

## **2 Iowans killed when run over by tractors that were started while standing beside the tractor**

In a 5-week period during Fall 2012, 2 Iowans died as a result of starting tractors from a standing position on the ground beside the tractor when the tractor was in gear. In both cases, operators were run over by the tractor and died of the resulting injuries.

- In western Iowa, a 63-year-old farmer started his Farmall 460 while standing inside the right rear wheel, when the tractor was in reverse gear and was backed over.
- In eastern Iowa, A 47-year-old farm employee started a Case IH 485 utility tractor from the left hand side of the tractor which was in forward gear, and was run over when he released the clutch.

The National Institute for Occupational Safety and Health (NIOSH) notes that more than 60 fatalities occur each year from tractor runovers; state-based NIOSH FACE programs have investigated numerous runover incident deaths involving unsafe tractor-starting practices (*Learn more about it...*). Four of these deaths have occurred in Iowa since 2007.

A common scenario involves an operator standing beside a tractor that has not been put in neutral or park, depressing the clutch with one hand, and starting the ignition with the other. When the clutch is released, the operator is in the path of the moving front or rear wheels, and has no time to get clear of the moving implement.

Older model tractors are associated with this scenario because they lack design features such as safety interlock starter switches requiring the tractor to be in neutral or park, and the operator to be in the tractor seat to start it.

Newer model tractors with safety interlock features result in runover incidents when operators disable or wire around the safety interlock switches in an attempt to avoid the 'inconvenience' of starting from the operator's seat.

'Bypass starting' is starting the tractor by shorting across the starter terminals while standing on the ground between the front and rear wheels; FACE investigations describe scenarios of operators using this method when ignition switches failed, or in lieu of repairing the starter system.



**Depiction of an operator's hazardous position when starting tractor from the ground. Arrow shows movement of tractor left in forward gear when started.**

*Photo credit: Michigan FACE, Report 04MI108*

## **To prevent tractor runovers...**

- **Start tractors only when you are sitting in the operator's seat.**
  - ✓ Check the engine throttle position.
  - ✓ Shift transmission into park or neutral.
  - ✓ Make sure the power take off is disengaged.
  - ✓ Disengage the clutch.
  - ✓ Set the brakes.
- **Do not bypass or disengage factory-installed safety devices.**
- **Check the function of safety start switches and repair any problems as soon as detected:**
  - ✓ Depress the clutch and brake pedals and attempt to start the engine with the gears disengaged and the PTO in neutral. **The starter should engage.**
  - ✓ Depress the clutch and brake pedals and attempt to start the engine with the gears engaged and the PTO in neutral. **The starter should *not* engage.**
  - ✓ Depress the clutch and brake pedals and attempt to start the engine with the gears in neutral and the PTO engaged. **The starter should *not* engage.**
  - ✓ For tractors with clutch-mounted start switches, depress only the brake pedal and attempt to start the engine with the transmission and PTO in neutral. **The starter should *not* engage.**
- **Follow operator manual procedures for safe starting using battery chargers or jumper cables if the tractor battery is dead.**

## **Learn more about it...**

- Iowa FACE 3IA35: Tractor operator run over and killed while making repairs. <http://www.public-health.uiowa.edu/face/Reports/PDF-Reports/Tractor%20Runover.pdf>
- Iowa FACE 98IA073: Farmer is run over by a tractor while starting it when not in the operator's seat. <http://www.cdc.gov/niosh/face/stateface/ia/98ia073.html>
- Kentucky FACE 97KY082: Farmer crushed when run over by tractor and disc. <http://www.kiprc.uky.edu/projects/KOSHS/face/data/Reports/97KY08201.htm>
- Kentucky FACE KY9501101: Farmer killed when run over by tractor in barn. <http://www.kiprc.uky.edu/projects/KOSHS/face/data/Reports/95KY011.HTM>
- Massachusetts FACE 01-MA-020-01: Country club maintenance employee run over by a tractor while training a new employee. <http://www.cdc.gov/niosh/face/stateface/ma/01ma020.html>
- Michigan FACE 04MI108: Farmer died when run over by rear wheel when he started the tractor while standing on the ground. <http://www.oem.msu.edu/MiFace/04MI108v1.pdf>
- Michigan FACE 02MI140: Farm hand run over by tractor while starting the tractor while standing on the ground. <http://www.oem.msu.edu/MiFace/02MI140v1.pdf>
- Minnesota FACE 00MN008. Farmer dies after being run over by a tractor. <http://www.cdc.gov/niosh/face/stateface/mn/00mn008.html>
- Nebraska FACE 98NE001. Shop worker run over by tractor. <http://www.cdc.gov/niosh/face/stateface/ne/98ne001.html>
- New Jersey FACE 94-NJ-141-01: Farm mechanic run over while servicing a tractor. <http://www.nj.gov/health/surv/documents/94nj141.pdf>
- Oklahoma FACE 05-OK-038-01. A farmer was killed while bypass-starting his tractor. <http://www.cdc.gov/niosh/face/stateface/ok/05ok038.html>
- Oklahoma FACE 05-OK-019-01. A farmer while was killed while bypass-starting his tractor. <http://www.cdc.gov/niosh/face/stateface/ok/05ok019.html>
- Oklahoma FACE 01-OK-14-01. Worker was run over by his tractor as he tried to jump-start it in Oklahoma. <http://www.cdc.gov/niosh/face/stateface/ok/01ok014.html>
- Wisconsin FACE 98WI065: Farmer dies after he is run over by tractor in machine shed. <http://www.cdc.gov/niosh/face/stateface/wi/98wi065.html>
- Wisconsin FACE 95WI073: Farmer dies after he is run over by tractor in farmyard in Wisconsin. <http://www.cdc.gov/niosh/face/stateface/wi/95wi073.html>