Safe Maintenance

Before attempting any maintenance work on a machine, make sure the machine is safe to work on by following the Safe Stop procedure.

To remain safe:

- Chock the wheels and apply the brakes
- Disconnect the battery before starting work
- Prop raised bodies properly - do not rely on hydraulic systems alone for support
- Use axle stands and never work under vehicles supported on jacks alone
- Wear appropriate protective clothing and equipment if necessary

When cleaning dust off brakes, don't be tempted to blow on them, always use a vacuum or other dust-free method, as older brake linings may contain asbestos. Asbestos brake linings should not be used as a replacement.

Before working on stationary machines such as generators, dryers or mill-mix plants, isolate the power from the main isolator.

If the machine is at some distance from the isolator or if other people will not be able to obviously see you working on the machine:

- Remove the fuses from the isolator box
- Lock the isolator box
- Keep the key with you

Some equipment such as lifting machinery including chains and ropes, and pressurised equipment including steam boilers and air receivers on compressors should be regularly examined or tested. This should be done by a competent person, who has the necessary qualifications and experience to identify potential faults.

For specialist assistance you may want to talk to your insurer, local agriculture engineer or machinery dealer.

Tidy farm workshops are safer farm workshops and more pleasant places for your employees to work. Consider how improved lighting, ventilation and heating could improve the working environment.

Case Study

An agricultural engineer, was unblocking a forage harvester on a farm near Bolton. He found some waste material needed cleaning so he switched off the machine, went to the inspection chamber, removed the inspection plate and cleared the blockage. He then turned the blower on and blew out the soft earth and switched the blower and machine off.

After talking to the farmer for a few minutes he returned to the inspection chamber, thinking the mechanism had stopped. However, a tractor was running alongside and masking the sound of the still rotating forage harvester mechanism and as he put his hand in, the blades grabbed hold of his fingers and part of his arm below the elbow.

He underwent two operations and took 12 months to return to work.

Case Study

A 55 year old farmer from Buxton was carrying out maintenance on a loader. He had choked the back wheels and rested the loader arm on a wall. After disconnecting a number of hydraulic pipes, the unpropped loader arm pushed the machine backward and crushed him underneath.

Further Information

HSE can be contacted for specific health and safety information at www.hse.gov.uk/agriculture. For agricultural training search www.lantra-awards.co.uk or www.lantra.co.uk/CourseFinder. Alternatively call 0845 707 8007.

Safety focus on:
Farm machinery

This guide highlights the key risks to you from farm machinery and provides practical advice on how you can make your farm a safer place for you, your employees and any visitors

Make the promise. Come home safe.

Prepared by NFU© 2011

The Law

The Provision and Use of Work Equipment Regulations 1998 (PUWER) apply to any equipment and machinery that you use at work. They require that equipment must be suitable for the task, properly maintained and guarded and that adequate training and information about the equipment is available for employees.

The Lifting Operations and Lifting Equipment Regulations (LOLER) 1998 also apply to any lifting equipment, for example, a telehandler. They require that equipment must be strong and stable enough for its proposed use, marked to indicate safe working loads, positioned and installed to minimise any risks, used as part of a planned operation and subjected to ongoing thorough examination at suitable intervals by a competent person.

Introduction

Machinery related accidents account for nearly 1 in 10 deaths in farming every year, with balers and PTO shafts causing the most fatalities. Machines need to be properly maintained, guarded and functioning and people should be trained how to use them.

Over the past two years more than 300 people have been injured after coming into contact with farm machinery. Many of these incidents have occurred when a machine has been left running, not stopped fully or been restarted while someone was in contact with the moving parts.

These may have been prevented by following the Safe Stop procedure:

Safe Stop — 1. Handbrake on — 2. Controls in neutral — 3. Engine off — 4. Key out

Case Study

A 23 year old farmer got off his tractor to check the vacuum tanker he was using was working, as no water was being drawn through.

As he leaned over the tractor to put his hand against the pump exhaust, the PTO shaft on the machine caught his safety vest, ripping his shirt, jumper and left arm completely off. Unfortunately, surgeons could not save his arm and it had to be amputated.

Safe Purchase

When hiring machinery or buying new equipment, check:

- The machine is 'CE' marked and supplied with a Certificate of Conformity
- The machine is fitted with roll-over protection
- The machine will clear under any overhead power lines
- Whether operators need training to use the new machine safely
- When buying second-hand equipment, check the machine complies with PUWER requirements and has guards in place. If not, you must bring it up to a safe standard and replace or repair guards before you use it

Case Study

A worker reached across an unguarded section of a potato harvester, to clear some potatoes. His arm was drawn into the harvester and was caught up to the elbow, breaking his fingers and forearm bones and removing muscle from the top of his forearm. The farmer was fined £5,000 plus £1,561 costs for failing to properly guard machinery.

Safe Use

Before using a machine, you should check it is suitable for the job, safe to use and has been set up correctly. Equipment should be inspected regularly for deterioration and records kept of all inspections.

To remain safe:

- Keep guards in place
- Switch machinery off when not in use and remove the key
- Provide training to staff on how to work the equipment efficiently as well as safely

Power take-off (PTO) shafts

Power take-off shafts must be guarded at all times. Guards should be made to a recognised standard (such as BS EN ISO 5674), they must be the correct size and length for the shaft and not rotate.

If you need access several times each day to a guarded dangerous part of a machine, check that interlocking safeguards are in position and that the machine cannot run when a guard is open.

Pressurised equipment

Any plant or equipment under pressure, such as slurry tankers, boilers, compressors and even tyres can burst open violently.

To remain safe:

- Make sure equipment is fit for purpose, used properly and maintained
- You should know the safe working pressures and temperatures for the equipment
- Fit safety valves to relieve excess pressure
- Pressure test pipes and tanks hydraulically rather than with air
- Use a tyre cage when inflating large tyres
- Never weld or heat wheel rims unless you have removed the tyres

Case Study

A 13 year old farmer's son became entangled on an unguarded PTO shaft while milling grain and shovelling it into bags. Fortunately, he survived but lost his left hand and lower leg below the knee, as well as receiving torso and head injuries.

Case Study

A fleece winding machine was being used to wind up lengths of rope on a polytunnel when the tractor driver left the cab without turning the engine off. Several hours later, the bodies of two farm workers were found entangled between the rope and a rotating shaft.

The farming partnership was fined £60,000 plus £45,548 costs. The company contracted to dismantle the polytunnels was also fined £20,000 plus £15,516 costs as not only was the machine not suitable for the job it was carrying out, without an automatic cut off in the event of entanglement, the employees had not been adequately trained.

Case Study

A 50 year old farm worker was trying to transfer high pressure oxygen using a home-made hydraulic hose connected to two cylinders. As he opened the valve on the small cylinder, a spark ignited and exploded, causing part of the hose to strike his head, fatally injuring him.