MANITOBA PUBLIC INSURANCE

MANDATORY ENTRY-LEVEL TRAINING MANITOBA CLASS 1

Lesson 7

Instructor's Guide

Overview

Purpose/Objectives

This lesson is intended to provide students with the knowledge of proper reversing procedures: straight line, offset and alley dock.

Upon completing this lesson, students should be able to:

- Understand the theory behind the different backing procedures
- Demonstrate backing and parking manoeuvres with a tractor-trailer
- Demonstrate tractor-trailer coupling and uncoupling tasks

How long should it take?

Classroom (hours)			In-Yard (hours)			In-Cab (hours)			Total Training Duration (hours)
Deliver	Apply	Assess	Deliver	Apply	Assess	Deliver	Apply	Assess	
3.5			3.0	20.0	1.0				27.5

Required materials

- Whiteboard or flipchart
- Markers
- Projector
- PPT presentation
- Printed and electronic quizzes
- Pens

Using this document

This document is intended to guide you through the session. It includes the following icons for reference:

▶ **Direction on what you need to do**

Sample language for what you need to say

? Sample wording for what you need to ask

ⓘ Extra information to consider

Lesson Outline

Time (Approx. mins)	Topic	Materials	Slides
15	Introduction		1-3
10	Backing Concepts		4-7
35	Straight Line		8-11
35	Offset		12-13
35	Alley Dock		14-17
50	Coupling and Uncoupling		18-22
30	Wrap Up		23-27
180	Practical In-Yard Demo		28
1,200	Practical In-Yard Application		28
60	Practical In-Yard Assessment		29

Total time = 27.5 hrs

ⓘ Times are an approximation of what is expected in a 15-student class with active participation. Times also include in-yard demonstration, application and assessments.

Student Materials

- Lesson 7: Exercise Book
- Textbook
- Lesson 7 Practical Job Aid

Introduction

Objectives: Introduce the section on backing and coupling manoeuvres.

Time: 15 minutes

Slide: 1 Type: Presentation

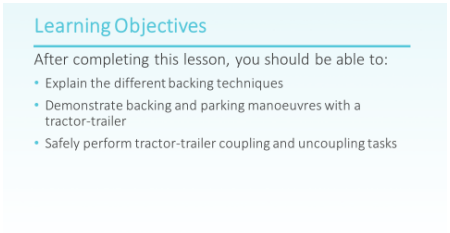
- Welcome students and allow time to settle if this is a new day of classroom delivery.

Slide: 2 Type: Presentation

- This lesson is intended to provide you with the knowledge of proper backing techniques for the different types of backing: straight line, offset (left and right), and alley dock.

  Upon completing this lesson, you should be able to:

  - Explain the different backing techniques
  - Demonstrate backing and parking manoeuvres with a tractor-trailer
  - Safely perform tractor-trailer coupling and uncoupling tasks



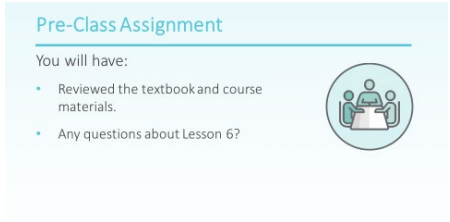
- During this lesson, manoeuvres will be explained, demonstrated and then performed by the student.

Slide: 3 Type: Discussion

- You were asked to review the materials at the end of the last lesson.

? Are there any questions that came up with your review?

- Go over any questions about Lesson 6.

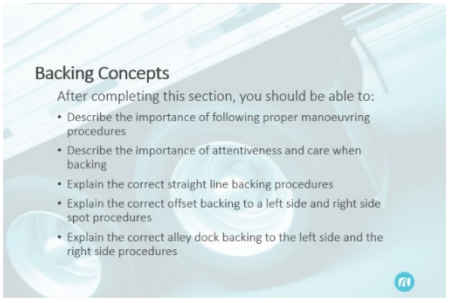


Backing Concepts

Objectives: In this section, backing concepts and specific procedures for backing manoeuvres are explained.

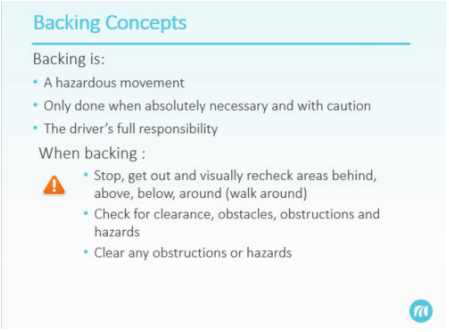
Time: 10 minutes

Slide: 4 Type: Section Break



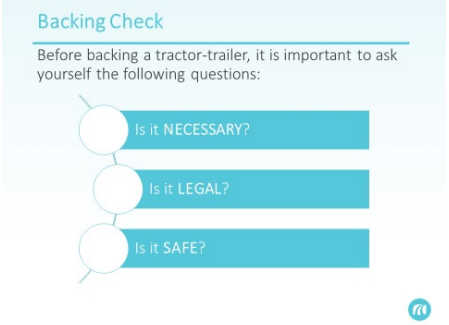
- After completing this section, you should be able to:
  - Describe the importance of following proper manoeuvring procedures
  - Describe the importance of attentiveness and care when backing
  - Explain the correct straight line backing procedures
  - Explain the correct offset backing procedures (left side and right side)
  - Explain the correct alley dock backing procedures (left side and right side)

Slide: 5 Type: Presentation



- Backing a tractor-trailer is a hazardous manoeuvre and should only be done when absolutely necessary. Do not rely on a guide. You are responsible for all movements of the vehicle.
- When backing, stop, get out and visually recheck the areas behind, above, below, and around the entire unit. Walk around the vehicle to check for clearance, obstacles, obstructions or hazards beside, behind, or under the vehicle. Take actions to clear any obstacles or hazards.

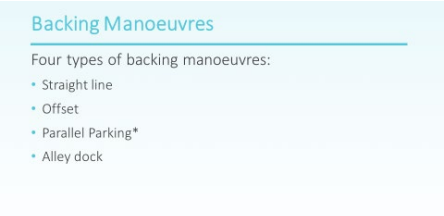
Slide: 6 Type: Presentation



- Before backing a tractor-trailer, ask yourself:
  - Is it necessary?
  - Is it legal?
  - Is it safe?

Slide: 7 Type: Presentation

There are four different backing manoeuvres that you may encounter: straight, offset (backing left side and right side), parallel, alley dock (left side and right side).



ⓘ **Textbook Reference:** Section 7 - Backing.

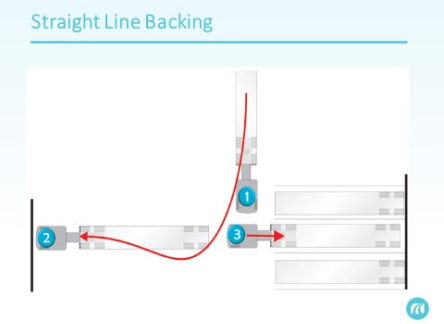
Straight Line Backing

Objectives: This section will describe the procedures for the straight line backing manoeuvre.

Time: 35 minutes

Slide: 8 Type: Presentation

- Straight line backing is used when approaching the target space from either direction.



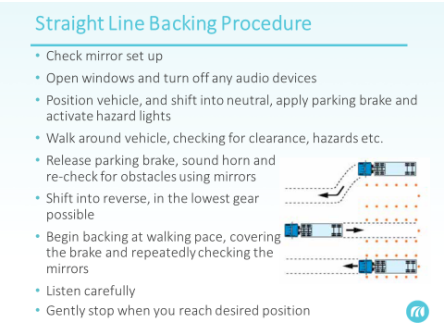
ⓘ **Textbook Reference:** Section 7 - Straight Line Backing procedure.

- You may play a video on backing at any point throughout this lesson. We recommend videos from J.J. Keller, one from your own library, or a suitable alternative.

  The following video is available through the MELT curriculum website if you wish to use it in the classroom:
  https://apps.mpi.mb.ca/MELT/videos/Backing.wmv

Slide: 9 Type: Presentation

- Before positioning the vehicle in front of the target space:
  - Check your mirror setup.
  - Open windows and turn off any audio devices.
  - Position the vehicle:
    - 1.5 vehicle lengths from the target space
    - Aligned straight to the target space
    - Front wheels straightened

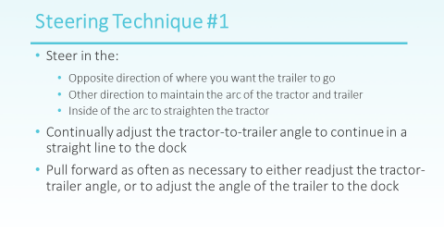


  - Shift into neutral, apply the parking brake, and activate the hazard lights.
  - Exit the vehicle and walk around the vehicle to check for clearance, and obstacles or hazards beside, behind, or under the vehicle. Take actions to clear any obstacles or hazards.
  - Re-enter the vehicle, release the parking brake, and sound the horn.
  - Use your mirrors to re-check for obstacles.

- Shift into reverse, in the lowest gear possible.
- Begin reversing at a walking pace, covering the brake and repeatedly checking the mirrors.
    - Pull up as often as needed to adjust angles to align the vehicle with the target space.
    - Exit the vehicle as often as needed to examine your positioning and alignment.
- Listen and watch carefully for any indication of conflict or impending collisions (horn, shouts, someone banging on the side of the vehicle, etc.).
- Gently stop when you reach the desired position.

Slide: 10 Type: Presentation

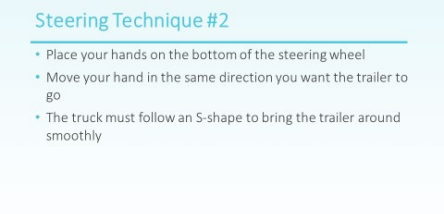
- How to manoeuvre the vehicle:
    - Steer in the opposite direction of where you want the trailer to go.
    - Steer in the other direction to maintain the arc of the tractor and trailer.
    - Steer to the inside of the arc to straighten the tractor.



- Continually adjust the tractor-to-trailer angle to continue in a straight line to the dock.
- Pull forward as often as necessary to either readjust the tractor-trailer angle, or to adjust the angle of the trailer to the dock.

Slide: 11 Type: Presentation

- Another manoeuvring approach is to:
    - Place your hands on the bottom of the steering wheel.
    - Move your hand in the same direction that you want the trailer to go.
    - The truck must follow an S-shape to bring the trailer around smoothly.



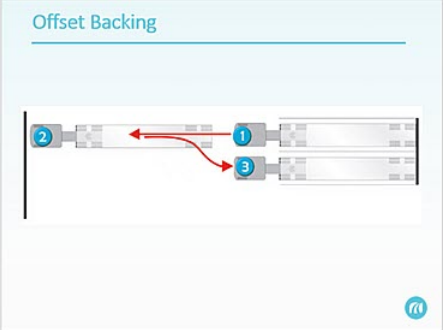
Offset Backing

Objectives: This section will describe the procedures for the offset backing manoeuvre.

Time: 35 minutes

Slide: 12 Type: Presentation

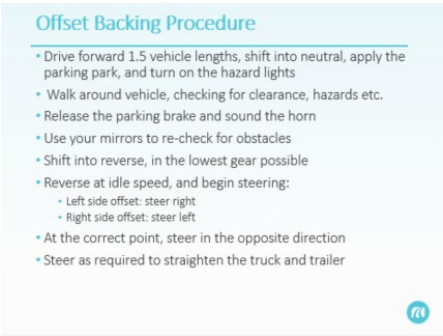
- You will sometimes be required to move from one loading dock to an adjacent one along the same wall. It resembles backing in for parallel parking, without having to fit between vehicles behind and ahead of you, but with the added complexity of aligning the tractor and trailer.



ⓘ **Textbook Reference:** Section 7 - Offset Backing procedure.

Slide: 13 Type: Presentation

- Other than the steering direction, the procedure is the same for both left-side and right-side offset backing:
  - Drive forward 1.5 vehicle lengths.
  - Shift into neutral, apply the parking park, and turn on the hazard lights.
  - Exit the vehicle and walk around the vehicle to check for clearance, and obstacles or hazards beside, behind or under the vehicle. Take actions to clear any obstacles or hazards.



  - Re-enter the vehicle, release the parking brake, and sound the horn.
  - Use your mirrors to re-check for obstacles.
  - Shift into reverse, in the lowest gear possible.
  - Reverse at idle speed, and begin steering:
    - For a left side offset, steer right to move the trailer to the left.
    - For a right side offset, steer left to move the trailer to the right.
    - Check both mirrors for positioning.
  - At the correct point, steer in the opposite direction to align the trailer with the target space. Continue checking both mirrors for positioning.
  - Steer as required to straighten the truck and trailer, and align to the target space.
  - Gently stop when you reach the desired position.

Alley Dock Parking

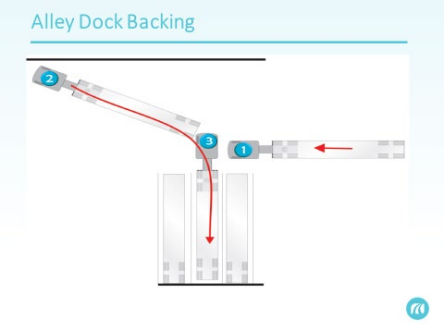
Objectives: This section will describe the procedures for the alley dock backing manoeuvre.

Time: 35 minutes

Slide: 14 Type: Presentation

- This method is used when there is not enough space to do straight line backing.

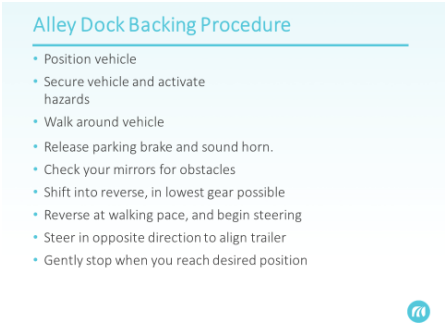
  This is the most difficult and potentially most dangerous backing manoeuvre. It's especially challenging if you are backing to the right side, because you can't clearly see the target space and you have to use your right side mirrors. No matter which side you use, it's best to avoid this manoeuvre if possible.



ⓘ **Textbook Reference:** Section 7 - Alley Dock Backing procedure.

Slide: 15 Type: Presentation

- Other than the steering direction and which mirrors to check, the procedure is the same for both left-side and right-side backing:
  - Before starting the manoeuvre, shift into neutral, apply the parking park, and turn on the hazard lights.
  - Exit the vehicle and walk around the vehicle to check for clearance, and obstacles or hazards beside, behind or under the vehicle. Take actions to clear any obstacles or hazards.
  - Re-enter the vehicle, release the parking brake, and sound the horn.
  - Use your mirrors to re-check for obstacles.
  - Shift into reverse, in the lowest gear possible.
  - Reverse at a walking pace, and begin steering:
    - For left side backing, steer right to move the trailer to the left.
    - For right side backing, steer left to move the trailer to the right.
    - Check both mirrors for positioning. (…continued on next page)
  - At the correct point, steer in the opposite direction to align the trailer with the target space.

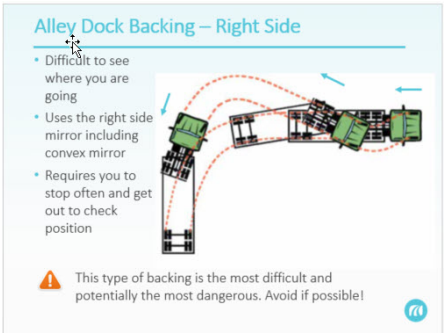


- For left-side backing, steer left.
- For right-side backing, steer right.

- To align the tractor with the trailer, continue steering in the same direction, but more tightly.
- Continue checking both mirrors for positioning.
- Pull up as often as needed to adjust angles to align the vehicle with the target space.
- Steer as required to straighten the truck and trailer, and align to the target space.
- Gently stop when you reach the desired position.

Slide: 16 Type: Presentation

For right side alley dock backing, it's more difficult to see where you are going. Use your passenger-side mirrors and exit the vehicle to check your position.



Slide: 17 Type: Self-paced Activity

You will have 15 minutes to complete Exercise 1 in the Lesson 7 - Exercise Book.

If time permits, you should review the questions after the students have completed the exercise. Alternatively, you may provide a copy of the **Lesson 7 - Exercise Book Answer Key** at the end of the lesson for them to review on their own time.

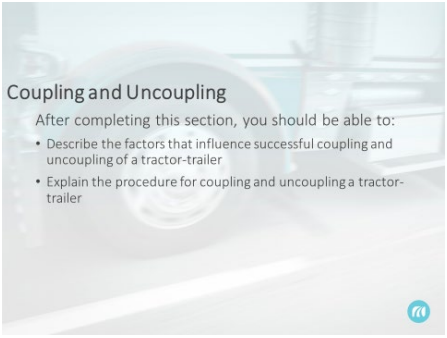
Coupling and Uncoupling

Objectives: This section will describe the procedures for the coupling and uncoupling manoeuvres.

Time: 50 minutes

Slide: 18 Type: Section Break

- After completing this section, you should be able to:
  - Describe the factors that influence successful coupling and uncoupling of a tractor-trailer
  - Explain the procedure for coupling and uncoupling a tractor-trailer

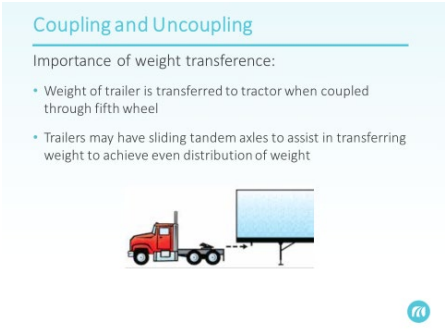


Slide: 19 Type: Presentation

- When connecting a tractor to a trailer, the draw bars or coupling devices must be in accordance with The Highway Traffic Act and its regulations.

  When a coupling device is used, an auxiliary safety chain or metal cable of equal strength to the coupling device must also be used to prevent separation in the event of the coupling device failing.

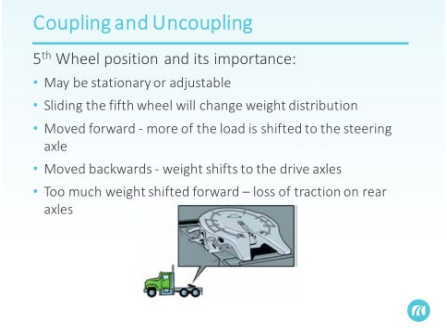
  If you are coupling or uncoupling at night or in reduced light conditions, you must use work lights for your own protection.



Slide: 20 Type: Presentation

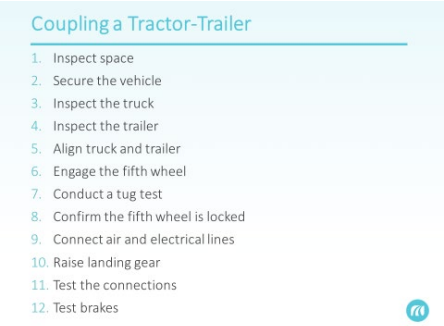
- The position of the fifth wheel plays an important role in tractor weight distribution. We will talk more about weight distribution in Lesson 9: Cargo Securement.

- You may wish to use these resources regarding coupling/uncoupling procedures and landing gear:
  https://truckinghr.com/wp-content/uploads/2019/10/National-Occupational-Standard-Toolkit.pdf (Page 176)
  https://safetydriven.ca/resource/safety-bulletin-operating-the-landing-gear/



Slide: 21 Type: Presentation

- When coupling and uncoupling, you need to enter and exit the cab multiple times. Always practice safe entries and exits (see Section 4), shifting into neutral, braking, and chocking as appropriate. Coupling a truck and trailer is a 12-step process:



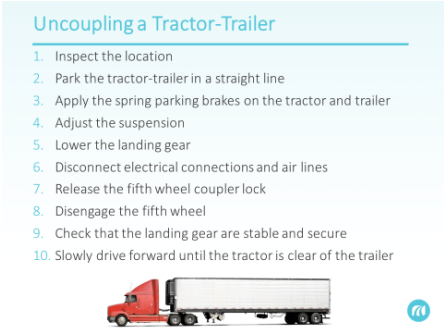
    1. Inspect the space
    2. Secure the vehicle
    3. Inspect the truck
    4. Inspect the trailer
    5. Align the tractor and trailer
    6. Engage the fifth wheel
    7. Conduct a tug test
    8. Confirm the fifth wheel is locked
    9. Connect air and electrical lines
    10. Raise the landing gear
    11. Test the connections
    12. Test the brakes

- You may play a video on coupling in this section of the lesson. We recommend videos from J.J. Keller, one from your own library, or a suitable alternative.

ⓘ **Textbook Reference:** Section 7 - Coupling and Uncoupling Procedures.

Slide: 22 Type: Presentation

- Uncoupling a trailer is a 10-step process:



    1. Inspect the location
    2. Park the tractor-trailer in a straight line
    3. Apply the spring parking brakes on the tractor and trailer
    4. Adjust the suspension
    5. Lower the landing gear
    6. Disconnect electrical connections and air lines
    7. Release the fifth wheel coupler lock
    8. Disengage the fifth wheel
    9. Check that the trailer and the landing gear are stable and secure
    10. Slowly drive forward until the tractor is clear of the trailer

- You may play a video on coupling in this section of the lesson. We recommend videos from J.J. Keller, one from your own library, or a suitable alternative.

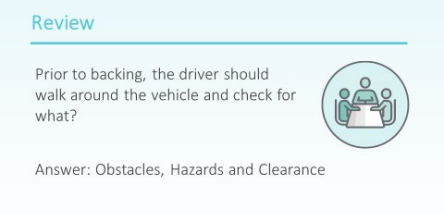
Wrap Up

Time: 30 minutes

Slide: 23 Type: Discussion

? Prior to backing, the driver should walk around the vehicle and check for what?

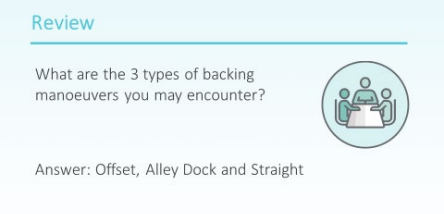
▶ Wait for students to respond, then click to reveal answer.



Slide: 24 Type: Discussion

? What are the 3 types of backing manoeuvres you may encounter?

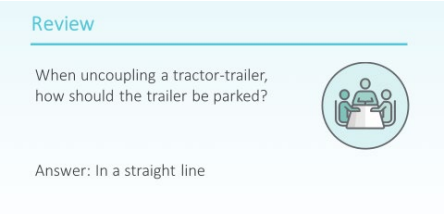
▶ Wait for students to respond, then click to reveal answer.



Slide: 25 Type: Discussion

? When uncoupling a tractor-trailer, how should the trailer be parked?

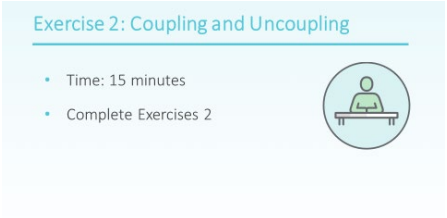
▶ Wait for students to respond, then click to reveal answer.



Slide: 26 Type: Self-paced Activity

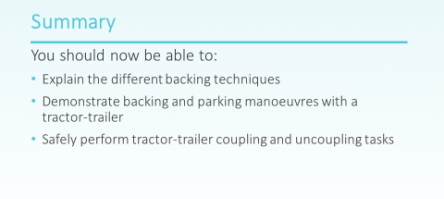
- You have 15 minutes to complete Exercise 2 in your Exercise Book.

- If time permits, you should review the questions after the students have completed the exercise. Alternatively, you may provide a copy of the **Lesson 7 - Exercise Book Answer Key** at the end of the lesson for them to review on their own time.



Slide: 27 Type: Presentation

- You should now be able to:
  - Explain the different backing techniques
  - Demonstrate backing and parking manoeuvres with a tractor-trailer
  - Safely perform tractor-trailer coupling and uncoupling tasks



Practical In-Yard/In-Cab Training

Time: 1,380 minutes

Preparation

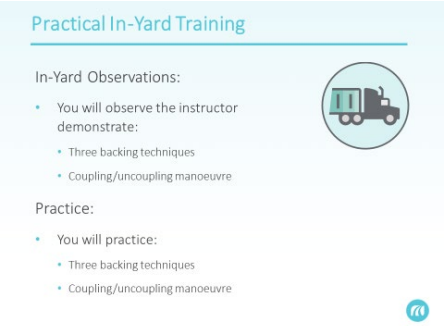
- Organize students and time in-yard/in-cab in order to maximize efficiency.
- Print **Lesson 7 - Practical Job Aid** for each student.
- Ensure the yard and vehicle are prepared for training.

Slide: 28 Type: Practical Training

You will head out to the yard where you will observe the instructor performing these manoeuvres. Then you will practice the backing, coupling and uncoupling manoeuvres.

You may wish to take your textbook with the procedure details to refer to while you are observing.

Each time you attempt the activity during training, you will be provided a copy of your assessment, which you can then review to improve your skills in this area.



? Are there any questions about the practical training for backing, coupling and uncoupling?

▶ **Wait for students to respond then address questions.**

▶ At the end of the classroom session, the instructor and the students will proceed to the yard for the in-yard and in-cab activities related to backing, coupling and uncoupling. The instructor will have about 3 hours in total to demonstrate all of these manoeuvres, after which the student will perform the manoeuvres.

The students will have a minimum of 20 hours to practice the manoeuvres throughout the course. This time may be split up and used in 30-minute increments throughout the length of the course as it may be helpful to break up practice time into different sessions in order to have more knowledge retention and to help with yard management. Make decisions about how to organize yard time based on numbers of students, available instructors for proper yard/vehicle ratio, physical training space, and available vehicles.

Practical In-Yard Assessment

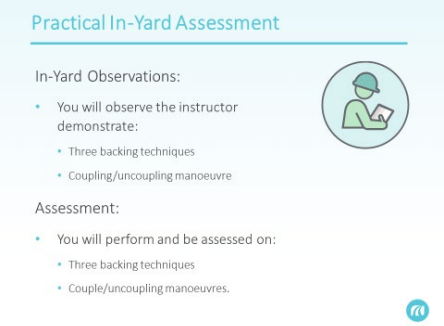
Time: 30 minutes

Preparation

- Ensure the yard and vehicle are set up for assessment.
- Print the **Practical Assessment Rubric Evaluator Job Aid** for the evaluator.
- Review **Performing Practical Assessments**.
- Prepare to record assessment performance either on printed **Lesson 7 – Practical Job Aid** sheets or directly into the **Practical Assessments** Excel file.
- Ensure you have access to the **Practical Assessments** Excel file.
- Print **Instructors Class Summary**.
- Print **Instructors Student Summary**.

Slide: 29 Type: Practical Assessment

You will now have a practical assessment where your instructor will assess your understanding and skill competency. This final in-yard assessment will count towards your final course mark. Each time you attempt the activities, your instructor will provide you with a copy of your in-yard assessment, which you should review to improve your skills in this area.



ⓘ You must be familiar with the assessment rubric before evaluating the student's practical knowledge and skills.

▶ The instructor will evaluate students using the practical assessment sheet. The list may then be shared with the student to improve their performance. Use one practical assessment sheet each time the student performs the activities.

A minimum of one hour will be used for in-yard assessment.

Check the recorded time in the log as well to confirm accuracy and proper completion of required paperwork for Hours of Service compliance.

ⓘ Use the rubric for evaluating in-yard and in-cab assessments. You are required to enter the results of the assessments in the Excel spreadsheet to calculate the final grades. Assessment sheets can then be printed and signed.