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PRESS RELEASE

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FOR IMMEDIATE RELEASE

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Rollover Protective Structure (ROPS)
Your life is worth protecting.

Photo by Canva

It's still the deadliest type of injury incident on the farm: tractor rollovers. The best protection for operators in a rollover is a rollover protection system (ROPS).

The PennState Extension "Rollover Protection for Farm Tractor Operators" document notes that recent figures from the National Institute of Occupational Safety and Health (NIOSH) suggest that approximately 20 out of every 100,000 American farmers die on the job every year.

"NIOSH estimates that there are approximately 4.8 million tractors in use on U.S. farms," the document states. "One-half of them are without rollover protection for the operator. 1 in 7 farmers involved in tractor overturns are permanently disabled and 7 out of 10 farms will go out of business within five years of a tractor overturn fatality."

ROPS are roll bars or roll cages designed for wheel- and track-type agricultural tractors. They are designed to create a protective zone around the operator when a rollover occurs. In conjunction with a fastened seatbelt, ROPS will prevent the operator from being thrown from the protective zone and crushed from an overturning tractor or from equipment mounted on or hitched to the tractor.

Among the key reasons for using a ROPS is that tractor overturns continue to be the leading cause of death on the farm. Additional reasons include:

- The use of ROPS and a seat belt is estimated to be 99% effective in preventing death or serious injury in the event of a tractor rollover.

- The Occupational Safety and Health Administration (OSHA) requires an approved ROPS for all agricultural tractors over 20 horsepower that were manufactured after October 25, 1976, and which are operated by hired employees.
- A ROPS normally limits the degree of rollover, thereby reducing damage to the tractor.
- A ROPS with enclosed cab also prevents tractor operators from being knocked out of their tractor seat from rough ground and low hanging tree limbs, provides protection from the sun and other weather hazards, and reduces risk for the unsafe practice of extra riders on tractors.
- Experienced operators are involved in 90% of all tractor rollovers.

ROPS became optional equipment on most tractor models between 1967 and 1985, meaning new tractor buyers had to add the ROPS cost onto the tractor's base price. Few cost-conscious farmers added the ROPS as an option. Prior to 1967, even fewer tractors were equipped with ROPS. Today, many tractors manufactured prior to 1967 are still in use and without the protection of a ROPS. It was 1985 when most American tractor manufacturers voluntarily began adding ROPS on all farm tractors over 20 horsepower that were sold in the United States.

Because tractors are often in use for 30 to 40 years after they're manufactured, the percentage of tractors in America being used without a ROPS is high. In addition, some farmers claim the ROPS on their tractor hinders their view as they use it, so they have removed the ROPS. Still other farmers find their tractor doesn't fit a small space unless the ROPS is removed.

ROPS are engineered to mount on specific tractor models are designed to operate with the tractor's mounting brackets and frame. This creates a structure that is flexible, yet rigid enough to withstand loads produced during a tractor overturn. These must pass engineered, crush, static, and dynamic tests set by the Society of Automotive Engineers (SAE) or OSHA to assure adequate performance before they're produced commercially.

Factory installed ROPS are certified to meet maximum rollover impact and dynamic forces in order to absorb impact energy without excessive deformation to create an operator zone of protection. They may be made of any material that meets temperature requirements and passes the standard test. Typically, installed ROPS are made of steel that will not fracture in cold temperatures and are precision welded. A factory installed ROPS will have a certification label attached to the roll bar starting that the roll bar meets SAE/ASAE/OSHA standards.

Modification of a factory installed ROPS (cutting, grinding, frilling, or welding) is unauthorized and unwise. It can impair the ROPS ability to carry out its function in the event of an overturn.

Three types of ROPS are available for agricultural tractors:

- Two-post ROPS
- Four-post ROPS
- ROPS with an enclosed cab

Two-post ROPS are the most common and are available in either rigid or foldable models. The rigid ROPS has upright posts that are vertical or slightly tilted and mount to the rear axle. The foldable ROPS was designed with hinges to allow the ROPS to fold to fit low clearance areas.

A four-post ROPS is mounted onto both axles and onto the frame in front of the operator. ROPS with an enclosed cab is typically installed by the manufacturer and the structure acts as a ROPS.

To maintain a ROPS, inspect and service the ROPS and seat belt periodically for extreme rust, cracks, or other signs of wear. Any significant wear could cause a ROPS failure during a rollover. If signs of wear are observed, the manufacturer or dealer should be consulted to determine a suitable course of action.

Never drill holes into a ROPS or weld a piece of steel onto the frame. If lightning or other light attachments are needed, they should be clamped onto the ROPS. A ROPS should not be used as a point of attachment for a chain, hook, or cable. Pulling with the ROPS could damage it and result in a rear overturn. If a tractor with a ROPS does overturn, the ROPS should be replaced because it is designed to bend to absorb the overturn energy generated when the tractor contacts the ground. ROPS are only designed and certified to withstand one overturn.

Retrofit ROPS are available. A listing of ROPS for farm tractors manufactured since 1967 is available in "A Guide to Agricultural Tractor Rollover Protection" at https://rops.ca.uky.edu/. For information about ROPS for some older tractors, visit the National ROPS Rebate Program (https://www.ropsr4u.com/) website.

A homemade ROPS is not recommended because the materials and tools necessary to design one that withstands an overturn are not readily available to the public. A ROPS used without a seatbelt will not provide full protection to the operator.

Be aware that a ROPS will not prevent an overturn, but can prevent injury to the operator once the overturn occurs. The ROPS and properly worn seatbelt provides the most protection in an overturn incident.

Find more details and a wealth of ROPS resources at https://www.ropsr4u.org/rollover-facts.php.

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