

## Using the Load Securement Risk Assessment Tool

### Related Regulation

**4.47 Risk identification:** *The employer must identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MSI).*

**4.48 Risk assessment:** *When factors that may expose workers to a risk of MSI have been identified, the employer must ensure that the risk to workers is assessed.*

### MSI Factors

**Repetition** is one of the physical risk factors related to the risk of a MSI. The more frequently a task is completed, the greater the risk of a MSI.

**Force** is also a physical factor related to the risk of a MSI. The WorkSafe BC regulations indicate specific requirements for load securement devices (wrappers). Heavier wrappers (3/8ths inch) weigh approximately 4.5 pounds **more** than lighter (5/16ths inch) wrappers, and therefore the size and weight of the wrapper should be considered when assessing the risk of an MSI injury.

**Work Posture** is also a physical factor related to the risk a MSI. The Log Truck Technical Advisory Committee (LTTAC) engaged physiotherapy experts to build resources that provide education in the identification, prevention and treatment of MSIs related to throwing wrappers. The resources are available here: <https://www.bcforestsafe.org/transportation/log-hauling/>

**Who** – Workers responsible for loading and load securement tasks must be trained in the use of the Loader Securement Risk Assessment Tool. The Loader Securement Risk Assessment must be completed by a *qualified* person. WSBC OHS Regulation Part 1 provides the following definition of a qualified person: “*being knowledgeable of the work, the hazards involved and the means to control the hazards, by reason of education, training, experience or a combination thereof*”.

**When** – Due to the changing conditions of the loading environment, the load securement risk assessment is conducted on an ongoing basis. It is recommended that the loader person and log truck driver assess the risk prior to commencing load securement tasks.

### Owner Responsibilities

- Provide all of the known information to the employer/prime contractor so they can eliminate or control hazards.
- Conduct and plan for loading operations and acceptable safe work procedures that are consistent with the Occupational Health and Safety Regulation.
- Ensure loading operation plans have been reviewed and acknowledged.

- Identify conditions and activities that are associated with known or foreseeable risks to workers.
- Conduct and document advance planning for the work.

### **Prime Contractor Responsibilities**

- Establish and maintain a system to ensure compliance with the Act and OHSR, and coordinate health and safety at the workplace.
- Conduct and plan for loading operations that are consistent and compliant with the OHSR.
- Ensure acceptable safe work procedures are in place that meet OSR guidelines requirements.
- Identify conditions and activities that are associated with known or foreseeable risks to workers.
- Ensure advance planning has been conducted and documented for the work.

### **Employer Responsibilities**

- Ensure the health and safety of your workers as well as the other workers onsite.
- Adequately instruct, train, and supervise workers.

### **Supervisor Responsibilities**

- Actively supervise and monitor operations.

### **Employee Responsibilities**

- Follow acceptable safe work procedures.
- Report any hazards encountered to the supervisor.
- Stop work if there are upset conditions that result in previously unidentified hazards that have not been controlled.
- Refuse unsafe work.

## Load Securement – Risk Assessment Tool

**Purpose:** The Load Securement Risk Assessment Tool is the result of a collaborative approach by the BC Forest Industry to reduce log hauling injuries related to load securement. It has been identified that many lost time incidents are caused by MSI injuries related to load securement. Tasks completed during load securement that contribute to the risk of MSIs include; throwing wrappers, pulling wrappers, and cinching. As a preventative measure, all log haulers should be provided with documented MSI training specific to log hauling.

### Musculoskeletal Injury (MSI) Risk Assessment -Throwing Wrappers

Strains related to the task of throwing wrappers has been identified as one of the most common MSI injuries related to load securement. The following risk assessment is developed to support workers, and employers in identifying the risks factors.

**Factors that may increase the risk of MSI:** Previous injury, age, fitness, throwing multiple wrappers in one throw.

**Factors that may reduce the risk of MSI:** Height of the load (bundle). Where the height of the load does not exceed the mid-point of the stake, and if the driver does not throw more than one wrapper and does not extend the shoulder past the point of impingement.

**Step 1:** Assess the risk of Musculoskeletal Injury (MSI) based on the number of loads per day by the driver, and the number of bundles per load using the most limiting factor and determine the risk of MSI related to throwing wrappers.

**Step 2:** Using the Loader Assist Hazard Risk Assessment table, assess the other related hazards at the loading site. **Step 3:** Based on the assessment in step 1 and 2 implement controls that mitigate the risk of MSI that do not result in an increased risk of injury from other hazards

#### Increased Risk of MSI Injury →

|                             |           |   |   |  |
|-----------------------------|-----------|---|---|--|
| <b>≤2 loads per Day</b>     | Long logs | 2 bundles   | 3 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load | ≥4 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load |
| <b>3 to 4 loads per day</b> | Long logs | 2 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load | 3 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load | ≥4 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load |
| <b>&gt; 4 loads per day</b> | Long logs | 2 bundles<br>Increased risk if<br>3/8 wire rope wrappers<br>or off-highway load | 3 bundles   | ≥4 bundles   |

### Loader Assist Hazard Assessment

**Key Considerations:** The risk of a MSI injury must be evaluated in conjunction with the risk of other injuries that can occur when considering controls that reduce the risk of MSI. The following risk assessment considers other hazards and severity of injury related to the hazards.

**Increased Risk of Serious Injury or Fatality** —————▶

|   |   |   |
|---|---|---|
| <b>Summer Haul<br/>Day Shift</b>  | <b>Winter Haul<br/>Day Shift</b>  | <b>Winter Haul<br/>Night Shift</b>  |
| <b>Even ground<br/>(&lt;15% slope from loader<br/>to log truck)</b>   | <b>Uneven Ground<br/>(≥15 to 30% slope from loader to<br/>log truck)</b>  | <b>Uneven Ground<br/>(≥30% slope from loader to log<br/>truck)</b>  |
| <b>Loading Site<br/>Considerations<br/>(even surface, clear of<br/>debris, loader on driver<br/>side, low risk from<br/>mobile equipment)</b> | <b>Loading Site Considerations<br/>(uneven surface, moderate debris,<br/>loading from passenger side, other<br/>mobile equipment active and in<br/>proximity)</b> | <b>Loading Site Considerations<br/>(uneven surface, heavy debris,<br/>other mobile equipment active<br/>and in close proximity, overhead<br/>hazards)</b> |

#### Controls for Reducing Load Securement Injuries

Log Truck Driver - Preventing MSIs - A series of videos and posters have been developed as an initiative led by The Log Truck Technical Advisory Committee (LTTAC). These videos provide awareness and training that help with Musculoskeletal Injury Prevention and Management for Logging Truck Drivers. The videos are available on the BC Forest Safety Council YouTube channel. <https://www.bcforestsafesafe.org/transportation/log-hauling/>

| Task                        | Injuries                           | Controls  |
|-----------------------------|------------------------------------|---|
| Throwing Wrappers           | Strains, sprains, slips            | Wrapping station<br>Loader assist<br>Jo's Easy Wrap<br>Synthetic wrappers<br>JB Cable Slinger<br>Heel stops (winter cleats) |
| Pulling Wrappers            | Strains, sprains, slips, struck by | Pike Pole<br>Heel stops (winter cleats)   |
| Cinching                    | Strains, sprains, struck by        | Inwood cinch  |
| Getting in and out of truck | Fall from elevation, slips         | 3 Point contact<br>Heel stops (winter cleats)   |

## **Additional Resources:**

Back and shoulder injuries are common risks for log haul drivers when throwing wrappers over loads. Using a log loader to place wrappers is one way to reduce injury risks but this process presents other risks that must be managed. This video explains risk assessment criteria and a process employers can use to develop an effective safe work procedure for loader assist.

[Loader Assist Procedure YouTube video](#)

With the greater number and weight of load wrappers required to effectively secure a log load, drivers are at increased risk of overexerting themselves. As a result, overexertion injuries resulting from drivers throwing wrappers over log loads has become a concern for forest the forest industry. FPInnovations studied the current work practice where a loader-securement wrapping technique was used to reduce injuries resulting from throwing wrappers.

[https://www.workplacesafetynorth.ca/sites/default/files/resources/CR-754-MSY-WorkSafeBC\\_LoadWrapper.pdf](https://www.workplacesafetynorth.ca/sites/default/files/resources/CR-754-MSY-WorkSafeBC_LoadWrapper.pdf)

FPInnovations youtube video showing loader securement

[https://www.youtube.com/watch?v=Jnbh-ZVNC5U&list=UUHKLKPB039ZjXKENx\\_f1TIQ&index=92&t=4s](https://www.youtube.com/watch?v=Jnbh-ZVNC5U&list=UUHKLKPB039ZjXKENx_f1TIQ&index=92&t=4s)

MSI is a common type of workplace injury in all industries in British Columbia. MSI claims associated with overexertion and repetitive motion account for about one-third of claims accepted by WorkSafeBC. In some industries, this proportion is much higher.

<https://www.worksafebc.com/en/resources/health-safety/books-guides/understanding-the-risks-of-musculoskeletal-injury-msi-an-educational-guide-for-workers-on-sprains-strains-and-other-msis?lang=en&direct>

### Links to Additional Controls

- Jo's Easy Wrap <http://www.joseasywrap.ca/product.html>
- Synthetic wrappers
- JB Cable Slinger <http://jbcableslinger.com/> email: [jjfirewood@shaw.ca](mailto:jjfirewood@shaw.ca)



Trucking & Harvesting Advisory Group

## Loader Wrapper/Binder Assist Procedures

**JOB STEP:** Loader Placing Wrappers / Binders OverLogs

**Objective:** Reduce the risk of injury to log truck drivers as a result of throwing wrappers / binders.

**Hazards:** Being struck by logs, wrappers or loader. Slips, trips and falls. MSI when placing / reaching for wrappers.

**When required:** The loader-assist procedure can be used at the discretion of the log truck driver and loader operator to reduce risks and overcome challenges such as tall loads, or limitations in driver physical abilities. If a risk assessment completed by the prime contractor and/or the loader operator and log truck driver determine it is not safe to use loader assist, the driver will move to a safe location and throw the wrappers over manually.

### **Rules:**

- The driver and the loader operator must designate a safe zone before starting the loader-assist process.
- Acceptable safe zones are either in front of the cab or a minimum of 5 m away from the rear of the load.
- The driver must always stay in the designated safe zone whenever the loader is energized or moving (includes body, boom and grapple).
- The truck driver must be visible to the loader operator whenever the loader is energized.

### **Safe work procedure:**

1. Loader operator finishes loading, puts grapple on ground in a location clearly visible to driver, idles down machine, engages hydraulic lockout, and radios / signals to the driver that loading is complete.
2. Truck driver and loader operator will assess the area and load to determine whether it is safe to use loader assist. Some factors to consider are load stability; overhead hazards; slips, trips and falls (e.g., due to mud, ice, debris), available space, (e.g., road width), steep side slopes (risk of something rolling / sliding and hitting the driver, and whether the loader operator will be able to see the driver during the securement process etc. If they agree to use the loader-assist process, they follow the steps below.
3. Truck driver retrieves wrappers and places one end of each wrapper through the grapple or puts them in a location where the loader can grab them. The driver then goes to the safe zone, establishes eye contact with the loader operator and hand signals that he/she is in the clear.
4. The loader operator lifts the wrappers over the load and releases them, then places the grapple on ground, idles down the machine and engages the hydraulic lockout.
5. Repeat Steps 3 and 4 for each set of wrappers and/or bunk.
6. Once each bunk has its wrappers on, the loader operator moves the grapple away from the area and de-energizes it, and the driver adjusts the wrappers as required. The driver can wrap up at the loader or can move forward to the closest safe location (assessed by the driver) to finish securing the load.
7. If unsure about anything please stop and seek clarification before proceeding.

**Note:** Under WSBC regulations, employers have a responsibility to identify, assess, eliminate or minimize the risk of musculoskeletal injuries to workers.