



## Loss Prevention Reference Note

# Mirrors for Passenger Vehicles

## Automobiles And Light Trucks

To operate a vehicle safely, the driver must make good timely decisions based on the input gained from their driving environment. The view through the windshield lets the driver make decisions based upon what is in front of them. Good decisions, however, should be based upon the entire environment surrounding the vehicle.

While most of us are aware that heavy commercial vehicles have blind spots, what you may not be aware of is that blind spots are present on passenger vehicles as well. Especially passenger vehicles without proper mirrors or proper mirror adjustment.

Approximately 30% of all reportable motor vehicle crashes involve:

- sideswipes
- backing
- striking parked vehicles
- striking vehicles while pulling from a parked position

These crash types distinguish themselves from others because the hazard generally comes from behind or beside the driver. Many of these crashes may be the result of improperly adjusted mirrors.

Traffic hazards from the rear and sides increase on certain types of roadways. On inner city roadways we have a greater exposure to rear-end and striking-parked-vehicle crashes. On multi-lane roadways we have an increased exposure to sideswipe accidents. The different sizes of newer passenger vehicles such as SUVs and subcompacts also have an impact on the driver's ability to evaluate the entire driving scene.

It is difficult to establish criteria for mirrors that will fit all vehicle types and sizes. The width and configuration of the windshield and the side windows determine, to a large degree, the size and type of mirror that can be used. Driver seat position is another factor, especially where the forward side post (window frame also known as the A-pillar) blocks the driver's view.

Most passenger vehicles today are equipped with three mirrors; one inside, and an exterior mirror on both the driver's and passenger's side. The mirror on the passenger's side is usually a convex unit (one that has a curved angular surface). This increases the view to the sides, but distorts the view so that distance interpretation may be difficult.

### Adjusting Mirrors

Let's look first at the interior mirror. Adjustment may be accomplished by a simple framing of the rear window; however, because of our seating position on the left side of the vehicle, greater visibility is achieved by angling the mirror slightly toward the passenger's side. Not only does this provide visibility directly behind, it also allows a view to the right rear quarter of the vehicle, which is generally a blind area.

The driver should adjust the mirror based on his or her height. The mirror should provide a view as far back as visibility will allow (see figure 1 on page 2). Adjustment of this mirror may change during different times of the day. As you grow tired, you may have to adjust the

**Figure 1**



mirror to compensate for fatigue (we tend to slump, or slouch as we become more fatigued late in the day). Also, the angle of this mirror may be changed during dark hours to dim the glare of approaching light by flipping the day/night lever. Some newer vehicles have mirrors which dim automatically.

Next are the outside mirrors. A common error which many drivers make is to adjust the mirrors so they see a great deal of the side of their own car. This is generally done to create a reference point to gauge the location of other vehicles around them, but the more of your vehicle you see, the more you reduce visibility to the side.

To reduce the “blind” area, adjust your mirrors so you do not see any part of your car when you are sitting in a normal driving position. Here’s how:

- After setting your inside mirror, while seated in the same relative position, lean your head approximately 4 inches to the left. Adjust your left mirror so that you can just barely see the side of your vehicle in the lower right corner of the mirror (See figure 2). Return to your normal seated position. When you look in the left mirror you will no longer be able to see the side of the car, but you will be able to see further to the left than before.
- Next, lean your head approximately 4 inches to the right. Adjust your right mirror so that you can just barely see the side of your vehicle in the lower left corner of the mirror (See figure 2). Return to your normal seated position. When you look in the right mirror you will no longer be able to see the side of the car, but you will be able to see further to the right than before.



**Figure 2**



**Figure 3**

- Figure 3 illustrates the adjusted mirror views. Notice that your car is no longer visible. Since we can see it in the inside mirror, we do not have to see it in the side mirrors too. When a vehicle begins to pass, you will be able to see it, as you have almost eliminated the blind spot by properly adjusting your mirrors. As the passing vehicle moves out of your inside mirror it will appear in the outside mirror.

### Using Mirrors

Many drivers are involved in crashes because they become preoccupied with only one important detail in a traffic picture and fail to spot other potential hazards around them. This is why it is critical that drivers keep shifting their attention, never staring at anything longer than two seconds, and checking their mirrors every five to ten seconds. Shifting attention enables the driver to make prompt decisions that will deal with hazards.

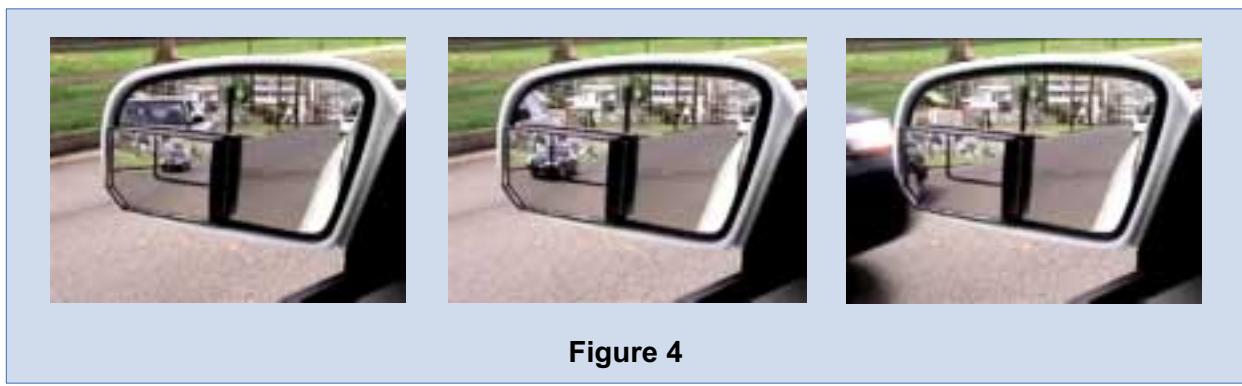
The mirror system on our vehicles is an important part of our decision making process, and mirror adjustment is crucial to its effective use.

### Alternative Mirrors

There are a number of items currently on the market that can help you view the area that is contained within the blind spot, including stick on units, and even replacement mirror systems. Remember, these systems are only aids. The only way to really be sure there are no vehicles in your blind spot is to turn your head and actually look into the area.

Shown in figure 4 is a “Smart-View” auxiliary mirror attached to the driver’s outside mirror. This system shows a box in the upper-inside corner that is the “safe box”. When a car is in the “box” and stays in the box, it is safe to move in front of it.

Mirror adjustment is critical to safe vehicle operation. A few minutes spent properly setting your mirrors may help you see potential hazards that will impact your driving decisions.



**Figure 4**

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The illustrations, instructions and principles contained in the material are general in scope and, to the best of our knowledge, current at the time of publication. No attempt has been made to interpret any referenced codes, standards or regulations.

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