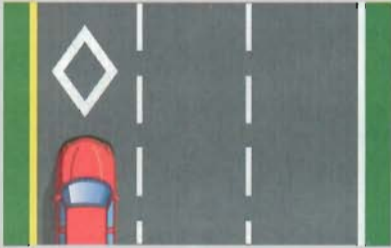
Pedestrian crosswalk




Road exit ramp



Reversible lane ■ at different times of day may be used by traffic moving in opposite directions



High-occupancy vehicle (HOV) Lane ■ for use by vehicles carrying 2 or more occupants



Disabled driver parking

## What Do Other Markings on the Roadway Mean?

Other roadway markings may include lines, arrows, symbols, and lettering designed to guide drivers and pedestrians.

### Arrows

White arrows on the roadway identify lanes from which you can drive straight ahead or turn right or left. On some three-lane roadways, the center lane is marked by parallel solid and broken yellow lines with white arrows that point alternately left and right. This lane is called a **shared left-turn lane**. Vehicles moving in either direction can use these lanes to make left turns onto another road or into an entrance. Drivers who want to make left turns onto the roadway can also move into the shared left-turn lane and wait for a gap in traffic.

### Other Markings

On the opposite page are other pavement markings whose meaning and purpose you should know.

## Lesson 3 Review

1. Which pavement markings let you know that it is legal to pass? That it is illegal to pass?
2. How is a shared left-turn lane marked? How would you use it?

## TIPS

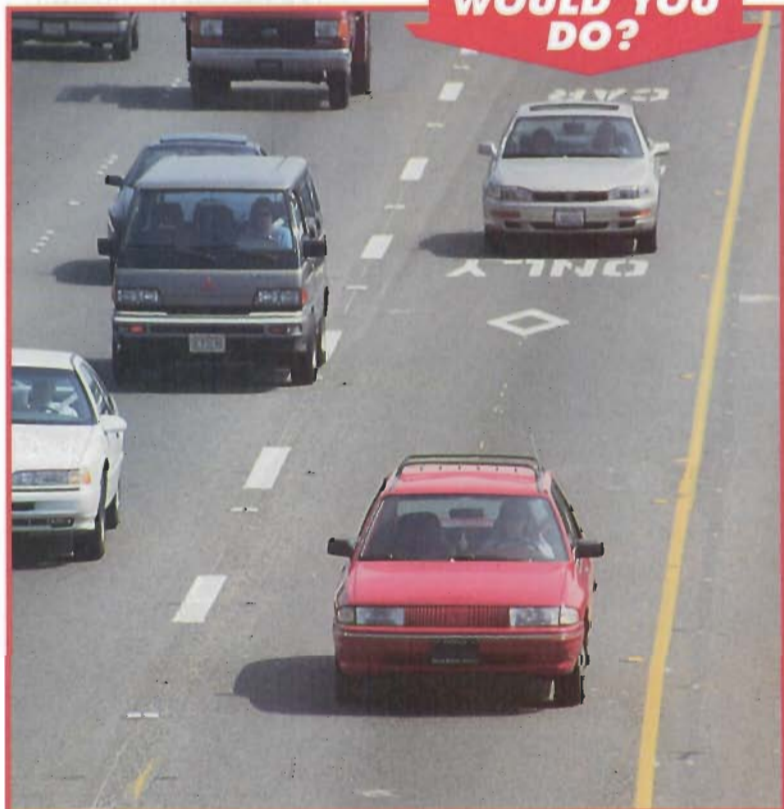
### FOR NEW DRIVERS

#### Shared Left-Turn Lanes

Here are tips for using shared left-turn lanes safely.

- Do not move into the lane too soon. The longer you stay in the lane, the more likely it is you will meet someone coming in the opposite direction.
- Watch for cars pulling out of entrances and side streets. They may cross in front of you, cutting you off.
- Do not use a shared left-turn lane for **anything but turning left**.

### WHAT WOULD YOU DO?



You are driving alone. Are you allowed to use this lane? Why or why not?



**OBJECTIVES**

1. Describe traffic signals and the meanings of their colors.
2. Describe the colors and meanings of lane-use lights.

**KEY TERMS**

traffic control signal  
pedestrian  
lane-use light

# Responding to Traffic Control Signals

A **traffic control signal** keeps traffic moving in an orderly manner. Except in large cities, most signals operate automatically, using a timer system to change the lights through the green-yellow-red sequence. In many large cities, signals are linked electronically to and are controlled by computer. This sets up a gridwork that allows traffic to move smoothly and adjusts to changes in traffic volume.

## How Do You Know When to Stop or Move Your Vehicle Through Traffic?

As a user of the highway transportation system, your movement, whether you're a driver or pedestrian, is controlled by a series of traffic signals, arrows, flashing lights, pedestrian signals, or the directions of a traffic officer.

### Traffic Signals

Traffic signals are usually located at intersections where the level of risk increases. Special-use signals may operate during specific hours or

on demand at school zones, fire stations, or factories. Traffic signals may be vertical or horizontal, and may have one to five or more separate lenses that give information to roadway users. The most common lenses are red, yellow, and green circles.

At a flashing signal you must either stop or slow down, depending on the color of the light. If you see a flashing red signal this means that



## PEDESTRIAN SIGNALS



**Steady WALK**  
Pedestrians may proceed across street.



**Steady DON'T WALK**  
Pedestrians should not enter street.



**Flashing DON'T WALK**  
Pedestrians in street may proceed across street; others should not start.

## LANE-USE LIGHTS



**Red X**  
Never drive in a lane under a red X signal.



**Yellow X**  
A steady yellow X indicates the driver should safely vacate this lane, because it soon will be controlled by a red X.



**Green arrow**  
Drivers are permitted to drive in a lane under a green arrow.



**Flashing yellow X**  
A flashing yellow X indicates the lane is to be used, with caution, for left-turn movements only.

you must come to a full stop, just as you would at a stop sign. You must slow down at a flashing yellow signal.

### Pedestrian Signals

In the city, you'll find pedestrian signals at busy intersections. Some are also located in the middle of the block. They may have either words or signals telling **pedestrians**, or people on foot, how to proceed.

If you're driving and the pedestrian signal starts to flash an orange "Don't walk," you can expect that your traffic signal is going to turn from green to yellow to red. However, don't just watch the pedestrian signals. Pay attention to the pedestrians and the traffic signal controlling vehicle traffic.

### Traffic Officer's Signals

Keep in mind that a police officer can take the place of and overrule traffic control signals. Thus, when an officer *is* present and directing traffic, you should follow the officer's signals even if they go against those of an automatic traffic signal or stop sign.

### Energy Tips

**Save fuel by letting up on the accelerator well in advance of a red light, stop sign, or yield sign.**

## ADVICE FROM THE EXPERTS



### James E. Weaver

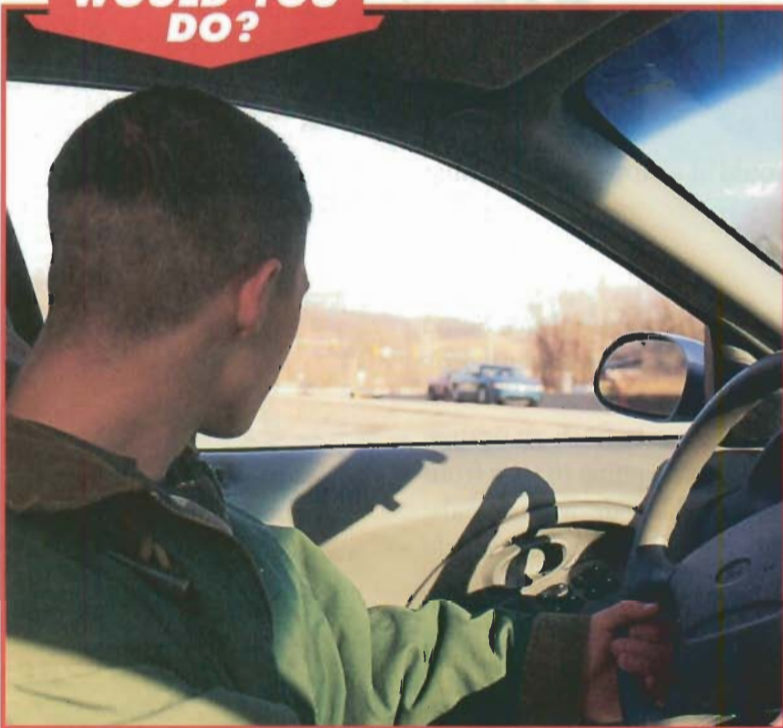
Highway Engineer, Traffic Control Division,  
Federal Highway Administration

Highway and traffic engineers design traffic control devices to convey a uniform, clear, and simple message to all highway users. It is your responsibility as a driver to recognize and fully understand the meaning of these devices by their color, shape, legend, and placement. This is important so that you will be able to respond properly and take the actions needed to maneuver your car safely in different traffic, terrain, and weather conditions.

## Are There Signals That Let You Know Which Lanes You Can Use?

On heavily traveled multiple-lane roadways, you may see **lane-use lights** mounted above the roadway. It is important for you to know what to do in response to these signals because they are used when lane traffic is reversed during rush hours. Lane-use lights indicate which lane(s) you can use at any given time.

**WHAT  
WOULD YOU  
DO?**



You are stopped at a red light and want to turn right. Should you make the turn now?

### Lesson 4 Review

1. What are the colors and the meanings of the colors of traffic signals?
2. What are the meanings of the different colors of lane-use lights?

## Reading and Interpreting a Bar Graph

A bar graph presents information in a way that makes it easy to compare quantities.

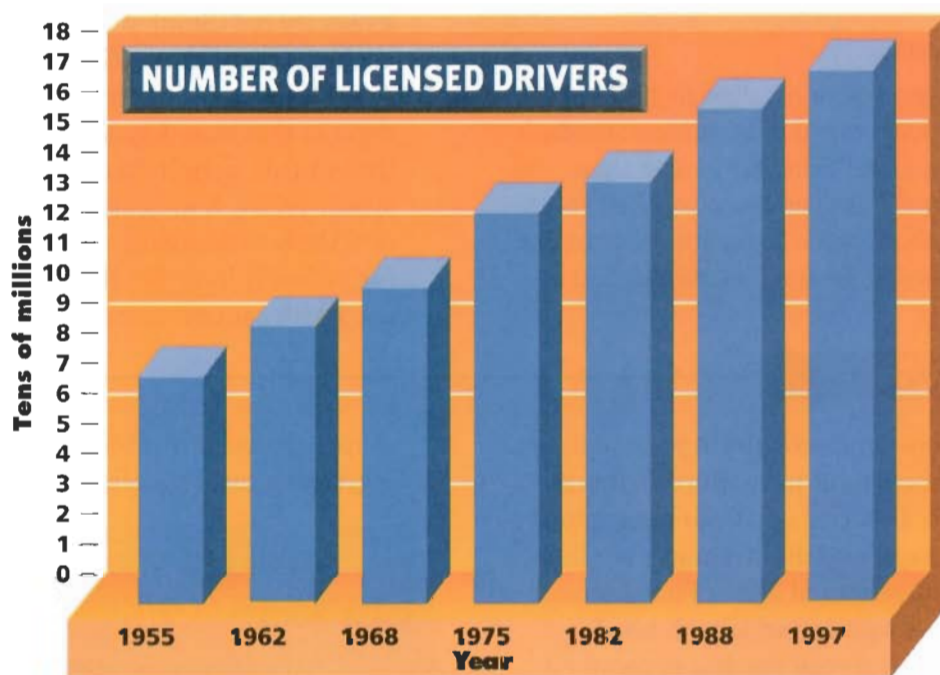
The bar graph below shows the number of licensed vehicle drivers in different years. The numbers along the vertical axis, going up the left side of the graph, stand for tens of millions. So 1 equals 10 million, 5 equals 50 million, and so on.

The years in which the number of drivers are being compared are written along the bottom of the graph, on the horizontal axis.

### Try It Yourself

1. About how many licensed drivers were there in 1962? In 1997?

2. About how many more licensed drivers were there in 1975 than in 1955? About how many more were there in 1975 than in 1962?
3. Which year shown on the graph had the smallest increase in the number of new drivers?
4. Between which two years shown did the number of licensed drivers nearly double?
5. What is the approximate average number of new licensed drivers each year? (Figure the difference between the last and the first years shown. Then divide by the number of years.)
6. If the trend in numbers of licensed drivers continues, about how many would you expect in the year 2010?



# CHAPTER 5 REVIEW

## KEY POINTS

### Lesson One

1. Regulatory signs control the movement of traffic. They can be red, white, black, green on white, or white on black. A red circle with a red slash on any of **these signs** means *NO*.
2. You must come to a **full stop** at stop signs, yield to cross traffic at **yield signs**, drive no faster than the limit posted on speed limit signs, and be prepared to stop at railroad **crossbuck** signs.
3. Warning signs alert you to **changes** in road conditions. They are black on yellow or orange and are usually diamond-shaped. Some warning signs are construction, school area, and railroad advance warning signs.
4. Respond to warning signs by increasing your level of alertness, slowing down, and proceeding with caution.

### Lesson Two

1. Informational, or guide, signs include route signs, **destination and mileage signs**, roadside service signs, and **recreational area signs**.
2. International signs **communicate their meaning** by symbols. **Some international signs** used in the United States are First Aid Station and Telephone.

### Lesson Three

1. Yellow lane markings divide traffic moving in opposite directions. White lane markings separate traffic traveling in the same direction. If the first line on the pavement to your left is a yellow or white **broken line**, **you may pass** another vehicle when it is safe to do so. If the line is solid, you may not pass.
2. Arrows direct **drivers into** lanes from which they can turn. **Other road** markings include lines, symbols, and words to guide drivers and pedestrians.

### Lesson Four

1. Traffic signals have from one to five or more lenses. Those with three lenses can be either vertical or horizontal. The most common lenses are red (Stop), yellow (Do not enter intersection), and green (Go when safe to do so).
2. A red X signal indicates that you should not drive in that lane. A green arrow indicates that you are permitted to drive in that lane. A steady yellow X indicates that you should vacate the lane as soon as possible, and a flashing yellow X indicates that the lane may be used with caution to make left turns.

## PROJECTS

1. Find out how intersections in your state are marked where right turns on red lights are prohibited. Describe what you believe to be the advantages and disadvantages of allowing right turns on red lights. Find intersections where right on red is prohibited. Determine what each one has in common.
2. Do you find certain signs, signals, or pavement markings confusing? How would you improve them? How would you change their location,

shape, size, color, symbols, lettering, numbering, timing, and how often they appear?

**inter**NET  
CONNECTION



Take a trip to the Web to find more information on international traffic signs.  
**[drivered.glencoe.com](http://drivered.glencoe.com)**

## CHAPTER TEST

Write the letter of the answer that best completes each sentence.

1. White lines parallel to the road separate
  - a. traffic moving in the same direction.
  - b. traffic moving in opposite directions.
  - c. vans from trucks.
2. When a police officer is giving hand signals at an intersection, you should
  - a. always follow the officer's directions.
  - b. follow the traffic signals.
  - c. proceed with caution.
3. A yield sign indicates that a driver
  - a. has the right of way.
  - b. may need to stop and wait until the roadway is clear of traffic before proceeding.
  - c. must move to a different lane.
4. When you approach a stop sign and observe no other vehicles around, you should
  - a. slow down but continue moving past the sign.
  - b. come to a full stop at the sign.
  - c. blow your horn and increase your speed.
5. Two solid yellow lines on a roadway indicate that
  - a. passing is permitted in either direction.
  - b. the left lane may be used only for left turns.
  - c. no passing is permitted in either direction.
6. When approaching a flashing red traffic signal, you should
  - a. slow down and proceed with caution.
  - b. respond as if it were a stop sign.
  - c. immediately turn right.
7. A steady yellow X posted above a highway lane indicates that
  - a. vehicles should move slowly.
  - b. vehicles should move to a different lane.
  - c. the lane will become an exit ramp.
8. Blue signs with white lettering indicate
  - a. roadside services.
  - b. roadway conditions.
  - c. construction areas.
9. Shared left-turn lanes are marked by
  - a. solid yellow lines.
  - b. white arrows that point in the same direction.
  - c. parallel broken yellow lines with white arrows that point left and right.
10. A red arrow indicates
  - a. a detour.
  - b. a one-way street.
  - c. traffic is not allowed in the direction of the arrow.

Write the word or phrase that best completes each sentence.

advance warning	regulatory
pavement markings	breakdown lanes
high-occupancy vehicle	

11. You may be permitted to drive in \_\_\_\_\_ lanes if your vehicle has two or more occupants.
12. A(n) \_\_\_\_\_ sign indicates what a driver must or must not do.
13. Traffic signals, signs, and \_\_\_\_\_ provide drivers with information.
14. A railroad \_\_\_\_\_ sign is round and yellow with black markings.

## DRIVER'S LOG

In this chapter you have learned about the signs, signals, and pavement markings that communicate information to drivers. Take 5 minutes to list all that you can remember and explain what they mean. Which ones did you leave out? Write about how you will remember them in the future.