

2022

PRESS RELEASE

For More Information:

ELLEN G. DUYSEN

Central States Center for Agricultural Safety and Health

University of Nebraska Medical Center

College of Public Health, Room 3035

984388 Nebraska Medical Center

Omaha, NE 68198-4388

402.552.3394

FOR IMMEDIATE RELEASE

*By UNMC, Central States Center for Agricultural
Safety and Health, Omaha, NE*

Photo Credit: © Can Stock Photo / evgovorov

TOWING SAFETY: WHAT ARE THE DYNAMICS?

Know how to evaluate the risks of any tow job.

Workers in an agricultural setting will likely find it necessary to tow equipment at some point. Many things can go wrong without a proper understanding of the dynamics involved in towing equipment.

Purdue Extension's "There's More to Equipment Extraction than Hooking and Pulling" notes that "every vehicle extraction brings its unique set of challenges and concerns." Don't count on having the same results every time you tow equipment. Past success may have been "lucky," even though it was a risky process. Understanding the ratings of towing devices, what factors to consider before attempting to extract equipment, and knowing when to call a professional wrecker service can help avoid tragic consequences resulting from a towing event.

Before attempting to extract equipment, remember that a broken piece of metal can quickly become a missile with the potential for serious injury. It's not uncommon for a sense of urgency to tempt operators to find the fastest, easiest way to extract equipment. Acting without planning may lead to unnecessary risk-taking actions. Using a cut towing strap, undersized clevis or chain, or a weak attachment point has the potential for injury and may result in tragedy.

Operators must be "consciously aware of what's happening and anticipating the unexpected to extract equipment safely. Extracting stuck equipment is never routine because every situation is different. It only takes a split second to turn the most benign activity into one that causes serious injury or even death."

When equipment is mired in the ground, it takes more pulling strength to move it than to pull the same object over the road. Stuck equipment is "dead weight," requiring the operator to overcome additional forces. Towing puts "incredible stress on the straps, cables, chains, and other devices. From the time we start pulling until the time the stuck vehicle is dragged forward – that stress can be up to many times the weight of the stuck object."

The strength and integrity of towing devices are "put to the ultimate test" when the force of the vehicle pulling in one direction is pitted against the force of the stuck equipment. If the pulling force is greater than the force holding the stuck vehicle, the vehicle will be pulled toward the towing truck or tractor.

Suppose the force exerted on the chains, straps, clevis, etc., is greater than the rated capacity of the connector. The towing device can tear, snap, or break before the equipment is freed. When tearing or breaking occurs, debris may become airborne with tremendous speed and force.

Don't take the risk if the proper equipment for a successful tow isn't available. Foregoing good judgment in any situation isn't worth the potential for a terrible outcome. Always take time to analyze the situation before attempting to complete a tow.

Consider using a professional towing service in these circumstances:

- The towing vehicle's engine stalls out in the lowest gear when attempting a tow.
- The towing vehicle's tires do nothing but spin and smoke.
- Attachments – chains, straps, etc., break.
- Multiple chains, ropes, etc., will be required to complete the tow.
- Multiple tow vehicles will be required to attempt the pull.
- The circumstances are unusual, and operators are unsure how to proceed with the tow.
- You will cause additional damage to the tow vehicle or stuck equipment by attempting the tow.
- You're uncertain of the rated capacities for the towing straps, clevises, etc.
- The towing equipment has not been inspected.
- The towing vehicle will need a "running start" for a successful tow.
- Tempers are flaring – which quickly leads to poor judgment.
- Don't ignore "gut instinct."

If the equipment that requires towing is loaded with hazardous material (pesticide, liquid fertilizer, fuel, etc.), consider the added risk factors for potential operator injury or environmental pollution. Consider where the spilled material might flow or what other hazards a spill could pose.

If hazardous material is towed, take these added safety steps:

- Make sure the tank holding material is secured.
- Account for any materials on the equipment.
- Inspect tie-downs to ensure they're still intact.
- Consider unloading materials before attempting a tow, which may be safer and make the tow load lighter.
- Inspect hoses and fittings to ensure they are intact and not damaged.
- Make sure towing won't rip off hoses.

- Do everything possible to ensure that hazardous materials aren't released into the environment.
- Wear all appropriate personal protective equipment (PPE) if a spill occurs.

For all towing situations, determine how badly the equipment/vehicle is stuck. If you proceed, will further damage be caused to the equipment or tow vehicle? Are the axles dragging? Is the vehicle bellied out or resting on the frame or rear-end housing?

Determine if the extraction will require a general pull or more effort. Know if the equipment is loaded or empty and where the equipment is located – i.e., sand, clay, snow. Can you reach the stuck vehicle without getting any other equipment stuck? What's the condition of the ground under the pulling vehicle? Do you have all the right equipment to complete the pull – straps, clevises, chains, etc.?

Check your towing equipment to ensure it's rated for the job and ensure all extraction equipment is in good condition and has no integrity issues.

Any drivers and bystanders must be protected from potentially flying debris. Consider whether or not the load on the stuck equipment will shift forward or backward during the tow and how that could affect the towing operation.

Is the stuck equipment leaning to one side? If a truck and trailer are involved, will unhitching the trailer cause the towing vehicle to roll over?

Look up to determine if power lines will be an issue during the tow.

If you work with a team or professional towing service, provide them with all these essential details before attempting the tow. Consider a backup plan if the tow fails. Have information for spill recovery on hand and all appropriate emergency phone numbers.

You can find additional details for towing safety at: <https://ppp.purdue.edu/extracting-stuck-equipment-safely/>.

Funding for this educational article comes from the Central States Center for Agricultural Safety and Health and the University of Nebraska Medical Center.