Chapter 4
Preparing to Drive

4-1 VEHICLE INSTRUMENTATION

A. Complete each of the following sentences by writing the correct word or phrase in the space provided.

1. A _________ has a scale with an indicator needle or numerical marker that keeps track of a changing condition like fuel level or speed.

2. Warning lights are usually red or _________.

3. A speedometer usually indicates vehicle speed in both miles and _________ per hour.

4. It is strictly illegal to alter the _________ on an instrument panel.

5. Most cars have a _________ that can be set back to zero at any time with the press of a button.

6. In some vehicles, you must turn on the ignition to activate the _________.

7. Losing _________ pressure can seriously damage your engine.

8. It is your responsibility to check your oil level regularly, using the _________ located under the hood.

9. When the _________ warning light is on, it indicates a problem with your vehicle’s electrical system.

10. If the alternator is not putting out enough electricity to run a car, the engine must use stored electricity from the _________.

B. What does a rheostat do?

C. If you are driving a vehicle with a manual transmission, how would you use the tachometer?

D. What might cause the temperature warning light to come on?
E. What can cause your vehicle to lose oil pressure?

F. Identify each of the following vehicle instruments in the spaces provided.

G. Select the word or phrase that best completes each of the following sentences and write the letter in the space provided.

_____ 1. A tachometer is a gauge that measures your engine in:
   a. kilometers per minute.  
   b. revolutions per minute.  
   c. degrees per second.  
   d. seconds per gear.

_____ 2. If your tachometer is in the red zone, you should:
   a. shift to a higher gear.  
   b. shift to a lower gear.  
   c. speed up.  
   d. turn off the engine.

_____ 3. Keeping your fuel tank at least half full in cold weather will prevent:
   a. “fuel-line freeze.”  
   b. low oil pressure.  
   c. alternator discharge.  
   d. “sub-zero slippage.”

_____ 4. The ________ will go on briefly when the ignition is turned to the “on” position and will go off again once the car is started.
   a. alternator  
   b. braking system warning light  
   c. odometer  
   d. oil-pressure warning light

_____ 5. One function of the braking system warning light is to remind you to:
   a. change the brake fluid.  
   b. release the emergency parking brake.  
   c. pump the brake pedal before starting.  
   d. have the electrical system checked.
H. CHECK IT OUT.

In the spaces provided, make a list of the gauges and warning lights on your car.

Gauges: __________________________________________________________________________________________

Warning lights: ____________________________________________________________________________________

Look at the instruments on several other vehicles, including older and newer makes. How do the layouts differ from each other and from your own vehicle?

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

Use the Internet to discover what types of instruments will be offered on future cars. In the space provided, write down what you discover.

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

4-2 OPERATING DEVICES

A. For each of the following sentences, circle T if it is true and F if it is false.

1. T F All vehicles are required to have two headlights giving off white or yellow light.

2. T F Taillights come on whenever you turn on your headlights.

3. T F Back-up lights are activated when the transmission is set to PARK or REVERSE.

4. T F On most cars, high beams are activated by pressing a button on the gearshift.

5. T F The emergency-flasher switch or button activates only the rear turn-signal lights.
6. T F You can activate the turn-signal lever while keeping both hands on the steering wheel.

7. T F Vehicles passing you should be in your rearview mirror before they leave your sideview mirrors.

8. T F A short driver will have larger blind spots than a tall driver.

9. T F Most sideview mirrors can be adjusted for both daytime and nighttime driving.

10. T F The driver’s door on most vehicles can only be locked from the outside.

B. Identify each of the following operating devices in the spaces provided.

C. Indicate the word or phrase in Column B that best matches each item in Column A by writing the correct letter in the space provided.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Taillights</td>
<td>a. Have been installed since 1989</td>
</tr>
<tr>
<td>2. Hazard lights</td>
<td>b. May not always turn off automatically</td>
</tr>
<tr>
<td>3. Headlights</td>
<td>c. White on the front, red on the rear</td>
</tr>
<tr>
<td>4. Running lights</td>
<td>d. Emergency flashers</td>
</tr>
<tr>
<td>5. Turn-signal lights</td>
<td>e. Activated with gear change</td>
</tr>
<tr>
<td>6. High beams</td>
<td>f. “Flash” these as a warning to others</td>
</tr>
<tr>
<td>7. Back-up lights</td>
<td>g. Two red lights</td>
</tr>
<tr>
<td>8. Parking lights</td>
<td>h. “Dim” to these when approaching others</td>
</tr>
<tr>
<td>9. Low beams</td>
<td>i. Two white lights</td>
</tr>
</tbody>
</table>
D. How should you adjust your rearview and sideview mirrors before driving?

E. As a defensive driver, what can you do to minimize the dangers posed by blind spots?

F. Complete each of the following sentences by writing the correct word or phrase in the space provided.

1. Headlights must be lit at designated times or when your _________ is limited such as in rain or snow.

2. Running lights can be a _________ setting of your headlights or a separate set of lights located next to your headlights.

3. The headlight switch usually has _________ settings.

4. In some older cars, you can activate high beams with your _________.

5. The _________ is usually located on the steering wheel.

6. The areas not reflected in your mirrors are called _________.

7. Always make sure that your _________ is securely locked into place before driving.

8. Door locks prevent your car doors from opening in a _________.

9. _________ are hinged panels located at the top of the windshield.

10. The _________ setting is used in cold or rainy weather to remove condensation from the inside of the windshield.

G. CHECK IT OUT.

Go to the library or use the Internet to find out what types of levers, knobs, and switches were once used on automobiles but are no longer in vogue. For example, the earliest cars were started manually with a crank rather than a key; in the 1950s, some major automakers flirted with push-button transmissions. In the space provided, write down what you discover.
What types of operating devices will future cars have?

4-3 VEHICLE CONTROLS

A. Select the word or phrase that best completes each of the following sentences and write the letter in the space provided.

_____ 1. When driving, your right heel should rest on the floor at the base of the:
   a. brake pedal.       b. accelerator.
   c. clutch.            d. parking brake.

_____ 2. Most vehicles today have a __________ steering system that mechanically assists the driver.
   a. power               b. “tilt-wheel”
   c. “accessory”         d. “lock”/“off”

_____ 3. The ignition has at least three positions:

_____ 4. The accelerator is also called the:
   a. fuel injector.       b. carburetor.
   c. gas pedal.          d. speed pedal.

_____ 5. In some vehicles, the __________ function as brake lights by getting brighter when the brakes are applied.
   a. back-up lights       b. parking lights
   c. taillights          d. hazard lights

_____ 6. In some vehicles, you must activate the parking brake using a:
   a. knob on the turn-signal lever.       b. lever under the driver’s seat.
   c. button on the gearshift.             d. foot pedal.

_____ 7. The __________ has been required on all passenger cars manufactured since 1985.
   a. hand-operated parking brake        b. center high-mounted rear brake light
   c. console                            d. stick shift

_____ 8. The gearshift is attached to the:
   a. transmission.       b. carburetor.
   c. clutch.            d. ignition.

_____ 9. The clutch is a pedal found only on vehicles with a(n) __________ transmission.
   a. automatic           b. manual
   c. power-assisted     d. fuel-injected

_____ 10. You can cancel cruise control at any time by tapping the:
   a. accelerator.       b. clutch.
   c. parking brake.     d. brake pedal.
B. How should your body be positioned with respect to operating controls when driving?

C. How do you activate the ignition?

D. How are brakes an important communication device?

E. What are the benefits and dangers of cruise control?
F. Identify each of the following operating devices in the spaces provided.

AUTOMATIC TRANSMISSION

MANUAL TRANSMISSION
G. Complete each of the following sentences by writing the correct word or phrase in the space provided.

1. You should be able to pivot your right foot from the accelerator to the ________ without lifting your heel from the floor.

2. Ignitions have safety catches to prevent you from accidentally removing the ________ while driving.

3. If you use the ________ setting on the ignition too long, you might drain the battery.

4. In manual-transmission vehicles, the ________ is on the console.

5. Cruise control allows you to drive without using the ________.

H. CHECK IT OUT.

Examine a car’s controls.

Does it have a “tilt-wheel”? If so, how is it adjusted? ________________________________

What are the key positions on your ignition? ________________________________

Do you have standard brakes or power-assisted brakes? ________________________________

Where is the parking brake and how is it activated? ________________________________

Do you have a manual or automatic transmission? ________________________________

Where is the gearshift located? ________________________________

If your vehicle has cruise control, how is it activated? ________________________________

How do you know when it is on? ________________________________

Go to the library or use the Internet to find out how the center high-mounted rear brake light has improved safety. Who developed it? How has it reduced the risk of rear-end collisions?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

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________________________________________________________________________

________________________________________________________________________
Have the driver of a bus or tractor-trailer truck demonstrate the vehicle's controls. In the space provided, list those controls not found in your own car or that work differently. Briefly describe their purpose and how they are used.

Type of vehicle: _____________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

CROSSWORD PUZZLE: PREPARING TO DRIVE

Across
2. Far right
3. Removes condensation
5. "Lock"
8. Steering wheel
10. +
12. Back-up lights
13. "Accessory"
14. "Set _______ control"
15. Crank to open

Down
1. 80 km/h
4. 020056.5
6. "Stick"
7. 400 RPM X 10
9. Emergency _______
11. Day/night lever
14. Manual transmission
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Where</th>
<th>What Happened</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp. warning light on/gauge in red</td>
<td></td>
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<tr>
<td>Oil-press. warning light on/gauge in red</td>
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<td></td>
<td></td>
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<tr>
<td>Alternator warning light on/gauge in red</td>
<td></td>
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<tr>
<td>Braking-system warning light on</td>
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<tr>
<td>Ran out of gas</td>
<td></td>
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<tr>
<td>Burned-out headlight</td>
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<tr>
<td>Activated hazard lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used horn</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Failed to adjust mirrors before driving</td>
<td></td>
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<tr>
<td>Failed to see driver in blind spot</td>
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<tr>
<td>Not seen in other driver’s blind spot</td>
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<tr>
<td>Failed to adjust seat before driving</td>
<td></td>
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<tr>
<td>Pressed wrong pedal while driving</td>
<td></td>
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<tr>
<td>Problem with steering wheel</td>
<td></td>
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<tr>
<td>Problem with brakes</td>
<td></td>
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<td></td>
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<tr>
<td>Scary moment with cruise control</td>
<td></td>
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