

FARM EQUIPMENT AND MOTOR VEHICLE OPERATION ON PUBLIC ROADS

The Problem

Over one hundred traffic incidents a year on Saskatchewan roads and highways involve farm equipment. Between 1990 and 2000, 27 people died as a result. Hundreds of others were injured.



Clearly, farm implements are not designed for travel on public roads. Their size and slow speed make them a hazard, not only for motorists but also for the operator. Compare the dimensions and operating speed of farm equipment and a typical road vehicle, and the problem is evident.

Road conditions can contribute to the hazard. Thin membrane surface (TMS) highways were created for light traffic 30 to 40 years ago when there was little heavy trucking on rural roads. While these roads are systematically being upgraded, their current deterioration creates hazards for farm equipment operators, such as potholes and unstable shoulders.

Relatively sparse traffic, ironically, may also contribute to the hazard. Saskatchewan has 26,000 kilometres (km) of public roads, the most per capita of any Canadian province;

including 7,000 km of primary, paved highway; 5,400 km of paved highway; 7,500 km of TMS highways and 5,600 km of gravel roads. Rural dwellers drive long distances and many drive at the speed limit or faster. Travelling at this rate, a sudden encounter with slow-moving farm equipment may leave insufficient reaction and braking time to avoid a collision.

Farm Equipment	Dimensions	Highway Operating Speed
Tractor	Height: 12.7 feet (4.3 m) Width: 14 feet (4.3 m) Length: 26.5 feet (8.06 m) Weight: 40,000 lb (18,182 Kg)	25 mph (40 kph)
Tractor + Air Seeder	Height: 30 feet (9.2 m) Width: 18 feet (5.5 m) at top Length: 80 feet (24.4 m) Weight: 100,000 lb (45,454 Kg) full	25 mph (40 kph)
Combine + Header	Height: 13 - 14 feet (4 - 4.3 m) Width: 36 feet (10.9m) Length: 45 feet (13.7 m) Weight: 40,000 lb (18,182 Kg)	20 mph (32 kph)

Farm Equipment	Dimensions	Highway Operating Speed
Half-Ton Truck	Height: 5.9 - 6.2 feet (1.8 - 1.9 m) Width: 6.6 - 8 feet (2 - 2.4 m) Length: 17 - 21.4 feet (5.2 - 6.5 m) Weight: 2 - 3.25 tons (1.8 - 2.9 tonnes)	63 mph (100 kph) Capable of 100+ mph (160+ kph)

The Statistics

People die every year in incidents involving farm equipment on Saskatchewan roads and highways. Many others are injured. The following table outlines the nature of the fatalities. By far the most common cause of death is a collision between a motor vehicle and a farm machine.

Fatalities Involving Farm Equipment on Saskatchewan Public Roads and Highways, 1990 - 2000*	
Mechanism of Injury	Total
Machine/motor vehicle collision	14
Sideways roll over	3
Unspecified roll over	2
Passenger fell from machine, then run over	2
Operator fell from machine, then run over	1
Pinned or struck by machine	1
Other	1
Unknown	3
Total	27

* Saskatchewan Farm Injury Surveillance Program, 2003

Typical circumstances of a collision involving farm equipment are:

Left Turn Collision

The most common type of farm vehicle incident on public roads is a left-turn collision. It happens when the farm vehicle is about to make a left turn. Meanwhile, the motorist behind the farm vehicle decides to pass.

Rear End Collision

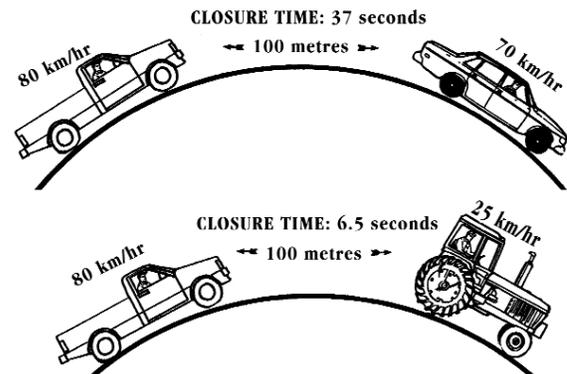
This is second most common type of farm vehicle incident on public roads. It is easy to misjudge speed when you come upon a slow-moving vehicle. In most cases, you have only a few seconds to react and slow down.

Passing Collision

Collisions also occur when motorists attempt to pass farm vehicles. They may be unaware that the equipment is extra wide or long until they are in the passing lane.

Over 100 traffic incidents a year on Saskatchewan roads and highways involve farm equipment.

How fast can YOU react? Encountering Slow Moving Vehicles



Defensive Driving Tips for Farm Machinery Operators

BE VISIBLE

The key to transporting farm machinery safely is to be as visible as possible. Saskatchewan's Vehicle Equipment Regulations are currently being revised. New regulations pertaining to the lighting and marking of farm equipment on Saskatchewan highways will generally be consistent with Canadian Standards Association Standard M669-02 on which the following recommendations are based.

Lighting and Marking Self-Propelled Equipment

- **Slow Moving Vehicle (SMV) Emblem**

This triangular, bright-orange sign with red border must be securely mounted at the centre or to the left of centre of all slow moving farm vehicles and equipment. Be sure it is clean and visible. Replace it when damaged or faded due to sun and weather deterioration.



- **Head Lamps**

Tractors and other self-propelled equipment must have at least two headlamps visible from the front. Your headlamps should be on for daytime travel as well as after dark - you'll be extra visible and that much safer. For detailed specifications on aiming and aligning headlamps, check the "Be Seen, Be Safe" pages on the Prairie Agricultural Machinery Institute Website: www.pami.ca/

- **Tail Lamps**

Tractors and other self-propelled equipment must have two red tail lamps visible from the rear of the machine, mounted symmetrically no more than 1.5 m (5 ft.) to the left and right of the machine centre and between 1 and 3 m (3.3 and 12 ft.) high.

- **Amber Flashing Warning Lamps**

- Tractors and self-propelled equipment must have at least two flashing amber warning lamps, visible from both the front and rear of the machine, and located at least 1 m (39 in.) high.



Use your flashing amber warning lamps and tail lamps whenever you are on the road.

- On machines more than 3.7 m (12 ft.) wide, warning lamps must be mounted within 400 mm (16 in.) of the extremities of the machine. The extremity dimension applies to items such as dual wheels, wide axles and headers.

- **Turn Signals**

Two types of turn signals are required:

- The amber flashing warning lamp opposite the direction of the turn becomes steady burning.
- The rear-facing red tail lamp flashes in the direction of the turn.

- **Reflectors and Reflective Tape**

- Red reflectors or reflective tape, visible from the rear of the unit and capable of being seen at night from a distance of 305 m (1,000 ft.), must be mounted to indicate the extreme left and right projections of the machine.
- On machines over 3.7 m (12 ft.) wide, reflective tape, visible from the front and rear of the unit, must mark the extreme left and right projections of the machine. Reflective tape visible from the front must be yellow in colour.
- Reflectors and reflective tape must be visible at night from a distance of 305 m (1,000 ft.) when directly exposed to the lower light beam of headlamps. Check with your supplier whether their components meet the CSA and ANSI standards for reflective material.

- **Flood Lamps**

Flood lamps or general service lamps are designed to illuminate the machine or field work. Front-facing flood lamps must be aimed downward during travel on public roads so as not to blind oncoming traffic. Rear-facing service or flood lamps must be turned off.

Lighting and Marking Non-Self-Propelled Equipment

- **Slow-Moving Vehicle (SMV) Emblem**

Towed equipment must have its own SMV emblem if the equipment obscures the visibility of the SMV on the towing vehicle.

- **Marking for Equipment Width**

- Equipment extending more than 1.2 m (4 ft.) to the left of the centre of the towing vehicle must have at least one strip of yellow reflective tape visible from the front, indicating the extreme left margin of the equipment. It must also have at least two strips of red reflective tape visible to the rear, indicating the extreme left and right margins of the equipment.

- **Marking for Equipment Length**

- Equipment extending more than 1.2 m (4 ft.) to the rear of the hitch point of the towing vehicle must have at least two strips of red reflective tape visible to the rear, indicating the extreme left and right margins of the equipment.
- Equipment extending more than 5 m (16.4 ft.) to the rear of the hitch point must have strips of yellow reflective tape visible from the right and left sides; and spaced no further apart than 5 m (16.4 ft.)

- **Lighting Non-Self-Propelled Equipment**

- If the tail lamps on the towing vehicle are obscured, two red tail lamps must be mounted symmetrically on the rear of the equipment.
- If the rear flashing warning lamps on the towing vehicle are obscured, the equipment must have two amber flashing warning lamps visible from the rear.
- If the rear turn indicators on the towing vehicle are obscured, the equipment must have turn indicators.

For illustrated information on lighting and marking farm equipment, visit the *Be Seen, Be Safe* pages on PAMI's Website: www.pami.ca/

Sample Sources of Farm Equipment Marking and Lighting Devices

- Acklands-Grainger (over 25 SK branches),
1402 Quebec Avenue, Saskatoon, SK S7K 1V5
Tel: (306) 644-5500 Fax: (306) 664-5594
Website: www.acklandsgrainger.com
- Interlake Resources Inc.,
300 Centre Street, Box 2136, Nipawin, SK S0E 1E0
Tel.: (306) 862-5050 or 1-800-563-5055
Fax: (306) 862-5055
Website: www3.sk.sympatico.ca/intres/

MAINTAIN EQUIPMENT IN GOOD CONDITION FOR TRANSPORT

- **Check and maintain brakes, tires and lights in good mechanical condition.**
- **Clean windows, mirrors, lights and markers.**
Make this a routine before road travel.
- **Secure towed loads.**
 - Hitch trailed equipment only to the tractor drawbar.
 - Connect each farm wagon or piece of equipment to

the towing vehicle by two separate means of attachment.

- Use properly rated safety chains with pins and balls of the proper size. The strength of a safety chain must be equal to the gross weight of the load being towed.
- Use safety hitch pins (draw pins with cotter pins) in every application.
- Use locking pins on hydraulics.
- Transport winged and folding implements in their narrowest configuration.
- If a trailed implement exceeds 1.5 times the weight of the pilot vehicle, it must have independent brakes.

OPERATE SAFELY

- **Use trained and licenced drivers.**

Licensed drivers trained in the rules of the road and on the machine make the safest operators.

- **Make sure it is safe to enter any roadway.**

Watch for oncoming vehicles. Assume that cars and trucks are travelling at the speed limit. Let them pass before entering the roadway.

- **Drive as far to the right as possible, but stay on the road.**

Many collisions occur when motorists pass farm vehicles. As a farm equipment operator, you may pull over to make passing easier. Be aware that travelling on the shoulder can be dangerous if:

- The shoulder is soft or has potholes
- Other motorists try to pass when it is unsafe

- **Clearly indicate all turns.**

This is required by law, even for farm vehicles. A left-turn collision is the most common type of farm vehicle accident on public roads. Typically, the motorist following farm equipment thinks the operator is pulling over to allow him to pass, when the operator is actually making a wide left turn. If your equipment does not allow other drivers to see your signals, an escort vehicle(s) should be used.

- **Slow down when leaving a roadway.**

Tractors and other farm machines are prone to sideways roll overs because of their high centre of gravity. Decreasing a tractor's speed by half cuts its centrifugal force by a factor of four, reducing roll over risk.

- **DO NOT allow extra riders.**
Adopt a “No Rider” policy on tractors and other farm equipment. When things go wrong, an extra rider is the most likely person to die.
- **Use extra caution when transporting dangerous goods** such as anhydrous ammonia, pesticides, compressed gas or fuel. For specific information on regulations governing the transport of these materials, call:
Provincial Transport Regulations and Dangerous Goods Program
Tel. Regina: (306) 787-4801



- **Equip all tractors with a roll over protective structure (ROPS) and seat belt.**
A ROPS and seatbelt prevent the operator from falling from the tractor and being run over. In a tractor roll over, a ROPS and seatbelt will save the operator’s life.
- **Be aware of road conditions.**
For current conditions, call Saskatchewan Highways and Transportation 24-hour, toll-free Highway Hotline.
Regina and surrounding area: Tel: 787-7623
Saskatoon and surrounding area: Tel: 933-8333
All other areas: Tel: 1-888-335-7623
Recorded information is available on summer and winter road conditions, ferries, ice road crossings and spring road restrictions. During winter, the hotline is updated three times a day. During poor weather, it is updated more frequently.
- **Know your route.**
Official Saskatchewan Road Maps are available from Tourism Saskatchewan for a nominal fee. For a copy, call toll-free (1-877-237-2273) or visit the website, www.sasktourism.com. A Saskatchewan Grid Road

Map can be obtained free-of-charge from the Department of Highways and Transportation Communications and Public Relations branch by calling (306) 787-0113.

- **Don’t operate farm vehicles and equipment if you are impaired.**
The Criminal Code of Canada applies to drivers of vehicles both on and off the highway. It is illegal to operate a farm tractor or self-propelled implement when impaired by alcohol or drugs.

COMPLY WITH VEHICLE WEIGHT AND DIMENSION LIMITS

Special precautions are required when vehicles exceed legal weights and dimensions; for example:

- Farm equipment exceeding the legal dimensions (2.6 m wide, 4.15 m high and 12.5 m in length) may be driven or towed without a permit on provincial highways during daylight hours only.
- Permits are required for certain designated highways if the equipment protrudes over the centre line of the highway.
- Where farm equipment, round bales or other material are loaded on a trailer or semi-trailer and the legal dimensions are exceeded, permits are required and certain conditions apply.



- For further information and permits, contact the Central Permit Office: Toll-free 1-800-667-7575.
- For travel on municipal grid roads, contact the Rural Municipality office for information on load requirements.

Defensive Driving Tips for Motorists

1. Be alert.

Always watch for farm vehicles on rural roads, especially at seeding and harvest. Recognize the Slow Moving Vehicle sign - a fluorescent orange triangle with red borders. Under normal conditions, it can be seen at a distance of 150 metres (500 feet).

2. Keep your distance.

Stay a safe distance - at least 15 metres or five car lengths - behind farm vehicles. Most farm equipment is not designed to travel faster than 40 kph (25 mph). Even when towed behind a truck, equipment moves slowly as utility tires are rated for travel at low speed (40 kph or 25 mph).

3. Slow down immediately.

As soon as you see a slow-moving vehicle, start to brake the way you would when approaching a stoplight.

4. Don't assume a farm vehicle is pulling right to let you pass.

Check the operator's hand signals. Where could it turn? Check the left side of the road for gates, driveways or any place a farm vehicle might turn. Is there a turn sig-

nal? On a tractor, a flashing light that suddenly stops is a turn signal. Slow down when you see this.

5. Be patient.

Don't assume the farmer can move aside to let you pass. The shoulder may be too soft, wet or steep for him to pull to the right.

6. Make sure you're clear.

When passing, make sure you can see the farm vehicle in your rear view mirror before you change lanes.

7. Don't drive if you are impaired.

Even a single drink can impair your driving skills. Recent studies from the US and the Netherlands show light drinkers tend to make mistakes when driving and may not realize it quickly enough to avoid a crash. Check your estimated blood alcohol based on your sex, weight and number and type of drinks over time. Visit the site www.intox.com/sitemap.asp and click on "Drink Wheel." Be aware, though, that this is an approximation and that other factors can influence your actual level.

8. Enjoy the drive.

Following a farm vehicle usually takes just a few minutes. Don't let frustration cause you to make a decision that may cause you and others harm.

Driving is the most dangerous activity most of us ever attempt.

Although every care has been taken in providing this information, the authors accept no responsibility or liability for any consequences arising from the use of such information.

Reference list available upon request.

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