



## Mirrors Make a Difference

### **LARGE TRUCK AND BUS CRASH FACTS 2010; August 2012** **Analysis Division Federal Motor Carrier Safety Administration**

This report contains information on drivers of large trucks in fatal, injury, and property damage only crashes and on people killed or injured in large truck crashes. It is important to note that the number of large truck drivers in crashes is not exactly equal to the number of large trucks in crashes, because no driver information is provided for some crashes.

Of the 3,446 drivers of large trucks involved in fatal crashes, one or more driver-related factors were recorded for 63 percent of the drivers of large trucks involved in single-vehicle fatal crashes and for 27 percent of the drivers of large trucks involved in multiple-vehicle fatal crashes. The table below emphasizes the importance vision plays in making accurate driving decisions;

<b>People Table 12. Drivers of Large Trucks in Fatal Crashes by Driver-Related Factors and Violations Recorded, 2010</b>				
Driver-Related Factors	Multiple Vehicle	Single Vehicle	Total	Percent of 3,446
• Failure to keep in proper lane	87	114	201	0.058
• Vision obscured (by weather, roadway design, vehicles, etc)	107	35	142	0.041
• Failure to yield right-of-way	105	35	140	0.041
• Following improperly	73	3	76	0.022
• Overcorrecting	8	39	47	0.014
• Swerving due to vehicle in road	20	4	24	0.007
• Starting or backing improperly	17	5	22	0.006
• Swerving due to pedestrian, pedalcyclist, or other nonmotorist in roadway	2	16	18	0.005
• Improper or erratic lane changing	8	1	9	0.003
• Passing with insufficient sight distance	2	3	5	0.001
• Swerving due to live animals in road	3	1	4	0.001
• Making improper entry to or exit from trafficway	4	0	4	0.001
• Passing where prohibited	2	0	2	0.001
<b>Total number of crashes due improper driving decisions</b>	<b>438</b>	<b>256</b>	<b>694</b>	<b>0.201</b>

Over 20% of fatal truck crashes can be directly attributable to wrong decisions most likely due to limited visibility or incorrect visual perception. Of the five senses, our vision is the most important one we use to gather the information we need to make correct driving decisions. Improper mirror use means inaccurate information leading to wrong driving decisions which will ultimately result in collisions.

Companies that have integrated proper mirror use and adjustment as part of an overall defensive driving program have been able to reduce collision frequency by 50%.

<http://ai.fmcsa.dot.gov/CarrierResearchResults/PDFs/LargeTruckandBusCrashFacts2010.pdf>

# Setting Up a Mirror Check Station

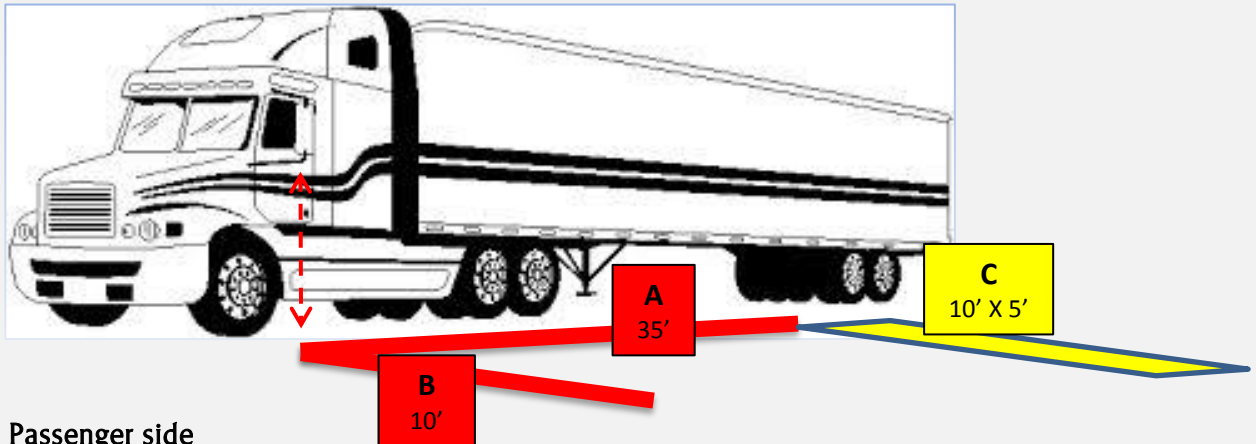
A full mirror check station will require at least a 30' x 80' setup area to accommodate a full size tractor/trailer. Lines and targets may be painted on ground or temporary material utilized (chalk, tape, panel board, cones, etc.) The colors in this example are not mandatory but it is recommended that all lines, particularly the "targets" be highly visible.

## Dimensions\*

- The dimensions of yellow targets (C) and (D) are 5' x 10'.
- All targets and red line (B) are at a 90° angles to red line (A)

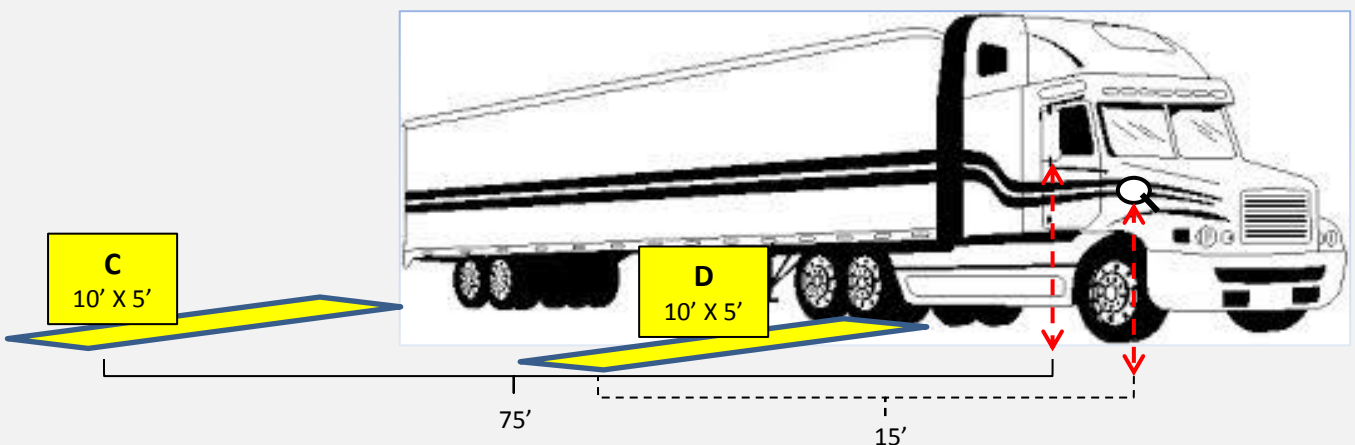
## Drivers Side

- Position vehicle approximately 6" to 9" inside of line (A) with mirror assembly directly above the intersection of lines (A) and (B)
- The forward edge of target (C) is 35' from line (B)



## Passenger side

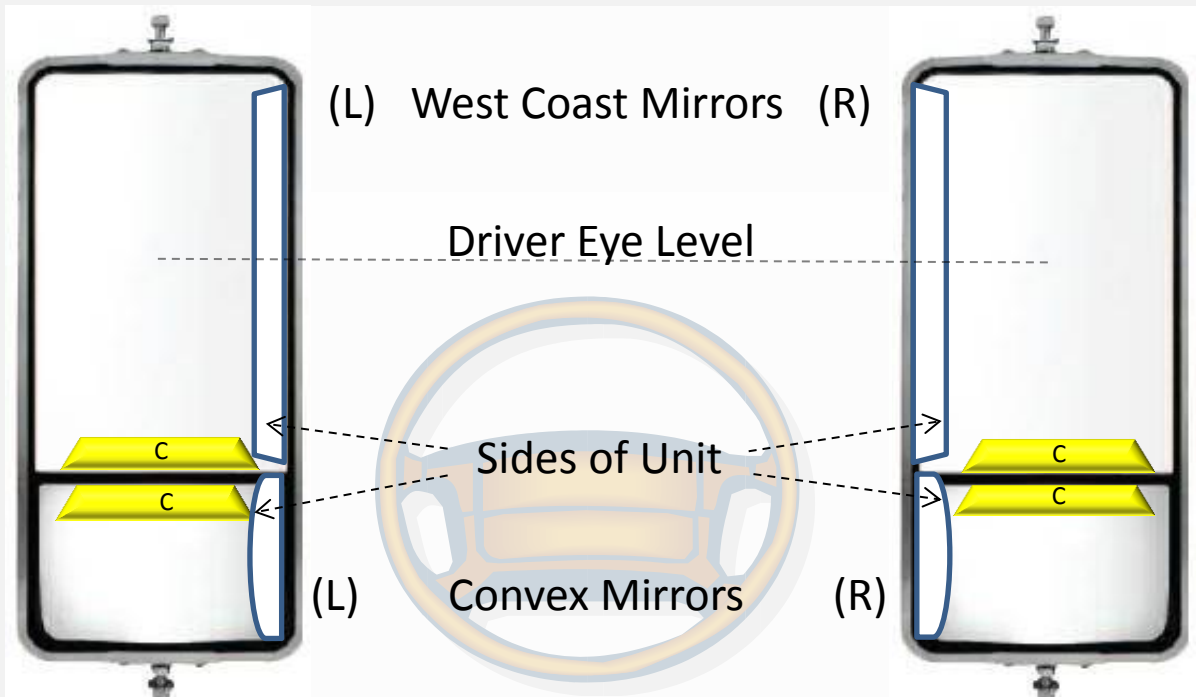
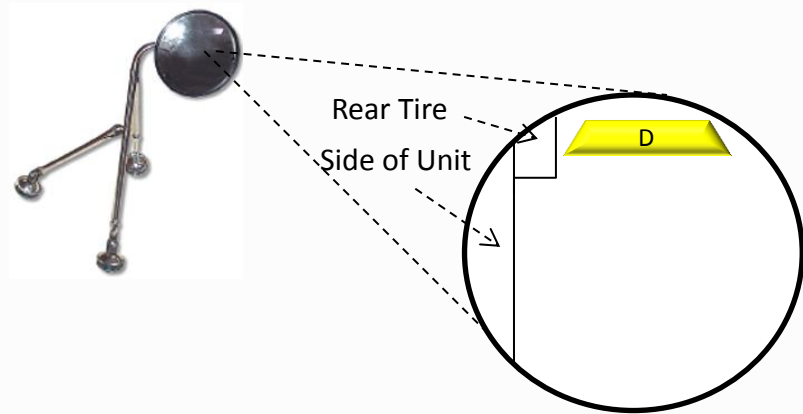
- Distance from line (A) to passenger side targets (C) and (D) is 10'
- The forward edge of target (C) is 75' from side door mirror
- The distance from the forward edge of target (D) to the right side fender spot mirror is 15'.



\*Adjust distance between targets for smaller vehicles.

Many late model trucks have large single mirror housings for both the flat (West Coast) and Convex mirrors as in the following examples. It is critical that the mirrors be individually adjustable for maximum adjustment capability. The following method involves placing sighting targets (C) and (D) in strategic locations in relation to the truck. With the targets properly placed and seat height adjusted, the mirrors are adjusted so the targets appear in the correct location as shown to assure the best possible visibility from the mirror system.

## Fender Spot Mirror (R)





## Make the Mirror Check Station Your Safety Inspection Lane

A Mirror Check Station makes a great “Safety Lane” and is a good place to check overall vehicle safety prior to departure, as well as serve as a crash countermeasure for backing and lane change collisions.

If the company has on-site maintenance, it is also recommended that new drivers be accompanied by an experienced maintenance technician while performing their pre-departure vehicle inspection, at least during the driver’s initial probationary period.

Company managers should continually review, refine and improve the vehicle inspection process. Driver inspections should include checking load securement, verification of legalization documents, routes, dispatch instructions and paperwork. Driver supervisors and managers should periodically observe and document the inspection in process and discuss results with the driver. This method of Management by Walking around is a proven and effective management technique and shows drivers that management is committed to safety.

[Inspection, Repair and Maintenance FMCSR 396.11](#) Every motor carrier shall require its drivers to report, and every driver shall prepare a report in writing at the completion of each day's work on each vehicle operated, except for intermodal equipment tendered by an intermodal equipment provider. The report shall cover at least the following parts and accessories:

- (i) Service brakes including trailer brake connections;
- (ii) Parking brake
- (iii) Steering mechanism
- (iv) Lighting devices and reflectors
- (v) Tires
- (vi) Horn
- (vii) Windshield wipers
- (viii) Rear vision mirrors
- (ix) Coupling devices;
- (x) Wheels and rims
- (xi) Emergency equipment;

### Safety Tip

- Keep mirrors clean and properly adjusted
- Avoid inattention – scan mirrors every five seconds
- Be aware of objects (vehicles, cyclists, pedestrians) momentarily hidden behind mirrors at on-ramps, intersections and crosswalks
- Think, Look Left - Right - Left, and proceed with caution



*(Click on photo for safety message)*