



# Timber Times

Partners for Healthy Forests

OCTOBER 2016

## SPECIAL POINTS OF INTEREST

- Importance of Machinery Maintenance for Safety
- 5 Basic Steps to Maintenance
- 5 Maintenance Tips to Extend Life and ROI
- Helpful Links
- Bad Safety Photos

## Safety Flyer

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Hello All,

At the recent CTIA Annual Meeting in May, the board decided to continue the monthly safety flyer. Safety has always been a primary focus for CTIA and it is a critical component to keep our workman comp rates at a reasonable level.

If you have contractors or fellow loggers who are not CTIA members, we would be happy to add them to our list. Our goal is safety industry wide!

If you find an interesting article or an OSHA related issue, please share with me so that I can send to our larger list.

Hope this helps improve your safety program.

Molly

The Colorado Timber Industry Association (CTIA) is an association of small, family-owned businesses committed to logging, processing and performing service work in the forests of Colorado. We are exceptional partners to the public and private stewards of our valuable and beautiful forests. We embrace Best Management Practices (BMPs) and sustainable forestry. To meet these values, we host annual continuing education classes on BMPs and conduct field audits to demonstrate our accountability to high quality, active management designed to promote long term forest health.

# Importance of Machinery Maintenance As A Measure of Industrial Safety

Organizations that work with machinery must protect their industrial assets in order to mitigate various safety threats. Having this done holistically should be included as a cautionary procedure in the risk prevention policies of any company requiring frequent implementation of the machinery by a large number of people within its organization.

If a serious accident occurs at a company, it can cause great alarm and will panic its staff. In addition, if the event gets broadcasted on the news, it can result in detrimental effects to the organization on a social level by compromising its reputation. This is why having a culture of prevention within work environment can prevent unfortunate consequences.

Security processes where industrial machinery is involved have always been linked to erroneous thinking about productivity in companies by assuming: "The higher the safety the lower the productivity." Due to advances in technology, this has been gradually changing because there are more secure computers with the purpose of improving production rates.

One of the main causes of accidents and occupational diseases is a lack of machinery maintenance. Periodic machinery maintenance is not only necessary for ensuring proper functionality and thus continued productivity, but also for safety and reliability. However, machinery maintenance is considered a high-risk activity, causing maintenance workers to be more exposed to risk than other workers within the company.



# 5 Basic Steps to Maintenance

Due to a lack of maintenance there can be accidents from faulty electrical installations (cables, plugs, and equipment), shocks and burns, fires, the ignition of potentially flammable or explosive materials, etc. Globally, it is estimated that between 15% and 20% (depending on country) of all accidents, and between 10% and 15% of all fatal accidents, are related to maintenance activities. To perform proper maintenance and avoid industrial safety risks, there are 5 basic steps that can be applied in any (commercial, medical, industrial, etc.) area:

- 1. Planning:** You must specify the scope of the task, the number of workers required to perform it, the assessment of potential risks and preventive measures, and the time and resources required for this activity, then inform workers of the necessary procedures.
- 2. Safeguard the work area:** This must be done in order to prevent access to unauthorized personnel by placing barriers and warning signs. The work area must be kept tidy, block the power supply, have moving parts of machinery placed in a safe position, be installed with temporary ventilation, and include safety exits.
- 3. Use proper equipment:** You must have the proper tools and equipment for performing maintenance activities as well as any equipment necessary for protection.
- 4. The planning described in "Step 1" must be properly implemented:** Workers and supervisors need to be aware of the appropriate work procedures and their work must be supervised.
- 5. Final check:** Create a manual describing the tasks performed, difficulties encountered (if they exist), and recommendations for improving any hazardous procedures.

Following these steps in the process of machinery maintenance can ensure the smooth running of a company's machinery by reducing both the risk conditions caused by their malfunction and the general risk conditions present when performing maintenance work. As a result of following this process, the company will more properly comply with appropriate industrial safety procedures.

# 5 Maintenance Tips to Extend Equipment Life and Return on Investment

Heavy machinery, especially Mining, Industrial or Farming Equipment, requires constant maintenance to keep it in good working order. Conversely, poorly maintained large machinery equipment runs inefficiently. Breakdowns are costly and safety is also an important consideration.

Here are five top tips for large machinery maintenance:

## **1. Stay on top of large machinery operator training**

- Many types of large machinery have multiple operators. One of the ongoing inspections on any checklist should be overseeing the correct operation of the equipment.
- Large machinery should be inspected as soon as it is purchased. Operator training is usually done at that point, but training needs to be kept up. Employees come and go, skills become rusty and poor operation leads to breakdowns.
- Operator manuals can be revised for the specific work situation. They can be rewritten in simpler language. A short manual can be provided to each operator for easy reference. And, if you operate in a paperless environment, you can rest assured operators use the most current version of each manual.
- One other note is to identify best practices, which can then be applied to other facilities or geographic locations. The knowledge you learn about how to maintain your equipment can become quite valuable – be sure to best leverage this important knowledge and use it at every applicable location.



# 5 Maintenance Tips (cont'd)

## 2. Add and test lubricants frequently

- Lubricants reduce friction around any moving part. A schedule of good lubrication maintenance extends the life of large machinery equipment and parts.
- Lubrication is one of the first and most important of maintenance checks. Look for signs of excess oil or grease build-up on pistons. Check for leaks around oil seals.
- Be sure to use the right lubricant. There are specific kinds of oil and grease for every component. Check the manufacturer's recommendations.
- Getting the lubricants checked is a good way to diagnose problems with large machinery. Experts analyze particles in the used oil. The makeup of any contaminants will indicate which part may be suffering from wear or breakdown.



## 3. Check for signs of wear

- Vibration, shock, high temperatures, friction and age all contribute to the breakdown of parts in heavy machinery.
  - Vibration can come from gears and belts that are out of alignment
  - Shock can come from accidents and from poor operator technique
  - High temperatures can come from extended use, friction, poor lubrication and worn parts, among other reasons
  - Age affects many key components. Over time, belts will warp. Seals will dry and crack. Bolts will loosen and stretch out of shape. Age is a factor to monitor in equipment.
- Should you discover wear and tear on any moving parts within your heavy equipment, be sure to quickly perform the necessary replacement of any worn parts.

# 5 Maintenance Tips (cont'd)

## **4. Keep large machinery clean, and maintain a clean environment**

- There are many seals and filters in place on heavy machinery to keep working parts clean and free of contamination. Seals should be inspected regularly to make sure they're in good condition. Filters should be inspected and changed regularly. Breathers should be kept clean to avoid creating a vacuum in the cab, which will suck contaminants into the cab. The electronics in the cab are susceptible to breakdown if contaminated. This impacts the clutch, for example.
- Large machinery should be stored in a shed or other building if at all possible. Exposure to wind and weather can lead to rust and rot. The machinery should be run periodically if it is not in use.

## **5. Have a maintenance and repair schedule, and keep good records**

- Fluids, tires, tracks and electrical systems are among the components that have to be checked regularly for preventive maintenance. Know what needs to be inspected and when. Here are some examples:
  - Power transmissions have many moving parts that need to be maintained in top condition. Gearboxes need to be checked for lubrication, vibration and damage to parts.
  - Friction materials, seals, gaskets and bearings all need to be inspected for wear and replaced. Gears and shafts usually last a long time and don't need to be replaced often, if at all.
  - Drive train components need constant monitoring. Check pulleys and v-belts on CVT transmissions for alignment and wear. Check sprockets for correct meshing with chains and for breaks.
  - Test the oil to diagnose problems. Change filters frequently.
  - Bearings keep great amounts of force running smoothly and are vital to large machinery performance. Check bearing lubrication often. Maintaining bearings well extends their life.
  - Lubricate gears frequently.
  - Do a seal check to prevent bearing raceway contamination.
  - Run torque checks on the bolts. Bolts can elongate and creep over time.

# Helpful Links

<http://www.aprison.com/blog/2014/03/5-maintenance-tips-to-extend-equipment-life-and-roi/>

<http://www.isn.co.nz/node/222>

<http://www.hse.gov.uk/safemaintenance/index.htm>

[http://www.cat.com/en\\_US/support/maintenance.html](http://www.cat.com/en_US/support/maintenance.html)

<https://www.convergencetraining.com/maintenance-safety.html>

