

# Safe Farm

Promoting Agricultural Health & Safety

## Use SMV emblems for your safety

The transport of agricultural equipment on public roads can be a dangerous operation. According to Iowa Department of Transportation data, about 20 percent of all traffic accidents involving farm equipment are rear-end collisions. Problems occur when vehicles traveling at higher speeds come upon a tractor or other slow-moving equipment and motorists do not have time to slow down.

A farm operator's best protection on public roads is the use of slow-moving vehicle (SMV) emblems. This publication will discuss when SMV emblems are required, and the farm operator's responsibility in maintaining those emblems to ensure your safety as well as the safety of other motorists.

### Why identify slower vehicles?

Early identification of a slow-moving vehicle by the motorist gives the motorist an opportunity to avoid a collision. It's helpful to know how little time motorists actually have when they come upon a slow-moving vehicle.

For example, a car traveling 50 miles per hour approaches a tractor traveling 20 miles per hour in the same direction on the road. Even if the car is still 400 feet behind the tractor (a sizeable following distance), the driver of the car has less than 10 seconds to react to avoid a collision with the tractor. In those 10 seconds, the motorist must recognize that a dangerous situation exists, determine the speed at which the tractor is moving, then decide what action to take. Time required to brake a vehicle traveling at 50 miles per hour also must be figured into the driver's 10-second response time.

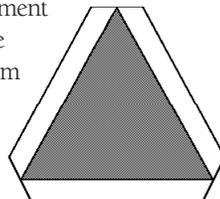
Under ideal road conditions, it would require at least one second (and about 55 feet of braking distance) to slow the vehicle to 20 miles per hour and avoid a rear-end collision with the tractor. Without early warning provided by the SMV emblem, the motorist might not have enough time to respond in this situation to avoid a collision.

### SMV laws

Iowa law requires all vehicles traveling on public roads at speeds less than 30 miles per hour to display a SMV emblem on the rear of the vehicle. The emblem alerts drivers that they are approaching a vehicle traveling at a reduced rate of speed and that caution may be necessary. All types of slow-moving vehicles, including horse-drawn carriages, mowers, and construction equipment that use public roads, must display the SMV emblem.

The emblem must be displayed on the rear of any slow-moving vehicle used on public roads. If towing wagons or other equipment, the emblem on the tractor must be clearly visible, or another emblem must be displayed on the rear of the last implement.

The shape, color, and placement of the SMV emblem also are specified by law. The emblem is an equilateral triangle at least 13.8 inches high (plus or minus 0.3 inches). It is a fluorescent red-orange material with a border of a red retro-reflective material. The fluorescent material is visible in daylight and the reflective border shines when illuminated by headlights of an approaching vehicle.



## Farm machinery safety

### How much do you know?

1. What do the SMV letters mean?
2. All agricultural equipment requires an SMV emblem. True or false?
3. The SMV emblem is square. True or false?
4. The SMV emblem is a fluorescent red-orange equilateral triangle with a red retro-reflective border. True or false?
5. Once you've permanently attached SMV emblems on tractors and other equipment, the signs never need inspecting again. True or false?
6. The driver of a car, traveling 50 mph, spots a tractor about 400 ft. ahead on the road. The tractor is traveling 20 mph. How long does the driver of the car have to respond, slow down, and avoid a rear end collision?
  - a) more than 60 seconds
  - b) 30 to 40 seconds
  - c) less than 10 seconds

See answers on back.

Standards for the SMV emblem are set by the American Society of Agricultural Engineers, the American National Standard Institute, and the Society of Automotive Engineers.

The placement of the SMV emblem is critical. The emblem is required to be displayed in the rear and as close to the center of the vehicle or implement as possible. It must be mounted with the point up, at a right angle or perpendicular to the direction of travel so that it can be seen by motorists approaching from the rear. The lower edge of the emblem must be at least two feet and not more than 10 feet above the ground.

### Other responsibilities

Farm operators must not only mount SMV emblems on all slow-moving equipment used on public roads, they also must maintain those emblems. Inspect emblems occasionally for fading. Exposure to sunlight causes the reflective material to fade, thus reducing its effectiveness.

SMV emblems that are faded or appear white must be replaced. Keep extra emblems on hand. New emblems can be obtained from local equipment dealers, or during various safety promotions.

## For more information

Another fact sheet in the Safe Farm series, *Reduce farm accident risks on roads*, PM 1563e, offers further information on how to avoid traffic collisions while transporting farm equipment.

If you need to purchase SMV emblems or other safety equipment, check with your local implement dealer.

Check SMV emblems before entering public roads. They can become covered with mud and debris, so a good cleaning may be necessary. Dirty emblems are not as effective as clean ones.

The use of SMV emblems is only one requirement for agricultural equipment used on public roads. Other state and local regulations may apply to the transportation of agricultural equipment on public roads. Additional laws may require proper lighting, special towing chains, reflectors, or specify other restrictions. Use of an SMV emblem does not replace other safety requirements.

The display and maintenance of SMV emblems on slow-moving agricultural equipment used on public roads is a simple and effective way to reduce considerable risks for farm operators. Know the regulations in your area, and take precautions to ensure the safety of yourself and other motorists.

Prepared by Charles V. Schwab, extension farm safety specialist.

Other extension resources on this topic include:

- *Safety on Iowa Roads: Sharing the Road with Farm Vehicles*, PM 1629, and
- *Safe Operation of Agricultural Equipment*, PM 646m (fee for publication).

## Farm machinery safety

### What can you do?

These simple actions can greatly reduce your risks while transporting farm equipment.

- Apply SMV emblems on all agricultural equipment that will be used on public roads.
- Inspect current SMV emblems for signs of fading and replace, if needed.
- Check your local law enforcement agency for current laws regarding farm vehicles on public roads.
- Periodically clean SMV emblems and make sure they are securely mounted on the vehicle or implement.

Answers to quiz: 1-Slow moving vehicle; 2-False; 3-False; 4-True; 5-False; 6-c



Safe Farm is an Iowa State University Extension and Outreach project helping to make Iowa farms a safer place to work and live.

For more safety information, check the web at [www.abe.iastate.edu](http://www.abe.iastate.edu).

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