Operating Portable Augers

WHAT’S AT STAKE?

GRAIN AUGER SAFETY AND PURPOSE

A grain auger is a tube containing a solid shaft in the center with flighting on it. Flighting is a spiral of flat steel that is welded onto the center shaft. As the center shaft turns in a clockwise direction, the flighting pulls the grain in and pushes it up the shaft.

Augers of various sizes, lengths and rotational speeds are used with a variety of farm implements. Several augers may be used to move harvested, threshed grain from the grain pans of the combine up and into the grain-holding tank. When the tank is full, an unloading auger with a spout may be used to move the grain from the tank into a grain cart for transport to a truck. The grain cart also has an unloading auger for unloading grain from the cart into the truck or, in some cases, the grain may be directly unloaded from the combine into a truck.

An auger may be used to move seed grain into a grain drill, feed into a feed trough and many other applications on the farm. When the auger is placed on a frame that allows the tube to be elevated at an angle and the base end to remain on or close to the ground and wheels are added to make the whole apparatus mobile, it becomes a portable farm grain auger. Augers also move grain from trucks and grain carts into grain storage bins or move grain out of the grain bin.

WHAT’S THE DANGER?

MOST DANGEROUS MACHINES

On a per-hour-of-use basis, augers are one of the most dangerous machines farms use.

An auger in good condition is an essential tool when it comes time to move grain and feed around the farm. Per hour of use augers are one of the most hazardous machines on the farm, especially if they haven’t been properly maintained.

Although Canadian Agricultural Injury Reporting statistics have identified runovers as the top cause of agriculture-related fatalities, the number of reported entanglements remain on that list and continue to be an area of concern.

Auger Accidents

Augers are among the most dangerous machines on the farmstead. Accidents resulting in injury can occur if augers are not used properly. According to a U.S. study by Schwab et al. (2000), an average of six to eight injuries related to augers occurred in Iowa each month. The Canadian Agricultural Injury Surveillance Program reported in 2003 that auger injuries rank second after tractor injuries. Between 1990 and 2000, 602 cases of auger injury accidents (more than one case per week) with 24 deaths were reported. Entanglement in the auger was cited as a major cause in almost 80 percent of the injuries requiring hospital treatment. Many accidents occurred from contact with the auger flight, with the most common injuries to fingers, feet, arms and hands.

Causes of Auger Accidents

The majority of auger accidents are operator-caused. Auger-related injuries primarily result from one or more of the following types of incidents:

- Contact with or entanglement in the exposed screw at the intake.
- Entanglement in a drive belt.
- Being struck by an uncontrolled spinning crank used to raise or lower the auger.
- Entanglement in a PTO drive shaft.
- Electrocution while moving a raised grain auger around the farmstead and contact with an overhead electrical wire.
- Maintenance neglected or overlooked.

- Carelessness in auger handling.
- Operator’s unfamiliarity with auger safety and operation.
- Inexperienced youth labor.

Some auger-related accidents cause lacerations, fractures, amputations, electrocutions or even death. Fatal injuries result in large part from two types of accidents – electrocution and entanglement.

HOW TO PROTECT YOURSELF

TRAINING ON SAFE OPERATING PROCEDURES TO PREVENT INJURIES

Training on safe operating procedures is a must.

- New and returning workers require orientation and training on the safe operations of augers.
- If an auger hasn’t been used in a few months, take the time to review how to safely use the machine before starting it up.
- A new auger or a new-to-you auger also requires some pre-operational learning.
- When purchasing an auger, ask for training.
- It’s better for both efficiency and safety to understand the intricacies of the machine.

MINIMIZE THE RISK OF AUGER ACCIDENTS

The Centers for Disease Control and Prevention says the following about grain augers:

1. Barriers (e.g., fences) should be used to prevent persons not involved in the operation of an auger from entering the area near the auger.
2. Children under 18 should not operate augers and should not enter the area near an auger.
3. Before starting an auger, the operator should ensure that all protective shields, as supplied by the manufacturer, are in place and in good condition. The federal Occupational

Safety & Health Association standard for safety of farm equipment requires placement of guards on some augers.

4. Before service or repair, power should be shut off and the auger power source “locked-out” and “tagged.” (Locking out prevents power from being restored while maintenance is in progress, and tagging the switch indicates that power is disabled.)
5. To prevent entanglement, wearing loose clothing or jewelry or who have long, untied hair should not operate augers.
6. Workers should not step or jump on or over an auger while it is in operation.
7. Grain augers always should be lowered to a horizontal position before being moved from one location to another. Workers always should observe the presence and location of power lines before raising an auger into position.
8. Whenever possible, operators should ensure good footing while working around augers. Portable augers should be placed on dry, level ground or a gravel pad. Spilled grain should be removed between loads after the equipment has been turned off.
9. Operators should never use their hands or feet to redirect the flow of grain or other materials into the auger.
10. All farm and auger operators should be educated about safe operating procedures and hazards associated with augers.
11. Augers should be clearly labeled as posing a hazard for entanglement and subsequent serious injury.
12. **NIOSH RECOMMENDATIONS**

NIOSH recommends that all farm owners/managers, farm/agricultural workers, and farm equipment manufacturers be made familiar with, and reinforce the following steps:

Hazard Awareness

A survey of the farm should be conducted to identify hazards posed by the locations of overhead electrical lines. When all such hazards are identified and documented for future reference, workers should be informed of their location and instructed in the steps necessary to safely move grain augers.

Safe Movement of Grain Augers and Other Equipment

Grain augers pose a life threatening hazard when moved in an elevated position if they contact overhead electrical lines or if they tip over. Therefore, it is essential that grain augers be lowered to a horizontal position before being moved from one location to another. In addition, all other equipment to be moved should be evaluated in order to determine the most appropriate method that will ensure worker safety during its transport. Manufacturers of grain augers are urged to consider design modifications that will prevent grain augers from being moved while in an elevated position.

Safety Signs

It is recommended that users and manufacturers of grain augers affix safety signs onto the equipment that warn the user of the potential hazards of moving the auger in its upright position. A safety sign to draw attention to avoiding electrical hazards when moving grain augers is provided with this Alert. This sign should be placed on the grain auger in a conspicuous location so that it will alert workers of life-threatening hazards.

FOUR BREAD AND BUTTER SAFETY TIPS

1. **For farmers who do not use grain augers as frequently**, it can be easy to overlook repairs or general maintenance between uses. But by performing routine maintenance, and taking the time to become reacquainted with an auger ahead use can help prevent close calls or even an injury.
2. **Before starting up the auger**, make sure to check that all guards are secured in place. Have a look at all the safety decals and get replacements for anything which is no longer legible or is missing. Some grain auger distributors make these available, free of charge.
3. **Inspect the winch system** for wear and tear, ensuring that there is enough cable to wrap around the winch drum at least three times when the auger is down. Check that the cable anchor, fasteners, belts and any chains are all sufficiently tight.

4. **Lubricate the machine** as directed in the owner's manual and top up oil levels in the gearbox. Several equipment manufacturers offer copies of grain auger owner's manuals online, for farmers who never received a paper copy or have misplaced it since the previous season.

FINAL WORD

Portable grain augers are used on our farm as a fast and simple way to move grain. However, using the auger improperly or without the guards can lead to serious injury. Common injuries with augers include amputations, lacerations, broken bones and electrocutions. Taking a few precautions can help prevent these injuries.

Refueling Equipment Safety Talk

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

FIRE PREVENTION

Fire prevention is the goal when refueling.

Clean up fuel spills immediately, no matter how small, to reduce

the impact on safety and on the environment.

While it’s easy to let your refueling routine slip, it’s important to remain alert and aware of the dangers of refueling. It only takes one misstep to cause a tragedy. Always have an appropriate and fully functional fire extinguisher close by and within reach.

WHAT’S THE DANGER?

REFUELING MATTERS

- Improper fueling techniques can have deadly consequences. Vapors from these liquids can ignite with explosive force from no more than a spark.
- Fuel spills resulting from poor refueling procedures can cause needless damage to the environment.
- Inhalation of gasoline fumes from improper refueling can cause nausea, dizziness, headaches, and loss of coordination.
- Once ignited, fires from liquid fuels can be very difficult to extinguish, as they often spread quickly.
- In the construction industry, dangerous fuels such as oil and gasoline are materials handled every day. Understanding their hazards and taking precautions when handling, dispensing, and storing them saves lives.
- Take your time, and be careful not to spill the fuel because it could ignite if it contacts with something hot. Do not overfill or “top off” the tank. If the equipment is in the hot sun, the fuel will expand and may overflow. Leave enough space in the tank to compensate for expansion or tilting.

Refueling Tractors and Gas-Powered Equipment

Proper storage and transport of fuel are useless if there is a lapse in safety protocol when refueling. **Safety recommendations for this process include:**

- Avoid spilling fuel on skin. It can cause irritation.
- Avoid breathing in fumes as it can result in dizziness and headaches.

- Turn off the engine and allow it to cool before refueling.
- Dispense fuel slowly and avoid overfilling.
- Refuel small equipment in the open. Refueling in a small enclosure can result in fume inhalation.

FINAL DANGER TAKE AWAY

Static Electricity

It’s essential to ensure equipment is off and cooled before refueling. A spark from the ignition system or hot exhaust could ignite the fuel. If fuel spills on an engine, wipe away any excess and allow time for the fumes to dissipate. Always have your fueling station outside, in a well-ventilated area – never inside a building.

It’s important to be aware of any source that could cause a **spark or static electricity**. Grounding the machine with a ground wire or dropping mounted equipment reduces the risk of **static electricity**. Remain still while refueling. Walking around, entering and exiting the machinery could result in a **static** charge build-up. Electronic devices, including cellphones or MP3 players, can also cause **static electricity** and shouldn’t be used when refueling. Open flames are also dangerous – items like cigarettes and butane torches need to be kept away from designated refueling areas. Exposing fuel to sparks, **static electricity** and open flames could result in explosions and fire.

HOW TO PROTECT YOURSELF

FUEL STORAGE

There are several safe storage solutions for farmers. For example, aboveground fuel tanks are cost effective, easy to relocate, and are unaffected by minor flooding. Some additional fuel storage safety **recommendations** are:

- Keep fuel storage containers and facilities out of direct sunlight. Farmers can either use canopies or make use of natural shade. If a farmer cannot avoid sun exposure, he or

she can invest in a pressure-vacuum relief valve to minimize evaporation.
- Keep fuel storage areas clear of trash and weeds to reduce the risk of fire.

FLAMMABLE LIQUIDS

Gas, diesel fuel, and paint solvents are just some of the flammable liquids found on farms. Take the following **preventive steps** when handling these kinds of liquids to avoid fire or explosions.

- Store flammable liquids far away from uncontained fires or motors that spark.
- Be cautious with empty containers that previously held a flammable liquid. Lingering vapors can still combust. Keep these containers away from fires and sparks as well.
- Take pains to ensure all fuel containers have accurate labels and follow all directions for using the containers.

REFUELING REMINDERS

1. Never smoke during refueling operations. Do not refuel near an open flame. Keep a C02 (carbon dioxide), or an ABC Dry Chemical extinguisher handy.
2. If there’s a chance of a vehicle rolling while being refueled, chock the wheels. Before filling the fuel tank, shut off the engine.
3. If the fuel tank is located near the engine or other hot area, such as the manifold or muffler, let the engine cool before filling the tank.
4. When transferring fuel from a can, mobile tank or fuel truck, keep the spout or nozzle in contact with the fuel tank. As fuel is poured, it can generate static electricity. If a spark ignites the fuel vapors, a fire or explosion could result.
5. After refueling has been completed, be sure all fuel has been drained from the hose and that any spills are cleaned up immediately.

REFUELING PROTOCOL / PROCEDURES

1. When approaching equipment for refueling ensure both the Swamper and Operator see you and signal you to enter area.
2. Drive close to equipment to be fuelled.
3. Shut off fuel truck if not required to run pump.
4. Have Operator shut off equipment and set attachment to rest.
5. Insure proper grounding of fuel truck and equipment.
6. Turn on fuel pump and remove nozzle.
7. If helper is available climb onto equip and have some one hand you nozzle.
8. If no one around attach rope to nozzle climb onto equipment and pull nozzle up with rope.
9. Remove fuel cap, insert nozzle and squeeze trigger, wait till tank is full release trigger.
10. Either hand nozzle down or lower with rope.

- Store your fuel outside. It’s best to have fuel storage at least 40 feet from any building. Keep the area free of weeds or any other combustible material. Carry a first aid kit and an approved dry chemical fire extinguisher. Tractors should have least a five-pound extinguisher.
- Be sure of good ventilation before starting the tractor engine. Exhaust gases contain carbon monoxide, which is odorless, colorless and deadly.

DOs AND DONTs

DOs

- Ensure stationary storage fuel tanks are vented and kept clear of buildings, and if not buried, should be grounded.
- Carry gasoline in a closed container, which is adequately vented.
- Inspect the tanks daily for leaks and ensure that the static chain is attached.
- Keep the metal fill nozzle in contact with the lip of the tank to eliminate any static accumulation.
- Take care not to over fill any equipment tanks
- Use three point system when climbing on or off equipment

DONTs:

- Smoke while fuelling is in progress.
- Allow open fires, welding, etc. in the fuelling zones.
- Fuel equipment before it is shut off.
- Overfill any equipment fuel tanks.
- Climb on equipment until it has been shut off.
- Leave fuel pumping unattended

FINAL WORD

Refueling happens so frequently that it is easy to get complacent about it. However, it must be remembered that diesel and gasoline are designed to cause explosions—hopefully within an engine. Beyond the act of refueling, further caution needs to be given to fuel fumes and the possibility of spills.

Ensure fuels tanks are clearly marked as “gas” or “diesel” and that the person refueling knows what kind of fuel is needed. This sounds simple, however it is a very expensive mistake!

California SB 1159 and AB 685 – What You Need to Know

Heat illness is deadly. In fact, each year thousands of workers succumb to heat exposure. Now that it is starting to heat up, safety is essential for your outdoor workers! The good news is heat illnesses and related deaths are preventable.

Farm Safety Photo Tips for Media

WHAT'S AT STAKE?

The problem is that photos are not just for capturing milestones and memories today. For the full-time homesteader, photos are part of the business of farming. You need photos for blog posts, photos for your Etsy pages or online store front, and photos for articles or press releases in newspapers and magazines. If you write a homestead blog, your audience needs beautiful photos to encourage sharing on social media. Social Media, is driven by high quality photos and you'll get more shares if you can provide them. But you can already feel overwhelmed with the garden, food preservation, taking care of lambs or calves, and cooking from scratch, to spend hours learning to use your digital camera.

WHAT'S THE DANGER?

Harsh sunlight, animals that steal the shot, grungy backgrounds, the weather, and focal, distractions can make a photo shot fail.

To be sure, taking attractive outdoor photos on the farm is not for the faint of heart.

Harsh sunlight causes people to squint, and flattens out a photograph.

It changes the way colour appears in a picture.

HOW TO PROTECT YOURSELF

Taking pictures outside in the natural habitat can be challenging.

However, there are some steps to take to ensure one gets optimal results.

Here are some **takeaways:**

1. Always shoot in the shade and avoid harsh sunlight

Pictures taken on the trail, in the woods, hiking into the lake, are soft and attractive. It requires a lot of light manipulations with the use of filters and reflectors to do it well. Instead, find a spot in soft shade or dappled light where your subject can look wide eyed at the camera.

2. Choose morning or evening for outdoor photography

The sun's rays play beautifully with the atmosphere for a few hours after dawn and a few hours before dusk. This is an amazing time to capture landscape photos. It's also the perfect time to take pictures of your livestock or special portraits of your family.

The sun is slanting at an angle and the light is the most attractive for taking pictures of people, too. In fact light at 45 degree angle to the person, is the most flattering light for the human face.

3. Choose an overcast day

The clouds on an overcast day make the perfect lightbox, softening shadows, and mediating color. If it looks like it might rain, bring an umbrella. If it looks like a tornado, pick a different day. You're looking for soft dove grey clouds but not purple darkness.

4. Use the flash-fill feature to light the subject while allowing the background to be lit with ambient light

On digital cameras there are arrow settings that look like lightening bolts – one is for auto flash, one is to turn off the flash, but on some cameras there is a third feature that allows the flash to go off when the lighting is adequate for taking pictures without the flash. Called the "flash-fill," it lights the subject, while allowing ambient light to light the background. This softens the shadows on the subjects face and

adds a beneficial pop of light to the subjects' faces.

5. Look at the background before you click the shutter

Get rid of the clothes line with the unmentionables blowing in the breeze and the dry branch just behind the subject that looks like it's growing out of their head. Clean it up before you click the shutter. Further, add a bit of distance between your subject and the background to allow the background to softly blur. A good rule is to place the subject at least an arm's length away from the background.

6. When taking people-shots focus the camera on the eyes

Our eyes are drawn to the eyes of a portrait, the window of the soul, so make them the focal point of your portraits. Focusing on the eyes softens the other features in the face, and blurs imperfections.

7. Choose your background for light and texture

Look for interesting textures for the background or interesting plays of light and shadows to create Bokeh in the background of your photos. Bokeh is more than just blurring the background of your photo. Bokeh comes from the interplay of shadows and the blue sky or light peeking through. It also makes your subject pop. Play with it in your farm photography.

8. Avoid power-lines, wire fences, and manure piles in the background

While you might notice the clothesline flapping in the breeze, you need to look beyond it to the environment. While an urban photo-shoot might take the abundant power-lines and razor wire as part of the ambience and culture of the photo, farm photos look best without them. Try to avoid them if you can.

9. Take advantage of natural textures like stones, water, and wood in the background

Natural texture is amazing. Take advantage of rock walls, weathered wood, old barns, and water features to bring contrasting

texture and give ambience to your farm photography.

10. Use a faster aperture to photograph livestock and pets or children

While you give up some of the clarity in the photo, the higher speed means you'll be less likely to end up with a blurry unusable photo. Your camera probably has an action setting or a special setting for taking pictures of children or pets. Don't forget to change quality settings when you change subject matter. The aperture automatically changes with the change in the quality settings. With a D-SLR camera you have some manual control over the aperture as well. Get a good user guide like the ones I mention below to help you learn how to use aperture to your best advantage.

KEY POINTS – OVERVIEW

The DOs:

DO show tractors and other farm equipment being maintained and operated safely, including rollover protective systems (ROPS), guards in place, safety chains attached, etc.

DO show children doing supervised age-appropriate chores.

DO show workers wearing proper fitting personal protective equipment appropriate for the task they are performing.

DO be aware of the background and ensure it conveys a safe image.

The DONTS:

DON'T put children in unsafe situations – sometimes "cute" is unsafe. For example, showing a five-year-old child leading a large draft horse may be cute, however it is very unsafe and should never be depicted as a safe, fun or acceptable activity.

DON'T photograph children in agricultural work sites; rather show them in a fenced-in play area where they are being properly supervised. Most farm-related childhood incidents happen when children are playing or doing chores with their parents in a farm

work area.

DON'T allow or show people engaging in unsafe behavior such as extra riders, climbing heights without fall protection, working with unguarded blades or moving parts, and so on.

DON'T allow or show children under 14 driving farm vehicles or machinery.

DON'T allow or show children riding on adults' laps on tractors/machinery, ATVs or riding mowers.

DON'T allow or show children near large animals unless appropriate barriers are evident.

FINAL WORD

A picture is worth a thousand words only if the taker of the picture knows, understands and is able to incorporate the natural habitat in picture taking.

Farm Safety- Write it Right

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 **Meeting Kit**	 **PowerPoint**

WHAT’S AT STAKE?

You have farming knowledge, love to work outside, and enjoy getting your hands dirty. Your job now is to let farmers know you are an available and skilled farm hand, and with all the competition out there you may need more than your resume to do it. A professional farm hand cover letter share details about your background appeals to a potential employer and help you reach your farming goals. Having a cover letter will certainly distinguish you from the pack of other applicants, and may even present you with the opportunity to do the type of work you most favor on the farm.

Farm Hand Cover Letter Must-Haves

Cover letters in the farming industry are not as common as they are in many other occupations. However, this presents you with an excellent opportunity to catch the attention of your potential employer and highlight your most impressive skills. The farmer will want to know you can be relied upon to produce the best crop or product possible, with minimal direction. Apply the format of the professional farm hand cover letter sample to your own background to provide details not forthcoming in your resume.

WHAT’S THE DANGER?

Use Action Verbs/Transitive Syntax

Use active words, such as generated, benefited, handled, scheduled, operated, adapted, expanded, and performed.

Cover letters are advised for internet applications. Before you begin, it’s important that you know as much as possible regarding the sort of letter you’re writing. It is very important that the letter be sent on the business letter head. Writing a perfectly phrased letter is not quite as difficult as it’s made out to be. In actuality, however, you can readily equip yourself to compose a winning letter. If it comes to writing a winning cover letter it’s frequently the little things which make a huge difference.

Clearly a project proposal isn't unlike the industry proposal sample. The project proposal has to be written in an official way, since it's a tool of business communication. Your project proposal example will want to outline the precise numbers. **So make sure that it contains the necessary information in that regard, outlined in sufficient detail.**

By taking the opportunity to first ask the organization questions, you'll have the information that you want to create a letter which gets positive outcomes. Make sure that you get the info you're looking for. Also, be certain that your contact information is accurate.

In the agricultural industry, farmers need to carry out lots of duties daily. The farmer would likewise require a much more elaborate irrigation system to feed crops water over a bigger span of land. Depending on the type of animals he raised, he might need a variety of different tools. Pig farmers must watch over pigs and make certain they're healthy. A farmer could have just one tomato patch for a monoculture and understand how to work with that 1 monoculture well. Family farmers often do all of the work themselves.

The employer is not going to be interested in your skills besides the ones applicable to farming, therefore it's prudent to conserve space and adhere to the position. Employees have to be trained so that they can take on greater responsibilities. Most importantly, they should know exactly where each item is located. The employee will tell the company how much training which he has had at each work skill and it'll help the enterprise to determine where to set the employee.

A company can grow and flourish provided you make the ideal effect on the clients' minds. It may not be making a large profit or have any valuable assets, but it could have huge potential. Check with the city offices where you want to conduct business. Inspect the accounts for the business you're taking a look at.

Whether the job is paid or volunteer isn't as crucial as the kind of experience you get from it. Not every job needs to be one that

involves working for another person. Whether you're asking for a job as an administrative assistant or you're already working and will need to make career objectives, the trick is to understand the requirements of the business. Based on the facility, you can get a job part-time or full-time during the summertime.

HOW TO PROTECT YOURSELF

THE NEED FOR A COVER LETTER

A perfect resume is only as strong as its first impression, which is why a farmer cover letter is so important to not only being seen but getting your resume the second look it deserves. That single piece of paper is your best chance to convince an employer that you are the perfect person for the job. Well written, polished and professional, your farmer cover letter could very well be the key that secures your next farming job.

Job Description & Responsibilities

Employment in the fields of agriculture and environment entail two specific, but distinctive, categories that involve improvement, support and offering solutions. The first is the technical category. If this is the candidate specialty, the agricultural and environment cover letter will quickly discuss how they provided services to better agronomy, livestock, nutrition, conversation, waste management and other applications. The other field involves business and industry. In this case, hiring managers want to know about the candidate involvement in personnel management, business planning, and financial and estate management for agricultural farms and businesses.

These specialists work with growers and farmers, landowners and public bodies, conservation organizations, services and manufacturing, and other entities. Whichever side of the table they work on, the candidate has to have a working knowledge of any legislative and business implications of their advice and programs. The exact nature of any operation performed by these candidates will depend on the service they offer and the type of

business they are engaged in. But they all have one overall function, to help clients improve operations responsibly.

Education & Training

The agricultural and environment cover letter will need to mention a strong educational background in one of the related fields, such as biotechnology, farming, oenology, or viticulture. A minor in some form of business would be beneficial. The candidate should be computer literate and have a more than impressive grasp of mathematics and English, as well as good communication skills.

Hiring managers will be looking for candidates that have strong personal skills. A good agricultural and environment cover letter shows the candidate is efficiently organized, staying current with relevant advancements in their field as they could be preparing newsletter, leaflets, press releases, notes, and articles. They will collect and analyze information to measure performance and monitor programs. From livestock to pest control to waste management, the candidate must be innovative coming up with solutions that improve productivity and protect the environment.

Salary Range

These fields of expertise are too broad to pinpoint any specific salary. Candidates can end up in the private or public sector, at a university or manufacturing warehouse, in a consultancy or in-house position. The agricultural and environment cover letter and resume will determine value, alongside industry and desired job.

COVER LETTERS

There’s a nasty rumor that cover letter writing is irrelevant and won’t help you secure that dream job you’ve been after, but that is just wrong!!!

Next to your resume, a well written cover letter is the most valuable document you have in your job seeker toolkit and when written correctly, can help your application stand out amongst the rest.

A cover letter is a concise document that outlines why your skills and experiences make you the best candidate for the job, in four paragraphs or less. It complements your resume and is a place to highlight important and relevant skills or accomplishments. But, before you begin crafting your cover letter, carefully read through the employer job description; this will help you understand your audience, and allow you to better tailor your cover letter to the reader.

IMPORTANT WRITING TIPS

The following tips will enable you to write **Effective** cover letters.

- **Tailor your cover letter to each job you're applying to, always!** This cannot be stressed this one enough. Your cover letter is a personalized document that you're using to convince the reader to look at your enclosed resume. Take some time to make sure you clearly state why you're the best candidate for the job, based on the qualifications the job description is asking for.
- **Don't rehash your resume in your cover letter.** Your cover letter is a complimentary document and a place for you to establish a voice and target why your skills and experiences are a good fit for the role you're applying to.
- **Identify keywords within the job description and include them in your cover letter.** This will help you when applying through a company's applicant tracking system (ATS) or talent management system (TMS).
- **Make the reader's job easy by including the job title and the reference number in the reference line.** Include the date, your name and contact details in case your cover letter is separated from your resume during the application process.
- **Keep the font style and size consistent with your resume.** It is recommended to use an easy-to read, sans serif font, like Arial.
- **Include where you heard about the job opening,** whether you saw the position on AgCareers.com, heard about the position

through a friend or found the job on the employer's corporate career site. If you were referred by an existing employee, include their name, this will help to set you apart.

- **Show, don't tell.** Use concrete examples to demonstrate to the reader how you developed a relevant skill or exceeded expectations in your current role.
- **Don't overcomplicate the sentences within your cover letter by utilizing descriptive diction.** In other words, use plain language.
- **Avoid including meaningless, overused adjectives like:** aggressive, creative and independent. Instead, use action verbs like: wrote, managed, and collaborated with, to describe exactly what you accomplished.

FORMATTING TIPS

- **First Paragraph:** Introduce yourself, what job you're applying to and state where you heard about the position.
- **Second and Third Paragraphs:** This is the meat of your cover letter. In paragraph two, highlight any skills or experiences you've gained that fit with the qualifications in the job description. Use concrete examples and evidence to show the reader why you're a strong contender for the job. State growth numbers wherever possible. If you have a considerable amount of experience related to the position, it might be a good idea to break this section up into two separate paragraphs to make your cover letter easier to read.
- **Fourth Paragraph:** Thank the reader for their time and consideration and express again your interest in the position you're applying to. Let the reader know you look forward to being reached at their earliest convenience to further discuss your interest and qualifications in the position. It's a good idea to list your contact information again in this paragraph.

FINAL WORD

A properly drafted cover letter is your most valuable document and correctly written could enable you to attain the dream job that always seemed beyond your grasp.

Farm Stress Management

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

Perhaps you have noticed that some farmers struggle under the pressures of events that you find easy to handle. Or perhaps you have wondered how other farmers can go on in spite of the stress load they carry.

WHAT'S THE DANGER?

STRESS – GENERALLY

Common Stressors

Stressors are the things that may cause stress. Things like weather, pests, disease, off-farm work, major life changes,

relationships, fears and uncertainty are all things that can be stressors.

Types of Stress

Acute stress is also known as the fight-or flight response. Acute stress is your body's immediate reaction to a perceived threat, challenge or scare. Chronic stress is more subtle than acute stress, but the effects may be longer and more problematic.

Some symptoms of chronic stress can include:

- Stomach distress
- Unexplained headaches
- Muscle tension
- Chronic fatigue
- Insomnia or disrupted sleep
- Change in appetite
- Relationship problems, hard on self,
- family or others
- Depression/withdrawal
- Substance abuse

QUESTION??

Why is it that some farmers can handle lots of stress and others very little?

Researchers who have examined differences between successful and unsuccessful stress managers have identified three key factors.

1. Individuals vary in their capacity to tolerate stress. For example, prolonged exertion and fatigue that would be only mildly stressful to a young farmer may prove very difficult for an older farmer or someone with a heart defect.

Emergencies on the farm, delays and other problems that a confident farmer takes in stride may be a stumbling block for one who feels inadequate. While part of an individual's stress tolerance is inborn, a crucial part depends on the quality of coping skills practiced. Learning to cope successfully with a

stressor once makes it easier the next time.

2. A second factor is feeling in control. Successful stress managers know how to accept those stressors out of their control – the weather, their height, stock market fluctuations – and how to effectively manage those stresses within their control – such as neck tension, temper flare-ups or record keeping.

3. The attitudes, perceptions, and meanings that people assign to events determine a large part of their stress levels. A person has to perceive a situation as stressful or threatening in order to experience stress. If you think your dog is barking in the middle of the night because of a vandal, you will experience more stress than if you suspect a skunk has wandered into your yard.

Stress can be defined as energy in a blocked or chaotic state. Individuals should seek to develop calm, free-flowing energy that promotes harmony and balance in a person's body, psyche and soul. To relax and manage stresses well during peak farm stress seasons – planting and harvesting – takes discipline and daily practice at controlling events, attitudes and responses.

STRESS OVERVIEW

Many factors that influence a farm's viability are out of a farmer's control.

Often what we cannot control causes us to feel the most stress:

- The weather
- Increased input costs
- Large debt loads
- Livestock health
- Erratic markets
- Government regulations and complicated paper work
- Long working hours
- Disagreements with other family members in the farm operation
- Uncertain crop yields and fodder production
- Machinery breakdowns
- Handling dangerous goods e.g. farm chemicals

Stress for farmers continues as rural communities change – some shrink and fewer services are conveniently available, others are witnessing a changing landscape through urban sprawl and mining. As members of these communities, farmers work to fill the gaps in order to keep their communities functioning. Rural communities in turn are affected by the high stress farm environment.

HOW TO PROTECT YOURSELF

The "OPERATIVE" word in discussing stress is CONTROL.

Control Events

- Plan ahead. Don't procrastinate. Replace worn machinery parts during the off season.
- Before the harvest discuss who can be available to run for parts, care for livestock, etc.
- Set priorities about what has to be done today and what can wait until tomorrow. Plan your time.
- Say no to extra commitments that you do not have time to do.
- Simplify your life. If possible, reduce your financial dependence on others.
- Schedule stressful events within your control, such as elective surgery.

Control attitudes

- See the big picture: "I'm glad that tire blew out here rather than on that next hill."
- List all the stresses you now have. Identify those you can change; accept the ones you cannot change.
- Shift your focus from worrying to problem solving.
- Think about how to turn your challenges into opportunity.
- Notice what you have accomplished rather than what you failed to do.
- Set realistic goals and expectations daily. Give up trying to be perfect.

Control responses

- Focus on relaxing your body and mind. Whether you are walking, driving or phoning, do it slowly and relax. Keep only that muscle tension necessary to accomplish the task.
- Tune in to your body. Notice any early signs of stress and let them go.
- Take care of your body. Exercise regularly and eat well-balanced meals. Limit your intake of stimulants such as coffee, sodas and tea.
- Avoid smoking cigarettes, using alcohol or other drugs, or using tranquilizers or sleeping pills.
- If your health allows, tense and then relax each part of your body from toes to head, one part at a time.
- Shake away tension as you work by vigorously shaking each of your limbs.
- Take a break. Climb down from your tractor and do a favorite exercise.
- Take three deep breaths – slowly, easily. Let go of unnecessary stress.
- Stop to reflect or daydream for 10 minutes. Close your eyes and take a short mental vacation to a place you really enjoy. See the sights; hear the sounds; smell the smells. Enjoy. Then go back to work feeling refreshed.
- Think positive thoughts: “I can and will succeed.”
- Look for the humor in things that you do.
- Balance your work and your play. Do both well.
- Find someone with whom you can talk about your worries and frustrations.
- Seek help when you need it. There are times when all of us can benefit from professional help or support.
- Unwind before bedtime. Do stretching exercises, listen to soothing music, practice rewinding deeply, and be thankful for any blessings received today. Then sleep well.

FINAL WORD

Farming can be a very stressful occupation. Stress that goes

unrecognized and is not managed well can cause you to make risky choices and can result in a farm incident. Unrelieved stress can take an emotional as well as a physical toll, in the form of anxiety or depression, or high blood pressure and heart disease. If unattended, stress can seriously damage physical health; psychological well-being; and relationships with friends, family, and coworkers.

Farm Machinery Fire Prevention

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

Farm machinery is essential to farm daily work. Machinery can be a fire hazard when it is not properly maintained. A fire on the farm is a major concern. Long distances from the fire department mean longer emergency response times. A fire on our farm could be extremely costly and potentially dangerous.

WHAT'S THE DANGER?

With organic materials like hay and feed, plus large mechanical equipment that generates heat and exhaust gasses, a typical farm

has several potential fire hazards. Losing property, livestock and equipment in a fire can lead to long-periods of downtime that can be devastating to your farming operation. It can also result in insurance premium increases in the future.

The leading cause of agriculture fires is open flame caused by candles, matches, bonfires, sparks, static electricity, friction, welding and equipment. Other causes of fires may include natural resources such as spontaneous combustion and lightning.

How Fires burn

The elements necessary to create a fire are **Fuel, Heat and Oxygen.** These elements constitute the fire triangle. Removal or control of one element will remove or control a fire hazard.

HOW TO PROTECT YOURSELF

GENERAL SAFETY MEASURES

1. Minimize Hazards on Site

Strictly enforce a no smoking rule inside a building or areas where flammable and combustible materials are stored or near storage, shipping or receiving areas where boxes or other containers can easily start a fire. Keep flammable liquids away from open flames and motors that might spark. Never smoke when refueling.

When transferring flammable liquids from metal containers, bind the containers to each other and ground the one being dispersed from to prevent sparks from static electricity. Clean up spills right away and put oily rags in a tightly covered metal container. Change your clothes immediately if you get oil or solvents on them.

Flammable liquids should be clearly marked and stored in approved containers in well ventilated areas away from heat and sparks. Keep above ground fuel storage tanks at least 40 feet from buildings.

Store compressed gases in a secure upright position, away from heat sources in an outdoor location. Keep different gases separately and full cylinders apart from empty cylinders, When heating with propane, keep 45-kg (100 LB) cylinders at least 4.5 metres (15 feet) away from heaters; keep large tanks at last 7.6 metres (25 feet) away.

2. Machinery

Re-fuel machinery with care. Watch for and repair leaks in fuel lines, carburetors, pumps and filters. Keep engines properly tuned and timed to avoid back firing and exhaust systems in good condition to avoid sparks. Keep machinery properly lubricated to minimize friction.

3. Hotwork

Always have a fire extinguisher on hand during hot work. Watch for molten metal as it can ignite flammables or fall into cracks and start a fire that might not erupt until hours after the work is completed. Use portable cutting and welding equipment in clean work areas.

Keep flammables at least 35 feet from a hot work area. Be sure other tanks and other containers that have held flammable liquids are completely naturalized and purged before you do any hot work on them

4. Spontaneous Combustion

Many materials under certain conditions heat spontaneously. Store vegetable and animal oils and paints or linseed – soaked rags in sealed containers in cool, well ventilated places away from other combustibles. Avoid storing wet hay and check stored hay for warm spots. If hay temperature is noticeably warmer than when it was put in, watch it closely. If the temperature reaches 175 degrees F, get the hay out or divide it into small, shallow stacks.

Watch for silage danger signs – heat, release of moisture, vapor or steam, smoke, a charred tobacco smell. A fine chop permits the material to be packed more firmly in both trench and upright

silos. Also, a silo designed to be sealed should be kept closed, except for loading or unloading.

5. Control of Fire Hazards

Cut down and remove weeds and brush from around buildings. In buildings, check for excessive accumulation of dust, feathers, cobwebs, and other potential combustibles. Reduce and keep away from heat unneeded items that will burn. Arrange shops and barns so that flammables are safely away from ignition sources. Use approved electrical installations including proper fuses or circuit breakers, waterproof outlets, enclosed electric motors and similar equipment in any buildings which are cleaned periodically with high-pressure equipment.

Inspect all wiring and electric motors and appliances for exposed wires, broken insulation, improper grounding and incorrect installations.

6. Check the Heating System.

See that air shafts are clean of dust and debris, motors are cleaned and oiled (if necessary) each season, and pulley belts are in good working order. Check gas and fuel oil system for leaks and unsafe installations.

7. Know your Fire Extinguishers

Fire extinguishing equipment can be classified into two types; portable and fixed. However, a portable, ABC rated fire extinguisher is more practical for agricultural use, capable of extinguishing Class A, B or C fires.

Fire classes

Class A – Combustibles such as wood, paper textiles, where a quenching, cooling effect is required

Class B – flammable liquids, gasoline, oils, fats, paint, where oxygen exclusion or flame interruption is essential.

Class C – live electrical wiring, motors, appliances, where non-

conductivity of the extinguishing agent is crucial.

Class D – combustible materials, magnesium, sodium, and potassium.

FARM FIRE PREVENTION HI-LITES

Preventative Measures for Barns and other Farm Buildings

No smoking: Never allow smoking in farm buildings. Discarded cigarettes should not be left on the ground or in potted plans. Potting soil becomes combustible in dry conditions.

Clear the clutter: Keep barns and yard areas clear of brush and other flammable debris. Move flammable items away from heat sources, and clear away dirt and dust buildup from appliances and equipment to prevent overheating.

Let the air flow: Provide adequate ventilation to prevent buildup of chemical vapors, silo gases, and other hazardous byproducts. Proper airflow helps dissipate flammable gas and vapors, preventing heat buildup.

Inspect electrical equipment: Maintain electrical equipment and keep wires safely enclosed in metal or PVC pipes to protect them from exposure to weather and animals. Once per year, have a licensed electrician inspect the electrical equipment in your farm buildings.

Refuel outside: Refuel equipment outdoors, away from open flames and as far from any buildings as possible. Make sure engines are not running or still hot before refueling. Keep fuel and other combustibles away from livestock in a different building.

Heat with care: Keep heaters out of the reach of livestock and well away from bedding and other combustible materials. Avoid using heat or solar lamps, trouble lights, heated watering bowls or other heated devices to warm outdoor pet shelters. Instead, use borrowed heat that provides warmth from a separate building – such as through a hot water heating system that circulates water with potable antifreeze to buildings via underground piping.

Keep extinguishers ready: Portable fire extinguishers should be

properly maintained, regularly inspected and easy to find in each building, especially near mechanical equipment and storage areas that contain flammable materials. Train your employees how to properly use extinguishers and where to find them.

MACHINERY FIRE PREVENTION

Preoperational inspections must be done prior to using any equipment on a daily basis. If you notice any fire hazards, please correct them or inform a supervisor.

Look for:

- Any build-up of crop residue around the engine, exhaust systems and belts and chains.
- Any damage or worn parts on the exhaust system, drive belts, electrical wiring, moving parts
- Any signs of leaking fluids, oils and fuel.
- Any odor of burning electrical wiring

SAFE FUELING

Improper Fueling can result in a costly fire.

- Never refuel equipment with the engine running.
- Allow hot engines to cool down before refueling.
- Do not use electronic devices like cell phones while fuelling.
- Do not enter the equipment. Doing so could create static electricity that could create a spark and ignite fuel vapors.
- Absolutely no smoking while refueling. Smoking is only to be done in the designated areas.
- Clean up minor spills and allow any spilled fuel on the engine to evaporate before starting.

IN CASE OF FIRE

- If a fire does break out on a machine you’re operating, quickly shut off the engine, grab your extinguisher, get out, and get help.
- Approach any fire with extreme caution. Even a small fire

can flare up dramatically when doors, hatches, or other areas are opened.
- If possible, use the extinguisher’s flexible hose to shoot the chemical from a safe distance at the base of any flames you see.
- Remember that it may not be possible to put out every fire. If it’s in a difficult-to-reach area or seems out of control, don’t risk it, wait for help to arrive.

FINAL WORD

There are the three major elements that combine to create fire. They are air, heat, and fuel. It’s impossible to eliminate air from around farm machinery. Farm machinery fire prevention focuses on keeping the machinery clean of possible fire causing materials (fuel) and eliminating all possible sources of heat that could lead to a fire.

Farming Around Power Lines

WHAT’S AT STAKE?

Farms will sometimes have power lines on poles or towers crossing farmyards and fields. Most of the time, there are distribution lines supplying electricity to the farm house and site. In some cases, there are also buried power lines on the farm. Become familiar with the power lines on farms.

Farm equipment like augers, hoisted truck boxes and large cultivators in transport position are a few examples of farm equipment that could come into contact with power lines if you are not careful.

WHAT’S THE DANGER?

IRRIGATED LANDS

There are three main dangers to consider when working around transmission facilities on irrigated lands: direct contact, spraying and induction.

Direct Contact

If you must handle irrigation equipment close to a transmission tower or line, take caution to never come near or touch the transmission facilities. In many irrigation systems, especially older ones, aluminum pipes are used and they are particularly conductive. If any kind of pipe or hose contacts a tower or line, it will create a path to the ground and you could be seriously injured.

Spraying

Electricity will flow through many materials to make a path to the ground, including water. If you enter this path to the ground you could seriously harm yourself and any equipment you’re using.

When using an irrigation system on your land, make sure to never get too close or make direct contact to the power line with the water stream under any circumstance. Using a flapper to break up the spray helps to not create a current.

Induction

In rare circumstances induction can occur where a piece of irrigation equipment you’re using can be electrically charged by a tower or line next to it. Ensuring your irrigation system does not run parallel to the transmission line will help to reduce the potential for induction. Please exercise caution when using any kind of equipment near transmission facilities.

The following types of farm machinery can accidentally brush or get hung up in overhead power lines while in use or being moved:

- Tractors with front-end loaders.
- Portable grain augers.
- Fold-up cultivators.
- Power Pole
- Moving grain elevators.
- Irrigation pipes.
- Equipment with antennas.
- Watch out for overhead electrical lines.
- Know where power lines are located.
- Treat all overhead power lines as though they are bare and uninsulated.
- Keep all equipment away from overhead lines.

Know where power lines are when:

- Using ladders.
- Harvesting tree crops.
- Moving equipment.
- Always use pre-planned routes that avoid power lines when moving equipment.

ELECTRICAL FACTS

- Electrical incidents in the rural industry have often involved contact between machinery or irrigation pipes with overhead powerlines.
- Other causes of electrical incidents include general lack of electrical equipment maintenance and unauthorized electrical handy-work.
- Apart from death and injury, electrical incidents have also caused significant property damage (e.g. arcing or burning from electricity can damage or destroy vehicle frames, gearboxes, engines, axles and tyres).
- Most overhead power lines have no protective insulation. Any physical or equipment contact with them could be dangerous.
- Non-metallic materials such as lumber, tree limbs, tires, ropes, straw and hay, are capable of conducting electricity, depending on moisture content and surface contamination.
- Electricity always seeks the path of least resistance to the ground.

- You can be electrocuted by simply coming too close to a power line. Electricity can arc or “jump” between a wire and a conducting object, such as a ladder or a truck.
- When electricity flows into the ground, it can electrocute anyone who comes close. Stay at least 10 metres away from fallen Also, if you see equipment or a person in contact with a power line, be aware that the ground may be energized and be dangerous to bystanders.

FINAL FARM POWER LINE TAKEAWAY

These tasks can put you in harm’s way near power lines.

1. Cutting down trees and tree limbs too close to power lines.
2. Raising or carrying ladders or other long tools near power lines.
3. Raising front-end loaders and moving other large equipment (including those with radio antennas) near power lines.

HOW TO PROTECT YOURSELF

EMPLOYER/EMPLOYEE SAFETY SOLUTIONS

Employers have the primary responsibility for protecting the safety and health of their workers. Employees are responsible for following the safe work practices of their employers.

- Develop a “safety first” attitude. Follow safe work practices all the time and set a good example for others.
- Provide adequate training for all workers. Train them in rescue and emergency procedures so everyone in your operation knows what to do in an electrical emergency.

Train workers that if they have an electrical emergency and must leave the equipment, they should:

- Never get back on machinery that touches a power line until the utility company disconnects the line.
- Train seasonal employees about dangers and give additional reminders.

- Determine transport and clearance height for farm equipment. Ask your local utility company to help determine line heights in all areas of the farm. Never measure line heights yourself.
- Plan and develop routes for moving equipment to avoid power lines and train workers to follow these routes.

Train workers that when moving equipment they should:

- Know where all overhead power lines are located.
- Know pre-planned routes between fields, to bins and elevators, and on public roads to avoid low-hanging power lines.
- Keep all equipment and objects at least 10 feet away from overhead lines.
- Always lower a portable grain auger before you allow workers to move it, even just a few feet.

What to do in case of a fire when operating equipment

- Leave the equipment, jump as far away from the equipment as possible.
- Do not allow any part of your body to touch the equipment and the ground at same time.
- Shuffle away from where you jumped; do not take large strides. Too large a step could put each foot in a different voltage zone and electrocute you.
- Once away from the equipment, never attempt to get back on or even touch it. Many electrocutions occur when the worker dismounts, then gets back on the equipment.
- Remember that prevention is the best way to handle emergencies. Respect electricity and avoid contact with overhead lines.

Prevention Reminders

- Be Aware. Locate overhead power lines before starting work.
- Lower large equipment like grain augers, air seeders and front end loaders before moving them.
- Take another route if you are moving large equipment and don’t have enough clearance.

- Make sure you have enough clearance while working around power poles in the field. If you don’t have enough clearance, you could pull down a power pole.
- Never stack hay or pile grain near power lines. These can be inviting for kids who may climb too near to a power line.
- Use care when doing field work around power poles and guy wires. Watch for broken or dislodged guy wires. Report broken or damaged guy wires to your electrical service provider immediately.
- Never place bulk fuel tanks or granaries near power lines.
- Know the height of any new equipment your purchase.
- Never spray water hoses or irrigation pivots at power lines.
- When using machinery to dig, a clearance distance of one metre (3.2 feet) has to be maintained from any underground electrical cable. If you must work closer, contact your electrical service provider.
- Be careful when pruning as a wire could be hidden in a tree or bush.

FINAL WORD

Prevention and precautions are the best methods to deal with emergencies in the farm environment. But the key starts with respect for the power of electricity especially overhead power lines.

Front-end Tractor Attachments

WHAT’S AT STAKE?

One of the most popular and versatile attachments for any tractor is a front-end loader. For farmers in particular, who tend to

tackle a wide variety of tasks from time to time, a front-mounted bucket is perfect many tasks, including:

- moving compost and manure
- digging and shifting dirt
- clearing snow
- transporting materials
- grading driveways

WHAT'S THE DANGER?

The hydraulics that power the front loader can do a lot to make you work easier.

You can install many other useful attachments on the front of your tractor. They further expand its capabilities while making your farm chores easier and faster.

Some attachments can be installed directly on the bucket of your front-end loader. Others are installed in place of the bucket.

Here are four:

1. Bucket teeth

Adding a row of teeth to the bucket of your front-end loader can increase its capacity and—more importantly—its versatility as a digging tool. It literally gives it the teeth it needs to take powerful bites out of tough ground.

The shape of the teeth can be an art form in and of itself. Varying sizes and shapes offer ideal performance for working with rocks, clay soils, soft soils and more.

2. Forks

Forks can be installed on the bucket or in place of the bucket to quickly turn your tractor into a forklift. This offers you the ability to transport pallets of supplies, hay bales, logs, large branches and more.

As with a front-end loader, how much your forks can handle depends

on the strength of your tractor. But even a utility tractor of modest size can handle a lot of material. I've moved multiple 8-foot pine logs at once with forks installed on a 40-horsepower diesel tractor.

In many cases, forklift attachments are adjustable, allowing you to change the width between the two forks. This is an important feature if you wind up working with pallets of different sizes, or if you're moving something more obscure and need the forks to be set a specific distance apart.

3. Bale spear

A hay bale spear is a lot like a forklift attachment, except it's specifically designed for transporting round hay bales.

Designs vary, but a typical bale spear uses a handful of tapered spears to penetrate a round bale in multiple locations. This provides a secure means for the tractor to lift and transport the bale to wherever it's needed.

Since round hay bales are large and heavy, a bale spear is a must-have attachment for farmers feeding these bales.

4. Grapple

A grapple installs in place of the bucket and is the perfect tool for dealing with logs, branches, brush and more.

The hydraulic-powered jaws allow you to secure a tight grip on your load and lift it up for transportation to a more appropriate location, whether that's a brush pile, a wagon or a sawmill.

A large grapple mounted on a strong tractor will significantly speed up your efforts to clean up tree debris on your farm. In turn, you will save a lot of time and manual labor.

But there are **Dangers/Risks**

Front-end tractor attachments change the tractor's centre of gravity. The higher the load is lifted, the more unstable the tractor becomes and this can result in the tractor tipping over

onto its side. Mounted tractor attachments make the tractor longer and this changes the amount of room needed when maneuvering.

HOW TO PROTECT YOURSELF

MAKE SURE ALL ATTACHMENTS ARE SECURE

Front-end loader attachments can become unattached if they are not properly secured. Clear any debris from the coupling system and make sure that all locking mechanisms are engaged. Visually inspect the coupling system to verify that the attachment is secure, all locks are fully engaged and the centre of the attachment matches up to the coupler. Quick attach systems are quick, but they are not foolproof!

THE BUCKET SHOULD BE KEPT AS LOW AS POSSIBLE WHEN TURNING AND TRANSPORTING

It is important that you make sure you have enough clearance when driving that the bucket doesn’t touch or catch on the ground but carrying loads higher than needed can cause centre of gravity of the tractor to shift. If the tractor becomes unstable due to the gravity shift this can cause the tractor to tip or roll.

NEVER WALK OR WORK UNDER A RAISED LOADER

The loaders are attachments, and even though we make sure that they are properly attached, at times, mechanical or hydraulic issues can cause the loader to drop. Make sure that no one walks or works under the loader at any time.

A FRONT-END LOADER CHANGES THE CLEARANCE

A front-end attachment changes the amount of room the tractor needs to turn corners, maneuver through the yard and to park. Adjust for this and make sure you have enough clearance when operating a tractor with a front-end attachment.

FRONT-END LOADERS AREN’T PEOPLE TRANSPORTERS

Front-end loaders can haul many things, but never people. A sudden

stop, lurch or bump can cause the rider to lose their footing and fall off.

FRONT-END LOADERS AREN’T REPLACEMENTS FOR POSTDRIVERS OR OTHER TOOLS

Even though front-end loaders are handy, please make sure you are using the proper tool for the job.

Here are some additional safety tips for working with front-end tractor loaders:

1. Loader controls should only be operated from the operator’s platform when the operator has a clear sight of what is around the machinery or is being guided by a spotter.
2. Never exceed the lifting capacity of the loader.
3. When handling large bales, make sure the bale is speared through the centre. Never lift the bale by sliding the fork under the bale as it might fall off.

FINAL WORD

Front-end tractor loaders and other attachments are used to transport bales, rocks and other objects, move debris and snow on yards and lanes, and are essential on the farm. However, there are safety considerations when it comes to using these attachments.

Hazard Points and Guarding on Farm Equipment

WHAT’S AT STAKE?

Numerous farmers and farm workers have been injured or killed because guards were not installed or were improperly used. Guards and decals which identify the danger must be kept in place whenever the machine is operated. Guards or shields removed for maintenance must be properly replaced before use.

WHAT’S THE DANGER?

HAZARDS / DANGERS OF FARM EQUIPMENT

- cutting edges
- gears
- chains
- levers
- revolving shafts
- rotating blades

THE MAIN HAZARDS ASSOCIATED WILL EXPOSURE TO THESE PARTS INCLUDE THE FOLLOWING:

Shear/cutting points

Shear points are created when the edges of two objects are moved close enough together to cut a material, as in the case of a pair of shears or an auger. Cutting points are created when a single object moves forcefully or rapidly enough to cut, as in the case of a sickle blade.

Shear points and cutting points are hazards because of their cutting force, and because they often move so rapidly that they may not be visible. Workers should be aware of shear points and shields or use guards to prevent exposure or access.

Pinch points

Pinch points form when two objects move together and at least one of them is moving in a circle. For example, the point at which a belt runs onto a pulley is a pinch point. Belt drives, chain

drives and gear drives are other examples of pinch points in power transmission devices.

Body parts such as fingers, hands and feet can be caught directly in pinch points, or they may be drawn into the pinch points by loose clothing that becomes entangled. Workers should be aware of pinch points and shields or use guards to prevent exposure or access.

Wrap points

Rotating shafts are the most common source of wrap point accidents, although any exposed machine part that rotates can be a wrap point. Clothing or hair can catch on a rotating part.

The ends of shafts that protrude beyond bearings are also dangerous. Universal joints, keys and fastening devices can also snag clothing. Entanglement with a wrap point can pull a worker into the machine, or clothing may become tightly wrapped, crushing or suffocating a worker.

Workers who operate machinery should be aware of wrap points and should not wear loose clothing. In addition, operators should use shields or guards where possible to prevent access.

Crush points

Two objects can create crush points when they move toward each other or one object moves toward a stationary one. For example, hitching a tractor to an attachment may create a potential crush point and failure to block up equipment safely can result in a crushing injury.

Crushing injuries most commonly occur to fingers. To prevent a crushing injury, workers should be aware of crush points and wait until a tractor has stopped before stepping into the hitching area. Workers should also arrange the hitch point to back the tractor into position without a worker being in the path and should block any machine that can move before doing any work under or near it.

Pull-in points

Pull-in points usually occur when plant material or other obstacles become stuck in feed rolls or other machinery parts, preventing the mechanism from operating. A worker trying to free such material without shutting down or locking out the power can be rapidly pulled into the mechanism when the material is freed.

Free-wheeling parts

Many machine parts continue to spin after the power is either shut off or locked out. Workers should not start repair or maintenance work until all parts have stopped moving, even if equipment is locked out. This may take a few minutes.

Examples of free-wheeling parts include:

- cutter heads of forage harvesters
- hammer mills of feed grinders
- rotary mower blades/fans
- flywheels

Springs

Springs are commonly used to help lift equipment such as shock absorbers and to keep belts tight and may harbour potentially dangerous stored energy. Springs under compression will expand with great force when released while stretched springs will contract rapidly when released.

A worker should know in which direction a spring will move and how it might affect another machine part when released and stay out of its path.

Hydraulic systems

Hydraulic systems store considerable energy and are used to:

- lift and change the position of attachments
- operate hydraulic motors
- assist in steering and braking

Leaks from hydraulic systems are a serious hazard because of the high pressure and temperature of the fluid contained in the system. Even fine jets of hydraulic fluid can burn or pierce skin and tissue.

HOW TO PROTECT YOURSELF

THE CDC FARM CHECKLIST FOR GUARDING EQUIPMENT

1. Guarding Farm Equipment

The Questions

Have operating instructions been provided at the time of initial assignment and at least annually thereafter to all who come in contact with covered equipment? Do instructions discuss the safe operation and servicing of all farm equipment and include at least the following practices?

- Keep all guards in place when the machine is in operation.
- Permit no riders on farm field equipment other than those required for instruction or assistance in machine operation.
- Stop engine, disconnect the power source and wait for all machine movement to stop before servicing, adjusting, cleaning or unclogging the equipment.
- Make sure everyone is clear of machinery before starting the engine, engaging power or operating the machine.
- Lock out electrical power before performing maintenance or service work on farmstead equipment.

Have all workers been protected against contact with the hazards created by moving machine parts by either of the following methods?

- Through the installation and use of a guard or shield or guarding by location.
- By a guardrail or fence whenever a guard or shield or guarding by location is not possible.

When guards are used to provide protection required by this section, are they designed and located to protect against contact

with the hazard being guarded?

Unless otherwise specified, is each guard and its support capable of withstanding the force that a 250-pound person, leaning on or falling against the guard, would exert on that guard?

Are all guards free from burrs, sharp edges and sharp corners, and securely fastened to the equipment or building?

Whenever a moving machinery part presents a hazard during servicing or maintenance, is the engine stopped, the power source disconnected, and all machine movement stopped before servicing or maintenance is performed?

Note: Exceptions to this requirement are as follows:

- The equipment must be running to be properly serviced or maintained.
- The equipment cannot be serviced or maintained while a guard or guards required by this standard are in place.
- The servicing or maintenance can be safely performed.

2. Farm Field Equipment

The Questions

Are all power take-off shafts, including rear-, mid- and side-mounted shafts, guarded either by a master shield or by other protective guarding?

Are all tractors equipped with an agricultural tractor master shield on the rear power take-off, except when the design of the power take-off driven equipment requires removal of the shield?

Does the master shield have sufficient strength to prevent permanent deformation of the shield when a 250-pound operator mounts or dismounts the tractor using the shield as a step?

Is power take-off-driven equipment guarded to protect against employee contact with positively driven rotating members of the power-drive system, including the portion of the tractor power take-off shaft that protrudes from the tractor if the master

shield is removed?

Do signs placed at prominent locations on tractors and power take-off-driven equipment specify that power take-off-driven system safety shields must be kept in place?

Is the mesh or nip points of all power-driven gears, belts, chains, sheaves, pulleys, sprockets and idlers guarded?

Are all revolving shafts, including projections such as bolts, keys or set screws guarded, except smooth shaft ends protruding less than one-half the outside diameter of the shaft and its locking means?

Are ground-driven components guarded?

Are the following components, which must be exposed for proper function, guarded as much as possible in a manner that will not interfere with normal functioning of the component? Choppers, snapping or husking rolls, straw spreaders and choppers, cutterbars, flail rotors, rotary beaters, mixing augers, feed rolls, conveying augers, rotary tillers, rotary beaters, mixing augers, feed rolls, conveying augers, grain spreaders, stirring augers, sweep augers and feed augers.

Are guards, shields and access doors in place when equipment is in operation?

If removal of a guard or access door will expose a person to any component that continues to rotate after the power is disengaged, has the employer provided, in the immediate area, the following?

- A readily visible or audible warning of rotation.
- A safety sign warning the worker to:
  - Look and listen for evidence of rotation, and
  - Not remove the guard or access door until all components have stopped.

3. Farmstead Equipment

The Questions

Are all power take-off shafts, including rear-, mid- and side-mounted shafts, guarded either by a master shield or other protective guarding?

Is power take-off-driven equipment guarded to protect against contact with positively driven rotating members of the power-drive system?

If power take-off-driven equipment is of a design requiring removal of the tractor master shield, does the equipment also include protection for that portion of the tractor take-off shaft that protrudes from the tractor?

Are signs placed at prominent locations on power take-off-driven equipment specifying that power-driven system safety shields must be kept in place?

Are all revolving shafts, including projections such as bolts, keys and set screws, guarded?

Are sweep-arm material-gathering mechanisms used on top surfaces of materials within silo structures guarded?

Is the lower or leading edge of the guard located no more than 12 inches above the material surface and no less than 6 inches in front of the leading edge of a rotating member of the gathering mechanism?

Is the guard parallel to, and extended to the fullest practical length of, the material-gathering mechanism?

Is exposed auger flighting on portable grain augers guarded with either grating type guards or solid baffle-style covers as follows?

- The largest dimension or opening in grating-type guards through which materials are required to flow shall be 4 ¾ inches. The area of each opening shall be no larger than 10 square inches. The opening shall be located no closer to the rotating flighting than 2 ½ inches.
- Slotted openings in solid baffle-style covers shall be no

wider than 1 ½ inches or closer than 3 ½ inches to the exposed flighting.

Are guards, shields and access doors in place when the equipment is in operation?

Is the application of electrical power from a location not under the immediate and exclusive control of the person maintaining or servicing the equipment prevented by one of the following methods?

- Providing an exclusive, positive locking means on the main switch that can be operated only by the worker or workers performing the maintenance or servicing.
- In the case of material handling equipment located in a bulk storage structure, by physically locating on the equipment an electrical or mechanical means to disconnect the power.

Employer responsibilities

As an employer on a farming operation, you have an obligation to protect the health and safety of your workers. If you have workers operating farm equipment this obligation includes:

- providing information, instruction and supervision to workers
- maintaining equipment in good condition
- making sure all safety devices are operational
- maintain records of inspection of safety devices
- advise the operator to use farm equipment for its intended purpose, as specified by the manufacturer and outlined in the operator’s manual
- If farm equipment is modified, you and your operator should consider how the modifications affect the safe operation of the equipment.
- All safety decals attached to a tractor should be visible and easy to read. Replace damaged or missing safety decals with new ones, if available.

More Responsibilities

Employers should develop and use **Lockout** procedures for each piece

of equipment to ensure that power is disconnected during repairs or adjustments to the equipment. Equipment should be locked out before shields or guards are removed for maintenance purposes. Shields and guards should be re-installed before work is started again.

Guards

If using a shield or guard prevents a piece of farm equipment from performing its intended purpose, employers should guard against the hazard as much as possible and use additional measures to protect workers. Examples of additional measures include:

- installing a warning device such as an alarm
- developing alternate work procedures that allow workers to perform the task safely
- providing personal protective equipment

Workers Responsibilities

- never inspect hydraulic hoses with their hands
- wear long sleeves, heavy gloves and safety glasses when checking for leaks
- always follow the instructions in the operator’s manual because the specific procedures for servicing these systems are very important for one’s safety

Where appropriate, a properly qualified and certified mechanic should perform repairs and maintenance. Workers should not perform work under raised hydraulic equipment.

FINAL WORD

Working around moving parts on farm equipment can be very dangerous if safe work procedures are not followed. Machinery guards when they are in place and properly maintained, provide a physical barrier to the hazard points and reduce the risk of injury.

Work Comp Fraud: Identifying the Modern Fraudster

Fighting work comp fraud starts with knowing what to look for. Who is likely to commit fraud? What are the warning signs?

In this installment of the Spot It & Stop It fraud-fighting webinar training series, an expert from our Special Investigations Unit discusses what red flags to look for before fraud is committed and how to fight back.

In this webinar, you'll learn

- Keeping your eye out for the modern fraudster
- Today's trending fraudster techniques
- COVID reality – real examples of modern fraud
- Critical steps you can take to protect yourself

About your presenter

Christopher Dill, Special Investigations Unit Manager
A Fraud Claims Law Specialist designee, Christopher Dill was a recipient of the National Health Care Anti-Fraud Association's Investigation of the Year Award for his significant contribution to the successful resolution of "Operation Back Lash" – one of the largest workers' compensation health care bribery schemes ever uncovered in San Diego County. Christopher has participated in over 30 criminal cases surrounding medical and legal providers attempting to defraud the workers' compensation system. Christopher's approach to insurance fraud investigations is a holistic one. From preventative education campaigns, to data analytics, to time tested investigative, and intelligence gathering techniques, it is Christopher's belief that a multi-faceted approach to insurance fraud is necessary to a successful defense.

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Watch Out for Work Comp Fraudsters



Look for these clues that may indicate work comp fraud.
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Hazards and Eye Protection on the Farm

WHAT'S AT STAKE?

Eye injuries can translate into pain, loss of time, money and even loss of your eyesight. Even a slight loss or impairment of your vision is a tremendous price to pay for a moment of carelessness. Review the first aid treatment for eye injuries, you learned through your first aid course. Use that information and seek medical attention if there is an eye injury.

WHAT’S THE DANGER?

Personal Protective Equipment (PPE) is important for agricultural procedures to reduce the risk of injury and death.

It is important to remember how important your eyes are. You only have two and they are irreplaceable.

Dangers/Risks

Injuries to the eye can be expensive, painful, and may cause partial or total blindness. Proper eye protection is the best strategy in preventing eye injuries because most eye injuries are a result of flying particles. The eye has its own built-in protection from the surrounding bone structure, eyelashes, tearing, and blinking; but they are no match for particles entering the eye at a high rate of speed. Eye protection should be worn when completing the following types of jobs: feed grinding, handling chemicals, haying, welding, repairing equipment, and any task completed in a dusty environment.

HOW TO PROTECT YOURSELF

EYE PROTECTION

There are 5 types of eye protection. Choose the type that best suits your vision and provides the best protection for the job that you are completing.

1. Basic Safety Glasses

A pair of basic safety glasses provides protection when there is potential for particles to enter the eye from the front. Safety lenses in regular eyeglass frames are not considered suitable safety glasses. Most basic safety glasses do not provide side protection, but side protection is available on some safety glasses through either permanent or detachable side shields to protect the eye from above, below and on the sides. When choosing safety glasses with side protection, make sure that the sides do not interfere with your peripheral vision.

2. Prescription Safety Glasses

Prescription safety glasses are made of either plastic or metal and are available in both bifocals and tinted lenses. Use caution when choosing tinted lenses because these lenses take time for the tinting to disappear which can be hazardous when frequently going between inside and outside work areas. Choose tint lenses when activities may include bright flashes of light.

3. Goggles

Goggles provide inexpensive protection from all angles because they fit snugly around the eyes. This type of eye protection is especially good for jobs such as chainsaw operation, grinding, and riveting. Goggles are especially useful because they typically fit over most prescription eyeglasses and are usually ventilated with an anti-fog solution. Two of the most common models of goggles are eyecup or wire mesh. If working around chemicals, choose goggles with off-set ventilation ports.

4. Face Shields

Face shields are secondary protection and must be worn in conjunction with either glasses or goggles. This type of eye protection is especially designed to protect the user from heat, glare, and flying objects. Face shields can be attached to hard hats for those jobs that also require head protection.

5. Welding Helmets and Goggles

A welding helmet is equipped with special filtering lenses that protect the eyes from the strong ultraviolet and infrared rays that can permanently damage eyes and cause blindness. Welding goggles have various filter lens shades to protect against sparks, rays, and flying particles. Talk with your local dealer to determine the filter lens shade that you need for the various types of welding. Stationary or lift-front lenses are available for both welding helmets and goggles.

Eye Protection Standards

These are recommendations from the American Academy of

Ophthalmology (AAO) for eye protection in the workplace:

- Protective eyewear should include side protection unless there is no possible chance of injury from side impact, splashes or sparks.
- Always put on protective eyewear before entering an area where hazards may be present.
- Eye protection must fit properly and comfortably, including when worn over prescription eyeglasses.
- Protective eyewear should be regularly checked for damage and replaced if there is any defect.
- When in doubt, assume that eye hazards are present.

The AAO estimates that 90% of all eye injuries are preventable by using protective eyewear.

Other Eye Protection Standards

Standards for eye protection are determined based on the identified hazard in the workplace.

Additional recommendations concerning eye protection include the following:

- Do not share eye protection to reduce the risk of contracting a contagious eye disease from another worker.
- Even though sunglasses are important for working outdoors, they are not considered to be eye protection.

Select, Fit, Clean Eyewear

Protective eyewear should be carefully selected, fitted and cleaned. Protective eyewear should be reasonably comfortably and fit snugly without interfering with the movements or vision of the wearer. Protective eyewear should be durable, easily cleaned and capable of being disinfected. It should be kept clean and in good repair. To shield eyes from flying objects, wear industrial-rated glasses or sun glasses and flexible or cushion-fitting ventilated plastic goggles that fit over ordinary eyeglasses. Adding side shields increases protection. Wear splash goggles when handling and applying agricultural chemicals. Farmers can also wear welding

goggles to protect their eyes from intense light and sparks. Full face shields are another option for eye protection and can be worn comfortable. Never wear contact lenses when handling ammonia or other farm chemicals. Store eye protection in clean, dust-proof containers.

Basic eye protection for the glasses or sunglasses wearer is a must. The glasses wearer should wear a face shield, goggles or spectacles with protective lenses. The glasses should be of industrial-quality with flame-resistant frames. Wearing outdated glasses or sunglasses offers no protection and may even be dangerous as they tend to splinter or shatter on impact.

Maintenance of Eye Protection

Regularly clean your protective eyewear in warm, soapy water because looking through dirty lenses can strain your eyes. Use a soft tissue or cloth to dry the lenses to reduce the risk of scratches because deep scratches or pitting may weaken the lenses. Goggles should fit snuggly over your eyes so replace elastic goggle headbands when they become stretched. Store your protective eyewear in a rigid case to reduce dust build-up and potential damage to delicate parts.

Maintain proper vision by having your eyes examined annually. Vision changes can occur that may require a prescription change or the need for prescription eye protection. If you wear contacts, always wear protective eyewear in work areas. The recommendation is to wear prescription eye protection instead of contacts especially in dusty environments because contact lenses may trap particles in the eye.

Causes of Eye Injuries

Spray cans are an increasing source of chemical eye injury, compounded by the force of contact. Whether containing caustics or irritants, spray cans must be carefully used and kept away from children.

Particles of rocks, soil, crop material or other foreign objects

thrown from farm equipment that chops or grinds can cause unexpected eye injury to the operator or bystander. Keep machinery properly shielded. Keep away from the discharge path.

Eye injuries are more likely to occur when servicing farm equipment than when operating it. Simple hand tools can cause severe eye injuries. Wear industrial strength eye protection when using hand tools. Select the right tool for the job.

Basic First Aid

Proper first aid for eye injuries is critical. The method of first aid needed depends upon the type of injury sustained. Let natural tears wash out specks or particles in the eye. Try not to rub the eyes if possible. If this does not work, see a physician. For blows to the eye, apply cold compresses for 15 minutes and again each hour as needed to reduce pain and swelling. If the blow was hard enough to cause discoloration, see a physician. Internal damage could have occurred. For cuts and punctures to the eye, do not do anything to the eye but bandage it lightly and see a physician at once.

Chemical burns on the eyes can be minor to very serious. Fresh water should be available for irrigating eyes anywhere chemicals are used. If the eye comes in contact with any chemical, it should be continuously flooded with water for at least 15 minutes. Do not put anything else in the eye. See a physician and take the label or container of the chemical involved.

FINAL WORD

Many farming activities carry the risk of eye damage. Moving grain, fixing equipment, operating grinders and chemical handling are all examples of activities that can result in an eye injury if proper precautions aren’t observed. Never take your eyesight for granted.

Hitching – Drawbar Connection Safety Talk

WHAT'S AT STAKE?

One of the most common tasks on the farm is hitching or unhitching equipment. The two most common tractor-hitching methods use the drawbar or the 3-point hitch assembly. In either case, there can be multiple elements involved in the process including: connecting the implement using a hitch pin, adjusting a jack stand, attaching safety chains, connecting the PTO shaft, connecting hydraulic couplings, or plugging in electrical connections.

WHAT'S THE DANGER?

Improper Hitching-Fatalities

There are common injuries that occur during hitching like pinch points, crush points, blunt trauma, and run over.

According to the National Institute for Occupational Safety and Health (NIOSH), farmers and others who use tractors are at risk for severe injury or death if proper hitching methods are not used when towing or pulling objects with tractors.

In a recent article in the Centers for Disease Control and Prevention's Morbidity and Mortality Weekly Report, NIOSH warned that improperly attaching a tow chain to a point above the tractor's drawbar can cause tractors to suddenly flip backward. These rear rollovers often result in injury or death.

Between April 1991 and June 1996, 28 incidents of sudden rear rollover of tractors were documented in New York by NIOSH's Occupational Health Nurses in Agricultural Communities program.

Sixteen of these incidents resulted in death. Improperly hitching equipment or material for towing caused the rollovers in 60% of these incidents. Environmental circumstances such as muddy conditions, wet ground, snow-covered, hilly or uneven terrain may have contributed to some of the incidents.

As the number of people using tractors for towing and hauling increases during the winter months, it is important that they are informed of the hazards associated with hitching and the proper prevention measures.

SPECIFIC RISKS/DANGERS

Tractor Stability

Tractors are used in farming regions where there is tough terrain. Steep, rough, slippery or loose ground and towing implements increase the risk of losing control.

The tractor could become unstable because of sudden changes in direction and the tractor’s centre of gravity.

Drivers can easily lose control of tractors after hitting an object, finding poor ground conditions or when towing implements and trailers. The driver can fall off the tractor and hit the ground, another object or the tractor itself.

Towing a Trailer/Heavy Farm Implements

The trailer’s or mounted implement’s weight behind the tractor can cause instability and affect the steering:

- The weight on the rear wheels can make the tractor keep going in a straight line when the steering wheel is turned.
- A load that is too heavy to control, or a trailer without a good braking system, can jack-knife.
- Mounted spray tanks cause more instability because of the liquid’s movement.

Smaller Farm Equipment

Smaller farm equipment may be more susceptible to hitching failure

or loss of a hitch pin, due in part to the hitching configuration (size and type of hitch pin used). Small tractors, 150PTO horsepower and smaller, typically have category 0, 1, or 2 drawbar hitches. Larger row-crop tractors, 250-400+PTO horsepower, have category 3 or 4 drawbar hitching systems that typically use a specific hitch pin and locking mechanism.

HOW TO PROTECT YOURSELF

GENERAL SAFETY GUIDELINES

When Hitching or Unhitching Equipment follow these guidelines:

- Review the equipment manual of the tractor and implement before use.
- Ensure hitch attachments match the tractor hitch category.
- Assess the situation and make a plan prior to attempting to hitch the implement.
- Place the tractor in a lower gear and lower the RPMs to reduce sudden quick movements when approaching or pulling away from the implement.
- When assisting the operator, keep visual contact and communicate with the operator at all times.
- The ground person should stay outside of the wheels of the tractor until the hitch and drawbar are lined up correctly.
- Leave yourself an escape route. Plan a travel path to get out of the way should the tractor lurch towards you.
- Use only approved hitch pins. If hitch pins are damaged or bent, take them out of service.
- Make sure the hitch pin is locked in place or secured with a retainer clip.
- Once the implement is attached, make sure the tractor is in PARK and shut off the engine to complete additional hitching tasks such as connecting PTO or hydraulic lines.
- Before connecting or disconnecting hydraulic lines, ensure the pressure has been released from the system.
- Use proper lifting techniques to reduce sprains / strains when lifting or moving the implement tongue.
- Ensure there is sufficient tongue weight to stabilize the

implement when unhitching.
- Use an approved size tongue jack to support the tongue weight of the implement.
- Only use jacks that are attached to the tongue. Temporary jacks can kick out or fail with minimal implement movement.
- Remove all additional connections prior to pulling away from equipment.
- When unhitching on slopped areas, chock the wheels of the implement to prevent unwanted movement.

Make a Good Connection

Regardless of tractor size, here are some hitch pin tips to ensure you are making a good connection:

- Use safety hitch pins that have a locking device to keep them in place.
- Use the largest diameter hitch pin that will fit through the tractor drawbar and implement hitch.
- NEVER use bolts or fasteners as hitch pins.
- Hitch pins supplied by the equipment dealer are preferred; low-cost hitch pins may be of inferior strength (currently no standardized testing protocol). Note that hitch pins are sold by shaft diameter and length rather than actual load capacity.
- ALWAYS attach a safety chain between the tractor and equipment when transporting on the road; this won’t stop the hitch pin from coming out or failing, but will minimize damage if the pin does fail.
- Discard worn or damaged (e.g. bent) hitch pins to avoid the temptation to use them; throw them in the scrap heap, not in the toolbox.

Finale – Steps for Prevention

Steps for Prevention

- Use farm tractors equipped with ROPS, and wear a safety belt.
- Carefully select the hitching point to a tractor.
- Don’t alter the drawbar by raising or shortening it.

- Never attach the load directly to the axle.
- Never use a two or three-point hitch as a single-point hitch instead of the drawbar.
- If the load attaches by a single point, attach it only to the drawbar.
- Ensure that the tractor operator is familiar with safe use of the equipment.
- Select a strong tow chain with a length sufficient to allow adequate stopping distance between the towed object and the towing vehicle to avoid collision and rear rollover.
- Ensure a cleared work area for greater maneuvering.
- Use slow, steady pull.
- When using a tractor to free an embedded vehicle, hitch the vehicles front-to-front and drive the towing tractor in reverse to minimize the risk of rollover.

FINAL WORD

Hitching and unhitching causes countless injuries on Canadian farms every year. It only takes a few moments longer to do a job safely, rather than spending a lifetime regretting an injury to yourself or someone else.

Ladder Safety Talk

WHAT'S AT STAKE?

Falls from ladders are one of the leading causes of serious injury in business operations in any sector. Remember that ladders are essentially tools. Many of the basic safety rules that apply to tools also apply to the safe use of ladders.

WHAT’S THE DANGER?

The Basics

At some point, you may have used a ladder incorrectly, even if it was only something you did as a child. Over the years, safety administrations, employers and ladder manufacturers alike have made it a priority to improve education regarding ladder safety to help keep others safe. Why? Because using a ladder incorrectly can come with a steep cost: injury or even death. If you aren’t using your ladder the right way, you put yourself and others at risk.

Ladders are so common that it’s easy to forget the risks involved in using them.

OSHA estimates that, for general industry companies, falls from ladders – step, straight, combination, and extension – account for 20% of fatal and lost workday injuries.

Most of these incidents would have been prevented by compliance with OSHA standards. Falling from heights, one of the most-cited **OSHA** violations, includes ladder safety violations.

Working with ladders involves a risk assessment before the use and implementation of ladders on the jobsite by workers. Injuries and even fatalities can occur where appropriate measures, decisions are not applied:

Examples of dangerous situations are as follows:

- If you feel tired or dizzy, or are prone to losing your balance, stay off the ladder.
- Do not use ladders in high winds or storms.
- Wear clean slip-resistant shoes. Shoes with leather soles are not appropriate for ladder use since they are not considered sufficiently slip resistant.
- Before using a ladder, inspect it to confirm it is in good working condition.
    - Ladders with loose or missing parts must be rejected. Rickety ladders that sway or lean to the side must be

rejected.

- The ladder you select must be the right size for the job.
    - The Duty Rating of the ladder must be greater than the total weight of the climber, tools, supplies, and other objects placed upon the ladder. The length of the ladder must be sufficient so that the climber does not have to stand on the top rung or step.
- When the ladder is set-up for use, it must be placed on firm level ground and without any type of slippery condition present at either the base or top support points.
- Only one person at a time is permitted on a ladder unless the ladder is specifically designed for more than one climber (such as a Trestle Ladder).
- Ladders must not be placed in front of closed doors that can open toward the ladder. The door must be blocked open, locked, or guarded.
- Read the safety information labels on the ladder.

HOW TO PROTECT YOURSELF

The Three Point-of-Contact Climb

Factors contributing to falls from ladders include haste, sudden movement, lack of attention, the condition of the ladder (worn or damaged), the user's age or physical condition, or both, and the user's footwear.

Although the user's weight or size typically does not increase the likelihood of a fall, improper climbing posture creates user clumsiness and may cause falls. Reduce your chances of falling during the climb by:

- wearing slip-resistant shoes with heavy soles to prevent foot fatigue;
- cleaning the soles of shoes to maximize traction;
- using towlines, a tool belt or an assistant to convey materials so that the climbers hands are free when climbing;
- climbing slowly and deliberately while avoiding sudden movements;

- never attempting to move a ladder while standing on it;
- keeping the center of your belt buckle (stomach) between the ladder side rails when climbing and while working. Do not overreach or lean while working so that you don't fall off the ladder sideways or pull the ladder over sideways while standing on it.

When climbing a ladder, it is safest to utilize **Three Points-of-Contact** because it minimizes the chances of slipping and falling from the ladder. At all times during ascent, descent, and working, the climber must face the ladder and have two hands and one foot, or two feet and one hand in contact with the ladder steps, rungs and/or side rails. In this way, the climber is not likely to become unstable in the event one limb slips during the climb. It is important to note that the climber must not carry any objects in either hand that can interfere with a firm grip on the ladder. Otherwise, **Three Points-of-Contact** with the ladder cannot be adequately maintained and the chance of falling is increased in the event a hand or foot slip occurs.

OSHA Regulations for Ladders

The OSHA general industry requirements for using ladders stipulate the structural requirements and usage restrictions for various types of ladders. They also include guidelines on ladder setup and usage and restrict unsafe behaviors like attaching ladders together to reach a greater height.

Employer/Employee Responsibility

If you're an employer, it's your responsibility to train your employees to use ladders safely. If an employee feels unsafe, they have the right to refuse work.

The OSHA general industry ladder requirements:

- Use one! A step stool or ladder is required when attempting to reach or perform tasks overhead. Don't step on chairs, boxes, bins, or other objects.
- Choose the right style, height, material, and performance

(duty) rating required for the job.
- Inspect ladders before initial use and before each work shift: replace defective ladders.
- Set up and use your ladder according to the manufacturer’s label.
- Climb and balance safely.
- Avoid hazards and misuse like ascending a closed ladder.
- Communicate ladder-related hazards like damaged or defective equipment.
- Train all employees on the above requirements.

CHOOSE THE RIGHT LADDER

Using ladders safely begins with choosing the right one for the job. OSHA regulations list a few types, including stepstools, stepladders, rolling ladders, extension ladders, and self-supporting ladders. However, the standards are meant to apply to any portable ladder used by your employees, even when not expressly listed.

- Read and follow all labels/markings on the ladder.
- Avoid electrical hazards! – Look for overhead power lines before handling a ladder. Avoid using a metal ladder near power lines or exposed energized electrical equipment.
- Always inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- Always maintain a 3-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing. Keep your body near the middle of the step and always face the ladder while climbing (see diagram).
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Ladders must be free of any slippery material on the rungs, steps or feet.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose.

- Use a ladder only on a stable and level surface, unless it has been secured (top or bottom) to prevent displacement.
- Do not place a ladder on boxes, barrels or other unstable bases to obtain additional height.

DOWN TO THE BASICS

The basics of ladder safety includes:

- Select right ladder for the job.
- Maintain three points of contact.
- Do not overreach.
- Do not move or shift a ladder while a person or equipment is on the ladder.
- An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support (see diagram). Do not stand on the three top rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface (see diagram).
- A ladder placed in any location where it can be displaced by other work activities must be secured to prevent displacement or a barricade must be erected to keep traffic away from the ladder.
- Be sure that all locks on an extension ladder are properly engaged.
- Do not exceed the maximum load rating of a ladder. Be aware of the ladder’s load rating and of the weight it is supporting, including the weight of any tools or equipment.

FINAL WORD

Choosing or selecting the right ladder for a specific job is as important as how an employee ascends or descends on the ladder in pursuit of the job objective.

Safety Footwear

WHAT'S AT STAKE?

Signaling is an important part of hoisting and rigging.

Protecting employees' feet with good industrial footwear cuts lost work hours, improves productivity, and heightens morale and reduces injuries.

To abide by federal regulations adopted and enforced by the Occupational Safety & Health Administration (OSHA), protective footwear is required for workers in industrial settings. OSHA has an abundance of rules and regulations regarding workplace safety, including section 29 CFR 1910.136 on occupational foot protection.

A good safety footwear program begins not with selecting a new pair of shoes or boots, but by addressing all of the walking and working surfaces that employees are going to be exposed to and assuring that they are in the best condition possible.

OSHA's personal protective equipment standard, 1910.132 (d)(1), requires that employers "assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment."

WHAT'S THE DANGER?

There is certainly sufficient financial incentive for industry to pay close attention to foot-related hazards. Workers suffered 180,000 disabling injuries to the feet and toes in 1995, according to the National Safety Council. During that same period, says the National Council on Compensation Insurance, injuries to the feet and toes cost an average of $6,700 per claim.

Foot and Toe injuries are only part of what can happen with a poor footwear program.

It is the Questions that need to be asked.

- have you had slips and falls in the workplace?
- are employees tired at the end of the day and less likely to perform effectively?
- can that result in other, secondary injuries?

HAZARD ASSESSMENT

In the hazard assessment process, safety and health managers should consider the kinds of operations within a facility, the processes being used, the tasks being performed, environmental conditions and the nature of any chemicals in use. They also have to examine “key human performance factors,”, such as the fit of footwear or whether the foot will sweat profusely.

The questions need to posed before selecting protective foot wear:

- Why are we protecting this individual?
- What are protecting from?
- Why is he working in these?

OSHA

OSHA requires that employers document that the hazard assessment has taken place. This written certification includes the identity of the workplace evaluated, the name of the person who performed the evaluation, and date(s) of the hazard assessment.

FOOT PROBLEMS

There are two major categories of work-related foot injuries. The first category includes foot injuries from punctures, crushing, sprains, and lacerations. The second group of injuries includes those resulting from slips, trips and falls. Slips and falls do not always result in a foot injury but lack of attention to foot safety plays an important role in their occurrence.

These two categories of foot injuries, however, do not exhaust the

whole range of foot problems at work. There are also other conditions such as calluses, ingrown toenails or simply tired feet that are common among workers. Although these may not be considered as occupational injuries in the strictest sense, they can have serious consequences for health and safety at the workplace. They cause discomfort, pain and fatigue. Fatigue sets up the worker for further injuries affecting the muscles and joints. Also, a worker who is tired and suffering pain is less alert and more likely to act unsafely. An accident or incident of any kind may result.

The Working Position Contributes to Foot Problems

Common foot problems occur both on and off the job. Still, there is no doubt that some work-related factors can lead to foot problems, especially jobs that require long periods of standing. Since the human foot is designed for mobility, maintaining an upright stance is extremely tiring. Standing for hours, day after day, not only tires the worker’s feet but can also cause permanent damage. Continuous standing can cause the joints of bones of the feet to become misaligned (e.g., cause flat feet) and can cause inflammation that can lead later to rheumatism and arthritis.

Flooring Contributes to Foot Problems

The type of flooring used in the workplace has an important influence on comfort, especially on tender feet. Hard, unyielding floors like concrete are the least comfortable surfaces to work on. Working on a hard floor has the impact of a hammer, pounding the heel at every step. Slippery floors are hazardous for slips and falls that can result in sprained ankles or broken foot bones.

Foot-Wear Contributes to the Foot Problems

Footwear that fits poorly or is in need of repair also contributes heavily to foot discomfort. Pointed toes and high heels are particularly inappropriate for working footwear.

Specific examples of workplace foot injuries

Injuries	Common Causes
Crushed or broken feet, amputations of toes or feet	Feet trapped between objects or caught in a crack, falls of heavy objects, moving vehicles (lift trucks, bulldozers, etc.), conveyor belts (feet drawn between belt and roller)
Punctures of the sole of the foot	Loose nails, sharp metal or glass objects
Cuts or severed feet or toes, lacerations	Chain saws, rotary mowers, unguarded machinery
Burns	Molten metal splashes, chemical splashes, contact with fire, flammable or explosive atmospheres
Electric shocks	Static electricity, contact with sources of electricity
Sprained or twisted ankles, fractured or broken bones because of slips, trips or falls	Slippery floors, littered walkways, incorrect footwear, poor lighting.

Additional hazards for foot injury exist in outdoor jobs such as logging, hydro linework or fishing which involve freezing temperatures, or wetness in low temperature: frostbite and trench foot.

HOW TO PROTECT YOURSELF

AMERICAN NATIONAL STANDARDS INSTITUTE

Protective footwear must comply with American National Standards Institute standard ANSI Z41-1991, which breaks footwear down into six categories:

- **Impact – and compression – resistance**, which uses a steel or nonmetallic toe cap (steel toe) to protect against falling objects or crushing from heavy rolling objects.
- **Metatarsal footwear,** which provides similar protection against falling objects to the area of the foot between the ankle and the toes.
- **Electrical hazard,** where the sole of the shoe or boot is designed to protect workers from electric shock from 600 volts or less, under dry conditions.
- **Conductive footwear**, which prevents the buildup of static electricity.
- **Puncture-resistance**, where the sole resists penetration from sharp objects; such as nails or broken glass.
- **Static-dissipative,** which reduces the buildup of static electricity by conducting body charge to ground, while protecting the employee from electrical hazards.

Safety Footwear Knowledge

If you are at risk for foot injury at your workplace, you should wear the appropriate protective footwear.

- If foot protection is required, set up a complete foot safety protection program including selection, fit testing, training, maintenance and inspection.
- Safety footwear is designed to protect feet against a wide variety of injuries. Impact, compression, and puncture are the most common types of foot injury.
- Choose footwear according to the hazard. Refer to CSA Standard Z195-14 “Protective Footwear”.
- Select CSA-certified footwear. Ensure that it has the proper

rating for the hazard and the proper sole for the working conditions.
- Use metatarsal protection (top of the foot between the toes and ankle) where there is a potential for injury.

Footwear Selection

Footwear must be chosen based on the hazards that are present. Assess the workplace and work activities for:

- Materials handled or used by the worker.
- Risk of objects falling onto or striking the feet.
- Any material or equipment that might roll over the feet.
- Any sharp or pointed objects that might cut the top of the feet.
- Objects that may penetrate the bottom or side of the foot.
- Possible exposure to corrosive or irritating substances.
- Possible explosive atmospheres including the risk of static electrical discharges.
- Risk of damage to sensitive electronic components or equipment due to the discharge of static electricity.
- Risk of coming into contact with energized conductors of low to moderate voltage (e.g., 220 volts or less).

Good Footwear Should Have the Following Qualities

- The inner side of the shoe must be straight from the heel to the end of the big toe.
- The shoe must grip the heel firmly.
- The forepart must allow freedom of movement for the toes.
- The shoe must have a fastening across the instep to prevent the foot from slipping when walking.
- The shoe must have a low, wide-based heel; flat shoes are recommended.
- The shoe should have a low, wide-based heel. Small heels (1/4” to 1/3” for a men size 9, scaled to other sizes) are recommended.

Buying Footwear for Work Should Take the Following Advice

- Do not expect that footwear which is too tight will stretch

with wear.
- Have both feet measured when buying shoes. Feet normally differ in size.
- Buy shoes to fit the bigger foot.
- Buy shoes late in the afternoon when feet are likely to be swollen to their maximum size.
- Ask a doctor’s advice if properly fitting shoes are not available.
- Consider using shock-absorbing insoles where the job requires walking or standing on hard floors.

Improve the Foot Safety in Workplaces Where Foot Injuries Occur Frequently

Job and workplace designs also have the potential to increase foot safety in workplaces that are specifically hazardous. Here are some examples:

- Separating mobile equipment from pedestrian traffic and installing safety mirrors and warning signs can decrease the number of incidents that might result in cut or crushed feet or toes.
- Proper guarding of machines such as chain saws or rotary mowers can avoid cuts or severed feet or toes.
- Effective housekeeping reduces the number of incidents at workplaces. For example, loose nails, other sharp objects, and littered walkways are hazards for foot injury.
- Using colour contrast and angular lighting to improve depth vision in complicated areas such as stairs, ramps and passageways reduces the hazard of tripping and falling.
- Posting safety signs in conspicuous places where safety foot wear is required when there is a potential hazard from falling objects, sharp objects, etc.

What Kind of Floors Improve Foot Comfort?

Standing or working on a hard, unyielding floor can cause a lot of discomfort. Wood, cork, carpeting, or rubber – anything that provides some flexibility – is gentler on workers’ feet. Where resilient floors are not practical, footwear with thick,

insulating soles and shock-absorbing insoles can alleviate discomfort. Anti-fatigue matting can also be useful wherever workers have to stand or walk. They provide a cushioning which reduces foot fatigue. However, the use of matting requires caution. When installed improperly, it can lead to tripping and slipping incidents.

Special anti-slip flooring or matting can reduce slipping incidents. If installed properly, these mats are useful, but workers may find that their feet burn and feel sore. The non-slip properties of the flooring mat cause their shoes to grab suddenly on the flooring making their feet slide forward inside the shoes. Friction inside the shoes produces heat that creates soreness and, eventually, calluses. A non-slip resilient insole can reduce this discomfort.

Footwear Knowledge

Proper footwear is important, not only for foot comfort but also for one’s general well-being. Improper footwear can cause or aggravate existing foot problems. Unfortunately, being fashionable sometimes takes precedence over choosing well-fitting, supportive safety footwear. However, many safety footwear manufacturers produce safety footwear that does look fashionable.

The best way to involve workers in programs to protect their feet is to provide:

- Training and information on the health hazards of wearing improper shoes.
- Principles for selecting proper shoes.
- Simple rules of general foot care.

Foot Injury Prevention

There is no workplace where a worker is immune to foot injury. However, the hazards differ according to the workplace and the types of tasks the worker does. The first step in developing a strategy to reduce foot problems is to identify the relevant hazards at the workplace. Such hazards should be assessed in each

workplace, no matter how safe or how dangerous it may seem. Foot injuries then can be prevented by looking for measures through proper job design and/or workplace design, and identifying proper foot wear.

Good Job Design Improves Foot Safety

Aching, flat or tired feet are common among workers who spend most of their working time standing.

The most important goal of job design is to avoid fixed positions especially fixed standing positions. Good job design includes varied tasks requiring changes in body position and using different muscles. Job rotation, job enlargement and team work are all ways to make work easier on the feet.

- Job rotation moves workers from one job to another. It distributes standing among a group of workers and shortens the time each individual spends standing. However, it must be a rotation where the worker does something completely different such as walking around or sitting at the next job.
- Job enlargement includes more and different tasks in a worker’s duties. If it increases the variety of body positions and motions, the worker has less chance of developing foot problems.
- Team work gives the whole team more control and autonomy in planning and allocation of the work. Each team member carries a set of various operations to complete the whole product. Team work allows workers to alternate between tasks which, in turn, reduces the risk of overloading the feet.
- Rest breaks help to alleviate foot problems where redesigning jobs is impractical. Frequent short breaks are preferable to fewer long breaks.

Workplace Design Improves Foot Safety

Redesigning the job alone will not effectively reduce foot problems if it is not combined with the proper design of the workplace.

- For standing jobs, an adjustable work surface is the best choice. If the work surface is not adjustable, two solutions include installing a platform to raise the shorter worker or a pedestal to raise the object for a taller worker.
- Work station design should allow the worker room to change body position.
- A foot-rail or footrest enables the worker to shift weight from one leg to the other. This ability reduces the stress on the lower legs and feet.
- Where possible, a worker should be able to work sitting or standing at will. Even when work can only be done while standing, a seat should be provided for resting purposes.

Men and Women

All working footwear, for both men and women, whether it is safety wear or not, should provide comfort without compromising protective value. In addition, protective footwear should conform with CSA Standard CAN/CSA-Z195-14 or appropriate standard for your jurisdiction.

- A steel toe cap should cover the whole length of the toes from tips to beyond the natural bend of the foot. A soft pad covering the edge of the toecap increases comfort. If the toecap cuts into the foot, either the size or style of the footwear is incorrect.
- Soles come in a variety of thicknesses and materials. They need to be chosen according to the hazards and type(s) of flooring in the workplace.
- Uppers of protective footwear come in a variety of materials. Selection should take into account the hazards, and individual characteristics of the worker’s foot.
- A steel midsole which protects the foot against penetration by sharp objects should be flexible enough to allow the foot to bend.
- No one type of non-slip footwear can prevent the wearer from slipping on every surface type.

Footwear Appropriate for Cold Conditions

Selection should be made to suit the specific working condition. Working outdoors in cold weather poses a special requirement on selecting the proper footwear. “Normal” protective footwear is not designed for cold weather. “Insulated” footwear may give little temperature protection in the sole if it has no insulation there. Loss of heat through steel toe caps (commonly blamed for increased heat loss) is insignificant.

Foot protection against cold weather can be resolved by:

- Insulating the legs by wearing thermal undergarments.
- Wearing insulating overshoes over work footwear.
- Wearing insulating muffs around the ankles and over the top of the footwear.

Feet Care

Feet are subject to a great variety of skin and toenail disorders. Workers can avoid many of them by following simple rules of foot care:

- Wash feet daily with soap, rinse thoroughly and dry, especially between the toes.
- Trim toenails straight across and not too short. Do not cut into the corners.
- Wear clean socks or stockings and change them daily.

Some feet sweat more than others and are more prone to athlete’s foot. Again, following a few simple guidelines may help:

- Select shoes made of leather or canvas – not synthetic materials.
- Keep several pairs of shoes on hand and rotate shoes daily to allow them to air out.
- For some workers, non-coloured woollen or cotton socks may be recommended since dyes may cause or aggravate skin allergies.
- Use foot powder.
- If problems persist, see a doctor or health care specialist.

In cases of persisting ingrown toenails, calluses, corns, fungal infection and more serious conditions such as flat feet and arthritis, see a doctor and follow the doctor’s advice.

Exercises at The Workstation

Standing still requires considerable muscular effort. Even so, it is not exercise – only a strain. It does not allow for the alternate contracting and relaxing of muscles of the feet and legs.

To keep feet healthy, it is necessary to compensate for working in a stationary position. One action that can be done frequently on the job is alternately to contract and relax the calf muscles, and flex and straighten ankles and knees. Another bit of advice is to walk whenever practical instead of riding. More information on exercise for feet can be obtained from a foot specialist or from a local fitness centre.

FINAL WORD

Protecting feet and ankles from injuries involve selecting and wearing the proper footwear according to task and hazards. In general, it is a good idea to always use CSA-approved safety footwear. It’s also important to select the right footwear for conditions and the task.

Power Take Off Safety Talk

Download Instructor-Led Material

 Meeting Kit	 PowerPoint

WHAT'S AT STAKE?

A power take-off (PTO) shaft transfers mechanical power from a tractor to an implement. Some PTO-driven equipment is operated from the tractor seat, but many types of farm equipment, such as elevators, grain augers, silage blowers are operated in a stationary position, enabling an operator to leave the tractor and move in the vicinity of the implement.

WHAT'S THE DANGER?

GENERAL

A PTO shaft rotates at a speed of either 540 rpm (9 rotations per second) or 1,000 rpm (16.6 rotations per second). At these speeds, a person's limb can be pulled into and wrapped around a PTO stub or driveline shaft several times before the person, even a person with extremely fast reflexes, can react. The fast rotation speed, operator error, and lack of proper guarding make PTOs a persistent hazard on farms and ranches.

PTO Entanglement Incidents

Generally, PTO entanglements:

- involve the tractor or machinery operator 78 percent of the time.
- shielding was absent or damaged in 70 percent of the cases.
- entanglement areas were at the PTO coupling, either at the tractor or implement connection just over 70 percent of the time.
- a bare shaft, spring loaded push pin or through bolt was the

type of driveline component at the point of contact in nearly 63 percent of the cases.

- stationary equipment, such as augers, elevators, post-hole diggers, and grain mixers were involved in 50 percent of the cases.
- semi-stationary equipment, such as self-unloading forage wagons and feed wagons, were involved in 28 percent of the cases.
- nearly all incidents involving moving machinery, such as hay balers, manure spreaders, rotary mowers, etc., were non-moving at the time of the incident (the PTO was left engaged).
- only four percent of the incidents involved no attached equipment. This means that the tractor PTO stub was the point of contact four percent of the time.

Power Take-Off Injuries Case

Case #1: An operator finished loading a load of silage into the silo and was approaching the tractor's PTO lever to turn off the forage blower. As he stepped onto the drawbar, the laces on his boot became caught on the spring loaded push pin of the forage blower PTO driveline coupling. He was thrown backwards off the drawbar, with this boot and denim jeans being forcibly removed. He suffered considerable muscle damage to his right leg.

Case #2: A teenager was helping her family load corn onto a grain elevator when her jacket sleeve because entangled by the elevator PTO shaft. Her body was flung around the shaft and her arm was torn from its socket before the tractor could be turned off.

Case #3: A small child was killed when as an "extra rider" on his father's tractor; he slipped off the tractor and became entangled by a spinning PTO shaft. The father grabbed for the boy as he began to slip but was unable to hold him out of the shaft.

PTO HAZARDS

The Main PTO Hazards Involve the PTO Stub and Driveline.

PTO Stub

The tractor’s stub output shaft, referred to as a **PTO stub**, transfers power from the tractor through a drive shaft to the implement or PTO-driven machine. The PTO stub rotates at rate of 540 or 1,000 rpm, and most incidents involving the PTO stub are entanglement incidents.

Entanglement incidents can occur when the operator is unaware that the PTO clutch is engaged, when the operator does not understand the dangers of the spinning PTO stub, or when the operator deliberately works close to an unguarded stub shaft that is in motion. Clothing, such as a pant leg, shoelace, thread from a jacket, and so on, is easily caught by the spinning shaft. Once caught, both the clothing and the wearer can quickly wrap around the stub shaft.

A **PTO driveline** or **implement input driveline (IID)** is the part of the implement drive shaft that connects to the tractor. When unguarded, the entire shaft of the driveline is considered a wrap-point hazard. Some drivelines have guards covering the straight part of the shaft, leaving the universal joints, PTO coupling, and the rear connector, or implement input connection (IIC), as wrap-point hazards. Clothing can catch on and wrap around the driveline. When clothing is caught on the driveline, the tension on the clothing from the driveline pulls the person toward and around the shaft. When a person caught in the driveline instinctively tries to pull away from wrap hazard, he or she actually creates a tighter wrap.

Driveline Separation

In addition to injuries caused by entanglement incidents with the PTO stub and driveline, injuries can occur when shafts separate while the tractor’s PTO is engaged. The IID shaft telescopes, meaning that one part of the shaft slides into another. The sliding sleeve on the shaft allows for easy hitching of PTO-powered machines to tractors and allows telescopic movement when the machine turns or is operated on uneven ground. If the IID is

attached to a tractor by only the PTO stub, the tractor can pull apart the IID shaft. If this occurs and the PTO is engaged, the tractor shaft can swing wildly, striking anyone in range and possibly breaking a locking pin, allowing the shaft to become a projectile. This type of incident is not common, but it is more likely to occur with three-point hitched equipment that is not properly mounted or aligned.

HOW TO PROTECT YOURSELF

PREVENTION

In addition to having the proper shields in place, taking the following preventive steps can reduce your risk of a PTO incident:

- **Never step over a rotating shaft.**
- Do not wear loose fitting clothing around PTO-driven equipment.
- Tie back long hair or secure it under a hat before operating equipment.
- Ensure that safety decals, such as “Rotating Driveline: Contact can cause death,” are readily visible. Replace decals that are obscured or incomplete.
- Always disengage the PTO and shut off the tractor before dismounting the tractor.
- Never work on machinery or equipment while the engine is running or is energized.
- Keep universal joints in phase.
- Do not switch drivelines between machines.
- To reduce driveline stress and separation, position the tractor’s drawbar appropriately for each piece of machinery.
- Reduce PTO shaft abuse by avoiding tight turns, reducing excessive telescoping, engaging power to the shaft gradually, and avoiding over-tightening the slip clutch on PTO-driven machines.
- Examine the driveline for protruding pins or bolts and debris such as mud that has dried onto the driveline shield. Clothing snags easily on such protrusions, resulting in entanglement incidents.

- As part of the pre-operation inspection, if the driveline shield is equipped with a tether, ensure that the tether is attached and in good condition and that the driveline shield rotates freely on its bearings.

PTO Safety Practices

Though not always convenient or easy, there are several ways to reduce the risk of PTO injury incidents. These safety practices offer protection from the most common types of PTO entanglements.

- Keep all components of PTO systems shielded and guarded.
- Regularly test driveline guards by spinning or rotating them to ensure that they have not become stuck to the shaft.
- Disengage the PTO and shut off the tractor before dismounting to clean, repair, service, or adjust machinery.
- Always walk around tractors and machinery instead of stepping over a rotating shaft.
- Always use the driveline recommended for your machine. Never switch drivelines among different machines.
- Position the tractor’s drawbar properly for each machine used to help prevent driveline stress and separation on uneven terrain and during tight turns.
- Reduce PTO shaft abuse by observing the following: avoid tight turns that pinch rotating shafts between the tractor and machine; keep excessive telescoping to a minimum; engage power to the shaft gradually; and avoid over tightening of slip clutches on PTO driven machines.
- Be sure PTO driveline is securely locked onto the tractor PTO stub shaft.
- Keep universal joints in phase. (If unfamiliar with this term, check the operator manual or talk with a farm implement dealer.)

Use the proper type of guard

It is very difficult to select the best PTO guard to suit your needs simply by looking at the guard in a shop.

Before buying a new guard it is wise to speak to a reputable machinery dealer or agricultural engineer/mechanic as they can

advise on the type and make of guard that should suit your needs.

A few tips to help select a suitable guard include:

- selecting a guard with flexible end cones
- a heavy duty plastic telescopic section
- a guard which can be easily removed and replaced to allow regular maintenance

PTO maintenance

- lubricate the bearings regularly as recommended by the manufacturer – do not over grease the bearing as the excess grease will attract dirt and dust
- clean the inner and outer sliding surfaces of the telescopic section of the guard daily or more frequently if the manufacturer recommends it – do not lubricate the sliding section of the guard with grease unless the manufacturer recommends it
- regularly remove the guard and clean the shaft with penetrating oil
- make sure that the U-guard on the tractor is in good condition. If it is bent it can damage the end of the PTO guard
- make sure that the O-guard fitted to the implement is the correct size to suit the PTO guard
- make sure that the U-guard on the tractor and the O-guard on the implement overlap the PTO shaft guard by at least 50mm
- make sure that the PTO shaft and guard are the correct length for the machine – the PTO guard telescopic section should be slightly shorter (not by more than 25mm) than the length of the telescopic halves of the PTO drive shaft
- lubricate the sliding metal PTO drive shafts as recommended by the manufacturer (usually before starting work and after every eight hours of use)
- make sure that the button on the end of the PTO shaft moves freely as the shaft and guard can be damaged if the button or the end of the shaft is hammered into position
- keep the tractor rear lower lift arms in a position to avoid them striking the PTO shaft or guard when the tractor is

turning – if making tight turns reduce the PTO speed or disengage the PTO drive to protect the shaft
- keep the restraining chains in place and secure them to a suitable point on the tractor and implement – this is usually near to the O-guard on the machine and the U-guard on the tractor (this makes sure that there is no restriction in the movement of the chains) – do not attach the end of the chain to the lower lift arms
- if using a bellows type PTO guard make sure that the ends of the guard are held correctly in place at both the tractor and implement, to ensure the drive shaft is fully enclosed in the guard and replace if necessary
- if buying a new PTO shaft for heavy drive machines, for example forage harvester, mower, feeder wagon or rotavator, make sure the shaft is heavy duty and suitable for the job
- consider fitting a PTO shaft with a wide-angle universal joint on machines like balers, mowers and slurry tankers
- make sure that draw-bar pins on trailed machines do not foul and damage the shaft or guard.

Summary

Recognize that the PTO shaft turns at speeds that are faster than our reaction time. It is easy to get snagged into a turning PTO shaft. To prevent PTO entanglement with its potential for injury and death, follow these guidelines:

- Stop the tractor engine and disengage the PTO to work on the machine or unclog it.
- Keep guards in place.
- Wear close fitting clothing to prevent entanglement of loose clothing parts.
- Secure long hair under a hat when working around the PTO.
- Instruct all operators about the hazards of the PTO.
- Keep children away from all turning parts of the machine not just the PTO.

FINAL WORD

Remember. A PTO turning at 540 RPM turns 9 times per second and one turning at 1000 RPM turns at 16.6 times per second. A Person cannot react so keep your distance. A PTO entanglement will have extreme consequences including death.

General Hitching and Hauling Safety Talk

WHAT'S AT STAKE?

Hitching and hauling cause countless injuries on Canadian farms every year. It only takes a few moments longer to do a job safely, rather than spending a lifetime regretting an injury to yourself or someone else.

The following are **TERMS** to help understand Hitching and Hauling procedures:

Hitches and Receivers- Refer to the device attached to the tow vehicle which adapts it to pull a trailer.

Ball Mount- A ball shaped attachment that connects the tow vehicle hitch/receiver and the trailer's coupler.

Trailer Coupler- Device attached to the trailer tongue that connects to the ball mount.

Tongue- The arm that extends from the front of the trailer that includes the coupler.

WHAT’S THE DANGER?

DANGERS/RISKS BEFORE TOWING

- Check the coupler or kingpin for fatigue, damage, cracks or missing parts before towing.
- Test the lock mechanism for complete and correct latching so the trailer will not come unhooked.
- For ball type couplers, make sure the coupler and ball size match.
- If you are using a bumper hitch type coupler, it is recommended to put a bolt or similar device through the latch mechanism when hooking to the tow vehicle for safety.

Ensure hitch ball is the correct size and capacity for the trailer and load. Improper ball size or capacity could cause the trailer to separate from the tow vehicle causing property damage, injuries or death.

Stability/Sway Control of Trailers

Factors of Dangerous Trailer Sway

- Weight of the tow vehicle relative to the trailer.
- Hitch load, the tongue weight being too light.
- Towing speed is too fast.
- Tire inflation.
- Design of the trailers, specifically placement of axles.

Mitigate the Sway

- Ensure you have the proper hitching
- Properly load the trailer.
- Follow the instructions in the tow vehicle and trailer owner’s manuals.
- Use the driving tips found here.
- You may also add a sway control device for additional security related to factors such as sudden maneuvers, wind gusts, and the like. A number of sway control devices are available on the market. You will want to ensure with your trailer dealer that the device is appropriate for your

application.

HOW TO PROTECT YOURSELF

First Line of Defense/Safety Chains

All hitches or tow bumpers must provide a secure location for the attachment of safety chains. Safety chains are your first line of defense if the trailer detaches. Safety chains are strongly recommended.

- Crisscross the chains to form an X beneath the trailer tongue so that it would catch the tongue should the trailer disconnect from the tow vehicle. Only enough slack to allow turning should exist.
- If possible, the chains should be looped back to hook onto themselves
- Do not hang an S hook on the opening of the receiver hitch, it might bounce off while driving, but loop it through the opening and connect it to the chain.

Driving Tips

Towing involves the interaction of a number of components: the **driver, tow vehicle and trailer**. Each of these contributes to the towing experience and safety of the combination. The driver is responsible for selecting the right tow vehicle and trailer for the load, hitching the unit, loading, steering, speed, and braking. All components of the tow vehicle and trailer effect towing. Safe and proper driving is a critical piece of trailer safety. Drivers should be focused and limit or eradicate distractions.

Hitching Tips

There are various devices used to hitch a trailer to a tow vehicle. Understanding hitches and the proper hitch for the trailer and load is important to ensuring a safe and smooth towing experience. After deciding the appropriate hitch system, properly hitching the trailer to the tow vehicle will help to ensure the

combination remains attached, and should the coupler fail, correctly attached safety chains should be your next line of defense.

Hitching Know-How

No matter which type of hitch system used, the hitch needs to have a strength rating equal to or greater than the GVWR of your trailer. Your trailer’s maximum capacity is never greater than the lowest rated part in the trailer/towing system. You also want to ensure your hitch system is in good working condition and matches the type of tongue on the trailer.

HITCHING BASIC STEPS

1. Back your tow vehicle as close as possible to the trailer. It is easier and safer to do this than it is to pick up and pull the trailer to your car or truck.
2. Release the coupler locking device.
3. Raise the front end of the trailer. Place coupler directly over the hitch ball then lower it until it is seated on the hitch ball, covering it completely.
4. Check under the coupling to ensure the ball clamp is below the ball and not riding on top of it.
5. Latch the coupler to the hitch ball. Make sure it is locked in place by lifting up the trailer tongue. If the coupler comes loose from the ball, unlatch it and go back to Step 3.
6. Make sure your jack is fully raised.
7. If you have a weight distributing hitch with spring bars, follow the above procedures. Then attach the spring bar chain to the trailer and tighten it until your trailer and car are in normal, level position.
8. If your trailer has a surge brake breakaway cable or chain, attach the cable or chain to your tow vehicle, allowing enough slack for you to make tight turns.
9. Attach the safety chains.
10. Connect the trailer wiring harness to the lighting system of your tow vehicle and check its operation.

HITCH TYPES

While there are a number of hitch types, their function falls into three main categories:

1. **Weight Carrying-** Generally used in applications with smaller loads, weight carrying hitches carry all of the tongue weight. Because this weight affects the truck's handling and braking ability and adds stress to the rear axle, this is not typically the best for heavier load applications.
2. **Weight Distributing-** Used in heavy-duty applications, the purpose of this system is to prevent sag due to excessive weight or stress on the rear of the tow vehicle. Rather than merely supporting the trailer tongue weight, weight distributing hitches apply leverage between the towing vehicle and trailer causing the tongue weight to be carried by all axles of the tow vehicle and trailer.

    - It is important to note that weight distributing hitches do not lend themselves to the proper operation of surge or hydraulic brakes.

3. **Fifth Wheel/Gooseneck-**Used in heavier-duty load application, this system located the hitch system over or before the rear axle of the tow vehicle.

    - A gooseneck hitch looks like a ball mount in the truck bed.
    - A 5th wheel hitch is a horseshoe shaped attachment.

Ball Mount Height

The trailer will need to ride parallel to the ground when being towed. This is important for stability, proper tire wear, and appropriate stress on the towing combination. As such, the ball mount will need to be raised or lowered as tow vehicles and trailers are often at different heights.

- To determine the appropriate rise or drop you will need to measure, on a flat surface, from the ground to the top of the hitch receiver opening and from the ground to the bottom of the coupler on the trailer. The difference between the two provides the necessary rise or drop for a ball mount.
- Ensuring the hitch ball is the proper size

- Hitch Balls are stamped with their maximum weight capacities
- They are purchased based on weight capacities, but also the size of the ball to ensure proper coupler fit, as well as shank width for mounting to the draw bar.

HITCHING/HAULING OVERVIEW

Hitching

- Try to do hitching and unhitching on level ground. If there is a risk of rolling, block wheels before unhitching.
- Hitch trailed equipment only to the tractor drawbar. Hitching elsewhere may displace the centre of gravity on the tractor and can cause a backward overturn.
- Connect each farm wagon or piece of equipment to the towing vehicle by two separate means of attachment. Most commonly this will be a draw pin and chains. It may also include a ball-hitch or three-point hitch. Use safety hitch pins (draw pins with cotter pins or other locking system) in every application.
- 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. Be sure no loose chains are dangling either from the drawbar or the implement.
- Use locking pins on hydraulics.
- Shut off the engine and wait for all moving parts to stop before un/hitching implements or when making adjustments or performing maintenance.
- Make sure all shields and guards are in good condition and properly installed.

Hauling

- When towing equipment without brakes, keep speeds under 40 km/hr.
- Stopping distance increases with speed and with increased weight of towed loads. Reduce speed when hauling a load.
- Make sure the tractor is properly counterweighted.
- Before hauling, ensure your load is well secured. Avoid

sudden starts / stops and excessive speed, especially when operating on a hillside or rough ground as it may cause your load to fall.
- Check clearance before operating under overhead electric lines or before entering a building.
- Always travel with the front-end loader or bucket in the lowest position possible.
- Avoid operating attachments during road travel and keep the PTO disengaged unless absolutely necessary.
- Transport winged and folding implements in their narrowest configuration.

FINAL WORD

Hitching and Hauling are common almost everyday occurrences on farms. Most of the time, they proceed without a “hitch”. The hitching process than is fraught with dangers and risk if safety procedures are not followed with precision and passion. The requirements of Equipment and Machine capacity, purpose a dangers must be strictly applied and adhered to by all farm workers.

Overhead Wire Safety Talk

WHAT’S AT STAKE?

Incidents involving high voltage power lines are preventable. But electricity is dangerous!!!

Electricity is dangerous! Less than one amps of electricity flowing through the human body can shock, burn, severely injure or cause death. Electricity travels at approximately 299,330 km per second – you’ll have no time to react. To be safe, never put yourself into electricity’s path. “Conductors “of electricity

include metal, water, humans and even non-metallic materials such as equipment tires, trees, and rope.

WHAT'S THE DANGER?

OVERHEAD POWER LINES

Accidental contact with live overhead power lines kills people and causes many serious injuries every year. People are also harmed when a person or object gets too close to a line and a flashover occurs. Work involving high vehicles or long equipment is particularly high risk, such as;

In Construction – Lorry mounted cranes (such as Hiabs or Palingers), Mobile Elevated Work Platforms (MEWP's), scaffold poles, tipper vehicles, cranes, ladders;

In Agriculture – combines, sprayer booms, materials handlers, tipper vehicles, ladders, irrigation pipes, polytunnels; Remember:

- going close to a live overhead line can result in a flashover that may kill. Touching a power line is not necessary for danger;
- voltages lower than 230 volts can kill and injure people;
- do not mistake overhead power lines on wooden poles for telephone wires; and
- electricity can bypass wood, plastic or rubber, if it is damp or dirty, and cause fatal shocks. Don't rely on gloves or rubber boots to protect

ACCIDENTS AND OVERHEAD POWER LINES

A high proportion of accidents occur when vehicles or machinery make contact with overhead lines. If a vehicle or machine becomes "live" then anyone touching it is in mortal danger. Anyone in the cab may be in less danger but may be threatened by the vehicle or machine catching fire.

Personnel are at serious risk if equipment they are driving tips off an overhead line. This may happen in a number of different

scenarios:

- the equipment is high enough to reach the line while driving along in its normal configuration;
- a trailer is tipped up, making contact with the line, rendering the entire vehicle “live”;
- a hydraulic boom or jib, controlled from a cab, makes contact with an overhead line, e.g. a crane lifting a load;
- a hydraulic boom, jib, pipe or conveyor, controlled by an operator in a standing position, makes contact with a line while lifting or conveying material.

Because of the height of equipment used in agriculture, farmers and those in or close to tall agricultural equipment can be at high risk in the event of a hit on an overhead line.

HOW TO PROTECT YOURSELF

PREVENTIVE STEPS

Plan and manage work near electric overhead power lines so that risks from accidental contact or close proximity to the lines are adequately controlled.

Safety precautions will depend on the nature of the work and will be essential even when work near the line is of short duration.

Safety can be achieved by a combination of measures:

- Planning and preparation
- Eliminating the danger
- Controlling the access
- Controlling the work

Planning and Preparation

The first step is to find out whether there is any overhead power line within or immediately next to the work area, or across any access route.

Information will be available from the local electricity supplier

or Distribution Network Operator (DNO). If any overhead lines are found, you should assume that they are live unless proved otherwise by their owners.

If there are any overhead lines over the work area, near the site boundaries, or over access roads to the work area, consult the owners of the lines so that the proposed plan of work can be discussed.

Allow sufficient time for lines to be diverted or made dead, or for other precautions to be taken as described below.

Eliminating the Danger

Eliminate the danger by:

- **Avoidance**– find out if the work really has to be carried out under or near overhead lines, and can't be done somewhere else. Make sure materials (such as bales or spoil) are not placed near overhead lines, and temporary structures (such as polytunnels) are erected outside safe clearance distances;
- **Diversion –** arrange for overhead lines to be diverted away from the work area; or Isolation – arrange for lines to be made dead while the work is being done.

In some cases you may need to use a suitable combination of these measures, particularly where overhead lines pass over permanent work areas.

If the danger cannot be eliminated, you should manage the risk by controlling access to, and work beneath, overhead power lines.

Controlling the Access

Where there is no scheduled work or requirement for access under the lines, barriers should be erected at the correct clearance distance away from the line to prevent close approach. The safe clearance distance should be ascertained from the Distribution Network Operator (DNO). HSE guidance documents Avoidance of danger from overhead electric power lines and Electricity at Work:

Forestry and Arboriculture also provide advice on safe clearance distances and how barriers should be constructed. Where there is a requirement to pass beneath the lines, defined passageways should be made.

The danger area should be made as small as possible by restricting the width of the passageway to the minimum needed for the safe crossing of plant. The passageway should cross the route of the overhead line at right angles if possible.

Controlling the Work

If work beneath live overhead power lines cannot be avoided, barriers, goal posts and warning notices should be provided. Where field work is taking place it may be impractical to erect barriers and goal posts around the overhead lines – these are more appropriate for use at gateways, on tracks and at access points to farm yards.

The following **precautions** may also be needed to manage the risk:

- **Clearance –** the safe clearance required beneath the overhead lines should be found by contacting the Distribution Network Operator (DNO);
- **Exclusion –** vehicles, plant, machinery, equipment, or materials that could reach beyond the safe clearance distance should not be taken near the line;
- **Modifications –** Vehicles such as cranes, excavators and tele-handlers should be modified by the addition of suitable physical restraints so that they cannot reach beyond the safe clearance distances, measures should be put in place to ensure these restraints are effective and cannot be altered or tampered with;
- **Maintenance –** operators of high machinery should be instructed not carry out any work on top of the machinery near overhead power lines;
- **Supervision –** access for plant and materials and the working of plant should be under the direct supervision of a suitable person appointed to ensure that safety precautions are observed.

SAFETY CONSIDERATIONS FOR OVERHEAD POWER LINES (OHPL)

It is a given that work may be carried out in close proximity to live overhead lines **only** when there is **no alternative** and when the **risks can be properly controlled**.

Voltages less than 230v can kill and overhead powerlines (OHPL) run between 400v and 400kv. The higher voltage cables are **not insulated** but gloves and rubber boots are not adequate protection for voltages in OHPL. It is not necessary to touch the OHPL to receive a shock – regardless, close proximity can produce a fatal arc.

Risks/Precautions

If you are working within a distance of 10m (measured at ground level horizontally from below the nearest wire) you are classed as working in close proximity. Ideally the line should be isolated or temporarily diverted but this is not always possible. Therefore, employers need to take suitable precautions that protect the workforce. Employers and workers have a duty to ensure:

- Risks are assessed by a **competent** and experienced person;
- Safety precautions are **always** followed;
- Overhead line wires should **never** be touched;
- It is **always** assumed that the wires are live. Even if thought to be isolated or dead, they may be switched back on either automatically or remotely after a few seconds, minutes or even hours;
- If working in proximity to **broken** lines, they are to be **isolated and earthed** at a safe distance either side of the working area.

ACCIDENTS HAPPEN

However, accidents do happen. The following are safety crucial points to follow if you find yourself near broken power lines:

- If you are in a vehicle that has touched a wire you will be safer if you **stay in the vehicle.** If you face additional hazards by staying in the vehicle (e.g. fire) and you need

to get out, jump out of it as far as you can and try to land with **both feet together** to avoid **“step potential”** (see below for definition).

- Do not touch the vehicle while standing on the ground as it is likely to have retained a substantial charge. A shock received in this manner is known as “touch potential” (see below for definition) and can be fatal.
- Do not return to the vehicle until it has been confirmed that it is safe to do so;
- If you can, call the emergency services. Give them your location, tell them what has happened and that electricity wires are involved, and ask them to contact the line’s owner;
- If you are in contact with, or close to, a damaged wire, move away as quickly as possible by shuffling and keeping **both feet on the ground** or by jumping with **both feet together;**
- If you see the accident from another area, **do not approach** within 10m of the broken line until the line’s owner advises that the situation has been made safe;

Step potential: When voltage is higher nearer the source – as you step away one foot may be in contact with a lower voltage than the other. Current will flow through your body, as you lift one foot, and arc back to earth giving a shock likely to be fatal.

Touch potential: When you touch a live source and the voltage is higher than your feet. Current will flow through you to the floor delivering a shock that could be fatal due to high voltage.

FINAL WORD

Knowledge and respect for the power of electricity are two fundamental tenets for working safely and with any longevity in the world of overhead wire. The one without the other; will most certainly leave a wake of devastation.

Farm Machinery and Left-Hand Turns Safety Talk

WHAT'S AT STAKE?

Poorly used or faulty machinery is a major cause of death and injury on farms. Common tractor accidents involve roll-overs, run-overs and unguarded power take-off (PTO) shafts. Other dangerous machinery includes quad (four wheel) bikes and motorbikes, chain and bench saws, harvesters, generators, augers and earth-moving equipment.

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

WHAT'S THE DANGER?

CAUTION

You might not always be the one driving the farm equipment. Remember it's 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. For example, if you're driving 55 miles an hour and come upon a tractor that's moving 15 miles an hour, it only takes five seconds to close a gap the length of a football field between you and the tractor.

Farm equipment is involved in more than one in three farm-related deaths. These machines are also involved in many accidents which result in life-changing injuries such as the loss of a limb.

Farms make up only 10 per cent of Victorian workplaces, but they

account for between 25 and 50 per cent of all work-related deaths (fatalities) in any given year.

One in four unintentional farm deaths are caused by unsafe tractor operation. Tractors have a high centre of gravity and can flip and crush the driver if not fitted with a roll-over protection structure (ROPS). Hands, hair and clothing can be caught by unguarded PTO shafts or other unguarded moving parts such as pulleys and belts. People can be injured by front-end loaders, falling from a moving tractor or being struck by its wheels.

Modern tractors, telehandlers and other equipment have given farmers the ability to work more quickly and efficiently. But this machinery brings new dangers.

HOW TO PROTECT YOURSELF

PRELIMINARY PROCEDURES

1. Always take care when mounting or dismounting the vehicle. Only start the vehicle with a key when in the driving seat. Check brakes are working properly and keep them maintained.

Think about the **‘Safe Stop’** procedure and always follow it. Complete four simple steps:

- apply the hand brake
- put the controls in neutral
- turn off the engine
- remove the key

Think about all-round visibility. Drivers should be able to see around their vehicles to drive and manoeuvre safely. For a tractor this normally means having the side mirrors in place. Achieving all round visibility with telehandlers will depend on the design – is the boom front or side mounted? Your telehandler may require side mirrors and sometimes a fish eye mirror or camera at the back.

Think about added hazards. Other equipment that can be attached to a tractor, may bring additional dangers.

B. Prevent loss of vehicle control

The driver must be trained and know how to operate the vehicle safely. Before use, always check that the brakes are working and that they are interlocked. If the implement being trailed has hydraulic or pneumatic brakes, make sure they are connected. Check the surface that will be driven on and drive appropriately for the conditions.

If a driver loses control of a vehicle, a roll-over protective system (ROPS) will reduce the harm done. Make sure all your vehicles have the ROPS system in place. This means that all vehicles should have a safety cab, or at the very least an approved roll bar.

Seat belts must always be worn if they are fitted. If there is no safety cab and only a roll bar then ensure that seatbelts are retro-fitted.

C. Guarding PTO shafts

Power-take-off shafts are the power source for many machines that are attached to and powered by tractors. The shaft can rotate at speeds up to 1,000 revolutions per minute (rpm). A PTO shaft must always be correctly guarded as shown in this diagram.

Broken, damaged or badly-fitting PTO guards are as dangerous as an unguarded PTO shaft, as a faulty guard can give a false sense of security. Repair or replacement is vital and could save lives.

Never wear loose clothes when operating machines powered by PTOs.

D. Care around hydraulics

Many machines and attachments for tractors are powered by hydraulics. Oil is pumped from the tractor to the equipment through pipes at very high pressures over 2,500 pounds per square inch (psi).

SAFETY PRECAUTIONS/FARM MACHINERY

General safety suggestions include:

- Read and follow the manufacturers’ instructions for operation.
- Don’t remove or modify safety features.
- Ensure that everyone working on the farm is thoroughly familiar with operating procedures and safety requirements for any machinery they use.
- If needed, replace and fit guards to cover the moving parts of machinery – for example, a PTO guard.
- Make sure that tractors are correctly ballasted or weighted for particular jobs.
- Fit falling object protective structures (FOPS) on front-end loaders.
- Keep a well-stocked, up-to-date first aid kit in an accessible area.
- Always wear appropriate protective and visible clothing.

Use All of Your Safety Equipment

Make sure you turn on your lights when moving your machinery. This becomes especially important when moving at night. Make sure to signal your intention when making a wide left turn. Signaling becomes very important especially when turning into a field approach.

Drive Defensively

All roadway travel is a team effort between yourself and other drivers. When driving, be aware that traffic behind you will be trying to pass and may not anticipate your movements, such as a wide left turn. Make sure you look behind you before starting to make a left-hand turn. This could prevent a collision if other drivers aren’t aware of your intention.

Change Travel Times, If Possible, To Avoid Peak Roadway Use

If you can, move machinery during slower times on the roadway. If possible, change your route to avoid large amounts of traffic.

Here are some additional safety tips for avoiding collisions on public roadways:

1. Use pilot vehicles when transporting very large equipment or during heavy traffic periods.
2. Occupy the full lane. Don’t straddle the shoulder.
3. Don’t drive with all of the field lights

Train workers thoroughly in farm machinery safety

Inexperienced workers are much more likely to be injured in farm accidents.

Prevent injuries by:

- Supervise inexperienced workers at all times.
- Make sure your workers are thoroughly trained in equipment operation and safety.
- Keep all equipment in good repair.
- Warn workers of potential hazards and insist they undertake training and use equipment safely.
- Only allow a worker to perform a task when you are confident they can handle it.
- Keep visitors and children well away from operating machinery and warn them of potential hazards.

Safe tractor operation

Keep your tractor in good repair and immediately fix or replace faulty parts. Make detailed notes on services and repairs in a logbook and conduct a general maintenance check on the tractor every day before use.

Safety Suggestions

- Devise safety procedures that everyone on your farm must follow, such as only starting the tractor when sitting in the driver’s seat and turning the tractor engine off before leaving the driver’s seat.
- Install ROPS and seatbelts on all tractors.
- If using a front-end loader, install FOPS.
- Don’t allow anyone to stand near the tractor when it’s being

started.
- Don’t operate your tractor close to dams, pipes, drains or powerlines, on steep slopes or near other potential hazards.
- Remember that tractors have a high centre of gravity and are more likely to tip when riding over hilly ground.
- Don’t carry passengers.
- Make sure that steps and control pedals are non-slip and kept clean.

Unguarded power take-off shafts are extremely hazardous

All moving machinery parts should be guarded so that clothing, hair or fingers can’t get caught. Power take-off (PTO) shafts can cause serious injury and death. Safety suggestions for PTOs include:

- Guard the entire length of the shaft.
- Anchor the shaft guard to stop it from rotating.
- Enclose the joints with a guard.
- Keep shields in place when using the tractor.
- Always make sure all guards and shields are re-attached if removed during maintenance.

Protect children from tractor accidents

Children account for a high proportion of farm-related fatalities, and children under the age of fourteen account for one in four tractor-related deaths. You can protect children from harm in many ways:

- Warn children of the hazards and make them aware of safety issues.
- Always remove keys from tractors.
- Separate play areas from active farm working areas.
- Make sure that equipment storage areas are securely locked and inaccessible.
- Don’t leave running machinery unattended.
- Lower your tractor’s front-end loaders or three-point linkages after use.
- Don’t allow children to ride on or drive the tractor.
- Make sure proper training is undertaken before allowing

young adults to operate machinery.

Draw up a farm safety emergency plan

An emergency plan is vital. Some suggestions include:

- Ensure easy access to a suitable and well-stocked first aid kit.
- Make sure at least one person on the farm is trained in first aid.
- Keep emergency numbers and correct addresses next to the telephone.
- Plan routes to the nearest hospital – make sure it has an operational emergency department.
- Regularly talk through your emergency plan with your family and other workers.
- Make sure your children understand what to do in an emergency.

Equipment Safety Checklist

DO's:

- keep all guards in place on tractors and equipment
- ensure PTO shafts are fully guarded (O-guard, U-guard and shaft) and the safety chain is attached
- make sure that all mirrors and cameras (if fitted) are clean and fully functional on tractors and telescopic handlers
- keep all windows clean and make sure you check all round before carrying out any manoeuvre
- ensure you have good all-round visibility on tractors and telehandlers
- when pulling heavy machinery equipped with hydraulic brakes, make sure the brakes are connected to the tractor and work properly
- keep the brakes on all your machines properly maintained, especially the parking brakes
- operate tractors with enclosed safety cabs or roll bars
- take care when mounting or dismounting tractors or telehandlers

- only start your tractor from the driver’s seat and make sure that your tractor’s starter system works properly
- check all hitches and linkages to ensure they are not worn or damaged
- make sure equipment is stopped fully before clearing blockages, which need to be cleared by hand

DONTS:

- attempt to repair machinery if you do not have the correct tools and equipment and are not competent to do so
- run a tractor down a slope to start it
- check hydraulic pipes for leaks by running your finger along them while they are connected and under pressure
- work underneath a raised load or implement unless it is adequately propped
- work near overhead power lines when tipping trailers or using high-reaching machinery

FINAL WORD

Moving large farm machinery on public roadways is part of the business of farms.

The nature of our work means we are using public roadways to access fields and farm-yards. Driving defensively and being aware of other motorists on the roadways are the best ways to avoid collisions.

Farm Workshop Safety Talk

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

The workshop is essential to the operation of our farm. There are a wide variety of work tasks that happen in the shop and there is the potential for many hazards. A tidy, organized workshop is important to safe and effective work.

WHAT'S THE DANGER?

HAZARDS IN WORKSHOP

People working in the farm workshop are exposed to risk of injury and illness associated with a range of hazards. Up to 20% of farm injuries presenting to hospital Emergency Departments are caused by farm maintenance work. More than 30% of these are eye injuries and more than 30% are hand injuries.

Hazards Include:

- Poor workshop design and layout
- Electricity
- Welding
- Oxyacetylene welding and cutting
- Grinding
- Using power hoists
- Using power and hand tools
- Battery charging
- Tire changing

The types of injury range from death, serious injury requiring hospitalization and down time, to “nuisance” injuries that stops work for a short time, or makes work slower and reduces productivity.

HOW TO PROTECT YOURSELF

GOOD SHOP MANAGEMENT CAN PREVENT INJURIES AND IMPROVE THE EFFECIENCY OF REPAIR OPERATIONS.

Keep it Clean

- Many injuries are the direct result of poor “housekeeping” in the workshop. Trips, slips, and falls account for the bulk of these mishaps.
- Scrap material and wrappings, loose parts, scattered tools and equipment, and oil spills all pose hazards. Oil spills should immediately be covered with absorbent material and cleaned up promptly Debris should be swept up and disposed of in designated containers.
- Parts should be kept on the workbench. Tools should be placed where they cannot fall and cause damage or injury.

Lighting, Heating, Ventilation

- Windows and overhead lighting are essential to provide a good level of overall illumination. Additional lighting should be available over work benches and stationary tools.
- Supplemental heating is required for winter shop work. The heating unit should be located to provide adequate, even distribution of heat. Ceiling heaters leave the work area clear.
- Open doors and windows may provide adequate ventilation of smoke, fumes and exhaust gases in the summer. Special systems may be needed to remove exhaust fumes and other gases during cold weather months.
- Flexible pipe or tubing can be used to vent exhaust gases. Properly designed ventilation systems are required in welding and battery areas to remove smoke and fumes. A booth with separate venting is recommended for paint fumes.

Electricity Safety

- Wiring must be of adequate capacity to handle lighting, heating and power tool requirements.
- The shop should have a sufficient number of conveniently located outlets.
- Conductors, plugs and receptacles should all be 3-wire grounded to prevent shock with power tools.
- Sufficient power should be available for welders and motors used in the workshop.
- Welding and grinding equipment.
- Power tools – checking guards and cords.
- Hoists used to work on farm vehicles.
- Poor lighting – leading to accidents.

Ground fault circuit interrupters (GFCI's) are recommended for wash bays and other damp areas. Explosions-proof wiring, motors and fixtures are required were flammable gases, fumes, or vapours may be encountered.

SHOP MANAGEMENT OVERVIEW

- Keep all tools and service equipment in good condition.
- Always use the appropriate personal protective equipment for operations such as welding and grinding.
- Keep floors and benches clean to reduce fire and tripping hazards.
- Clean the area completely after a job is finished.
- Empty trash containers regularly. Never store oily, greasy rags in closed containers – this practice has been responsible for numerous fires due to spontaneous combustion.
- Lighting, wiring, heating, and ventilation systems should be properly maintained.
- Do not allow unauthorized use of tools, service equipment and supplies.
- Don't allow anyone to use tools or service equipment without proper instruction.
- Keep guards and safety devices on power tools in place and

functional.
- Use tools and service equipment only for their designed purpose.
- Service fire extinguishers on a regular schedule.
- Keep the first aid kit fully stocked.

WORKSHOP SAFETY CHECK

- keep the workshop tidy and avoid tripping hazards such as trailing cables, tools etc;
- welding gas bottles are secured upright, and when in use can be moved easily on a trolley;
- battery charging is done in a well-ventilated area away from sources of ignition such as welding flames or angle grinding;
- avoid chlorinated solvents such as ‘trike’ or ‘perc’ for degreasing. Use a less harmful product (not paraffin or petrol) and put degreasing baths in well-ventilated areas;
- arc welding is done in a protected area so that others nearby are not affected by the ultra-violet light and suffer ‘arc-eye’ as a result;
- use the correct abrasive wheel for the job and adjust bench grinder tool-rests close to the wheel;
- escape from inspection pits easily and that inspection lamps have protected bulbs (flammable fluids such as petrol may collect in the bottom of the pit and explode with the heat from a broken bulb filament);
- noise levels from plant such as compressors are controlled – site the machine in a separate closed area or outside;
- hand tools are in good condition and suitable for the job;
- PPE is provided – eye protection for chiseling, grinding and welding work; respiratory protection for work that creates dust, if extraction cannot be provided; or foot protection if there is a risk of things falling onto the feet;
- electrical installations and equipment are maintained in good condition, regularly inspected and tested;
- safe means of access is provided for raised storage areas or mezzanine floors;
- lifting equipment and mechanical handling aids are used to

reduce risk of muscular skeletal injury (MSDs) eg when moving heavy machinery components. Such equipment should be capable of handling the required loads and be regularly inspected and tested. Lifting equipment will also require thorough examination.

- work at height can be carried out safely. Mobile tower scaffolds can be used as working platforms and may be safer than using a ladder for some tasks.

9 FARM WORKSHOPSAFETY TIPS

1. **Prevent falls.** Good housekeeping is fundamental. That means sweeping walkways and work areas, and cleaning up grease, gasoline, and water spills. Trips and falls are caused by clutter, especially extension cords.
2. **Improve lighting.** For general office and shop work, aim for 50 foot-candles of illumination. For detailed bench work or specific office desk work, use 100 foot-candles. For general machinery storage, 3 to 5 foot-candles is adequate.
3. **Use hoists, cranes, and lifts.** Over half of back injuries occur from lifting. Hydraulic lifts and hoists can help to reduce these injuries.
4. **Wear protective equipment.** Personal protective equipment should be used from head to toe, starting with shoes or boots with a heavy tread.

Wear earmuffs in the shop. They’re easy and quick to put on and take off.

Respirators filter dust, paint fumes, gases, or other hazardous material. Use NIOSH-approved filtering face pieces: N95, N100, or P100.

Leather gloves, chemical-resistant gloves, hard hats, protective aprons, and welding shields are vital. Goggles with side shields protect against chemical splashes, dust, fumes, and debris from bench grinders. Wear a NIOSH-approved respirator that fits under a welding hood, such as a 3M Particulate 8233 or a Moldex 2400 N95 or 2800 N95.

5. **Prevent electrical injury.** Make sure that electrical equipment is properly grounded. If an electrical tool isn't double insulated, there must be a third prong for grounding.

Driving over extension cords creates shorts. Frayed cords are a shock hazard. You shouldn't use less than 12-gauge cords. The heavier ones cost more, but they'll power every piece of equipment and pose less risk of motor damage. Heavier-gauge cord won't overheat or be a fire hazard.

Most farms don't have conduits for wiring, so electrical wires are exposed. Sometimes you take things outside to work on, and shocks are a hazard if it's damp.

6. **Prevent fires.** Flammable and combustible materials should be stored away from heat sources, and flammable liquids should be kept in covered containers. Fire extinguishers should be hung by the shop door. It is recommended to use a 20-pound ABC extinguisher for shops. Check your extinguishers annually.
7. **Improve ventilation.** Ventilation is vital in a heated shop. Engineering controls are the best way to remove air contaminants, with a ventilation system that includes hoods, roof vents, and high-speed intake and exhaust fans.

An exhaust fan must move 1,000 to 2,000 cubic feet of air per minute to completely remove welding fumes. For engine fumes, fans must be capable of moving 250 cubic feet per minute per vehicle. "Welding or cutting needs to be done in an area with exhaust fans to take fumes up and out," Grafft says. "You'll know it's designed correctly if the fumes draw down and away from your face when you're welding."

8. **Safeguard storage loft.** A railing and stairs help prevent falls.
9. **Use bulk lubricant storage.** Avoid skin contact with oil and solvents. Complete containment eliminates spills and slick spots on the shop floor. Oil should flow from the bulk container through a hose and past valves in a three-way valve junction.

FINAL WORD

The farm workshop can be the scene of many injuries. Many of these injuries involve hands or the eyes. Other injuries involve burns, cuts, abrasions and sprains to various parts of the body.

Grain Bin Safety Talk

WHAT'S AT STAKE?

It's long been known that grain bins are one of the biggest safety hazards for farmers who work in and around them. Serious and life threatening dangers lurk throughout grain facilities, so it is imperative that farmers and workers are aware of these threats in order to protect themselves from serious injury and fatalities. Farm workers die by suffocation every year.

These workers, enter grain bins for several reasons, such as to monitor the grain condition, break a cluster layer or check the grain or bin during loading or unloading.

WHAT'S THE DANGER?

HAZARDS/DANGERS

Engulfing and Suffocation

Engulfing and suffocation are major hazards. One of those being that bins have an opening in the center where grain is pulled from, so when the door is opened and grain is being pulled out, the grain on the inside is pulled down. Workers in the bins can become engulfed and suffocated in mere moments. Alternatively, if a worker is pulling grain that is vertically crusted inside the

bin, this can cause an “avalanche” of grain that can also engulf and suffocate. Grain that is crusted on the surface can create holes underneath, called bridging; an unbeknownst farmer can climb into the bin without seeing these voids and fall under the surface.

Any time you enter a grain bin, be aware of constantly changing conditions and possible hazards – like lowered oxygen levels and toxic gases – all which can cause serious injury or death. Toxic gases can present themselves from fumigants that are used to prevent insect infestation while grain is stored in bins. It is recommended to wear appropriate respirators when the aforementioned situations cannot be avoided.

An unintentional cause of death occurs when coworkers try to save a person from the bins in an accident. Due to grain being more resistant and having a strong pulling force, rescuers are discouraged from any attempts to save their coworker. Instead, OSHA recommends having a rescue system designed and built.

HOW TO PROTECT YOURSELF

SAFETY PRECAUTION/PREVENTION

Whenever possible, don’t enter a grain bin. If you must enter the bin, as a farm owner/operator you should:

- Break up crusted grain from the outside of the bin with a long pole. When using a pole, check to see that it doesn’t come into contact with electric lines.
- Wear a harness attached to a properly secured rope.
- Stay near the outer wall of the bin and keep walking if the grain should start to flow. Get to the bin ladder or safety rope as quickly as possible.
- Have another person, preferably two people, outside the bin who can help if you become entrapped. These people should be trained in rescue procedures and should know and follow safety procedures for entering the confined space.
- Grain fines and dust may cause difficulty in breathing.

Anyone working in a grain bin, especially for the purpose of cleaning the bin, should wear an appropriate dust filter or filter respirator.

- Stay out of grain bins, wagons and grain trucks when unloading equipment is running.
- If it is necessary to enter the bin, remember to shut off the power to augers and fans. It is a good idea to lock out any unloading equipment before you enter a bin to prevent someone from unintentionally starting the equipment while you are in the bin.
- Children should not be allowed to play in or around grain bins, wagons or truck beds.
- Where possible, ladders should be installed inside grain bins to for an emergency exit. Ladders are easier to locate inside a dusty bin if there are brightly painted stripes just above or behind the ladder.

More Safety Information

- Grain being stored is removed through an opening in the center of the bin. This process pulls the grain down and toward the center of the bin. A depression in the middle of the grain is formed.
- Grain wagons can be a hazard, particularly to youngsters. The grain in a grain wagon acts just like the grain in a bin when moving. It pulling down on whatever might be in the grain and children are not strong enough to pull themselves out of the moving grain.
- Vertically crusted grain can collapse on a farmer attempting to break it up while in the bin.
- Vertically crusted grain can collapse on a farmer attempting to break it up while in the bin.
- Grain crusted on the surface can be over voids (open spaces) and a person’s weight can cause the grain to collapse and the person can be covered with grain.
- If someone is in the bin when the grain is removed, they, too, will be pulled down and toward the center of the bin. If grain continues to be removed the person will be covered with grain in a matter of seconds!

- Persons pulled down into the grain and pulled toward the center of the bin. Once a person as been pulled into the grain above their knees, they cannot get out of it by themselves. The pressure of the grain on their legs and the grain flowing down as they try to move gives them no place to go.

GRAIN BIN SAFETY TIPS AND DANGERS

- Today’s large grain augers can transfer from two to four times as much grain as augers of the past. Your body can become completely submerged in about 8 seconds, leaving you helpless.
- Crusted, spoiled and wet grain associated with wet harvest (as well as remaining grain from last year’s wetter harvest) can also contribute to grain bin suffocation. As grain is removed from the bin it can bridge and form a cavity under the crusted surface. There’s little chance of survival if you are walking on the surface when the crust breaks and you plunge into flowing or hot grain.

Reminders and Safety Measures

1. **Keep children out of grain bins,** beds and wagons at all times. Grain flow can cover them before anyone realizes what is happening.
2. **Lock out the control circuit before entering** a bin, whether or not grain is flowing. Be especially careful around automatic unloading equipment.
3. **Have three people involved when you enter** a grain bin, and enter with a rope and safety harness. In the case of an accident, it will take two people to lift you out using the equipment.
4. **Don’t count on someone outside the bin** to hear your shouted instructions. Equipment noise may block out your calls for help.
5. **If you become trapped in a bin** of flowing grain with nothing to hold onto but you are still able to walk, stay near the outside wall. Keep walking until the bin is empty or grain

flow stops. If you are covered by flowing grain, cup your hands over your mouth, and take short breaths until help arrives.

6. **If another person becomes submerged in grain**, assume he is alive and begin rescue operations immediately. Turn on the fan to move air into the bin. Cut large holes around the bin, approximately 5 ft. up from the base, to empty grain. (If you cut too many holes, the bin may collapse on you.) Use the front-end loader of a tractor, an abrasive saw or an air chisel. A cutting torch is a last resort – it could cause a fire or an explosion from dust and fumigant residue.
7. **Never attempt a rescue** by going into the grain yourself. Call 911. Your local emergency team has the training and equipment to do the job safely.

Question Checklist

- Has equipment been powered off at main disconnect and locked and tagged?
- If there is potential for combustible gas, vapors or toxic agents, has the oxygen level been tested with a gas monitor?
- Is a rope and harness available for anyone entering a grain bin?
- If a worker enters, is an observer present and in communication?
- Is the observer trained and able to initiate rescue?
- Is rescue equipment provided and specifically suited for entry?
- Are there NIOSH approved masks or respirators available?
- Are grain and feed bins clearly labeled to warn of the hazards of flowing grain or feed?
- Do all bins have permanent ladders inside and outside?
- Are hearing protectors available for wearing around noisy equipment?
- Are equipment guards and shields in place and in good condition?

FINAL WORD

When you work with grain – loading it, unloading it and moving it from bin to bin – you need to know about the hazards of flowing grain and how to prevent injury.

Glove Selection and Use Safety Talk

WHAT'S AT STAKE?

Think if you were not able to use your fingers or hands for daily tasks!! Your fingers and hands are your most valuable asset. Farmers, gardeners, industrial workers rely on their hands to perform all kinds of potentially dangerous work. In this regard, protection for fingers and hands is critical. That is where wearing proper gloves enters the equation.

It is important to choose the type of glove that will offer the most protection from the hazards present on the job. Not every job requires gloves, and in some cases, wearing gloves can be dangerous.

WHAT'S THE DANGER?

INTRODUCTION

Farmers and gardeners rely on their hands to perform day-to-day tasks. Exposure to sharp objects, thorns, poisonous plants, hot objects and chemicals can cause damage to skin tissue. Wearing proper hand protection can prevent this painful and infection-causing damage. Gloves can protect hands and forearms from cuts,

abrasions, burns, puncture wounds, bites, skin contact with hazardous chemicals and some electrical shocks.

Hands and fingers are subject to an army of hazards in the workplace. There are hazards associated with exposure to chemicals. Generally, exposure means contact through the skin or respiratory system, and ingestion. Research reveals that at least 80% of total body exposure to chemicals is to the hands.

Once exposed, the person could be adversely like developing skin dermatitis or a burn from a corrosive chemical. Chemical can also be absorbed through the skin and into the body, causing a reaction that can lead to acute poisoning. General symptoms often associated with mild exposure to chemicals include headache, fatigue, dizziness, loss of appetite, stomach cramps, and diarrhea. Severe exposure to highly toxic compounds can lead to loss of coordination, seizures, and unconsciousness.

When working with agricultural and other chemicals, no single glove will protect your hands completely. Gloves made from polymers and other materials have their strengths and weaknesses in terms of preventing resistance and physical properties like resistance to tearing and abrasion. Since no protect-all polymer exists, selecting the right glove for the job is imperative to your safety.

HOW TO PROTECT YOURSELF

THE FOLLOWING ARE 7 CATEGORIES DEALING WITH GLOVE SELECTION AND USE

2. CHOOSING PROTECTIVE GLOVES

Gloves are made of a variety of materials that offer different types of protection. Using the wrong type of glove can cause injury.

- Fabric gloves can absorb liquids, including dangerous chemicals. For example, wearing cotton gloves while working

with pesticides would not repel the chemical from the skin.
- Nitrile and latex gloves offer little heat protection and may be flammable if exposed to high temperatures. These types of gloves do not provide adequate protection from fire or other heat sources. Therefore, latex gloves should not be used when building a fire for burning brush.
- Never wear gloves of any type while working on or around moving machinery parts such as rotating shafts, belts, pulleys and similar sliding or rotating movements. Gloves can get caught in machinery, causing a risk of injury or amputation to the hand and arm.

Gloves should be selected to best suit the task at hand. If general weeding and planting bed maintenance are being performed, a fabric or fabric-coated glove may be adequate.

2. THE PROPER FIT

Although gloves typically do not come in sizes to fit every hand, it is important to select a glove size to be snug without being overly tight or loose. Gloves that are too tight may restrict movement and cut off circulation to the fingers. Gloves that are too large may make work very cumbersome and difficult, especially work involving small objects requiring increased dexterity. Finding the right size and fit may require trying several different brands and styles.

3. TYPE OF GLOVE AND LEVEL OF PROTECTION

Metal Mesh and Kevlar Knit

- Protects against cuts from sharp objects.
- Used for pruning and grafting, and cutting with knives.

Leather

- Protects against rough objects, abrasion, sparks and moderate heat.
- Used for general chores, construction activities, tree work and fence maintenance/installation.

Fabric and Coated Fabric

- Protects against dirt, splinters and abrasions.
- Helps grip slippery or smooth objects.
- Used for general chores such as raking, shoveling, hoeing and weeding.
- Do not use when working with rough, sharp or heavy objects.

Rubber, Neoprene, Vinyl, Nitrile, Latex

- Protects against chemical, fluid and pathogen exposure.
- Check chemical packaging for specific instructions.
- Used for pesticide application, painting/staining, and livestock care and medications.

4. PROPER CARE

Inspect gloves before each use to make sure they are not torn, punctured or compromised in their ability to provide protection. Whether they can be reused or discarded depends largely on the work they are being used for and the desired protection. A hole in a glove while weeding may not pose a problem, but a puncture in a rubber glove when handling pesticides could create a dangerous situation. Reuse of gloves used to handle chemicals should be carefully considered and depends on the toxicity of the chemical, manufacturer’s recommendations, chemicals handled and factors related to exposure duration, condition of gloves and temperature.

5. SELECTION

The selection of the proper chemical-resistant glove begins with an evaluation of the job application.

Factors that influence this selection are:

- the type of chemicals to be handled (or used)
- frequency and duration of chemical contact
- nature of contact (total immersion or splash only)
- concentration of chemicals
- temperature of chemicals
- abrasion/resistance requirements
- puncture-, snag-, tear-, and cut-resistance requirements
- length to be protected (hand only, forearm, arm)

- dexterity requirements
- grip requirements (dry grip, wet grip, oily)
- cuff edge (safety cuff, knit wrist, or gauntlet)
- color requirements (to show contamination)
- thermal protection (for example, when handling anhydrous ammonia)
- size and comfort requirements
- price

6. USE AND CARE

Always inspect your gloves before using them. Of principal concern are cuts, tears and punctures. Discoloration or stiffness may indicate non-uniformities in the rubber or plastic or chemical attack resulting from previous use.

Visual inspection should be done every time you use the gloves to detect pinholes or other defects. One way to accomplish this is when they are still wet after having been washed, fill the glove with water and tightly roll the gauntlet toward the fingers and examine for leaks. Dispose of gloves that have been damaged or show signs of chemical degradation.

Proper handling of chemicals requires your wearing the gloves on the inside of your shirt sleeves. The exception is when you are working overhead and when your hands are in an upward position. In that case, put your shirt sleeves inside the gloves and turn up the cuff of the glove to catch any material that may run down your arm.

It is extremely important to avoid secondary exposure to the chemical after application. Before removing the gloves, thoroughly wash gloves with soap and water, or a detergent and water, and then rinse with a lot of running water. The gloves may now be removed. As the gloves dry in a decontaminated area, thoroughly wash your hands with soap and water. Make this a strict practice after every chemical application. Place dry gloves in a sealed plastic bag or other container, and store away from possible contamination.

7. REUSE QUESTION

Glove decontamination and reuse are controversial and unresolved issues. Often, surface contamination can be removed by scrubbing with soap and water; at other times, as in the case of emulsifiable concentrates, it may be practically impossible. The solvents in many emulsifable concentrates prompt this concern. Volatile solvents such as toluene and xylene, readily penetrate many polymers and the nonvolatile solvents, such as alkylated napthalenes and petroleum oil, are very difficult to remove from the glove material.

Once absorbed, some chemicals will continue to diffuse through the material toward the inside EVEN AFTER the surface has been DECONTAMINATED. For highly resistant chemical gloves, the amount reaching the inside may be insignificant. But for moderately performing materials, significant amounts of chemicals reach the inside. This may not occur during use, but while the glove is stored overnight. The next morning, when the applicator dons the glove, he may be putting his hand into direct contact with a hazardous chemical. In addition to the chemical resistance of the glove material, the amount of chemical that reaches the surface can be affected by the duration of exposure, duration of storage, the surface area exposed, and temperature.

The decision to reuse the gloves requires consideration of these factors as well as the toxicity of the chemical(s). In fact, unless extreme care is exercised to ensure decontamination, the reuse of chemical gloves that have been contaminated with a toxic chemical is not advisable. For this reason, the disposal of gloves on a regular and frequent basis is advisable.

FINAL WORD

Your fingers and hands cannot be replaced. Glove protection for your most valuable asset is critical. It’s essential to choose the correct gloves for the task. There are many types to choose from and using the correct type will go a long way to prevent injury or worse.

Noise and Hearing Protection Safety Talk

WHAT'S AT STAKE?

When does hearing loss, or hearing impairment, become the result of a work-related exposure? After all, we live in a world where loud noises are common, like from heavy city traffic, or even the music so kindly being shared through the open windows of the car stopped next to you. And there's often that person who thinks headphones are speakers and has the music playing loud enough that it can be heard by everyone in the room. Loud noise is common. Loud noise can lead to hearing loss.

There is no denying that the tools that we use in our lines of work create loud noise, too, but that doesn't necessarily mean that employees will lose their hearing. With the proper workplace hearing protection controls in place to eliminate, reduce, and protect against potentially damaging noise exposures, we reduce the chances that our employees will experience occupational hearing loss.

WHAT'S THE DANGER?

UNDERSTANDING HEARING DAMAGE

Hearing loss can occur when exposed to 85 decibels of noise averaged over 8 hours. Normal conversations typically occur at 60 decibels, well below the hearing loss threshold. Remember those headphones used as speakers? That music was probably playing at full volume, which can often register as 105 decibels. For every 3 decibel increase past 85 decibels, hearing loss can occur in half the amount of time. So it only takes 4 hours of exposure to 88

decibels for hearing loss to occur, and 2 hours of exposure to 91 decibels. Once noise levels exceed 100 decibels, a person can suffer hearing damage in as little as 15 minutes. The louder the noise, the faster hearing loss occurs.

WORKPLACE NOISE LEVELS

Where do the tools and environments where we work fit into this picture?

- Air compressors from 3 feet away register 92 decibels, which would take less than 2 hours to cause hearing loss
- Powered drills register 98 decibels, which would cause damage after 30 minutes
- Typical factories often register at 100 decibels – that's 15 minutes of exposure
- Powered saws can reach 110 decibels from 3 feet away, which could cause permanent hearing loss in under 2 minutes

In short, if workers are exposed to these noise levels without protection, then hearing loss is very likely. The only way to know the exact noise levels that workers are exposed to is to conduct noise monitoring using specialized equipment, though this is only required when exposures are at or above 85 decibels. Some indications that noise levels may be this high are if employees complain about the loudness of the noise, if there are signs suggesting that employees are losing their hearing, or if the noise levels make normal conversation difficult. Also consider that these conditions may not occur across the entire work site, but may be limited to a specific task or piece of machinery.

HOW TO PROTECT YOURSELF

THE IMPORTANCE OF HEARING PROTECTION IN THE WORKPLACE

The best protection we can provide is to eliminate the hazard, by eliminating the need to work with the tools or in the environments that create these noise exposures. Realistically, though, this

isn’t always possible. We can also work to reduce the noise levels that employees are exposed to. Some tools and machines are available that are designed to operate at lower decibels, therefore reducing the risk of hearing loss. We can also implement administrative controls, such as placing a cap on the number of hours that an employee can work in a high decibel environment, or limit the hours working with specific tools and equipment.

The final line of protection is PPE that meets OSHA hearing protection requirements. Ear plugs and ear muffs can reduce the decibel exposures, providing protection against hearing loss. Ear plugs provide the greatest amount of protection as long as they are inserted correctly. Therefore, employees need to be trained to wear them correctly when they are used. Ear muffs can also reduce the decibel exposures, though not to the extent that ear plugs can. They are easier to wear correctly, though, which is why some workers prefer them.

Some high decibel exposures may be unavoidable to perform the tasks necessary for our operations, but that doesn’t mean that we can’t take steps to protect employees and their hearing while at work. What they do in their free time, like attending a rock concert (which can peak at 130 decibels), becomes their choice.

- earmuff seals are undamaged;
- the tension of the headbands is not reduced;
- there are no unofficial modifications;
- compressible earplugs are soft, pliable and clean.

WHAT CHECKS HAVE TO BE MAKE?

You need to make sure that employees use hearing protection when required to. You may want to:

- include the need to wear hearing protection in your **safety policy**. Put someone in authority in overall charge of issuing them and making sure replacements are readily available;
- carry out **spot checks** to see that the rules are being

followed and that hearing protection is being used properly. If employees carry on not using it properly you should follow your normal company disciplinary procedures;
- ensure all managers and supervisors **set a good example** and wear hearing protection at all times when in hearing protection zones;
- ensure **only people who need to be there** enter hearing protection zones and do not stay longer than they need to.

HEARING CONSERVATION PROGRAMS IN CANADA

Eight jurisdictions specifically require a hearing conservation program when:

- Noise exceeds the jurisdiction’s occupational exposure limit (four jurisdictions: Federal, British Columbia, Newfoundland and Labrador, and Prince Edward Island).
- Noise exceeds 85 dBA (three jurisdictions: Northwest Territories, Nunavut, and Saskatchewan).
- There is excess noise (one jurisdiction: Alberta).

Six jurisdictions do not have a specific requirement for a hearing conservation program (Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, and Yukon).

However, as per Occupational Health and Safety legislation across Canada, employers have a duty to provide a safe work environment and take all reasonable precautions to protect the health and safety of employees and others in the workplace. This duty is known as due diligence. To exercise due diligence, an employer should work with the health and safety committee (or representative) to create and implement hearing conservation program when needed. Check with your jurisdiction for more guidance.

WHEN IS A HEARING CONSERVATION PROGRAM RECOMMENDED?

The employer should conduct a noise assessment at the workplace, according to the CSA Standard Z107.56 Measurement of Noise

Exposure, if:

- a worker is or is likely to be exposed to noise in excess of 80 dBA
- there is an alteration, renovation or repair of the workplace
- new equipment introduced in the workplace, or
- a modification done to a work process, that may result in a significant change in a worker's exposure to noise.

Note the requirement when to conduct a noise assessment (e.g., dBA level) may vary from jurisdiction. Conducting an assessment at an action level of 80 dBA provides more protection.

THE ELEMENTS OF A HEARING CONSERVATION PROGRAM

If noise monitoring confirms that workers are exposed to noise levels at or above 85 dBA, a hearing conservation program should be developed and implemented. The program includes a policy and procedure. **The CSA Standard Z1007 Hearing Loss Prevention Program Management recommends that a hearing conservation program include the following elements:**

- Hazard identification and exposure monitoring
- Control methods (using the hierarchy of controls)
- Hearing protection devices (selection, use, and maintenance)
- Audiometric testing
- Hazard communication, education, and training
- Recordkeeping, and
- Continuous monitoring and improvement (program review).

CONTROL NOISE EXPOSURE

The employer should make sure that, if reasonably possible, measures are taken to reduce noise levels using the hierarchy of controls in the following order before providing hearing protection devices:

- Eliminate the hazard

- Engineering control
- Substitution of equipment, and
- Administrative

THE NEED FOR HEARING PROTECTION DEVICES

The majority of the jurisdictions require that employers provide hearing protection devices when noise levels are at or above 85 dBA. The value of 85 dBA is also based on good practice guidelines set out by organizations such as the Centers for Disease Control. CSA Standards Z94.2 Hearing Protection Devices – Performance, selection, care, and use and Z1007 Hearing Loss Prevention Program Management also recommend that hearing protection devices be used when engineering controls or administrative controls are not practicable or do not reduce noise exposure to acceptable levels (i.e., below 85 dBA).

THE WHAT TO DO WHEN HEARING PROTECTION IS NEEDED

The employer should make sure that the selection, care, and use of hearing protection devices meet the specifications outlined in the CSA Standard Z94.2.

The employer should make sure that a worker using the hearing protection device is adequately trained and instructed by a competent person in selection, fit, use, care, maintenance, and inspection.

The choice of hearing protectors is a personal one, and depends on a number of factors, including but not limited to acoustics, comfort, and the suitability of the hearing protector for both the worker and the environment. Where protectors must be used, provide a choice of different types when possible. Having choice encourages use, and protection can only be effective if it is properly and consistently used. Anatomy of the ear and ear canal can vary significantly making comfort and individual preferences important.

AUDIOMETRIC TESTING

Audiometry is an important part of the hearing conservation program. It is the only way to determine if a hearing loss is occurring or being prevented. Although existing hearing loss cannot be cured, the data can be used to:

- Identify persons for follow-up and counselling
- Determine trends
- Make decisions on control measures
- Motivate employees to use protective equipment
- Create education opportunities
- Trigger changes in the program

Generally speaking, audiometric testing is recommended when a worker is exposed to noise levels greater than 85 dBA. Audiometric testing should be conducted according to CSA Standard Z107.6 Audiometric Testing for Use in Hearing Loss Prevention Programs, which outlines specifications for the testing facility, the equipment used, and those in charge of conducting audiometric tests.

The CSA Standard Z1007 Hearing Loss Prevention Program Management recommends that audiometric testing involves:

- an initial hearing test, and
- a hearing test at least once every 12 months after the initial test, or
- a hearing test more frequently should the noise level exceed 105 dBA.

RECOMMENDATIONS / OR HAZARD COMMUNICATION

If it is not practicable to reduce noise levels to or below the noise exposure limits, the employer should post clearly visible warning signs at every approach to an area in the workplace in which the sound level:

- Exceeds 80 dBA – clearly marked with a sign that states “Warning” and identifies the range of noise levels
- Exceeds 85 dBA – clearly marked with a sign that states

"Warning" and specifies that workers are required to wear single hearing protection device
- Exceeds 105 dBA – clearly marked with a sign that states "Warning" and specifies that workers are required to wear double hearing protection devices

WORKER EDUCATION AND TRAINING

Education and training should be provided to workers who are required to wear hearing protection devices. The education and training should cover all elements listed in CSA Z94.2 (i.e., selection, fit, use, care, maintenance, and inspection). The education and training should be repeated, as recommended in the Standards, at regular intervals and at least once every two years.

INFORMATION ABOUT EDUCATION AND TRAINING

- Why use hearing protection
- When should protective equipment be worn, in what work areas, during what work activities
- How should hearing protectors be selected and worn
- Who is responsible for taking care of the protective equipment
- How to take care of the protective equipment (storage, cleaning, etc)
- Company policy requirements for noise control and hearing conservation
- Legislative requirements

WHAT TYPE OF RECORDS AND DOCUMENTS SHOULD BE KEPT?

Keeping records of your assessment and any control measures implemented is very important. You may be required to store the records and documents for a specific number of years. Check for local requirements in your jurisdiction.

The level of documentation or record keeping depend on:

- Level of risk involved.

- Legislated requirements.
- Requirements of any management systems that may be in place.

RECORDS SHOULD SHOW THAT YOU:

- Conducted a good hazard review.
- Determined the risks of those hazards.
- Implemented control measures suitable for the risk.
- Reviewed and monitored all hazards in the workplace.

PROGRAM REVIEW OR EVALUATION

A program review or evaluation is done by auditing each of the program's steps and seeing how well they are being executed. For example, ask the following questions:

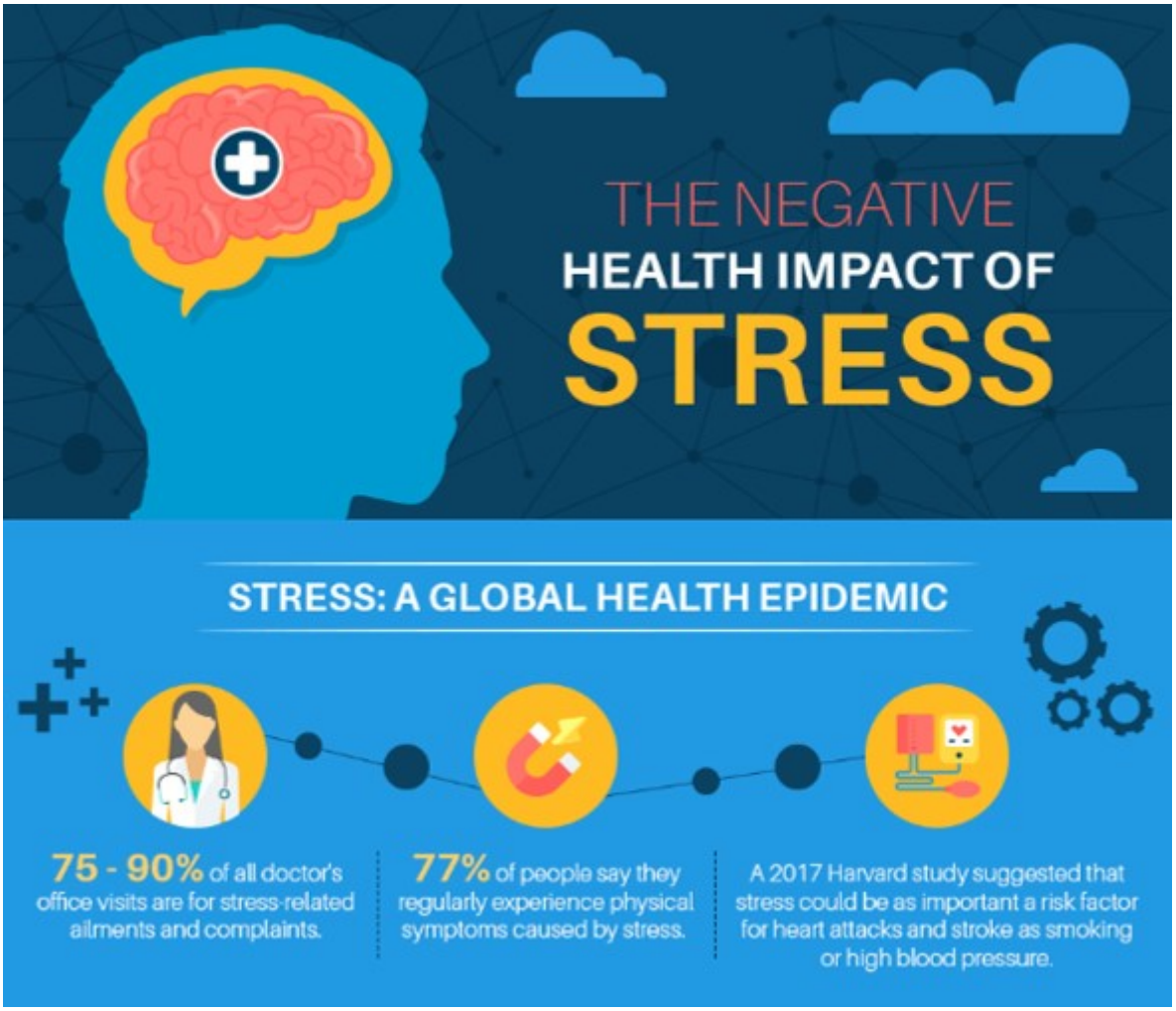
- Are all elements or steps in place?
- Is it necessary to re-test or monitor the noise exposures?
- Are there periodic education and training sessions?
- What are the results from the audiometric tests?
- Have changes in processes or equipment resulted in reduced hearing losses?
- Do existing noise controls appear to be in good working condition and being used?
- Have any modifications been made to controls, possibly reducing their effectiveness?
- Is hearing protection available? Is it stored and maintained properly?
- Are workers wearing their protection? Have they noted any issues?
- Are warning signs posted where they are necessary?
- When new machinery or equipment is being purchased, is "buying quiet" considered in the decision process?
- Are further changes necessary to protect workers?

The program should be reviewed periodically to see if there is a need for changes.

FINAL WORD

Noise is unwanted sound. Noise can harm human hearing. Noise has at least two measurable effects on humans. **Hearing Loss** can be temporary or permanent and can be measured. **Physical Effects** that may include fatigue, tension, increased blood pressure and stomach disturbances.

Stress Infographic



Struck-By/Caught-Between Infographic

