## Restraining loads

This activity aims to assist a haulage operator and contractor to use the information in the *Log Haulage Manual*. Log loading and haulage is potentially a high-risk activity. Accidents caused by incorrect and unsafe loading or unloading techniques and drivers not knowing about or following safe work procedures can cause fatalities and serious injuries.

**Who is this activity aimed at?**

This activity is for log hauliers to increase their understanding of the information in the *Log Haulage Manual* and to provide some practice at directly applying the information to practical scenarios. This activity should be guided by an experienced and capable person, with a sound knowledge of the log haulage manual contents and their practical application. It can be undertaken alone or in small groups.

**Outcome:**

It is essential that drivers and loaders maintain a professional and responsible attitude towards all aspects of loading, driving and unloading trucks carrying logs and other forest produce. The *Log Haulage Manual* provides a collated version of the information required to work in this area with due care and safety. This activity will enable a driver and /or loader operator to work through a series of questions based on knowledge required from the manual in day-to-day operations. This activity does not replace the manual it exemplifies how to use it as a learning tool with workers.

**Preparation:**

This activity should be undertaken with an experienced and knowledgeable person who has read the manual and is able to guide the learner through the questions in this activity. A discussion about specifics of trucks used and restraining techniques will make the activity relevant to all participants.

**What will you need?**

You will need a quiet room away from day to day activities to undertake this activity. A copy of the *Log Haulage Manual* and a pen and paper for notes.

## Activity:

The following activities are linked to information in the [*Log Haulage Manual*](http://www.forestworks.com.au/publications/item/153-log-haulage-manual), available from ForestWorks.

Read through the information on pages 29-35 of the *Log Haulage Manual* and discuss the questions below. You may like to make some notes under each question.

To complete the activities, think about the load that you had on your truck most recently.

### Load restraint

1. Which law regulates the requirements for road transport?

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1. How does this law specify load restraint?

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1. What is the speed that presents the ‘high risk’ to load restraint failure? (Refer to page 30.) Why is this the case?

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1. What is an example of a direct restraint system?

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1. What direct restraint systems are in place on the truck you drive or on the bottom of page 31 of the manual?

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1. What tie-down systems do you use or have you seen used?

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1. What is the difference between low friction logs and high friction logs?

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1. Which type of load would generally need more lashings to keep it stable?

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1. Which type of tensioning device is the most effective?

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1. Why are load binders hazardous?

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1. What are the advantages and disadvantages of using **chains** for lashing?

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| --- | --- |
| Advantages | Disadvantages |
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1. What are the advantages and disadvantages of using **webbing** for lashing?

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| --- | --- |
| Advantages | Disadvantages |
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1. What document specifies the minimum standards for chain or web lashings?

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### Load stability and truck rollover

The stability of log and other forest products in transit is a key issue for drivers. The key factors that impact stability are:

* The load centre of mass, and
* Vehicle speed

Read through the information on pages 61-62 of the *Log Haulage Manual*. Use the table on p62 to work out whether your load is at high or low rollover risk, taking into account:

* The bolster height of your load
* The total load height or your load
* The suspension on your truck (airbag or spring)
1. What is your bolster height and load height? Are you at high risk of rollover? If so, how can you change your load so there is a lower risk of rollover?

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1. What is the risk (% likelihood) of your load rolling over if you took a corner at 50km per hour?

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### Risk evaluation and log load restraint

Conduct a risk assessment of your load. Use the information on p55-59 of the *Log Haulage Manual,* to determine the level of risk associated with the restraint of your load. Tick (🗸) the appropriate boxes.

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| --- | --- | --- | --- |
| Consider | High risk | Medium risk | Low risk |
| Log friction | Debarked logs |  | Logs with bark and low sap content |
| Log overhang past stanchion | Short overhang | 🗸 | Long overhang |
| Load height | Maximum load height |  | Low load height🗸 |
| Lashing pre-tension | Standard 300 kgf 50mm webbing ratchet | Standard 750 kgf chain tensioner | Air driven tensioner 100 kgf |
| The availability of load blocking devices | Not blocked against headboard | 🗸 | Blocked against headboard |

1. Are any aspects of your load restraint at high or medium risk? What can be done to lower the level of risk?

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1. Are you carrying long or short long logs? Complete the relevant section on the following page for your load.

### Restraining long logs

1. Consider the bunk height of your load. What is the safe minimum overhang past the stanchion on your truck if you are using:

Chains? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Webbing? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­---

1. Consider the **bunk** mass of your load (in tonnes), the type of truck you drive (trailer or prime mover). Use the load restraint table on p56 of the *Log Haulage Manual* to determine the recommended number and type of restraints for low risk, assuming they are pre-tensioned at 750 kgf.

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### Restraining short loads

1. Consider the **bunk** height of your load (in metres), the type of truck you drive (trailer or prime mover). Use the load restraint table on p57 of the *Log Haulage Manual* to determine the recommended number and type of restraints for low risk, assuming they are pre-tensioned at 750 kgf, for low risk.

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### Restraining high risk loads

1. What are the key features of lashings for low risk loads?

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1. What are the key features of lashings for high risk loads?

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### Controlling hazards related to applying lashings

1. How can you reduce the risk of a log toppling off a load?

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1. How can you reduce the risk of injury from throwing a heavy chain over a load?

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1. Imagine you have just been pulled over by a State Roads Compliance Officer. The officer asks you to explain the restraints on your load and how they comply with the Heavy Vehicle National Law, particularly the Load Restraint Guide. What do you say? Make some notes below.

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