Loss Control & Risk Management Approach to Control Ergonomic Risks

CBIA Ergonomic Conference
Manufacturing Environments
December 8th, 2016

Course Outline – Controlling Ergonomics In Manufacturing Environments

1. Experience in the Industry
2. Common Ergonomic Issues in Manufacturing
3. Loss Control Approaches
   - Job Hazard Analysis
   - Removing Non-Value Adding Operations
   - Implementing Engineering Controls
   - Formal Job Rotation
4. Stretches and Exercise
5. Questions
Our Experience

CBIA Workers Comp Program
• FutureComp is the Third Party Administrator for the CBIA Workers Comp Program
• It is a Self Insurance Group
• Currently consists of 189 manufacturers across the State of Connecticut
• We work with these Members on a regular basis to help identify ergonomic exposures, implement controls, and help them manage claims after they occur
• Many of the risk management approaches covered in this conference are services we offer to the CBIA Workers Comp Members

Common Ergonomic Exposures in Manufacturing

In our experience, the following are some of the most common general ergonomic risks and exposures we find in manufacturing environments;
• Poor work flow design
• Poor work station design
• Bad postures and work practices even when a job is not highly repetitive
• High volume production demands
• Assembly type work
• Secondary operations

Some specific operations we see in manufacturing where ergonomic risks are prevalent include;
• Grinding, deburring, trimming, spray painting, powder coating, masking, taping, soldering, inspection, press operators...etc
It’s a Business….

With Ergonomics It’s About Control and Not Necessarily Elimination

- If you are in manufacturing, you probably have at least one of those processes within your plant or facility.
- In an ideal world, we as safety professionals, representing insurance companies would love to see all processes automated...but that is just not realistic.
- You want to identify the greatest ergonomic exposures and implement most effective controls within your company budget.
Job Hazard Analysis (JHA)

- Can often be called a variety of different things, with varying acronyms.
- Ultimately, it is a step by step breakdown of a job or work practice
- It’s the first step in identifying what exposures exist within your workplace
- Typically completed by plant manager, supervisor, safety director and or engineering department working in conjunction with the employee that performs said task on a daily basis

A Job Hazard Analysis will typically always include three steps; action, step or job identification. Hazards observed associated with the specific step and what controls can be implemented to reduce, control or eliminate said exposures

**JOB HAZARD ANALYSIS**

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<th>Action / Step</th>
<th>Hazard(s)</th>
<th>Control(s)</th>
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Job Title: □ New □ Revised
Department: Date Performed: / / 
Supervisor: Performed By:

FutureComp
Job Hazard Analysis

Document All Steps No Matter How Significant

- When conducting a JHA, you are trying to gain a better understanding of the work required in order to produce a certain part of perform a specific job
- All motions and process should be taken into consideration
- Videotaping job processes is a great tool when conducting JHA’s. Not only could you pick up on something that may have been missed during conversation/observations, but you could always get the safety committee involved which increases brainstorming possibilities

Job Hazard Analysis

- Once you think you have identified all necessary steps, attempt to identify potential hazards. For the purpose of this conference, the focus would be on ergonomic or repetitive motion exposures
- However, JHA’s can be used to identify other exposures and controls such as machine guarding needs and or PPE requirements
- Be on the look out for repetitiveness, excessive bending, twisting, turning, reaching, fine work, heavy lifting, and or jobs that could be modified to reduce physical strain on an individual
We will discuss the different type of controls that can be considered when attempting to reduce, control, or eliminate ergonomic exposures, but its key to reiterate the importance of conducting job hazard analysis.

You will not know what your potential problem areas are, unless you have a full understanding of the work that is required and how that work is performed.

To help determine whether or not something is a potential ergonomic exposure, ask yourself as the owner, manager, facilities director... etc two questions:

1. Is this job something you would want to do for 8 plus hours a day?
2. Is there a more effective, efficient and safer way to perform the job?

Who knows what Muda stands for or represents?

Japanese word for waste and is a key component in lean manufacturing

It is not necessary that your company become lean manufacturers, but when looking at job processes, a similar approach should be investigated

Not only will this make your company more effective and efficient, it also reduces overall ergonomic exposures. If you can reduce the number of times a part or product is handled, it should result in less exposure to an employee.
**Work Flow Arrangement**

The easiest way to describe value adding versus non value adding would be to look at a manufacturing facility as a whole.

- When attempting to organize production flow, do you attempt to have one operation stream into the next?
- For instance, when machining a part, most organizations would have raw materials lead directly into inspection, then into cutting, then machining, then secondary operations, then finishing, final inspection, and finally shipping and receiving.
- Typically, these processes are set up in circular fashion in plants to eliminate non value adding and material handling exposures.

**Engineering Controls**

- There are a wide variety of engineering controls that can be implemented to help reduce the overall ergonomic exposure to the employee.
- Areas of focus could include;
  - Work station design
  - How actual work is being performed
- You should be able to determine what controls need to be implemented based on your JHA.
Work Station Considerations

Chairs
- Have been surprised at number of times I have seen the old school wooden chairs or stools being used in manufacturing environments.
- Typically, there is little to no adjustability to these chairs and we often see employees with pillows behind and under them.

Desk/Workstations
- If there is a good chair in place, an employee should be able to adjust to height of workstation.
- However, if chair is fixed, may have to consider adjusting height of table/work area to height of employee.

Work Station Considerations

- Just like an office environment, you want to attempt to set up work in a manner that will encourage the employee to stay in neutral position as much as possible.
- Try to limit the amount of bending, twisting, reaching, and or awkward, prolonged postures.
- Ergonomics is all about the 90 degree rule...knees, waist, elbows...etc.
Remember....

- When introducing a new piece of workstation equipment, you should train and review the benefits of that equipment with the individuals that will be using it.
- Too often then not, when I meet with an employee to conduct an ergonomic assessment, he or she will either not know that their chair is adjustable or not know about all of its features.
- If you are going to invest in making improvements, make sure the employees understands how to get the most out of it.
Manufacturing Engineering Controls

Misconception

- Most people automatically assume that ergonomic improvements are going to be costly investments.
- They can be depending on the technology you want to invest in, but a perfect example of low cost ergonomic improvements would be using a ream of paper to get a computer monitor up to appropriate height.
- Always start small when making operational safety improvement. What you may think is the answer to the problem, may create other unwanted issues. Get feedback from the employees most affected by change to help limit unwanted spending.
Communication is Key

- The JHA will be a strong tool to identify any potential problem areas, but to implement effective solutions the following partners should be involved in the process:
  - Management
  - Safety Office/Director
  - Supervisor
  - Employees
  - Loss Control Partner
  - Safety Committee
- It's amazing what can be learned about job requirements by simply asking an employee how they would make it more effective and efficient.

Job Rotation and Exercise

If after identifying exposures, eliminating non-value adding processes and implementing controls to reduce potential ergonomic risks you still feel there is potential for injury, the next progressive steps would be to implement formal job rotation and at minimum provide employees with knowledge associated with stretches and exercise.
Job Rotation

- When all else fails, a company can implement job rotation to help limit potential ergonomic exposures.
- Some of the most common issues we run into with job rotation includes:
  - Informal Programs: When informal programs are in place, Management will think that efforts are being made to rotate employees, but in reality employees are going to stay in the positions that they like the most or if in piece work type jobs, the ones they are most profitable. A Supervisor should direct rotation and it should be on a set schedule dependent on risks and exposures
  - Employees Are Unqualified: There should be a business balance, if a job is repetitive in nature a Claim Adjuster would have a hard time denying a claim. To reduce exposure, investment in training may be necessary and at times production sacrificed
  - All Work is Similar: Even if the work is repetitive in nature and requires significant hand movement, slight changes in motions reduce likelihood of developing ergonomic injuries. Plus, sometimes a change in job helps employee psychologically when compared to doing the same task over and over again

Stretches & Exercise

- Many companies, especially those overseas have actually implemented exercise/stretch programs in an effort to reduce ergonomic risks and exposures
- The programs do not have to be done in a large conference room, simply having a Supervisor kick off the morning shift with everyone taking 5-10 minutes to stretch at their workstations could be beneficial
- If your company is not at the point of implementing formal programs, at minimum provide employees with the resources so that he or she can do on their own and or at home
Core Muscles

- Stretches and exercises focused on building core muscles have become popular not only in preventing workplace injuries, but improving the overall quality of life.
- Core muscles have a significant impact on the rest of the body and strengthening it could reduce ergonomic, lifting/material handling and other work-related injuries.
- Talk to your healthcare provider or Loss Control Consultant as they should be able to provide you some resources to strengthen the core. The following are just some examples:

**Stretches and Exercise**

Stretching is a form of preventative maintenance for your body.

**CURL UP**

Begin lying on your back with one leg bent, your other leg straight and your hands under your lower back.

Curl your upper body off the floor, hinging at the bottom of your shoulder blades. Hold for six seconds, lower your shoulders back to the ground and repeat ten times.

Use your hands to monitor the small natural arch in your lower back. Make sure to keep neck relaxed.
**SIDE PLANK: LEVEL 1**

Begin lying on your side with your knees bent. Raise yourself into a side plank position with your elbow supporting upper body with knees bent. Maintain this position, hold for ten seconds and repeat ten times. Make sure to keep your trunk stiff, do not let your hips roll forward, backward or drop to the floor.

**BIRD DOG**

Begin on all fours with your arms positioned directly under your shoulders and your knees resting on a cushioned surface. Straighten your opposite arm and leg at the same time so that your leg and arm are parallel to the floor for five seconds. Return to the starting position. Repeat with opposite side and conduct 15 repetitions. Do not let your trunk (waist) twist. Make sure to keep your back straight and chin tucked during the exercise.
In the other breakout session, you will learn how ergonomic related injuries can ultimately affect your company’s bottom line.

It will be very difficult for any insurance company and or Claims Adjuster to deny an ergonomic claim when repetitive type work is required.

However, if efforts are being made to limit the amount of overall exposure, the chances of injury could be decreased and we may be more successful in preventing serious ergonomic type injuries.

Business has to balance profitability with ergonomic risk. Take into consideration the cost of ergonomic claims when making a decision that could ultimately affect production.

The main risk management approaches to reduce, control, and or eliminate ergonomic exposures include:

- Job Hazard Analysis to identify exposures
- Removing non-value adding operations
- Implementing engineering controls to reduce exposures
- Formal job rotation to limit risk to individuals
- Stretches and exercises as a preventative measure
Questions

References

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