

Episode Title: Safe Tractor Operation: ROPS

Topic: Tractor Safety

Episode Summary: Half of all deaths from farming per year are from tractor rollovers. About half of all U.S. tractors are not fitted with Rollover Protective Structures or ROPS although ROPS have been proven to be effective at saving lives. This episode features Brad Kruse, a longtime fire service professional with firsthand experience responding to tractor emergencies, and Diane Rohlman, Professor and Endowed Chair in Rural Safety and Health from the University of Iowa. Brad explains the realities of emergency response during rollovers and emphasizes simple habits like using three points of contact when mounting or dismounting equipment and slowing down to work safely. Extension educator Emily Krekelberg from the University of Minnesota joins the conversation to discuss retrofitting older tractors with ROPS, how rebate programs can help offset costs, and how center of gravity changes when hauling loads or using attachments.

Current availability of program funding varies from state to state. Contact your local equipment dealer for more information on additional funding options in your area.

Experts: Emily Krekelberg, Diane Rohlman, Brad Kruse

Episode Quote:

"I think sometimes people think, 'I can jump out and I can escape it,' but I think in reality it's so quick that there really isn't time to react fast enough once you realize what's going on— it's too late."

— Diane Rohlman, GPCAH

Transcript

00:10 E Presnall

Welcome to the *FarmSafe* Podcast brought to you by the Great Plains Center for Agricultural Health. In the blink of an eye, an injury can change your life and your farm forever. During each episode, we share first-hand stories and real-life tips for making safer and healthier decisions while on the farm.

00:33 E Presnall

The National Agricultural Tractor Safety Initiative reports that tractors cause about 50% of all farm worker deaths each year, and a 2012 study by the U.S. Department of Labor found that tractor rollovers are the most common type of tractor accident.

The U.S. Department of Labor established the Rollover Protective Structure (ROPS) Standard to address the high fatality rate associated with tractor accidents, specifically tractor overturns. In the event of a tractor overturn, a ROPS has been shown to provide a protective zone around the tractor operator. When used with a seatbelt, ROPS are 99% effective in preventing deaths and serious injuries; while they are still effective without seatbelts, the effectiveness rate is reduced.

01:21 E Presnall

Let's listen in to a conversation between Diane Rohlman, from the Great Plains Center, and Brad Kruse, who has been in the fire service for over 26 years, providing response to tractor-related emergencies.

01:35 B Kruse

Tractors, as far as a rollover—it's a lot of the small tractors, the older tractors, mowing ditches, that kind of scenario—not wearing a seatbelt. You know, they might have the ROPS—the rollover protection—but unless you have that seat belt on, it doesn't hold you in that tractor, or combine, or what have you. So it's things like that we all know, we just have to bring it to the forefront instead of the back of the head.

02:01 D Rohlman

Yeah. I think you make a good point about the ROPS and the seatbelt, when we look at a lot of injuries and fatalities associated with tractor rollovers, so those are really important points. In those situations, you mentioned things like mowing the ditch or the smaller tractors, but who's usually driving those equipment? Do you know? Could it be anyone, or?

02:24 B Kruse

It could be anyone. With farming, it's a family business. So, it's, and I'm not saying this is bad, when I worked on a farm, I learned how to drive a tractor before I learned how to drive a car. So, when we put somebody on the roadway they have to a permit when they're 14 and then they have to have that permit for two years and then they get their license and then now it's graduated and all that different laws. But there's no law that says we can't set an 8-year-old on a tractor— so it's one of these things that we have to look at. It might be a younger person that doesn't have that experience— it might be an older person that is helping out the son or daughter that bought the farm and they don't move as fast or something happens and they can't react as quickly. I used to work for the city of Asbury in public works and I was mowing a ditch one day with a utility tractor, John Deere, and I came over a little farm lane and when I came on the other side, the ground was [out?] that I didn't know about and the tractor started sliding down the ditch and you're just along for the ride unfortunately. With that incident, the tractor did not roll but I wasn't able to get off and I wasn't able to get the tractor back out because my one wheel was actually up in the air, luckily some good citizens in a semi with a log chain was able to hook on to me and pull me out. It's little things—you think it's never gonna happen to me—the ground gives way, the tire pops, whatever, it's just a scary situation when you get into it. So, you could have a variety of ages that end up in that situation.

04:06 D Rohlman

I have to ask Brad, were you wearing your seatbelt and was the ROPS in place?

04:10 B Kruse

Yes, both. Yup, I was wearing a seat belt and the ROPs was in place, so... You never want to be in that situation— I'll tell you from personal experience.

04:20 D Rohlman

I think sometimes people think "I can jump out and I can escape it," but I think in reality it's so quick that there really isn't time to react fast enough by the time you realize what's going on— it's too late.

04:32 B Kruse

Well that and depending on what kind of tractor you have—there's so many things around the way you're sitting—if you're in an older tractor and the gear shifter is between your legs, every time you jump you wrap a shoelace around or the cuff of your pants around— there's just too many variables that unfortunately—you make it halfway out and then you catch a handle and it's gonna pull you back in but now you have no protection whatsoever.

05:00 D Rohlman

So, if you come to a scene where there's a tractor rollover what are some of things you think about when you approach the scene and as you engage in the rescue?

05:10 B Kruse

Back to that scene safety— what do we have going on? What were they hauling? Is it just a hay wagon or did they roll the tractor with an anhydrous tank on the back—so depending on what load they have. The other thing is antifreeze, fuel, battery acid, all that that we have to look at, where the tractor's at— if it's rolled in the ditch and it's halfway in the ditch, how do we stabilize it in order to get that person out from underneath it. With accidents, or with vehicles, tractors, cars— the way they're making things there's a lot of tension there—you can't just—if you have a rolled over tractor and a wagon—it's a hay wagon that's flipped over behind it, you can't just unhook that wagon just because of the tension that's on there—it could recoil and cause more injury.

With the tractors, tractors, vehicles what have you, we've proven in time that seatbelts save lives. When they first came out, everybody hated them, they didn't want to use them, when the state laws were made you know people bucked it, but they do save lives. They keep you in the container that is made to keep you safe. Back injuries— unfortunately we have a lot in the EMS world, the fire world,

the agricultural world, backs and knees seem to be a major concerns. So if you're getting off that tractor—three points of contact—don't just jump off the tractor because especially this time of year, you jump down, you fall on the ice, you break a hip, you injure a knee, injure a back, that kind of scenario, a lot of times it's easier said than done to slow down but sometimes you have to take time to make time and what I mean by that is slowing down, getting done what you need to get done safely— because we've all done it, you get in a hurry and things go wrong and then unfortunately when one thing goes wrong it just progresses and things get worse.

07:08 E Presnall

Now we will hear from Emily Krekelberg. Emily works as an extension educator in farm safety and health for the University of Minnesota.

07:17 E Presnall

And so going back to the rollover protective structures, I know that there's a lot of options out there. If any farmers are worried about cost, I know that there's rebate programs and I don't know a lot about retrofit fitting ROPS. Because in my mind, I think if the tractor is really old, would they have ROPS that would fit that tractor?

07:42 E Krekelberg

Yeah. So I know enough to be dangerous when it comes to ROPS and retrofitting. It is my understanding that there are different options. When it comes to two sizes and styles. And yes, I will reiterate, there are a lot of ROPS rebate programs and if you're curious what's available to you, you can, you know, just do a Google search for, you know, ROPS rebate type in your state, so reps would be ROPS. So that's a rollover protective structure. And So what a ROPS is if you get one installed is it is a large bar that kind of curves in in a U shape well not quite U shape it's kind of squared off that goes over the person so that if the tractor were to roll it would be stopped from rolling all the way over, right? So, think imagining tractor seat and steering wheel on the ground. The ROPS prevents it from getting that far. Another thing that wraps has so it's the bar and it's also a seat belt. So especially for these cab-less tractors. That's really important. You know, there's nothing holding you to the piece of equipment and keeping you contained that way. So a wraps will be the roll bar. It will also be a seat belt, typically a belt that can be worn so that the ROPS will stop the tractor from rolling and hopefully keep it propped up so that you can then unbuckle yourself and get out. So yeah, I, I have never heard of a situation where they were not able to get a ROPS on a certain type of tractor.

So, I think the retrofitting process is relatively easy. I believe there are different size options in that. I'm not aware of any instances where they weren't able to get something installed on an older tractor, so you know, again, if you're interested, you know you can contact your seats extension, you can contact your state's Department of Agriculture. Or again, I would just do a Google search for ROPS rebate and then whatever state you live in so example. I would do ROPS rebate Minnesota, not every state has a state-based program, but I would start by searching by your state first.

09:51 E Presnall

And I don't know if you can talk much about this, but anytime you have an attachment on there or you're carrying a load, you risk shifting your center of gravity. What would you do to make sure that won't be an issue and result in any sort of rollover? How do you counteract potentially having a shift in your center of gravity?

10:17 E Krekelberg

Yeah. So. I'll do my best on that question. This is something we talked about in our Youth Tractor safety program. So, where youth can get certified to operate tractors and they do have to take a driving test with the tractor hooked up to an implement. We really talked to them, yeah, about thinking about if you have equipment, you're probably kind of have two centers of gravity, right? The tractor is going to have its individual center of gravity. The equipment is going to have its individual center of gravity, especially if it's with single axle or double axle in the middle, it doesn't balance on its own when it's not hooked up. Thinking about those two things and using them together right and remembering that wherever one goes, the other is also going to go. The big thing we think about with keeping balance and avoiding rollovers is turns give yourself a wide enough berth. You want to take a really wide turn. My little trick is if your tractor does have a loader bucket on the front, just looking at that front corner of that loader bucket and using that to kind of idealize how you want to make this turn. Because if that bucket is getting around cleanly, the rest of you should as well. If you don't have that,

maybe it's just checking on the front tire, using it in that same way, but I find, yeah, the biggest thing is when you have something attached to you, but you still have a rotate point in the middle.

You need to make your turns wide enough, because that whatever you're hauling or attached to is coming behind you and you just have to remember tires are lazy, so they're gonna take the clearest and easiest path forward. So, if you make a wide enough turn, it's going to feel too wide for you up in the front, but in the back it's going to be a perfect fit.

12:06 E Presnall

It has been proven that using ROPS reduces deaths from tractor overturns. However, about half of the tractors in the US still do not have ROPS, therefore, it is also important to recognize the risk factors for overturns so you can be prepared and exercise caution. These risk factors include using a front-end loader, narrow front or tricycle design, and using the tractor for any activity on sloping ground.

Unfortunately, during the harvest season, many farmers use older equipment that does not have the recommended safety features, such as a ROPS. For most functioning older tractors, ROPS are available at a fairly reasonable cost. But fortunately for our Iowa farmers, there is a resource available to assist in covering the cost of installing a ROPS.

The National ROPS Rebate Program, or NRRP, is a voluntary program that provides rebates for approximately 70% of the cost of purchasing and installing a ROPS kit. The rebate covers the ROPS kit—which includes a rollbar and seatbelt—as well as shipping and professional installation. While the rebate scheme varies from state to state, Iowa, Minnesota, New Hampshire, New York, Pennsylvania, Vermont, and Wisconsin offer a 70% rebate with a \$500 out-of-pocket cap for the farmer. If the out-of-pocket amount is greater than \$500, then the rebate amount is increased.

13:28 E Presnall

At the time of our making of this episode, Iowa has a long waiting list of farmers signed up for the ROPS Rebate Program. Reach out to I-CASH for more information by emailing them at cph-icash@uiowa.edu.

If you are interested in applying for this program, you can go to www.ropsr4u.org/apply.php.

13:59 E Presnall

For this week's episode on Safe Tractor Operation, my one ask for our listeners during this harvest season is to securely fasten your seat belt if your tractor has a rollover protective structure. If an upset occurs, the seat belt is intended to hold you within the safety zone of the ROPS frame. However, if your tractor is not equipped with a protective structure, do not wear your seatbelt. Wearing a seatbelt without a ROPS would eliminate any chance for the operator to be thrown clear in the event of an overturn. Make sure to stay tuned for more episodes on tractor safety.

14:36 E Presnall

Listen in on the *FarmSafe* Podcast to join in on the conversation about keeping safe on the farm.

We want to hear from you. Share your stories about health and safety issues on the farm, about injuries that made you change the way you work, or about the ways you keep yourself and others safe on your farm. Also let us know if there's questions you have or topics that you want to hear about on the air. You can visit our website, gpcah.org, or email us.

Original music for the *FarmSafe* podcast was written and performed by Ben Schmidt. This work was funded by the Centers for Disease Control and Prevention as part of the National Institute for Occupational Safety and Health's Great Plains Center for Agricultural Health.

Episode Resources

- [National ROPS Rebate Program Website](#)
- [Show Me Farm Safety Website](#)
- [Link to ROPS Rebate Application](#)

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