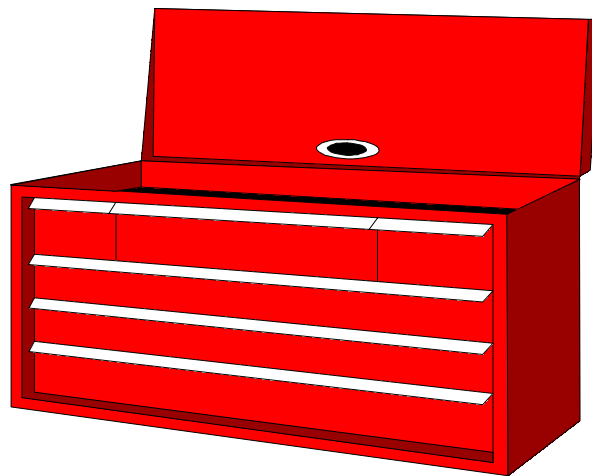


# INDUSTRIAL MUSCULOSKELETAL INJURY REDUCTION PROGRAM

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## Common Industry Jobs (CIJs) Shipper Co-ordinator Tool Kit



**IMIRP** program coordinated by:

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Council of  
Forest  
Industries



Industrial  
Wood & Allied  
Workers of  
Canada



Advanced  
Ergonomics  
Inc.

In cooperation with the Workers' Compensation Board of British Columbia

# SHIPPER CO-ORDINATOR TOOL KIT

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Shipper Co-ordinator  
Tool Kit

# Overview

## Shipper Co-ordinator

### Job Summary

A Shipper Co-ordinator is responsible for co-ordinating the activities of the lumberyard. A Shipper Co-ordinator will perform desk and computer work, use the phone, and supervise the lumberyard. Refer to the Physical Demands Analysis for more detail.

### Physical Demands

The physical demands of the Shipper Co-ordinator may include:

- a) Awkward postures of the neck and wrist
- b) Static postures of the neck, wrist, and low back
- c) Sitting at the computer or desk
- d) Walking in the lumber yard tallying or taking inventory
- e) Standing while counting lumber in the yard
- f) Climbing stairs

### Mental Demands

A Shipper Co-ordinator may have to weigh different outcomes at the same time and determine the appropriate action to take (e.g., processing an order, cross-referencing it to the inventory, co-ordinating production to produce what is needed). This processing of information may be performed under time constraints (e.g., the end of the month shipping requests are significantly higher than the beginning of the month).

**Major  
Variations**

With different mills, the following major variations may be found:

- 1) A Shipper Co-ordinator may also perform other duties such as:
  - a) Banding loads
  - b) Inventory in the yard

**Minor  
Variations**

With different mills, the following minor variations may be found:

- 1) A Shipper Co-ordinator may use one or more of the following to perform their job:
  - a) Computer
  - b) Adding machine
  - c) Fax
  - d) Pen/pencil

# Physical Demands Analysis Shipper Co-ordinator

## PDA General Instructions: Shipper Co-ordinator

The purpose of this PDA is to familiarise healthcare professionals with the physical demands of a Shipper Co-ordinator. This PDA can be used to gather information about an individual's job and to assist in developing a rehabilitation and return-to-work plan. It is not intended for use in claims adjudication.

Where applicable, common industry job data (e.g., hand tools, tasks) have been included in the tables of this document. The information reported was collected from a sample of Shipper Co-ordinator(s) in the BC Sawmill Industry. However, the PDA requires completion by the healthcare professional, with input from the injured worker to highlight tasks that aggravate the injury or prevent the worker from returning to their job. The worker's supervisor may be contacted for further information or verification of tasks.

A PDA should be filled out for each individual worker following an injury. Subsequent changes in the work process may reduce the accuracy of any pre-existing physical demands assessments.

### **Disclaimer**

*The IMIRP Society accepts no responsibility for the use or misuse of the PDA,  
or the accuracy of the PDA as it applies to any specific workplace.*

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# Physical Demands Analysis Shipper Co-ordinator

## Task List

For each of the tasks listed below, please indicate whether it occurs at your mill.

### **Desk work**

A Shipper Co-ordinator may do desk work while doing inventory, invoicing, ordering, co-ordinating forklift, planning the lumber yard, tallying, customs, and other papers at their desk.

*Does this task occur at your mill?*

Yes       No



### **Computer work**

A Shipper Co-ordinator may do computer work while doing inventory, invoicing, ordering, co-ordinating forklift, planning the lumber yard, tallying, customs, and other papers.

*Does this task occur at your mill?*

Yes       No



## Phone use

A Shipper Co-ordinator may use the phone for sales, receiving shipping information, co-ordination deliveries, co-ordinating external sources and dealing with customers.

*Does this task occur at your mill?*

Yes       No



## Supervise lumberyard

A Shipper Co-ordinator may supervise the lumberyard, taking inventory, regulating the loads going out of the yard, grade control, and co-ordinating activities in the lumberyard.

*Does this task occur at your mill?*

Yes       No

## Job Profile

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Division: \_\_\_\_\_

Employee Name: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Is a Return-to-Work (RTW) strategy in place?  Yes  No

If yes, check all that apply:  Modified Job  Modified Worksite  Graduated RTW

Describe:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Length of shift \_\_\_\_\_ hours

Formal breaks

- Two 10 minute breaks
- One 30 minute lunch break
- Other: \_\_\_\_\_

Informal breaks

- Yes, length of break varies
- Yes, \_\_\_\_\_ minutes/shift

Work pace control

- Self-paced
- Time pressure (e.g., completing a task during the 30 minute lunch break)
- Other: \_\_\_\_\_

Job rotation

Describe:

Yes  No

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Work Organisation

### Task Description

The table below contains a list of tasks performed by a Shipper Co-ordinator. Use the left column to check off (✓) tasks that are present. Estimate the *Percent of Shift* each task is performed and place a check mark (✓) in the appropriate column. The *Comments* section may be used to include information related to duration, frequency, and cycle times. Additional tasks can also be included under *Other*.

Task	Percent of Shift				Comments
	Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<i>Desk work</i>					<ul style="list-style-type: none"> <li>Frequency may vary depending on technology (e.g., computers, scanners, faxes) available to the Shipper Co-ordinator</li> </ul>
<i>Computer work</i>					<ul style="list-style-type: none"> <li>Frequency may vary depending on technology (e.g., computers, scanners, faxes) available to the Shipper Co-ordinator</li> </ul>
<i>Phone use</i>					<ul style="list-style-type: none"> <li>Frequency may increase during the last two weeks of the month when sales increase</li> </ul>
<i>Supervise lumber yard</i>					<ul style="list-style-type: none"> <li>Frequency may vary depending on the responsibilities of the Shipper Co-ordinator</li> </ul>
<i>Other:</i>					

## **Workstation Characteristics**

### **Dimensions & Layout**

Sketch workstation(s) and indicate relevant measurements, such as working heights and reaches.

**Flooring, Displays and Seating**

The table below lists several components of a workstation. For *Flooring* and *Displays* there are several options provided. Please indicate all of the options that apply to the workstation. For the *Seating* section, describe and identify the features of the seat, if applicable. The *Comments* section may be used to include additional information, especially any workstation characteristics of concern.

Workstation Characteristics	Comments
<p><b>Flooring</b> (<i>Check all that apply</i>)</p> <p><input type="checkbox"/> Cement</p> <p><input type="checkbox"/> Wood</p> <p><input type="checkbox"/> Rubber matting</p> <p><input type="checkbox"/> Metal</p> <p><input type="checkbox"/> Other: _____</p>	
<p><b>Displays</b> (<i>Check all that apply</i>)</p> <p><input type="checkbox"/> Lights on console</p> <p><input type="checkbox"/> Mirrors</p> <p><input type="checkbox"/> Video monitors</p> <p><input type="checkbox"/> Computer monitors</p> <p><input type="checkbox"/> Scrolling display</p> <p><input type="checkbox"/> Signal lights</p> <p><input type="checkbox"/> Other: _____</p>	
<p><b>Seating</b> (<i>Check all that apply</i>)</p> <p><input type="checkbox"/> Armrests</p> <p><input type="checkbox"/> Backrest</p> <p><input type="checkbox"/> Swivel seat</p> <p><input type="checkbox"/> Slide track</p> <p><input type="checkbox"/> Lumbar support</p> <p><input type="checkbox"/> Foot rest</p> <p><input type="checkbox"/> Casters #: _____</p> <p><i>Indicate if adjustable:</i></p> <p><input type="checkbox"/> Height</p> <p><input type="checkbox"/> Armrests</p> <p><input type="checkbox"/> Backrest</p> <p><input type="checkbox"/> Forward tilt</p>	<p>Height of seat: _____ cm</p> <p>Depth of seat: _____ cm</p> <p>Width of seat: _____ cm</p> <p>Covering type: _____</p>

## Equipment & Machinery Controls

The table below contains a list of the types of controls used by a Shipper Co-ordinator. Use the left column to check off (✓) controls that are present at the work site. Highlight controls that may aggravate the injury, or which the worker finds difficult to use. The *Comments* section may be used to include any additional information. Additional controls can be included under *Other*.

Type of Control	Function	Comments
<i>Keyboard</i>	<ul style="list-style-type: none"> <li>• <i>Computer work</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Frequency varies dependent on need of equipment use</i></li> </ul>
<i>Mouse/tracker ball</i>	<ul style="list-style-type: none"> <li>• <i>Computer work</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Frequency varies dependent on need of equipment use</i></li> </ul>
<i>Buttons on the fax machine</i>	<ul style="list-style-type: none"> <li>• <i>Desk work</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Frequency varies dependent on need of equipment use</i></li> </ul>
<i>Buttons for the phone</i>	<ul style="list-style-type: none"> <li>• <i>Desk work</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Frequency varies dependent on need of equipment use</i></li> </ul>
<i>Keys for the adding machine</i>	<ul style="list-style-type: none"> <li>• <i>Desk work</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Frequency varies dependent on need of equipment use</i></li> </ul>
<i>Other:</i>		

## Physical Demands

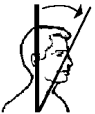

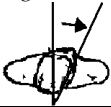

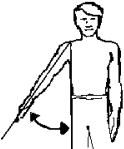

### Whole Body Physical Demands



Identify each of the physical demands required by a Shipper Co-ordinator and list the corresponding tasks in the second column. Check off (✓) the estimated *Percent of Shift*, and use the *Comments* section to include information related to duration, frequency, and cycle times.

Physical Demands	Tasks or Activity	Percent of Shift				Comments
		Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<i>Example: Sitting</i>	<ul style="list-style-type: none"> <li>• <i>Desk work</i></li> <li>• <i>Computer work</i></li> <li>• <i>Phone use</i></li> </ul>				✓	<ul style="list-style-type: none"> <li>• <i>Frequency depends on the tasks performed throughout the day</i></li> </ul>
<i>Walking</i>						
<i>Sitting</i>						
<i>Standing</i>						
<i>Climbing</i>						
<i>Balancing</i>						
<i>Kneeling/ Crouching</i>						
<i>Other:</i>						





## Body Postures





The table below outlines the body postures that may be adopted throughout the shift by a Shipper Co-ordinator, related to tasks. Check off (✓) the estimated *Percent of Shift*, and use the *Comments* section to include information describing posture duration, frequency, cycle times, and hand used.

Body Posture	Task(s)	Percent of Shift				Comments
		Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<i>Example: Neck Flexion</i>	<ul style="list-style-type: none"> <li>• Desk work</li> <li>• Computer work</li> </ul>		✓	✓		<ul style="list-style-type: none"> <li>• Frequency may depend upon the height of the computer monitor</li> </ul>
<b>Neck</b>						
<i>Flexion</i> 						
<i>Extension</i> 						
<i>Twisting</i> 						
<b>Shoulder</b>						
<i>Flexion</i> 						
<i>Abduction/adduction</i> 						
<i>Extension</i> 						

Body Posture	Task(s)	Percent of Shift				Comments
		Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<b>Forearm</b>						
<i>Rotation</i> 						
<b>Wrist</b>						
<i>Wrist Movements</i> 						
<b>Hand/Fingers</b>						
<i>*Handling</i>						
<i>*Fingering</i>						
<i>*Gripping</i>						

**Legend for Hand/Fingers**

<i>Handling</i>	<i>Grasping, turning, holding, etc.</i>			
<i>Fingering</i>	<i>Picking, pinching, etc.</i>			
<i>Gripping</i>	<i>Power</i> 	<i>Pinch</i> 	<i>Hook</i> 	<i>Precision</i> 

Body Posture	Task(s)	Percent of Shift				Comments
		Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<b>Back</b>						
<i>Flexion</i> 						
<i>Lateral Flexion</i> 						
<i>Twisting</i> 						
<i>Extension</i> 						

## Manual Material Handling

The table below contains a list of general manual material handling activities performed by a Shipper Co-ordinator. Indicate tasks that require one or more of these activities, and fill in the weight of the objects, or the force required, for each action. Check off (✓) the estimated *Percent of Shift*, and use the *Comments* section to include information related to duration, frequency, cycle times, and characteristics of objects handled. If necessary, please refer to Appendix A to calculate the weight of the wood being handled.

Activity	Task Description	Weight (kg)	Percent of Shift				Comments
			Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<i>Pushing</i>							
<i>Pulling</i>							
<i>Lifting</i>							
<i>Lowering</i>							
<i>Carrying</i>							

**Hand Tools**

Indicate the hand tools used by a Shipper Co-ordinator by placing a check mark (✓) in the far left column. Determine the weight of the hand tool and enter it in the appropriate column. Check off (✓) the estimated *Percent of Shift*, and use the *Comments* section to include information related to duration, frequency, cycle times, and characteristics of objects handled.

Type of Tool	Task(s)	Weight (kg)	Percent of Shift				Comments
			Rarely 0 to 5%	Occasionally 6 to 33%	Frequently 34 to 66%	Constantly 67 to 100%	
<i>Tape measure</i>	<ul style="list-style-type: none"> <li><i>Supervise the lumber yard</i></li> </ul>	0.2					<ul style="list-style-type: none"> <li><i>Frequency may vary depending on the responsibilities of the Shipper Co-ordinator</i></li> </ul>
<i>Other:</i>							

## Environmental Conditions

### Work Environment

The table below contains a list of environmental conditions that may be of concern. If any of these factors aggravate the injury, describe in the *Comments* section.

Factor	Comments
<b>Vibration</b> ( <i>Indicate source</i> ) <input type="checkbox"/> Seat <input type="checkbox"/> Floor <input type="checkbox"/> Tool <input type="checkbox"/> Other: _____	
<b>Noise level</b>	
<b>Lighting level</b>	
<b>Other:</b>	

### Location of Workstation

The table below contains a list of potential work environments. Indicate with a check mark (✓) in the left column which of the work environments apply to the specific workstation. For example, the workstation may be inside a building with both a local fan and heater, exposed to the outside by a doorway that is always open. In this situation, 'Inside exposed', 'Heater present', and 'Fan present' would all be checked.

Work Environment	
	Outside uncovered
	Outside covered
	Inside enclosed
	Inside exposed
	Heater present
	Fan present

## Temperature

The table below contains a list of the geographical regions of British Columbia. Indicate the appropriate region with a check mark (✓) in the left column. Refer to the regional map in Appendix B of the PDA.

Region	Avg. Max July/Aug	Avg. Min Dec/Jan	Extreme Max.	Extreme Min.
<input type="checkbox"/> Vancouver Island	22.5 °C	-0.6 °C	36.1 °C	-18.8 °C
<input type="checkbox"/> Southwestern BC	22.9 °C	0.4 °C	35.6 °C	-18.3 °C
<input type="checkbox"/> Cariboo Chilcotin Coast	22.2 °C	-11.6 °C	36.4 °C	-42.5 °C
<input type="checkbox"/> High Country	26.3 °C	-9.9 °C	39.6 °C	-39.7 °C
<input type="checkbox"/> Okanagan Similkameen	26.5 °C	-8.4 °C	36.0 °C	-36.3 °C
<input type="checkbox"/> Kootenay Country	26.2 °C	-6.7 °C	38.5 °C	-32.0 °C
<input type="checkbox"/> British Columbia Rockies	24.7 °C	-12.3 °C	37.5 °C	-42.2 °C
<input type="checkbox"/> North by Northwest	19.5 °C	-11.7 °C	32.9 °C	-38.1 °C
<input type="checkbox"/> Peace River Alaska Highway	20.0 °C	-20.2 °C	34.6 °C	-47.7 °C

## Personal Protective Equipment

The table below contains a list of the personal protective equipment (PPE). For the Shipper Co-ordinator at your mill, indicate with a check mark (✓) which of the PPE items are required.

<input type="checkbox"/>	Gloves Type:	<input type="checkbox"/>	Hard Hat	<input type="checkbox"/>	Leather Apron
<input type="checkbox"/>	Glove Liners	<input type="checkbox"/>	Steel-toed Boots	<input type="checkbox"/>	Dust Mask
<input type="checkbox"/>	Eye Protection	<input type="checkbox"/>	Hearing Protection	<input type="checkbox"/>	Seat Belt
<input type="checkbox"/>	Face Shield/Helmet	<input type="checkbox"/>	Life Jacket	<input type="checkbox"/>	Harness
<input type="checkbox"/>	Knee Pads	<input type="checkbox"/>	Other:	<input type="checkbox"/>	Other:

## Appendix A – Weight of Wood Equation

### 1. Type of Wood Handled

The table below contains a list of the types of wood processed in British Columbia. The weight per board foot wet and dry is given for each species. This information will be used in the table in *Section 4* to calculate the weight of the wood handled. Please indicate all of the types of wood processed.

Wood Handled	Wet lb./ Board Foot	Dry lb./ Board Foot	Wood Handled	Wet lb./ Board Foot	Dry lb./ Board Foot
Douglas Fir	3.60	2.83	Larch	3.48	N/A
Hemlock	3.42	2.49	Spruce/Pine/Fir*	2.95	2.18
Red Cedar	2.42	2.00	Alpine Fir	2.67	2.00
Yellow Cedar	3.01	2.49	Lodge Pole Pine	3.26	2.41
Sitka Spruce	2.76	2.23	White Spruce	2.93	2.15

\*The Spruce/Pine/Fir values are an average of White Spruce, Lodge Pole Pine, and Alpine Fir.

### 2. Size of Wood\*

The table below contains a list of different sizes or dimensions of wood. The percentage next to the size of the wood is the multiple used to compare the size of the board to a board foot (1" by 12" by 12"). This multiple will be used in the table in *Section 4* to calculate the weight of wood handled. Please indicate all of the applicable sizes of wood handled at the workstation. Add any other sizes to the bottom of the table if your particular size of wood is not listed.

1" Sizes	Multiple	2" Sizes	Multiple	4" Sizes	Multiple	6" Sizes	Multiple	8" Sizes	Multiple
1 by 4	0.33	2 by 4	0.67	4 by 4	1.33	6 by 6	3.00	8 by 8	5.33
1 by 6	0.50	2 by 6	1.00	4 by 6	2.00	6 by 8	4.00	8 by 10	6.67
1 by 8	0.67	2 by 8	1.33	4 by 8	2.67	6 by 10	5.00	8 by 12	8.00
1 by 10	0.83	2 by 10	1.67	4 by 10	3.33	6 by 12	6.00		
1 by 12	1.00	2 by 12	2.00	4 by 12	4.00				

\* Conservative estimates of actual wood dimensions

*If the size of the board is different from those in this table, use this equation to find out the multiple value.*

$$[(\text{Dimensions of wood}) \times 12] / 144 = \text{Multiple}$$

**For example:** For a 5 by 5 piece of wood  $[(5 \times 5) \times 12] / 144 = 2.08$

### 3. Length of Wood

The table below contains a list of the common lengths of wood. Please indicate which of these lengths are being handled at this particular workstation. Add additional lengths to the table if necessary. This information will be used in the table in *Section 4*.

Length of Wood			
6 foot		12 foot	
8 foot		14 foot	
10 foot		16 foot	
		18 foot	
		20 foot	
		22 foot	
		24 foot	
		Other:	
		Other:	

#### 4. Weight of Wood Equation\*

The table below is used to calculate the weight of the boards being handled. The weight is calculated by multiplying the species weight/board foot (*Section 1 value*) by the size of wood multiple (*Section 2 value*) and by the length of wood (*Section 3 value*).

**Example:** For a run of wet Spruce/Pine/Fir, 2" x 4", 16 feet long

$$2.95 \text{ (wet lb./ board foot)} \times 0.67 \text{ (size of wood multiple for 2" x 4")} \times 16 \text{ (length of board in feet)} = 32 \text{ lbs.}$$

For the heaviest species handled, enter the lb./board foot value, the multiple for the largest size of this wood, and the largest length of this wood. Multiply these values together to determine the weight of the board in pounds.

For the most common species handled, enter the lb./board foot value, the multiple for the most common size of wood, and the most common length of this wood. Multiply these values together to determine the weight of the board in pounds.

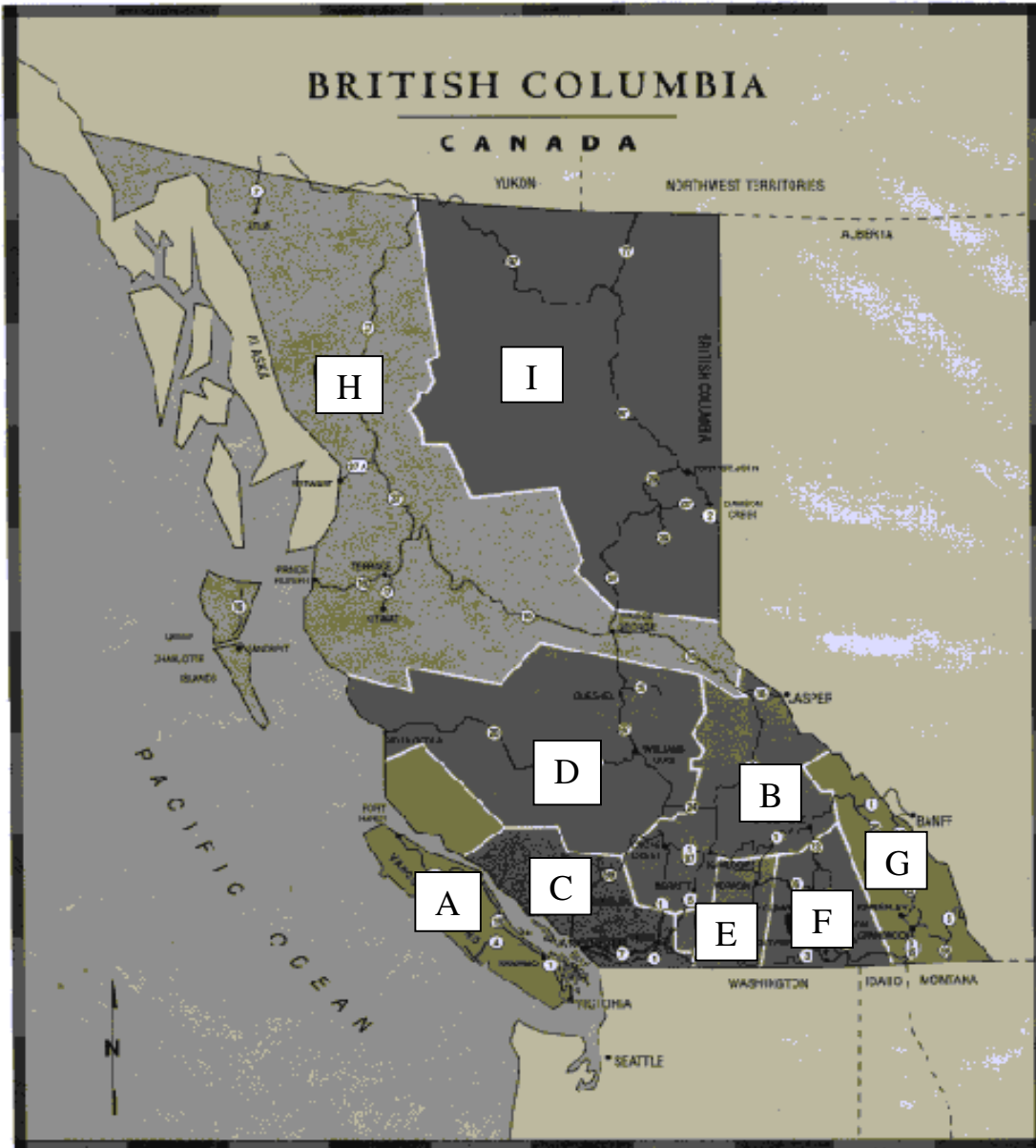
For the lightest species handled, enter the lb./board foot value, the multiple for the smallest size of wood, and the shortest length of this wood. Multiply these values together to determine the weight of the board in pounds.

*If required, divide the pound value by 2.2 to obtain the weight of the board in kilograms.*

Type of Wood Handled (lb./ board foot) <i>From Section 1</i>	x	Multiple (size of wood) <i>From Section 2</i>	x	Length of Wood <i>From Section 3</i>	=	Weight of the Board in pounds	Divide by 2.2 to calculate value in kilograms
<b>Heaviest Species Handled</b>	x		x		=		
<b>Most Common Species Handled</b>	x		x		=		
<b>Lightest Species Handled</b>	x		x		=		

\* Weight may vary from the above calculation depending on the cell moisture content of the wood, actual wood dimensions, and wood density.

## Appendix B – Regional Map



- |  |   |
|--|---|
| <p><b>A</b> - Vancouver Island</p> <p><b>B</b> - High Country</p> <p><b>C</b> - Southwestern BC</p> <p><b>D</b> - Cariboo Chilcotin Coast</p> <p><b>E</b> - Okanagan Similkameen</p> | <p><b>F</b> - Kootenay Country</p> <p><b>G</b> - British Columbia Rockies</p> <p><b>H</b> - North by Northwest</p> <p><b>I</b> - Peace River Alaska Highway</p> |
|--|---|

# Risk Factor Identification Checklist

## Shipper Co-ordinator

### Purpose

The Risk Factor Identification Checklist for a Shipper Co-ordinator is used to **identify** potential ergonomic risk factors. Keep in mind that the purpose of this checklist is only to **identify** potential ergonomic risk factors, **not** to assess them.

The checklist can be used as part of your ergonomic intervention process, when workers express concerns about their work environment, during regular workplace inspections and observations, or when conducting an accident or injury investigation. Ideally, management and worker representatives who have completed the IMIRP Occupational Health & Safety Committee and Supervisor Ergonomic Training Session should complete this checklist. Try to view different workers in the same occupation when completing the checklist. Some specific examples are given to help answer the questions.

### Instructions

#### **General**

Except for the first two questions, all remaining questions will require an answer with an implied frequency. For appropriate questions indicate with a check mark (✓) whether the answer to the question is 'No' or 'Yes'. This way you will have a record indicating that all risk factors have been considered in the identification process.

If you indicate 'No', please continue to the next question. If the question refers to a situation which does not exist (e.g., there is no seating available), please indicate 'No' in the appropriate box and continue to the next question.

If your answer is 'Yes', please check the appropriate box and then circle the frequency ('S' for 'Sometimes' or 'O' for 'Often'). If you answer 'Yes – Sometimes', then this risk factor **may be** a potential area of concern. If you answer 'Yes – Often' then there is an increased likelihood that this risk factor **is** an issue. Each mill will be responsible for defining what 'Sometimes' and 'Often' will mean to them. It is important that all people who complete the checklist are consistent in how they determine if a risk factor occurs 'Sometimes' or 'Often'. Use the 'Comments' section to indicate specific tasks, or to make other notes about the direct risk factors.

Since ergonomic risk factors frequently occur in combinations, you may find similar questions in different sections. Answering all questions will ensure that the situations that involve combinations of ergonomic risk factors are identified. It is very important to recognise all risk factors that occur in the work area.

Please note that for some of the questions it will be beneficial to ask the worker for their input. Please take the opportunity to include the operator in the risk factor identification process as much as possible. Videotaping the job of interest and reviewing the checklist in a quiet area with the worker may allow for more discussion.

### **Summary Tables**

At the end of each body part section, summarise your findings in the table provided. If any of the direct risk factor sections contain a 'Yes', indicate 'Yes' in the appropriate section of the summary table. Answer the questions referring to injury statistics and discomfort survey findings. If there are only 'No' answers in a direct risk factor section, indicate 'No' in the summary table for that section. Use the summary information to determine how you will use the Work Manual.

## Risk Factor Identification Checklist – Shipper Co-ordinator

Management Representative \_\_\_\_\_

Risk Identification completed:

Worker Representative \_\_\_\_\_

Before implementation of solutions

Date \_\_\_\_\_

After implementation of solutions

Job History		No	Yes	Comments
1	Are there records of musculoskeletal injuries or accidents to indicate a risk of musculoskeletal injury? (refer to Worksheet 1 in Implementation Guide)			
2	Are there worker comments to indicate a risk of musculoskeletal injuries? (refer to Worksheet 2 in Implementation Guide)			

### Definitions

**Force:** Force is the amount of physical effort required by the person to do a task and/or maintain control of tools and equipment. The effort depends on the type of grip, object weight and dimensions, body posture, type of activity, surface of the object, temperature, vibration, duration of the task, and number of repetitions.

**Repetition:** Repetition is defined as similar or the same motions performed repeatedly. The severity of risk depends on the frequency of repetition, speed of the movement or action, the number of muscle groups involved, and the required force. Repetition is influenced by machine or line pacing, incentive programs, piecework, and deadlines.

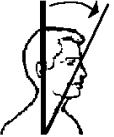
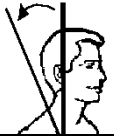
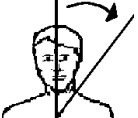
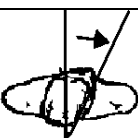
**Static Postures:** Static loading (sustained exertions) is physical effort (body postures) that is held, requiring muscle contraction for more than a short time.

**Contact Stress:** Contact stress is the contact of the body with a hard surface or edge. Contact stress can also result when using a part of the body as a hammer or striking instrument.

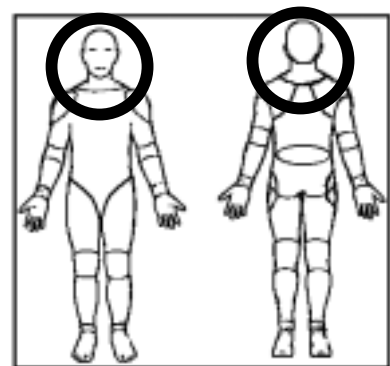
**Awkward Postures:** Awkward postures occur when there is a deviation from a power working posture. Some examples of awkward postures typically include reaching behind, twisting, working overhead, and forward or backward bending.

**Vibration:** Vibration is oscillation of a tool or surface. Vibration can be transmitted through the arm or through the whole body.

# NECK

Repetition		N	Y	Comments:
Are identical or similar motions performed over and over again? (e.g., looking down frequently)			S	
			O	
Ask the worker: Do you spend a large percentage of the day performing one action or task? (e.g., looking at a computer monitor)			S	
			O	
Static Posture				
Ask the worker: Do tasks require your neck or shoulders to be maintained in a fixed or static posture? (e.g., looking down at a computer screen for a long period)			S	
			O	
Awkward Posture				
Flexion			S	
			O	
Extension			S	
			O	
Lateral Bending			S	
			O	
Rotation			S	
			O	



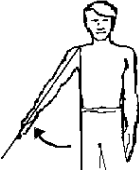
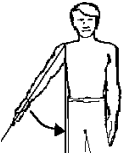
Please indicate whether the following direct risk factors were identified at the <b>NECK</b> .		
Direct Risk Factors	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Neck or Head/Eye or Upper Back? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Neck or Head/Eye or Upper Back? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No



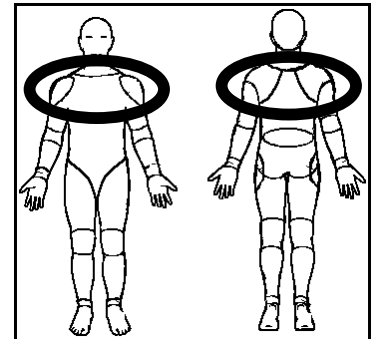
Body parts within the circled area will be classified as NECK issues.

## SHOULDER

<b>Force</b>	<b>N</b>	<b>Y</b>	<b>Comments:</b>
Is forceful physical handling performed? Such as: Lifting		S O	
Lowering		S O	
Pushing		S O	
Pulling		S O	
Carrying		S O	
<b>Repetition</b>			
Are identical or similar motions performed over and over again? (e.g., using a computer mouse)		S O	
Ask the worker: Do you spend a large percentage of the day performing one action or task?		S O	
<b>Static Posture</b>			
Ask the worker: Do tasks require your shoulders to be maintained in a fixed or static posture? (e.g., talking on the phone, holding the receiver with the hand)		S O	
Ask the worker: Do you hold parts, tools, or objects for long periods? (e.g., talking on the phone, holding the receiver with the hand)		S O	




Awkward Posture		N	Y	Comments:
Flexion			S O	
Extension			S O	
Abduction			S O	
Adduction			S O	

Please indicate whether the following direct risk factors were identified at the <b>SHOULDER</b> .		
<b>Direct Risk Factors</b>	Force	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Shoulder or Neck or Upper Back? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Shoulder or Neck or Upper Back? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No



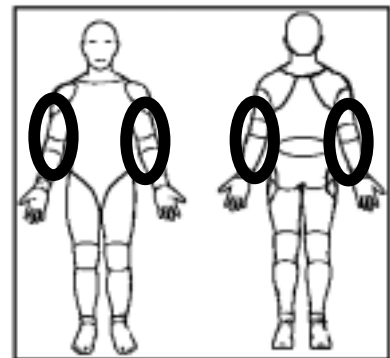
*Body parts within the circled area will be classified as SHOULDER issues.*

## ELBOW

Force		N	Y	Comments:
Is forceful physical handling performed? Such as:			S	
Lifting			O	
Lowering			S	
			O	
Pushing			S	
			O	
Pulling			S	
			O	
Carrying			S	
			O	
Turning materials			S	
			O	
Are objects handled in a power grip?			S	
			O	
Are objects handled in a pinch grip?			S	
			O	
Are objects handled in a hook grip?			S	
			O	
Ask the worker: Do you wear gloves while performing your job? If the answer is <b>No</b> , check the <b>No</b> box and go to next section.			*	S
				O
*If the answer to the above question is <b>Yes</b> , ask the worker: Are the gloves too large/small?				S
				O
Does the thickness of the gloves cause problems with gripping?				S
				O
Repetition				
Are identical or similar motions performed over and over again?				S
				O
Ask the worker: Do you spend a large percentage of the day performing one action or task?				S
				O




Static Posture		N	Y	Comments:
Ask the worker: Do tasks require your hand and arm to be maintained in a fixed or static posture? (e.g., using a computer mouse away from the midline of the body)			S O	
Ask the worker: Do you apply constant pressure on controls/objects with your hand?			S O	
Ask the worker: Do you hold parts, tools, or objects for long periods?			S O	
Contact Stress				
Ask the worker: Do <b>any</b> objects, tools or parts of the workstation put pressure on <b>any</b> parts of your hand or arm, such as the backs or sides of fingers, palm or base of the hand, forearm, elbow? (e.g., hand tools that dig into the palm of the hand, workstation digging into the elbow)			S O	
Vibration				
Ask the worker: Is vibration transmitted to your hand through a tool or piece of equipment?			S O	





Please indicate whether the following direct risk factors were identified at the <b>ELBOW</b> .		
<b>Direct Risk Factors</b>	Force	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contact Stress	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Vibration	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Elbow or Forearm? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Elbow or Forearm? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No



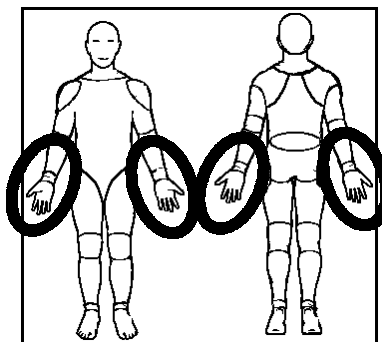
*Body parts within the circled area will be classified as ELBOW issues.*

## WRIST/HAND

Force		N	Y	Comments:
Is forceful physical handling performed? Such as:			S	
Lifting			O	
Lowering			S	
			O	
Pushing			S	
			O	
Pulling			S	
			O	
Carrying			S	
			O	
Turning materials			S	
			O	
Are objects handled in a power grip?			S	
			O	
Are objects handled in a pinch grip?			S	
			O	
Are objects handled in a hook grip?			S	
			O	
Ask the worker: Do you wear gloves while performing your job? If the answer is <b>No</b> , check the <b>No</b> box and go to next section.			*	S
				O
*If the answer to the above question is <b>Yes</b> , ask the worker: Are the gloves too large/small?				S
				O
Does the thickness of the gloves cause problems with gripping?				S
				O
Repetition				
Are identical or similar motions performed over and over again? (e.g., typing on the keyboard)				S
				O
Ask the worker: Do you spend a large percentage of the day performing one action or task? (e.g., using a computer mouse)				S
				O

<b>Static Posture</b>		N	Y	Comments:	
Ask the worker: Do tasks require any part of your arm or hand to be maintained in a fixed or static posture? (e.g., wrists while typing)				S	
				O	
Ask the worker: Do you apply constant pressure on controls/objects with your hand?				S	
				O	
Ask the worker: Do you hold parts, tools, or objects for long periods?				S	
				O	
<b>Contact Stress</b>					
Ask the worker: Do <b>any</b> objects, tools or parts of the workstation put pressure on <b>any</b> parts of your hand or arm, such as the backs or sides of fingers, palm or base of the hand, forearm? (e.g., hand tools that dig into the palm of the hand)				S	
				O	
Ask the worker: Do you use your hand like a hammer for striking? (e.g., using as stapler)				S	
				O	
<b>Awkward Posture</b>					
Flexion				S	
				O	
Extension				S	
				O	
Ulnar Deviation				S	
				O	
Radial Deviation				S	
				O	
<b>Vibration</b>					
Ask the worker: Is vibration transmitted to your hand through a tool or piece of equipment? (e.g., pneumatic drill)				S	
				O	





Please indicate whether the following direct risk factors were identified at the <b>WRIST/HAND</b> .		
<b>Direct Risk Factors</b>	Force	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contact Stress	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Vibration	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Wrist or Hand/Finger or Forearm? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Wrist or Hand/Finger or Forearm? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No



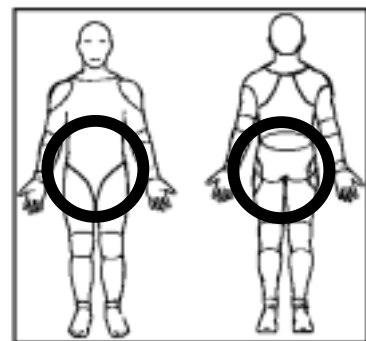
*Body parts within the circled area will be classified as WRIST issues.*

## LOW BACK OR HIP/THIGH

<b>Force</b>	N	Y	Comments:
Is forceful physical handling performed? Such as:			S
Lifting			O
Lowering			S
			O
Pushing			S
			O
Pulling			S
			O
Carrying			S
			O
<b>Repetition</b>			
Are identical or similar motions performed over and over again?			S
			O
Ask the worker: Do you spend a large percentage of the day performing one action or task			S
			O
<b>Static Posture</b>			
Ask the worker: Do tasks require your trunk and upper body to be maintained in a fixed or static posture?			S
			O
Are workers required to sit or stand in a stationary position for long periods of time during the shift? (e.g., sitting at a computer workstation)			S
			O
<b>Contact Stress</b>			
Ask the worker: Do <b>any</b> objects, tools or parts of the workstation put pressure on <b>any</b> parts of your hip/thigh?			S
			O


Awkward Posture		N	Y	Comments:
Flexion			<input type="radio"/> S <input type="radio"/> O	
Extension			<input type="radio"/> S <input type="radio"/> O	
Lateral Bending			<input type="radio"/> S <input type="radio"/> O	
Twisting			<input type="radio"/> S <input type="radio"/> O	
<b>Vibration</b>				
Ask the worker: Is your whole body exposed to vibration for significant portions of the work shift? (e.g., sitting on a vibrating surface above machinery)			<input type="radio"/> S <input type="radio"/> O	

Please indicate whether the following direct risk factors were identified at the <b>LOW BACK or HIP/THIGH</b> .		
<b>Direct Risk Factors</b>	Force	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contact Stress	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Vibration	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Low Back or Hip/Thigh? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Low Back or Hip/Thigh? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No

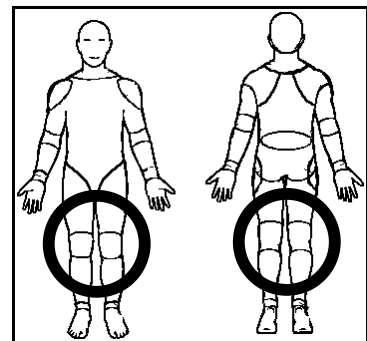


*Body parts within the circled area will be classified as LOW BACK issues.*

# KNEE



Repetition		N	Y	Comments:
Are identical or similar motions performed over and over again?			S O	
Static Posture				
Ask the worker: Do tasks require you to maintain your knee(s) in a fixed or static posture?			S O	
Are workers required to sit or stand in a stationary position for long periods of time during the shift? (e.g., sitting at a computer workstation)			S O	
Do workers kneel (with one or both knees)?			S O	
Contact Stress				
Ask the worker: Do <b>any</b> objects or parts of the workstation put pressure on your knee(s)?			S O	
Awkward Posture				
Extreme Flexion			S O	

Please indicate whether the following direct risk factors were identified at the <b>KNEE</b> .		
<b>Direct Risk Factors</b>	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Contact Stress	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Knee or Hip/Thigh? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Knee or Hip/Thigh? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No

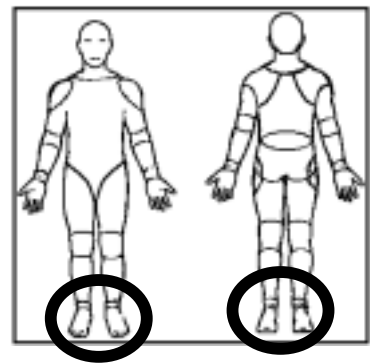


Body parts within the circled area will be classified as KNEE issues.

## ANKLE/FOOT

Repetition		N	Y	Comments:
Are identical or similar motions performed over and over again? (e.g., walking on uneven surfaces)			S O	
Static Posture				
Are workers required to stand in a stationary position for long periods of time during the shift?			S O	
Awkward Posture				
Flexion			S O	
Extension			S O	
Vibration				
Ask the worker: Is your whole body exposed to vibration for significant portions of the work shift?			S O	

Please indicate whether the following direct risk factors were identified at the ANKLE/FOOT.		
<b>Direct Risk Factors</b>	Repetition	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Static Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Awkward Posture	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Vibration	<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Injury Statistics</b> investigation, were there injury reports for the Ankle or Foot? (see Worksheet 1 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No
In the <b>Discomfort Survey</b> investigation, were there reports of discomfort for the Ankle or Foot? (see Worksheet 2 in the Implementation Guide)		<input type="checkbox"/> Yes <input type="checkbox"/> No



*Body parts within the circled area will be classified as ANKLE/FOOT issues.*

## CHARACTERISTICS OF OBJECTS BEING HANDLED

	N	Y	S	Comments:
Are there problems handling a load due to its size or shape?			S O	
Are there problems handling a load due to its fragile, unbalanced, or non-rigid conditions?			S O	
Ask the worker: Do you experience situations where mechanical aids or equipment are not readily available to assist with manipulating an object?			S O	
Are handles for tools and equipment inappropriate in terms of size or shape?			S O	
Ask the worker: Do any objects that you work with (other than tools or equipment) have handles? If the answer is <b>No</b> , check the <b>No</b> box and go to the next section.			S O	
If the answer to the above question is <b>Yes</b> , ask the worker: Are the handles an inappropriate size or shape for the characteristics of the object?			S O	

## ENVIRONMENTAL CONDITIONS

<b>Temperature</b>				
Ask the worker: Are your hands or arms exposed to cold from exhaust air, cold liquids or solids			S O	
Ask the worker: Are you exposed directly to temperature extremes that may cause you to use more force or cause you to fatigue quicker than normal? (e.g., hot or cold, either by equipment or natural environment)			S O	
<b>Lighting</b>				
Ask the worker: Do you assume awkward postures to overcome problems associated with glare, inadequate lighting, or poor visibility?			S O	

## ENVIRONMENTAL CONDITIONS [CONTINUED]

Noise	N	Y	Comments:
Have there been complaints on the level of noise in the work area?		S O	
Ask the worker: Are there any distracting or annoying noises at the workstation?		S O	

## WORK ORGANISATION

	N	Y	Comments:
Is the work externally-paced or controlled by a machine or the process? (e.g., incoming orders)		S O	
Do peak workloads or sudden increases in pace occur with the tasks? (e.g., end of month orders and inventory)		S O	
Ask the worker: Are there indications of excessive fatigue or pain, or symptoms of adverse health effects due to extended work days or overtime? (e.g., end of month hours)		S O	
Ask the worker: Are there indications of excessive fatigue or adverse health effects due to shiftwork?		S O	
Ask the worker: Are rest periods or task variety insufficient to prevent the build-up of fatigue or the risk of adverse health effects?		S O	
Ask the worker: Are tasks in a job rotation program similar to one another, and therefore not providing a variation in movements?		S O	

# **Work Manual**

**Industrial  
Musculoskeletal  
Injury  
Reduction  
Program**



# **Shipper Co-ordinator**

This Work Manual contains information about the body parts found to be at risk of musculoskeletal injury (MSI) for the Shipper Co-ordinator (Injury Education), and how to reduce the risk of MSIs using various control measures (Injury Prevention). Each Work Manual is intended to help Occupational Health and Safety Committee members establish effective solutions to reduce MSIs, and as a resource for workers to understand the MSI risks that they may encounter on the job.

The Body Manual, referenced throughout the Work Manual, is a separate document that contains information on how to prevent common MSIs through exercise. Please note exercises described in the Body Manual should only be used after consulting a healthcare practitioner.

The General Risk Factor Solutions Manual, referenced throughout the Work Manual, is a separate document that contains general, preventative information on Environmental Conditions and Work Organisation issues.

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## Work Manual

# Shipper Co-ordinator

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### **Disclaimer**

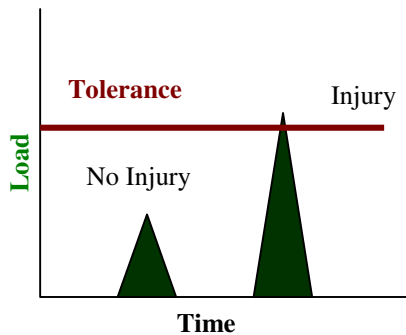
*The BC sawmill IMIRP documents were developed by Advanced Ergonomics Inc. (AEI) based on analyses conducted in a number of voluntary, participating sawmills in British Columbia and should be considered applicable only to the BC sawmill industry. Modification to these documents may reduce their usefulness and/or lead to hazardous situations. Individuals or committees wishing to make Physical Demands Analyses (PDAs) site-specific, or wishing to implement options from the Work Manuals, are advised to first complete the two-day OHSC and Supervisors Ergonomics Training Session. Modifications to a PDA must be within the scope of competence of those individuals making the changes and must be reported to any rehabilitation professional using the PDA. Neither AEI nor the IMIRP Society accepts any responsibility for the use or misuse of these documents.*

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# Injury Education

*Injuries occur when ...  
Loads exceed tissue tolerances*



## ***Excessive Force***

This type of injury occurs from a single event, where the loads or forces are so great they exceed tissue tolerances and cause an immediate injury. This type of injury is more common with trips and falls.

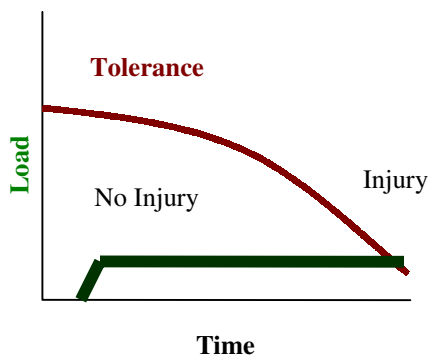
***Example – a worker going over on their ankle and spraining it.***



## ***Excessive Repetition***

This type of injury occurs from repeated loading weakening tissue to the point of failure. It progresses slowly to the point where a subfailure load can cause an injury. This type of injury is more common with repetitive tasks.

***Example – a worker pulling lumber off a chain developing a herniated disc.***



## ***Excessive Duration***

This type of injury occurs from constant loading weakening tissue to the point of failure. This type of injury is more common with tasks that require workers to adopt static or awkward postures for extended periods.

***Example – a Grader developing neck tension.***

## Body Parts at Risk

The previous page on injury education explains how injuries can occur. The Injury Education section of this Work Manual expands on these principles, relating them to the specific body parts at risk of being injured.

After all of the appropriate information is collected during the investigation of the Shipper Co-ordinator job (i.e., injury statistics, discomfort surveys, results from the Identification Checklist), the next steps are to:

1. Match the body parts of concern from your investigation to those described in this section of the Work Manual.
2. Note the direct risk factors associated with each body part of concern.
3. Read the information on the page and try to understand why a body part, in combination with each of the direct risk factors, is of concern.
4. Discover which indirect risk factors are associated with a particular body part problem and the headings under which they are found in the Injury Prevention section of the Work Manual.
5. Note the consequences of the direct risk factor relative to a body part.
6. Note where the potential solutions can be found within the Injury Prevention section of the Work Manual. In addition, for many of the body parts, a reference may be provided to refer to specific sections of the Body Manual.

At the end of the Body Parts at Risk Section, there is a summary page of all the body parts of concern for the Shipper Co-ordinator. In addition, a reference table, with a summary of the direct and indirect risk factors by body part, is provided.

In the last section on Injury Prevention, the Work Manual discusses specific solution options for each of the body parts at risk.

# Major Risk Identification

IMIRP ergonomists have assessed the Shipper Co-ordinator position and found that the neck, wrist, and low back are the body parts of major concern while performing their duties. Focussing on solutions that target the areas of major concern will likely reduce the greatest risks associated with this job.

**Neck:** Major risks include awkward and static postures of the neck while looking down to view the computer screen and cradling the phone on the shoulder when talking on the phone. Looking down at paper work may also add to neck discomfort.

The following solutions are targeted at reducing the risk of injury to the neck:

1. Desk workstation layout (page 68)
2. Phone options (page 74)

**Wrist:** Major risks include contact stress, static postures, and awkward postures of the wrist while typing on the computer or using the mouse.

The following solutions are targeted at reducing the risk of injury to the wrist:

1. Adjustable keyboard and mouse trays (page 68)
2. Wrist support (page 74)
3. Stretches (page 75)

**Low Back:** Major risks include static postures of the low back while sitting at the computer or desk. Increased duration of this posture can increase the risk of injury to the low back.

The following solutions are targeted at reducing the risk of injury to the low back:

1. Adjustable seating (page 71)
2. Vary body posture (page 71)
3. Vary chair position (page 72)

For additional stretching and strengthening exercises that would benefit a Shipper Co-ordinator, refer to the body part Neck, Wrist, and Back sections of the Body Manual.

# NECK

**Direct Risk Factors:**  
Awkward Postures  
Static Postures



**A Shipper Co-ordinator may hold the head forward, to the side, or in a twisted position in order to view the computer monitor, talk on the phone, and perform desk work.**

## BACKGROUND INFORMATION

- A number of smaller muscles around the neck produce the forces necessary to support and move the head. These muscles remain relatively relaxed when the head is balanced over the spine (neutral posture). The neutral posture occurs when the head is upright, and the ears and shoulders are aligned.

## DIRECT RISK FACTORS

### *Awkward Postures*

- Neck muscles are required to turn the head to the side. The further the head is turned to the side, the greater the load on the muscles and tendons.
- Neck muscles must support the weight of the head while in a forward/backward/side bent position. The more the neck is bent, the greater the load on the muscles and tendons.

### *Static Postures*

- When the neck is held still in a forward/side bent and/or twisted position, the muscles of the neck must remain tense to support the weight of the head. With no time allowed for recovery, the constant state of tension in the neck muscles may cause fatigue. If the constant stress is sufficient, and recovery is not adequate, the tissues may fatigue to the point of injury.

## **INDIRECT RISK FACTORS**

### ***Workstation Design***

#### **Working Reaches**

- Loading on neck tissues is increased because the head is held in a forward or side bent position when viewing or working at the computer or desk. This may be due to the layout of the desk or computer workstation.

#### **Working Heights**

- Loading on neck tissues is increased because the head is held in a forward or backward when viewing the computer monitor, depending on monitor height.

#### **Additional Workstation Design Options**

- Loading on the neck tissues is increased because the head is held in a side bent position when talking on the phone. Due to the nature of the phone calls, the Shipper Co-ordinator may talk on the phone while typing on the computer or writing on invoice paper. This simultaneous work may cause the Shipper Co-ordinator to cradle the phone between the ear and the shoulder in order to free up both hands.
- Loading on the neck tissues is increased in bifocal wearers because the head is tilted back to clearly view the computer monitor.

### ***Environmental Conditions***

#### **Lighting**

- Loading on neck tissues is increased when awkward postures are adapted to avoid the affects of glare off the computer screen or desk surface.
- Loading on neck muscles may be increased due to stress-related tension resulting from excessive visual demands, as a result of the colour of the computer screen.

### ***Work Organisation***

#### **Task Variability**

- Loading on the neck muscles is increased when the duration of the task is prolonged. The Shipper Co-ordinator may spend a long time in one posture performing a similar set of tasks.
- Loading on the neck muscles may increase due to stress-related work during peak periods.

## CONSEQUENCES

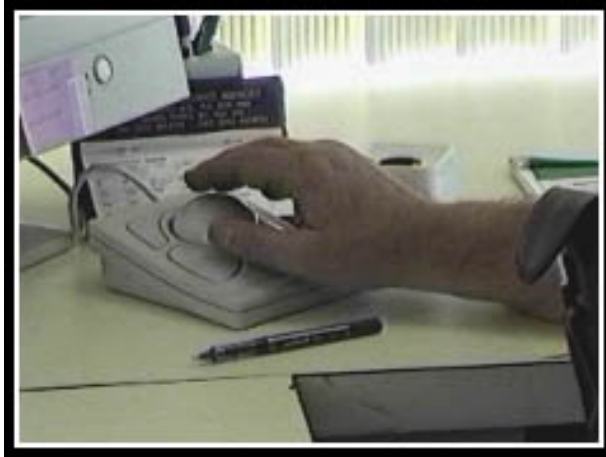
- When the head is held in a forward, side bent, or twisted posture muscles and soft tissues of the neck may fatigue. Fatigue leads to an accumulation of waste products and/or a decrease in the ability to tolerate additional stress.
- Signs and symptoms include pain, tenderness, muscle spasm in the neck area, and headaches.

## SUGGESTED SOLUTIONS

- For specific solutions that may prevent injuries to the Neck, please see the column labelled “Neck” in the Summary of Solutions on pages 81 to 83.
- For exercises that can help to prevent *neck* injuries, see the *Neck section of the Body Manual*.

# WRIST

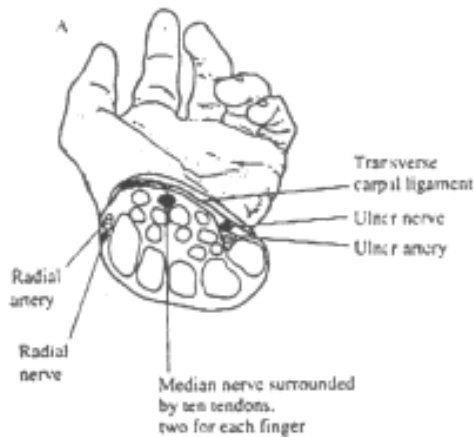
**Direct Risk Factors:**  
Awkward Postures  
Static Postures



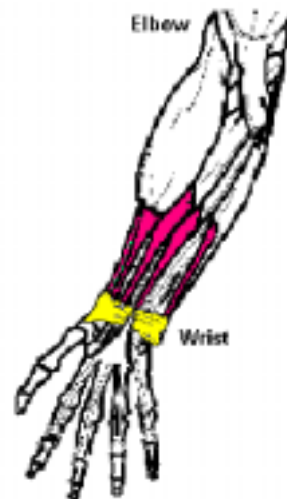
**A Shipper Co-ordinator may operate a keyboard or mouse with bent wrists.**

## BACKGROUND INFORMATION

- Most of the muscles involved in gripping and manoeuvring the hands are found in the forearms. These muscles attach at the elbow and their tendons (surrounded by a protective sheath) run down the forearm into the hand. At the wrist, the tendons and a nerve run under a thick band, which forms the roof of the carpal tunnel.



The Carpal Tunnel



## DIRECT RISK FACTORS

### *Awkward Postures*

- As the wrist is bent, tendon sheaths rub up against the walls of the carpal tunnel. The further the wrist is bent, the more friction experienced in the tendon sheaths.

### ***Static Postures***

- When the wrist is held in a bent position, tendon sheaths are under constant stress. If the duration of constant stress is excessive, and recovery is not adequate, tissues may fatigue to the point of injury.

## **INDIRECT RISK FACTORS**

### ***Workstation Design***

#### **Working Reaches**

- Loading on the muscles of the wrist is increased when the reach distance to the keyboard, mouse, or other devices on the desk causes awkward or static postures of the wrist.

#### **Working Heights**

- Loading on the tissues of the wrist is increased when the keyboard is at the incorrect height. Having the keyboard at positions too low or too high for the worker can place the wrist in an awkward posture, putting stress on tendons and other tissues of the wrist.

### ***Work Organisation***

#### **Task Variability**

- Loading on the neck muscles is increased when the duration of the task is prolonged. The Shipper Co-ordinator may spend a long time in one posture performing a similar set of tasks.
- Loading on the neck muscles may be due to stress-related tension during peak work periods.

## **CONSEQUENCES**

- Holding the wrist in a bent position may lead to irritation and damage in the tendon sheaths.
- Signs and symptoms include pain, tenderness, and inflammation in the wrist area.

## **SUGGESTED SOLUTIONS**

- For specific solutions that may prevent injuries to the Wrist, please see the column labelled “Wrist” in the Summary of Solutions on pages 81 to 83.

## WRIST/HAND

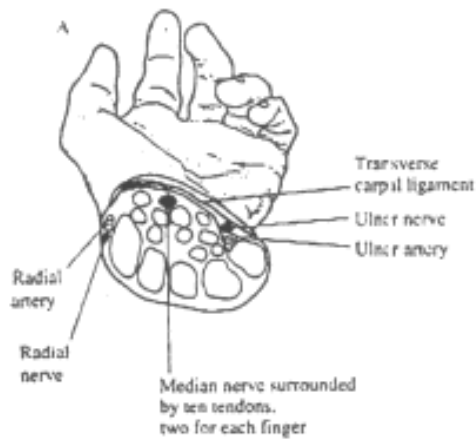
**Direct Risk Factors:**  
Contact Stress



**A Shipper Co-ordinator rests the wrist and hand on the desk when typing.**

### BACKGROUND INFORMATION

- The carpal tunnel is located at the base of the palm. It contains the tendons of the muscles that bend the hand and fingers inwards, and an important nerve (median nerve).



The Carpal Tunnel

### DIRECT RISK FACTORS

#### *Contact Stress*

- Contact between hard or sharp surfaces and the base of the palm places stress on the tendons and nerves in the carpal tunnel.
- Continual contact with hard or sharp surfaces may damage the nerve and/or gradually weaken the tendons, and cause injury.

## **INDIRECT RISK FACTORS**

### ***Workstation Design***

#### **Working Heights**

- Loading on the tissues of the wrist is increased when the keyboard is at the incorrect height for the operator. Having the keyboard at positions too low or too high for the worker can force the worker to rest the wrists on the edge of the keyboard or desk, placing stress on the tendons and other tissues of the wrist.

#### **Additional Workstation Design Options**

- Loading on the tissues of the wrists may increase when the design of the keyboard, mouse, desk, or tray does not allow for supported wrists.

### ***Work Organisation***

#### **Task Variability**

- Loading on the muscles of the wrist/hand increases because of the lack of task variability.

## **CONSEQUENCES**

- Continual exposure to contact stress increases the pressure on the carpal tunnel.
- Signs and symptoms include pain, numbness, and tingling in the hand area.

## **SUGGESTED SOLUTIONS**

- For specific solutions that may prevent injuries to the Wrist/Hand, please see the column labelled “Wrist/Hand” in the Summary of Solutions on pages 81 to 83.

# LOW BACK

**Direct Risk Factors:**  
Awkward Postures  
Static Postures

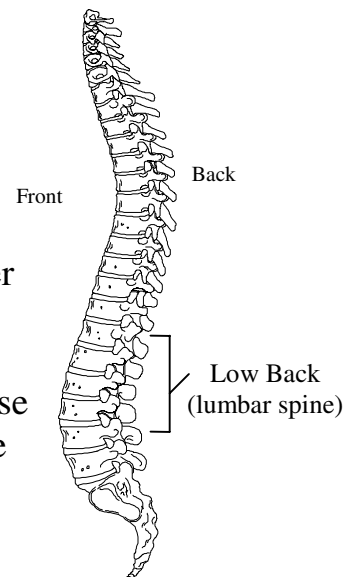


**A Shipper Co-ordinator continually sits while performing computer, desk, or phone work.**

## BACKGROUND INFORMATION

- The spine is made up of 33 bones called vertebrae. Each of these vertebrae is specially designed to protect the spinal cord and provide support for the back. Between each of the vertebrae are discs. Discs have tough elastic walls that are filled with a watery gel-like substance. These discs are like jelly donuts; when they are pressed down on one side, the other side bulges and puts increased pressure on the wall of the disc. To maintain an even distribution of pressure across the discs, the spine has to be kept in the neutral posture. Sitting will cause the pelvis to rotate out of a neutral posture, as the lumbar spine will flatten.

*Neutral Spine*



## DIRECT RISK FACTORS

### *Awkward Postures*

### *Static Postures*

- Sitting increases the loading on the walls of the discs. If the duration of sitting is excessive, and the recovery is not adequate (e.g., spine not returned to neutral posture), tissues may deform to the point of injury.

## INDIRECT RISK FACTORS

### *Workstation Design*

#### **Seating**

- Loading on the tissues of the back can increase due to a lack of support from the seating of the Shipper Co-ordinator. A non-supportive chair can increase your chances of poor posture and fatigue to the muscles of the back.

### *Work Organisation*

#### **Task Variability**

- Loading on the muscles of the back increases because of the lack of task variability. A Shipper Co-ordinator may spend a large percentage of the day in a seated posture, fatiguing the tissues of the low back and making them more susceptible to injury.

## CONSEQUENCES

- Continually sitting may lead to deformation in the disc walls and accelerated degeneration of the tissues.
- Signs and symptoms include muscle spasm and sharp or radiating pain in the back and/or lower extremities.

## SUGGESTED SOLUTIONS

- For specific solutions that may prevent injuries to the Back, please see the column labelled “Back” in the Summary of Solutions on pages 81 to 83.
- For exercises that can help to prevent *back* injuries, see the *Back section of the Body Manual*.

## Summary of Body Parts at Risk

### NECK

- A Shipper Co-ordinator may hold the head forward, to the side, or in a twisted position in order to view the computer monitor, talk on the phone, and perform desk work.



### WRIST

- A Shipper Co-ordinator may operate a keyboard or mouse with bent wrists.



### WRIST/HAND

- A Shipper Co-ordinator rests the wrist and hand on the desk when typing.



## **LOW BACK**

- A Shipper Co-ordinator continually sits while performing computer, desk, or phone work.



# Risk Factors by Body Part

Direct Risk Factors	Neck	Neck/ Shoulder	Shoulder	Elbow/ Wrist	Wrist	Wrist/ Hand	Low Back	Hip	Knee	Ankle/ Foot	Foot
Force											
Repetition											
Awkward Postures	✓				✓		✓				
Static Postures	✓				✓		✓				
Contact Stress						✓					
Vibration – Whole body*											
Vibration - Hand Transmitted*											

Indirect Risk Factors		Neck	Neck/ Shoulder	Shoulder	Elbow/ Wrist	Wrist	Wrist/ Hand	Low Back	Hip	Knee	Ankle/ Foot	Foot
Duration*	Duration	✓				✓	✓	✓				
Workstation Design	Working Reaches	✓				✓						
	Working Heights	✓				✓	✓					
	Seating							✓				
	Floor Surfaces											
Characteristics of Objects Being Handled	Size and Shape											
	Load Condition and Weight Distribution											
	Container, Tool and Equipment Handles											
Environmental Conditions	Heat Exposure	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Cold Exposure	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Lighting	✓	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Noise	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Vibration**	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Work Organisation	Work-Recovery Cycles	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Task Variability	✓	◆	◆	◆	✓	✓	✓	◆	◆	◆	◆
	Work Rate	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

\* Extended exposure to any risk factor can increase the likelihood of injury. For solutions designed to decrease the duration of exposure to any risk factor please refer to the Work Organisation section of the General Risk Factor Solutions Manual

\*\* Vibration is categorised under both direct and indirect risk factors. Vibration can directly increase the likelihood of injury to the back and wrist as well as indirectly (environmental conditions) promote injuries in other parts of the body.

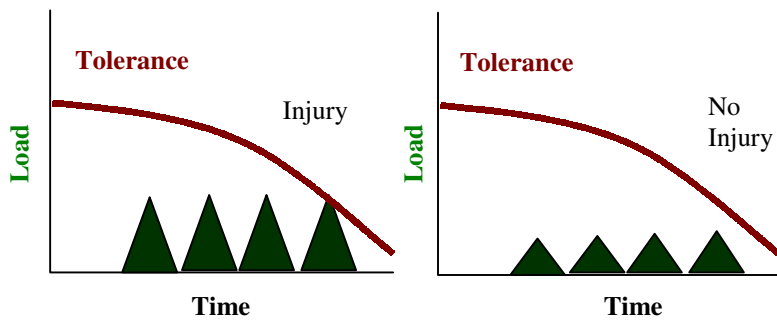
= Indicates that the risk factor was assessed and was not found to be a contributor to the body part problem.

◆ = Indicates that the risk factor assessed is commonly found in sawmills, and may need to be addressed at your mill. See the appropriate section of the General Risk Factor Solutions Manual for more information.

✓ = Indicates that the risk factor was assessed as a contributor to the body part problem. Please see the Summary of Solutions Table on pages 81 to 83 for specific problem/solution information. Additional information on some risk factors can be found in the General Risk Factor Solutions Manual.

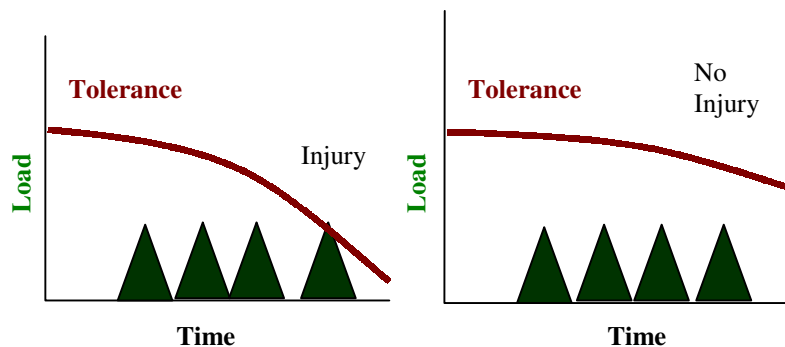
# Injury Prevention

*Injuries are prevented by ...  
Decreasing loads and increasing tissue tolerances*



Injuries may be avoided by decreasing the size of the loads on the tissue.

*Example – using a torque multiplier wrench to loosen bolts.*



Injuries may be avoided by increasing tissue tolerances, and allowing the body to endure more loading.

*Example – using maintenance exercises to strengthen tissues.*

## Suggested Solutions

The previous page explains how injuries may be prevented by decreasing the load on a tissue or by increasing the tissue tolerances. The Injury Prevention section of the Work Manual provides possible solutions that can be implemented to decrease the size of the loads on the tissues.

Each of the solutions described in the Work Manual has a risk control icon. The Risk Control Key provides guidelines on how to distinguish between different types of risk controls. Generally, engineering, administrative, and work practice controls are considered more effective than the use of personal protective equipment to decrease the risk of musculoskeletal injuries.

The focus of the Injury Prevention section is on solutions developed following the ergonomic investigation of the Shipper Co-ordinator job. The solutions are presented under the headings of Workstation Design, Characteristics of Objects Being Handled, Environmental Conditions, and Work Organisation.

The Summary of Solutions table provides a quick reference guide to solutions for specific body part problems.

Please note that the information provided in the Body Manual addresses the issue of injury prevention in terms of increasing tissue tolerances through exercise. This information is not provided in the Work Manual.

# Risk Control Key

Risk control measures (solutions) are commonly grouped into four categories:

E

## **ENGINEERING CONTROLS**

These include physical changes to workstations, equipment, materials, production facilities, or any other relevant aspect of the work environment, that reduce or prevent exposure to risk factors.

A

## **ADMINISTRATIVE CONTROLS**

These include any change in procedure that significantly limits daily exposure to risk factors, by control or manipulation of the work schedule or manner in which work is performed. Administrative controls include, but are not limited to, job rotation, rest breaks, alternative tasks, job enlargement, redesign of work methods, and adjustment of work pace or output. Some models of risk control include work practice controls within this category.

WP

## **WORK PRACTICE CONTROLS**

These include techniques used to perform the tasks of a job, such as reaching, gripping, using tools and equipment, or discarding objects, etc. Education and training are an integral part of work practice controls.

PPE

## **PERSONAL PROTECTIVE EQUIPMENT**

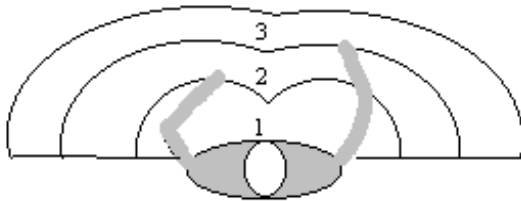
These are devices worn by a worker to reduce the risk of injury, including gloves, kneepads, hearing protection, and leather aprons.

**On the following pages, the icons next to the solution options indicate the type of risk control.**

# Workstation Design

## WORKING REACHES

A working reach that is too far for the worker will require stressful shoulder, elbow, wrist, and back postures. Reaching to the side, behind, or too far in front of the body can put stress on the smaller muscles. Ideally, working reaches should be within a normal reach envelope, as laid out below, with the controls and materials that are handled most often closest to the body. It is also ideal to have controls that perform similar or combined functions grouped together to decrease awkward postures that may otherwise occur.



1 = Controls/items most frequently used  
2 = Controls/items less frequently used  
3 = Controls/items least frequently used

Generally, the most frequently used items should be placed within a forearm's reach, with less frequently used items placed within a comfortable arm's reach, and infrequently used items placed within a fully extended arm's reach. For more specific recommendations on working reaches, please consult anthropometric tables or an ergonomist.

### *Mouse use*

**WP** To decrease awkward postures of the wrist, alternate hands when using the mouse. Most mouse controls can be changed between left and right handed use in the computer settings. This change will decrease the exposure to awkward wrist postures and movements for the dominant side.

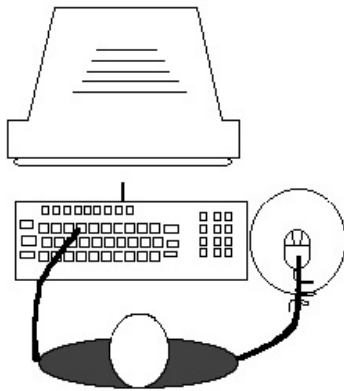
### *Keyboard placement*

**E  
WP** If keyboard use is predominant, centre the middle of the letter keys in front of the worker, leaving the numeric pad out to the right-hand side. If the number pad is used most, move the keyboard so the number pad is in line with the right shoulder. This position will reduce awkward postures of the neck, shoulders, wrists and low back.

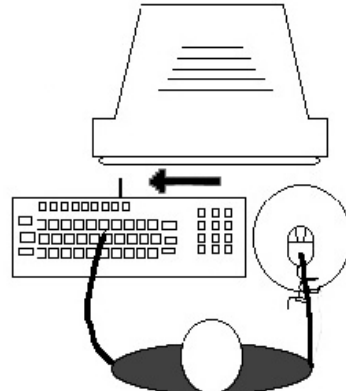
### ***Mouse placement***

E  
WP

In order to reduce awkward and/or static postures of the neck/shoulder, position the mouse so that it is close to and at the same height as the keyboard. If the mouse is used more frequently than the keyboard, position the mouse so that it is on the desk directly in front of the arm that uses the mouse.



*Position for mainly keyboard use*



*Position for mainly mouse use*

### ***Computer workstation layout***

E  
WP

In order to reduce awkward postures of the neck, layout the workstation so the computer can be viewed straight on (Figure 1). This will reduce the need for the worker to work at the computer in a twisted position (Figure 2), which causes awkward postures of the neck and upper body.



*Figure 1 – computer in front of worker*



*Figure 2 – computer off to the side*

### ***Distance to computer monitor***

E

To decrease awkward postures of the neck, adjust the monitor so that the viewing distance to the screen is about arms-length (33 to 70 cm) from the worker.

### ***Adjustable keyboard and mouse trays***

E  
WP

An adjustable keyboard and mouse tray may help to decrease awkward postures of the wrists by allowing the operator position the keyboard and mouse at the most comfortable height and reach distance. The keyboard should be at a height where the wrists are straight when the fingers are on the middle row of keys. This is also a good position for “hunt-and-peck” typists.

If the work surface does not adjust up or down, raise or lower the chair to a height where a worker can maintain neutral wrist postures. Keeping the wrists neutral will reduce the risk of wrist discomfort or injury.



### ***Desk workstation layout***

E

In order to reduce awkward postures of the upper body, organise items on the desk to correspond with the frequency of daily tasks. The most frequently used items (e.g., keyboard, mouse) should be placed within a forearm’s reach. Less frequently used items (e.g., phone) should be placed within a comfortable arm’s reach, and infrequently used items (e.g., reference books, card file) can be placed further away.

### ***Phone placement***

E

In order to reduce awkward postures of the upper body, place the phone on the non-dominant side. For example, a right-handed worker should place the phone on the left side of the workstation. This positioning allows the worker to write while on the phone without the phone cord getting in the way.

## WORKING HEIGHTS

A working height that is too high for the worker will require stressful shoulder and arm postures, while a height that is too low will require stressful bending of the neck and trunk. The height of a work surface should allow room to change position and move the legs and feet (WCB Draft Ergonomic Regulations, 1994).

The ideal workstation is height adjustable, allowing a large percentage of the population to adjust the work surface height to suit their dimensions

To determine the appropriate work height specific for the Shipper Co-ordinator, identify the body part of most concern. If the main concern is the:

**Neck** - minimise forward bending of the neck by increasing working height.

**Shoulders** - minimise elevation of the arms by lowering working height.

**Low Back** - minimise forward bending of the back by increasing working height.

For more specific guidelines on matching the working heights with the tasks performed please consult anthropometric tables or an ergonomist.

### *Armrests*

E WP	To reduce static postures of the neck/shoulder when mousing, use armrests to support the weight of the arm. It is important that armrests are adjustable, or at a height that allows the worker to mouse with a relaxed shoulder. Using the armrest should not force the shoulder to be elevated (shrugged) or lowered.
---------	---

If armrests are not available, or not at the appropriate height, an alternative is to move the keyboard and mouse back on the desk, and rest the forearms on the desk for support. However, with this workstation configuration, it is important to maintain proper monitor positioning and ensure enough space on the desk so that the whole forearm can be supported, without placing contact stress on any soft tissues.

A Shipper Co-ordinator should be encouraged to use arm supports to relax the muscles in the neck/shoulder region when there is a break in the workload when in a seated position. Placing the elbows and forearms on the supportive structure while taking these microbreaks will allow working muscles to recover and repair.

### ***Monitor positioning***

Proper positioning of the monitor can reduce several ergonomic risk factors:

E WP	To reduce eyestrain and awkward postures of the neck, position the monitor so that it is approximately an arm's length distance from the worker. Larger monitors may need to be positioned farther away from the worker.
---------	--

E WP	In order to reduce awkward postures of the neck, adjust the monitor height so that the top line of text, or the top of the screen is at eye level. Bifocal wearers may want to position the screen lower so that it is more easily viewed through the bottom of the lenses.
---------	---

Suggestions for lowering the monitor:

- Take the monitor off the central processing unit and place it directly on the desk
- Raise the height of the chair

Suggestions for raising the monitor:

- Put a book or other flat object under the screen
- Place the monitor on an adjustable arm

WP	To minimise glare on the monitor due to overhead lights, tilt the monitor downward and locate it perpendicular to the window. Minimising glare will reduce awkward neck postures and eyestrain.
----	---

### ***Footrest***

E WP	A footrest may prevent awkward postures of the back, if the chair and work surface is too high. Supporting the feet on the ground or on a footrest helps a worker maintain proper postures while seated.
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## SEATING

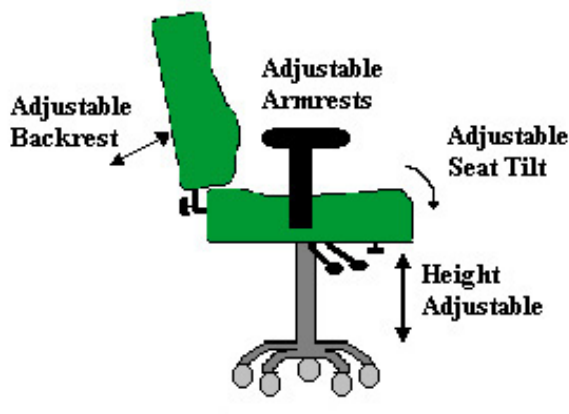
Many Shipper Co-ordinators are required to sit when working at the computer, desk or talking on the phone. Sitting for long periods of time increases the load on the spine, which stresses the ligaments and discs of the low back. The load is increased when the Shipper Co-ordinator does not maintain a neutral spine (see Injury Education for the Low Back on page 58).

### *Lumbar support*

**E** In order to reduce awkward postures in the low back while seated, lumbar support should be provided. Seats that wrap around the low back and allow the curve in the low back to be maintained should be considered for purchase. Padded lumbar cushions can also be added to existing seats.

### *Adjustable seating*

**E** To avoid awkward and static postures of the body, seating should have several adjustable features to allow for continual postural adjustments. Workers should also be trained on how and why to use the adjustable features. Poor chairs can contribute to back stress, circulation problems, fatigue, and discomfort. A good chair should have the following:



- Adjustable height
- Adjustable backrest
- Adjustable lumbar support
- Adjustable backrest height
- Adjustable arm rests
- Adjustable seat tilt
- Waterfall front to seat of chair
- Five legs
- Swivel seat
- Durable/breathable fabric

### *Vary body posture*

**WP** In order to reduce awkward and static postures of the neck, wrist, and low back encourage the Shipper Co-ordinator to get up from the seated posture throughout the day. This alleviates the load on the spine, allows the discs to equalise, and allows ligaments to regain their stiffness after being stretched out from sitting.

### *Vary chair position*

WP

Seated postures can contribute to fatigue and discomfort of the body, due to the awkward and static nature of the posture. A trunk to leg angle of  $110^{\circ}$  to  $120^{\circ}$  is needed for minimum compression of the spine.

In order to reduce awkward and static postures in the body, adjust chair features, such as seat pan tilt and back tilt, 2 to 3 times a day to allow muscles a chance to recover from static or held postures. This can be easily done while in the seated posture by simply adjusting your chair to different positions.

To change postures, the worker can change the positioning of any adjustable feature on the chair such as tilting the seat forward, moving the backrest back, adjusting the seat height, or even the angle of the armrests so they support the arms more. It is also important to occasionally get up and stretch for a few minutes. This will help you reduce the risk of injury by restoring your tissue tolerances.

Having a good chair and good positioning will not be enough to combat fatigue and discomfort for good. A good indication of when you have been seated for too long is when you begin to feel tired and uncomfortable. Any posture that you hold for a long period will lead to fatigue and discomfort, especially sitting.

## ***Seat maintenance***

E  
A  
WP

Seat maintenance should begin when a workstation is being created or renovated. Many equipment manufacturers offer a selection of seats. Use the information on the previous page to select a seat that satisfies your ergonomic criteria. Where possible, have the intended operators try several different seat styles before deciding on a seat design. If the manufacturer does not offer seats of suitable quality, it might be necessary to order a custom seat. Remember: heavy equipment manufacturers do not specialise in ergonomic seat design. Good quality seats may require separate ordering and installation.

Any new seat should come with a clear set of instructions for adjustment and use. Photocopy a set of these instructions for each operator, and laminate another copy for prominent viewing in the work area. Make sure all operators are familiar with the purpose and use of all seat features.

### ***Regular seat maintenance***

Regular vehicle seat maintenance should follow a schedule based on duration of use. At the prescribed time, all components of the seat should be inspected for wear, and damaged parts should be replaced. This inspection should include seat suspension, seat cushioning, seat covering, and arm supports. Seats should be replaced when they are too worn, or when they can no longer be repaired to safe working levels. Seats, like work boots, have a lifespan limited by their daily exposure to vibration, shock impact, and continuous load bearing.

### ***Daily inspection of seat***

Seat users should also be responsible for ongoing maintenance. A short daily inspection of the vehicle seat could identify wear or damage before it becomes a major problem. Keeping the seat as clean as possible and regularly using all adjustments on the chair can also help to minimise uneven wear and prevent damage.

## ADDITIONAL WORKSTATION DESIGN OPTIONS

### *Bifocals*

WP

In order to minimise awkward postures of the neck for workers with bifocals, lower the screen to prevent tilting the head back to look out of the bottom of the lenses. Other options, are to have special glasses made for the viewing distance of your computer screen, or place a larger screen farther away from the worker, to utilise the “distance” portions of the lens.

### *Document holders*

E  
WP

In order to minimise awkward postures of the neck while working with documents, use a document holder positioned as close as possible to the computer monitor. Documents should be at the same height and viewing distance as the screen. If a document holder is not available or practical, place the document as close as possible to the natural field of vision.

### *Phone options*

E

In order to minimise awkward and static postures of the neck while talking on the phone, consider investing in a headset for the phone, or a phone that has speakerphone options. Headsets will eliminate the need for awkward and static postures of the neck while talking on the phone. Keep in mind the different types available and the duration that they will be used for. Speakerphones eliminate the need for awkward postures of the neck and wrist, but take into account the environment it will be used in, as background noises may prevent clear communication.

### *Wrist support*

E

In order to minimise awkward postures of the wrists while typing or mousing, use a wrist support to aid in keeping the wrists in a neutral position. A wrist support made of a soft material such as foam or gel will reduce contact stress on the wrists also.

## Additional Work Practices

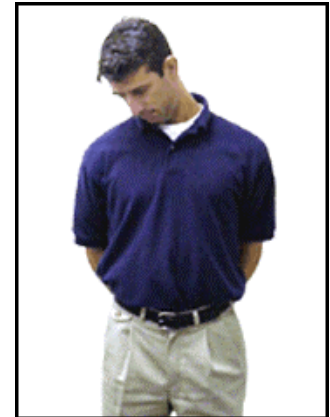
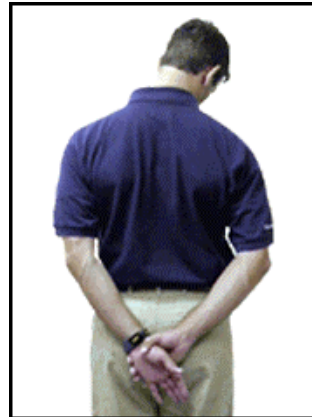
### Stretches

WP

In order to minimise awkward and static posture of the neck, wrist and low back, stretch these body parts throughout the day to enhance tissue tolerance for those muscle groups. See additional stretches in the Body Manual.

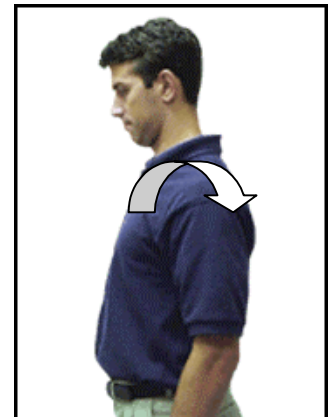
### Neck Stretch

Turn the head slightly to one side and reach for the ground with the ground behind you with the opposite arm. Hold for 10 seconds. Repeat 3 times on each side.



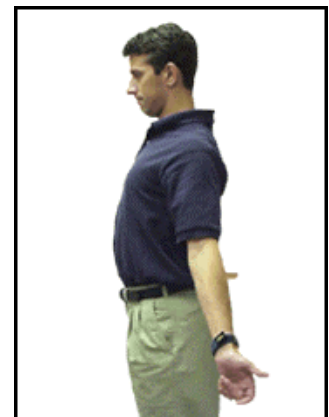
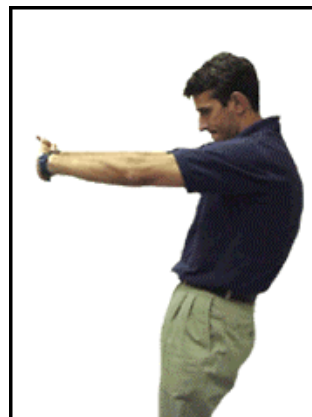
### Shoulder Circles

Rotate the shoulders in forward circles for 5 rotations. Repeat rotating the shoulders backward.



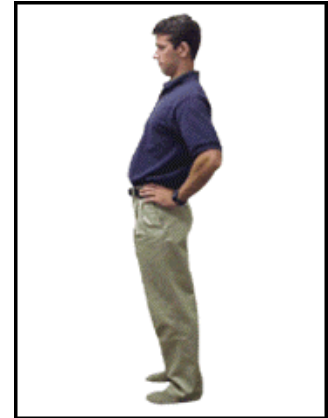
### Upper Back & Chest Stretch

Place the hands together in front of the body and push them outwards. Bring the arms behind the body and squeeze the shoulder blades together while pressing the shoulders down and keeping the chin tucked in. Repeat 5 times.



## Back Extension

Start by standing in an upright position (the back is in neutral posture). Lean backwards slightly, pushing the hips gently forward. Hold for 5 seconds. Repeat 3 times.



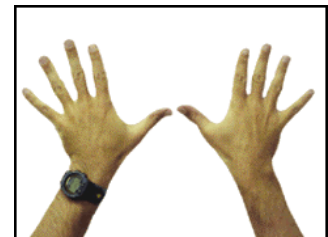
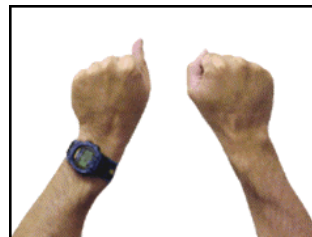
## Wrist Flexor and Extensor Stretch

With your arm extended and fingers pointing up, gently pull hand towards your body until you feel a mild stretch in the forearm. (**Note:** do not stretch to the point where you feel pain or tingling). Hold for 15 – 30 seconds. Repeat with fingers pointing down. Repeat with the other arm.



## Hands and Fingers Stretch

Clench both fists and hold for 3 seconds. Then open your hands and spread fingers apart. Hold for 3 seconds. Repeat.



## Hamstring Stretch

Place one foot in front of the other and squat down. Hold for 5 seconds. Repeat 3 times with each leg.



### ***Focus eyes***

WP

In order to minimise eyestrain from computer use, look up from the monitor every 20 minutes and focus on something in the distance. Focussing on a distant object allows the eye muscles to change position, relaxing the ones that have been focused on the computer for long periods.

# Environmental Conditions

## *Reduce glare*

E To minimise awkward neck postures due to glare, position the computer workstation so that the monitor is parallel with the overhead lights and perpendicular to the window.

## *Anti-glare screens*

E To minimise awkward neck postures due to glare, install anti-glare screens on the computer monitor. These filters can reduce the amount of glare on the screen but may also reduce the clarity of the characters on the screen. If you install an anti-glare screen, clean it regularly to prevent dust build-up.

## *Diffusers*

E To minimise awkward neck postures due to glare, reduce the amount of overhead light striking the computer screen by adding diffusers to overhead lights. Diffusers fit on overhead lights, either in tube or screen form, and direct light vertically, reducing the number of rays hitting the screen.

## *Task lighting*

E To minimise awkward neck postures due to low lighting levels, add a task light on writing surfaces. Place the light opposite your dominant writing hand to avoid shadows on the paper, and focus the lighting on areas where it is needed. If glare becomes a problem you can add an indirect light source, instead.

## *Colour of computer screen*

E To minimise awkward neck postures due to glare, use a light background with darker lettering on computer screens to reduce glare. Avoid:

- Using too many colours on the screen at once.
- Extreme colour contrasts such as red and blue. These extreme contrasts may make your eyes fatigue more quickly.
- Colours with minimal contrast, such as white on yellow.
- The combination of yellow on green can create a vibrating effect on the screen.

***Writing pad***

E	To minimise awkward neck postures use less reflective writing pads or blotter materials to reduce reflected glare.
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Please refer to the General Risk Factor Solutions Manual for solutions regarding environmental conditions.

# Work Organisation

## *Task variability*

A
WP

 In order to reduce exposure to risk factors associated with extensive computer or paper work, try to vary tasks throughout the day.

## *Job rotation*

A
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 To reduce loading on the body parts of concern listed in this Work Manual, the Shipper Co-ordinator can be rotated to other job positions that have different physical and mental demands. By rotating to jobs that require different physical demands the working muscles get a chance to recover and repair, decreasing the risk of injury. Job rotation is more effective if it occurs throughout the shift, for example, every hour or every two hours. The duration of exposure to risk has a large effect on the amount of time required for the tissue to recover.

## *Lumber yard inventory*

A
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 To reduce loading caused by stress on the body, recognise and plan for peak work cycles. The last two weeks of the month are the busiest in the shipping department, causing increased stress for the Shipper Co-ordinator. This time of the month often calls for more overtime, leading to prolonged exposure to risk factors. To help with this peak work cycle, maintain a slightly larger inventory of lumber in the yard. This stock will help reduce the administration and work load at the end of the month.

## *Organisation of paperwork*

A
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 To help with this peak work cycle, prepare shipping requirement paperwork ahead of time, when possible.

Please refer to the General Risk Factor Solutions Manual for solutions regarding work organisation risk controls.

## Summary of Solutions

Refer to the table below to help determine which solution alternatives will aid in addressing risk factors in the particular body parts of concern.

		<b>Injury Prevention Potential</b>										
<b>SOLUTIONS</b>	<b>Page</b>	Neck	Neck/ Shoulder	Shoulder	Elbow/Wrist	Wrist	Wrist/ Hand	Low Back	Hip	Knee	Ankle	Foot
Mouse use	66					A						
Keyboard placement	66	A				A		A				
Mouse placement	67	A S				A S						
Computer workstation layout	67	A										
Distance to computer monitor	67	A										
Adjustable keyboard and mouse trays	68					A	C					
Desk workstation layout	68											
Phone placement	68	A										
Armrests	69						C					
Monitor positioning	70	A										
Footrest	70							A				
Lumbar support	71							A				

### Direct Risk Factors

**F** = Force

**S** = Static Postures

**R** = Repetition

**C** = Contact Stress

**A** = Awkward Postures

**V** = Vibration

## Summary of Solutions

Refer to the table below to help determine which solution alternatives will aid in addressing risk factors in the particular body parts of concern.

SOLUTIONS	Page	Injury Prevention Potential										
		Neck	Neck/ Shoulder	Shoulder	Elbow/Wrist	Wrist	Wrist/ Hand	Low Back	Hip	Knee	Ankle	Foot
Adjustable seating	71							A S				
Vary body posture	71	A S					A S	A S				
Vary chair position	72	S					S	A S				
Seat maintenance	73							A S				
Bifocals	74	A										
Document holders	74	A										
Phone options	74	A S					A					
Wrist support	74						A	C				
Stretches	75	directly reduces risk of injury to the body										
Focus eyes	77	A S										
Reduce glare	78	A										
Anti-glare screens	78	A										
Diffusers	78	A										
Task lighting	78	A										

### Direct Risk Factors

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## Summary of Solutions

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<b>SOLUTIONS</b>	<b>Page</b>	Neck	Neck/ Shoulder	Shoulder	Elbow/Wrist	Wrist	Wrist/ Hand	Low Back	Hip	Knee	Ankle	Foot
<b>Colour of computer screen</b>	<b>78</b>	<b>A</b>										
<b>Writing pad</b>	<b>79</b>	<b>A</b>										
<b>Task variability</b>	<b>80 ♦</b>	<b>A S</b>				<b>A S</b>	<b>C</b>	<b>A S</b>				
<b>Job rotation</b>	<b>80 ♦</b>	indirectly reduces risk of injury to the body										
<b>Lumber yard inventory</b>	<b>80</b>	<b>A S</b>				<b>A S</b>	<b>C</b>	<b>A S</b>				
<b>Organisation of paperwork</b>	<b>80</b>	<b>A S</b>				<b>A S</b>	<b>C</b>	<b>A S</b>				
<b>Heat Exposure</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Cold Exposure</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Lighting</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Noise</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Vibration</b>	<b>♦</b>	directly reduces risk of injury to the back and wrist										
<b>Rest breaks</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Work Pace</b>	<b>♦</b>	indirectly reduces risk of injury to the body										
<b>Scheduling</b>	<b>♦</b>	indirectly reduces risk of injury to the body										

### Direct Risk Factors

**F** = Force

**R** = Repetition

**A** = Awkward Postures

**S** = Static Postures

**C** = Contact Stress

**V** = Vibration

**♦** = See General Risk Factor Solutions Manual

## SHIPPER CO-ORDINATOR MSI SAFETY GUIDE

### OBJECTIVE:

**To identify ergonomic risks involved in a Shipper Co-ordinator job and to reduce the potential for musculoskeletal injuries.**

More detailed information about risk reducing recommendations can be found in the Work Manual for the Shipper Co-ordinator.

CHECK IF THIS APPLIES	ACTIVITY OF RISK	DIRECT RISK FACTOR(S)	POTENTIAL HAZARDS	SUGGESTED SOLUTIONS
	<p><b>Neck</b></p> <p>A Shipper Co-ordinator may hold the head forward, to the side, or in a twisted position in order to view the computer monitor, talk on the phone, and perform desk work.</p>	<p><b>Awkward Postures</b></p> <p><b>Static Postures</b></p>	<ul style="list-style-type: none"> <li>• Neck muscles are required to turn the head to the side. The further the head is turned to the side, the greater the load on the muscles and tendons.</li> <li>• Neck muscles must support the weight of the head while in a forward/backward/side bent position. The more the neck is bent, the greater the load on the muscles and tendons.</li> <li>• When the neck is held still in a forward/side bent and/or twisted position, the muscles of the neck must remain tense to support the weight of the head. With no time allowed for recovery, the constant state of tension in the neck muscles may cause fatigue. If the constant stress is sufficient, and recovery is not adequate, the tissues may fatigue to the point of injury.</li> </ul>	<ul style="list-style-type: none"> <li>• For workers with bifocals, lower the screen to prevent tilting the head back to look out of the bottom of the lenses.</li> <li>• Look up from the monitor every 20 minutes and focus on something in the distance. This will help relax the eye muscles and decrease the risk of eyestrain.</li> <li>• Get up from the seated posture throughout the day. This alleviates the load on the spine, allows the discs to equalise, and allows ligaments to regain their stiffness after being stretched out from static posture.</li> <li>• For exercises that can help prevent <b>Neck</b> injuries, <i>see the Neck section of the Body Manual.</i></li> </ul>

CHECK IF THIS APPLIES	ACTIVITY OF RISK	DIRECT RISK FACTOR(S)	POTENTIAL HAZARDS	SUGGESTED SOLUTIONS
	<p><b>Wrist</b></p> <p>A Shipper Co-ordinator may operate a keyboard or mouse with bent wrists.</p>	<p><b>Awkward Postures</b></p> <p><b>Static Postures</b></p>	<ul style="list-style-type: none"> <li>As the wrist is bent, the tendon sheaths rub up against the walls of the carpal tunnel. The further the wrist is bent, the more friction experienced in the tendon sheaths.</li> <li>When the wrist is held in a bent position, tendon sheaths are under constant stress. If the duration of constant stress is excessive, and recovery is not adequate, tissues may fatigue to the point of injury.</li> </ul>	<ul style="list-style-type: none"> <li>Alter hands when using the mouse. Adjust the mouse controls, in “control panel”, to be a left-handed mouse. This will decrease the exposure to one hand by half.</li> <li>For exercises that can help prevent <b>Wrist</b> injuries, <i>see the Wrist section of the Body Manual.</i></li> </ul>
	<p><b>Wrist/Hand</b></p> <p>A Shipper Co-ordinator rests the wrist and hand on the desk when typing.</p>	<p><b>Contact Stress</b></p>	<ul style="list-style-type: none"> <li>Contact between hard or sharp surfaces and the base of the palm places stress on the tendons and nerves in the carpal tunnel.</li> <li>Continual contact with hard or sharp surfaces may damage the nerve and/or gradually weaken the tendons, and cause injury.</li> </ul>	<ul style="list-style-type: none"> <li>For exercises that can help prevent <b>Wrist</b> injuries, <i>see the Wrist section of the Body Manual.</i></li> </ul>

CHECK IF THIS APPLIES	ACTIVITY OF RISK	DIRECT RISK FACTOR(S)	POTENTIAL HAZARDS	SUGGESTED SOLUTIONS
	<p><b>Low Back</b></p> <p>A Shipper Co-ordinator continually sits while performing computer, desk, or phone work.</p>	<p><b>Static Postures</b></p>	<ul style="list-style-type: none"> <li>• Sitting increases the loading on the walls of the discs. If the duration of sitting is excessive, and the recovery is not adequate (e.g., spine not returned to neutral posture), the tissues may deform to the point of injury.</li> </ul>	<ul style="list-style-type: none"> <li>• Get up from the seated posture throughout the day. This alleviates the load on the spine, allows the discs to equalise, and allows ligaments to regain their stiffness after being stretched out from sitting.</li> <li>• Adjust chair features, such as seat pan tilt and back tilt, 2 to 3 times a day to allow muscles to recover from static or held postures.</li> <li>• Lumbar support in the chair should be adjusted to maintain the curve in the low back while sitting.</li> <li>• For exercises that can help prevent <b>Low Back</b> injuries, <i>see the Back section of the Body Manual.</i></li> </ul>