Preventing Agricultural Equipment/ Motor Vehicle Crashes

HIGHLIGHTS:

- Types of incidents that occur and why
- Information to help prevent collisions
- American Society of Agricultural and Biological Engineers (ASABE) recommendations for lighting and markings

Slow-moving farm equipment and fast-moving cars or trucks can be a dangerous combination on rural roads. Continuing urbanization of rural areas has increased the numbers of licensed motor vehicles on roads in farming areas on which agricultural equipment is moved.

Types of Incidents

While there is not a lot of specific national data about incidents on public roads involving agricultural equipment, available state information does point to some common trends about incidents involving farm self-propelled equipment (excluding licensed motor vehicles).

Frequent types of incidents include:

- A car or truck striking farm equipment in the rear.
- Vehicles striking farm equipment when the equipment is making a left turn while the vehicle is attempting to pass on the left.
- A vehicle passing farm equipment moving in the same direction.
- A vehicle striking farm equipment as it is turning onto a public road from a farm driveway.

Why are Incidents Occurring?

- Motor vehicle traffic increases yearly—especially on rural roads.
- Farms are larger than in the past so operators travel greater distances on roadways between fields.
- Farm self-propelled and towed equipment have become larger and can extend into the opposite lane of traffic.
- Crops, including corn, especially prior to harvest, and vegetation close to roadways and intersections can obstruct or reduce vision.

Help Prevent Collisions between Farm Equipment and Motor Vehicles

Keep vegetation such as crops, trees, bushes, tall grass, etc., trimmed in locations where the driveway meets the public road. This will help drivers of cars and trucks

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see farm driveways and entrances better, and help equipment operators see approaching vehicles. Also, do not park equipment in a manner that obstructs views in this area.

The Operator

- Allow only responsible, qualified operators to move equipment on public roads.
- Do not carry passengers unless the equipment has a passenger seat.
- Where practical, avoid traveling on roads during busy times or when visibility is reduced.
- Make sure equipment is ready for travel on a public road:
  - Adjust mirrors
  - Check tires for proper inflation
  - Ensure towed equipment is securely hitched
- Turn off rear-facing work lights so drivers will not mistake them for headlights.
- Lock brake pedals to ensure stopping in a straight line.
- Before entering roadway, come to a complete stop and look carefully both ways for approaching vehicles.
- Drive on the shoulder, wherever possible, but only when it is wide enough to accommodate the entire width of the equipment. Do not drive partially on the roadway and partially on the shoulder.
- If traffic becomes backed up behind the equipment, pull completely off the road (where safe to do so) to allow vehicles to safely pass. However, do not signal for them to pass.
- Signal all turns well in advance, but keep in mind that drivers may not always heed signals.
- Be constantly aware of traffic, and anticipate the incorrect actions of others.
- Stay alert for hazards such as soft shoulders, narrow bridges, loose gravel, bumps, potholes and deep ruts.

Equipment

- Check with state department of motor vehicles or state agricultural agency to determine what regulations apply to moving farm equipment on public roads, including any specific requirements for lighting, reflectors or other markings. Adhere to all requirements.
- Install mirrors on pieces of equipment that do not have them.
- Maintain equipment in accordance with manufacturers' recommendations.
- Lights, reflectors, signs and other markings should be clean and visible prior to entering roadway.
- Inspect equipment regularly. Replace broken reflectors, inoperative light bulbs, faded reflective tape, or faded SMV (Slow Moving Vehicle) emblems.
- If not part of the original equipment, add lights and other markings to increase visibility. See summary of American Society of Agricultural Engineers (ASAE) recommendations below. Please note that the ASAE is now known as the American Society of Agricultural and Biological Engineers (ASABE).

ASAE/ASABE Recommendations for Lighting and Marking of Agricultural Equipment for Travel on Public Roads

At present, the regulation of lighting and marking agricultural equipment for travel on public roadways varies from state to state. There are no uniform requirements. It is important that the owner and operator of the equipment be knowledgeable of and complies with applicable state regulations.

- Headlights: Two white headlights mounted on either side of vehicle centerline at the same height.
- Tail lights: Two red lights symmetrically mounted to rear between 3.3 feet and 10 feet high.
- Hazard flashers: Two or more amber lights, installed 3.3 feet to 12 feet high, and spaced as widely apart as practicable to be visible from front and rear.
- Turn indicators: Two amber and red. Hazard flashers can also function as turn indicators.

- Slow Moving Vehicle (SMV) emblem: One emblem, fluorescent orange for daylight with red retro-reflective border for night. Mounted on rear center or rear left for visibility at 600 feet day or night, and placed 2 to 10 feet above the ground.
- Reflectors: Two red reflectors placed on rear of machine and two yellow on front of machine. 2 inches wide by 4.5 inches long for machines up to 6.7 feet wide. Reflector size should increase to 2 inches by 9 inches for wider machines (may be part of tail lamp lens or conspicuity material).
- Rear conspicuity material: Visible in rear. Red retro-reflective and red-orange fluorescent markers, rear-mounted horizontally, and as in line as practical on rear corners, 6 feet apart.
- Front conspicuity material: Visible in front. Yellow retro-reflective with reflectors, within 16 inches of outside corners. Fluorescent material should be within 25
- Side conspicuity material: Yellow/amber reflectors installed on sides of trailing equipment measuring greater than 16.4 feet behind hitch point.

Resources

Cyr, Dawna L. and Johnson, Steven B., Ph.D., *Driving Farm Machinery Safely*, University of Maine Cooperative Extension.

Hallman, Eric and Abend, Ellen, Roadway Safety: Lighting & Marking of Agricultural Equipment, *Rural Safety and Health*, June, 2005, Cornell Cooperative Extension.

Agricultural Equipment on Public Roads, Committee on Agricultural Safety and Health Research and Extension, 2009, USDA–CSREES, Washington, D.C.

Boosting Visibility of Ag Equipment Fact Sheet, Agriculture and National Resources, Ohio State University, 2008.

Farm Machinery Safety on Public Roads, Farm Safety Association, Inc.

Reduce Farm Accidents Risks on Roads, Safe Farm, Iowa State University, March, 2013.

Safety Standards for Lighting and Marking, *AgProfessional*, January, 2011.

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