



A DIVISION OF
WELCO LUMBER COMPANY USA

Welco Lumber Company Skookum Division Shelton, Washington

October, 2003



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Introduction

In March 2003, Labor and Industries began an ergonomics demonstration project with Welco Lumber Co., Skookum Division, at Shelton, Washington. The Skookum Division of Welco Lumber Co. manufactures Western Red Cedar Fencing materials, beveled Cedar siding and decking.

Education and training

The Skookum Division Safety and Human Resources Director has experience with the Canadian IMIRP (Industrial Musculoskeletal Injury Reduction Program) for sawmills, and has presented comprehensive, industry specific ergonomics education to all mill employees. Additionally, four Skookum Division employees have received ergonomics training (November, 2002) addressing the Washington State Ergonomics Rule from the Timber Operator's Council (TOC).

Management commitment

Welco Lumber Co., Skookum Division management fully supports the process of ergonomics. There is money available to make small engineering changes. Capital is available for major projects.

Employee involvement in reducing WMSD risk

Employees who were familiar with the various jobs within the mill and who had attended the TOC training were charged with doing the caution zone review using L&I materials. This was accomplished during the summer of 2003. If there was any question of whether a job was in the caution zone, it was treated as a caution zone job and was analyzed for hazards.

Stretching

Pictures of Skookum Division's own employee's demonstrating quick, effective stretches are posted on bulletin boards in four locations in the mill. The emphasis of the stretching program is to encourage quick and easy stretches that employees can do on the job. All employees have been taught stretches that are specific to the job they are doing. They often do them during chain slowdowns, or down time.

Bevel Resaw Cart

Maintenance designed and built a cart to place under the Bevel Resaw In-feed table. Previously, the clean up employee was required to sweep saw dust from under the table. The clearance under the in-feed table is less than 4 feet, and it covers an area approximately 20' by 15'. This required the employee to bend while sweeping up the sawdust for at least 40 minutes per day.



Now, the cart is placed under strategically placed openings, and the operators working at the in-feed sweep dust off the table in-feed directly into the cart. And the clean up employee just wheels the cart over to the waste conveyor and dumps it. The development of the cart has reduced exposure to awkward postures of

the back (stooping), and highly repetitive motions (sweeping).

The Producto

The Producto is a saw that cuts corners off one end of fencing boards. A forklift delivers a pallet of fencing boards to the in-feed station. Before modifications, the operator was required to lift and move boards to a chain, which carried them to the saw.



As the stack of boards was transferred to the in-feed, the operator was forced into more and more back bending as he/she fed the chain. The employees re-designed the station and added a foot actuated lift table, which raised the level of the boards, allowing the operator to pull them off the stack at a reasonable height.



The in-feed was again (August, 2003) re-designed to increase the range of the pallet lift. Now, no lifting is required and the increased height allows the operator to slide the boards on the bottom of the loads over to the feeder chain.

Additionally, a control box was moved to allow the operator to get closer to the stack, further reducing his/her bending to access boards.



Fencing Chain Pullers

The fencing chain pullers who sort and stack fencing boards are now required to pull from both sides of the chain. They do this on a regular two-hour rotation, reducing their exposures to high hand force by using the opposite hand to grip the board to be stacked.



Clean-up

Where saw dust piles up in specific locations, workers in the area clean up/transfer saw dust to waste conveyors on a frequent basis throughout the day. This spreads exposure to the clean-up among a number of employees but reduces each employee's overall exposure to twisting, lifting, and awkward posture of the back.

Hazard Analysis

When conducting WMSD hazard analysis, Skookum Division uses the Washington State Ergonomics Rule Appendix B (Hazard Zone Checklist) to evaluate the physical risk factors for certain tasks. Beyond that Skookum Division also uses a **Physical Demands Summary** form to evaluate for WMSD risks.

Physical Demands Summary (PDS)

Each job at Skookum Division is evaluated using a Physical Demands Summary. The PDS was developed by a physical therapist for use in post hire physicals and the Return to Work program. It is an inventory of the physical and environmental stressors an employee may encounter in each job, and the tools used. Duration is categorized at four levels

1. Rarely (0-5%)
2. Occasionally (6-33%)
3. Frequently (34-66%)
4. Continuously (67-100%)

The physical risk factors evaluated are:

sitting	standing	walking	driving
lifting	carrying	push/pull	stooping/bending
squatting	kneeling	crawling	twisting
climbing	balance	reaching	hand activity
head/neck posture	feeling	talking	hearing
tasting/smelling	vision		

In addition, environmental factors, weights lifted, and distances carried are considered as well as equipment used.

The value of this summary is great when associated with the Washington State Ergonomics Rule. The PDS for each job can essentially serve as a caution zone review. An example of a Job Summary/Physical Demands Summary is Appendix A.

Solution development and implementation

Continuous improvement process

Well before the Washington State Ergonomics Rule was in effect, Skookum was active in finding solutions to WMSD risks. The safety manager brought experience with the Canadian IMIRP (Industrial Musculoskeletal Injury Reduction Program) process for sawmills to Skookum Division. She compared the IMIRP findings for other sawmills to the jobs at Skookum. Applicable solutions were applied, such as defining optimal postures for each workstation, placement of anti-fatigue mats at workstations where employees stood for long periods of time and job rotation to reduce exposures.

Conclusions

It is commonly understood that employees who do the jobs are the people who know how to improve those jobs. Through conversations with employees of Skookum Division it is evident that their ideas are valued. Many improvements to the production process and to the safety of employees are generated by line employees. This attitude has generated a culture of "can do". So whether it is a safety concern or a way of increasing the productivity of the mill, Skookum employees contribute their knowledge and ideas as a regular part of Skookum's business process. This attitude was confirmed through extensive interviews during a VPP audit in September Of 2003.

Appendix A

Physical Demands Summary

OCCUPATIONAL HEALTH & WELLNESS

JOB ANALYSIS/PHYSICAL DEMANDS SUMMARY

EMPLOYEE: _____ EMPLOYER: _____

JOB TITLE: _____

I. PHYSICAL DEMANDS

	Rarely (0 - 5%)	Occasionally (6 - 33%)	Frequently (34 - 66%)	Continuously (67 - 100%)
A. Sitting	_____	_____	_____	_____
B. Standing	_____	_____	_____	_____
C. Walking	_____	_____	_____	_____
D. Driving	_____	_____	_____	_____
E. Lifting				
1. 0 - 10 lbs. Level	_____	_____	_____	_____
2. 11 - 20 lbs. Level	_____	_____	_____	_____
3. 21 - 35 lbs. Level	_____	_____	_____	_____
4. 36 - 50 lbs. Level	_____	_____	_____	_____
5. 51 - 100 lbs. Level	_____	_____	_____	_____
6. Over 100 lbs. Level	_____	_____	_____	_____
F. Carrying				
1. 0 - 10 lbs. Distance	_____	_____	_____	_____
2. 11 - 20 lbs. Distance	_____	_____	_____	_____
3. 21 - 35 lbs. Distance	_____	_____	_____	_____
4. 36 - 50 lbs. Distance	_____	_____	_____	_____
5. 51 - 100 lbs. Distance N/A	_____	_____	_____	_____
6. Over 100 lbs. Distance N/A	_____	_____	_____	_____
G. Push / Pull Activity / Object	_____	_____	_____	_____
H. Stooping / Bending	_____	_____	_____	_____
I. Squatting	_____	_____	_____	_____
J. Kneeling	_____	_____	_____	_____
K. Crawling	_____	_____	_____	_____

	Rarely (0 - 5%)	Occasionally (6 - 33%)	Frequently (34 - 66%)	Continuously (67 - 100%)
L. Twisting				
Chain Puller (Fencing)				
M. Climbing				
Activity				
N. Balance				
O. Reaching (full extension)				
1. Above Shoulder				
2. At Shoulder				
3. Below Shoulder				
P. Hands				
1. Simple Grasp				
2. Firm Grasp				
3. Fine Manipulating				
Q. Head / Neck				
1. Static				
2. Flexion				
3. Rotation				
R. Feeling				
S. Talking				
T. Hearing				
U. Tasting/Smelling				
V. Vision				
1. Near Acuity				
2. Far Acuity				
3. Depth Perception				
4. Accommodation				
5. Color Vision				
6. Field of Vision				

II. EQUIPMENT _____

III. ENVIRONMENTAL CONDITIONS

- A. Inside _____ Outside _____
- B. Temperature (Non-Weather Related): Normal ___ Extreme Cold ___ Extreme Heat
- C. Humidity (Non-Weather Related): Normal ___ Wet ___ Dry
- D. Hazards: Mechanical ___ Electrical ___ Chemical ___ Burns ___ Cuts ___ Noise ___ Dust ___ Fumes ___
 Heights ___ Moving Machinery ___ Vibration ___ Slippery Surfaces ___ Explosives ___
 Other _____
- E. Safety Equipment Required: _____

IV. COMMENTS: _____

Analysis Performed by _____ Date _____

WELCO-SKOOKUM LUMBER COMPANY

The attached Job Analysis represents an accurate description of job duties and physical demands for the position of _____.

Employer Representative

Date

EMPLOYEE:

MEDICAL REVIEW:

Work status/restrictions:

RELEASED TO WORK WITH NO RESTRICTIONS

OFF WORK UNTIL _____(Date)

MAY RETURN TO ALTERNATE/MODIFIED/LIGHT DUTY WORK

So that we may obtain a clear understanding of this employee's restrictions, please indicate which physical demands of the job he/she is restricted from at this time and the duration of these restrictions.

Physician/Therapist Comments: _____

Physician/Therapist Signature

Date

Appendix B

Ergonomics Process



1) PURPOSE

- a) The purpose of this program is to provide the employees with the tools and knowledge to decrease the incidence of musculoskeletal injuries in their workplace. This will be accomplished through identification of ergonomic hazards, and developing ways to eliminate, reduce or otherwise control them.

2) OBJECTIVES

- a) To educate employees on prevention techniques that can be used at work, home, and in recreational pursuits.
- b) Through early detection, eliminate or at least minimize the full consequences of Musculoskeletal Injuries.
- c) To provide a process to determine jobs at risk, identify the risk factors, determine appropriate solutions, implement and evaluate solutions.

3) RESPONSIBILITIES

- a) Management
 - i. To support the Ergonomics Process by providing time and resources.
 - ii. Establish education and training program schedule, train, and track attendance.
- b) Program Administrators
 - i. Communicate with Safety & HR Manager, Safety Committee, Consultants, Supervisors and Employees.
 - ii. Determine Caution Zone Jobs by July 1, 2002
 - iii. Assist Safety Manager in the establishment of an education and training program schedule and in employee training.
 - iv. Perform Hazard Analysis on Caution Zone Jobs that have WMSD hazards.
 - v. Provide on-going information and support to employees on ergonomic issues.

4) ERGONOMICS PROCESS

- a) Caution Zone Job Analysis
- b) WMSD Hazard Analysis
 - i. Analyze CZJs to determine if WMSD hazards exist, using Hazard Zone Checklist (Appendix B) – WAC296-62-05174
 - ii. Reduce all WMSD hazards below the criteria in Appendix B of the rule or the degree technologically and economically feasible.
- c) Employee Participation
 - i. Provide for and encourage participation in analyzing CZJs and selecting measures to reduce WMSD hazards
 - ii. Share information on job analysis with safety committee, supervisors and employees

5) EDUCATION and TRAINING

- a) Training will be given to all management, supervisors and employees
 - i. After the initial training, refresher training will be given annually.
 - ii. New employees will be given basic ergonomics training as part of their initial safety orientation.
 - iii. Ergonomics training will be given, as needed, when new tasks, methods, etc. are introduced to the workplace, or existing ones are modified.
 - iv. Records of all training will be maintained in the Safety Office.

- c) Employees will receive training in:
 - i. Ergonomic Principles and the Ergonomics Rule
 - ii. Musculoskeletal Injuries, Signs and Symptoms
 - iii. Importance of Early Reporting
 - iv. Workplace & Personal Risk Factors
 - v. Risk Control
 - vi. Reporting Avenues

6) NEW OR MODIFIED EQUIPMENT

- a) The Ergonomics Administrators will work with the Maintenance Department to conduct an ergonomics evaluation during the design stage before a new task method, piece of equipment or workstation is introduced, or an existing one is modified.

7) MEDICAL EQUIPMENT

- a) Working with the Occupational Medical Department of the Capital Medical Center, Olympia, WA
 - i. Early identification of ergonomic-related disorders
 - ii. Systematic evaluation and referral
 - iii. Early treatment to prevent a more serious condition from developing
 - iv. Return-to-work planning for successful reintegration of the employee
 - v. Systematic and ongoing surveillance