

STEERING TOWARD A PROFESSIONAL DRIVE

Reversing Straight / 'B' Double

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Note: It is often suggested that it is illegal to reverse a 'B' double; however in practical operational situations it is often necessary to reverse.

Note: This 'Challenge' is one of a series dealing with manoeuvring a 'B' double vehicle. Others may be obtained upon request from [Smiley Newell] ru4training@hotmail.com

This topic focuses on:

- Controlling multi-pivot points in reverse using mirrors
- Judge positioning accurately

This exercise is *foundational* to all 'B' double reversing and is rated at *Level 1*

This exercise is also necessary for *Licence Preparation*

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SUB-TOPIC	INSIGHT	REFERENCE
Preparation	Cockpit and	<i>P = page number</i>
	Site planning	<i>P2:4</i>
	Mirror settings	<i>P3:1</i> <i>P3:2</i>
Observation & Mirror Use	When, where and	<i>P3:3 to P4:1</i>
	What to look for	<i>4:2</i>
Correcting	Using reference points	<i>P4:3</i>
	Detecting and controlling angle changes	<i>P5:1 to P6:2</i>
Practical / Theory	'Step' Instruction (Fundamental)	<i>P7:1</i>
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TRAINER and STUDENT DISCUSSION

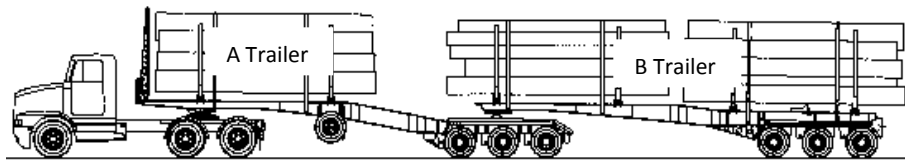
P2:1 **OUTCOME**

- ✓ To demonstrate preparation steps before reversing.
- ✓ To confidently know when, where and what to look for while reversing using mirrors.
- ✓ To control the vehicle combination accurately in a desired location.

P2:2 **PREPARATION**

Insight:

The first trailer in a 'B' double combination is commonly **known as the 'A' trailer** and is connected to the prime-mover; the **back trailer is known as the 'B' trailer** and is connected to the 'A' trailer



Prime-mover

P2:3 **Optimal Reversing Time:**

When possible **do** any **reversing** at the **end of your trip**.

More reversing accidents happen during manoeuvring prior to the commencement of a trip compared with the end of a trip because your driving skills are higher at the end of the journey; while your mind is usually on other things at the beginning of the trip.

Visibility:

There are many things that hinder visibility when moving a large vehicle forward; there are even more when you have to rely on mirrors to reverse. Therefore it pays to **have as many things as possible in your favour when reversing**. e.g.

P2:4 **Cockpit:**

1. Seat and steering wheel (Column) adjusted to suite you.
2. All mirrors correctly adjusted (flat and dome).
3. Mirrors and glass clean.

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P3:1 Planning:

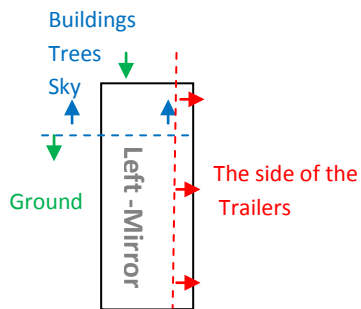
Before driving into a site (property), check:

1. Accessibility in and out
2. Desired location for your vehicle.
3. Amount of room you have to manoeuvre and any objects that you must clear.
4. Plan a path for optimal positioning of your vehicle
5. Look for reference points that will help to line up with desired position.

P3:2 **OBSERVATION and MIRRORS**

Mirror Settings:

Flat Mirrors:



Adjust left and right motion on mirror, so that you can just see the side of the trailers in your mirror (the objective is to have as much as possible of the surroundings visible in the mirror)

Adjust the up and down mirror setting to see horizon line (property line and above) in the top quarter of the mirror; and observe the ground the bottom three quarters.

Do this to both left and right flat mirrors

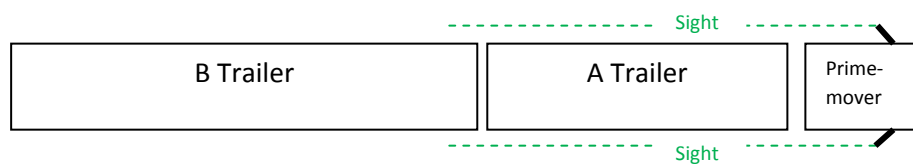
Dome Mirrors:

Repeat the above adjustments for the dome mirrors

P3:3 **Mirror Use** [Which Mirror to Use, When]

When Straight:

If you are **going straight** and you can see down the sides of the trailers in both flat mirrors; use **both flat mirrors equally** with an occasional glance in the dome mirrors



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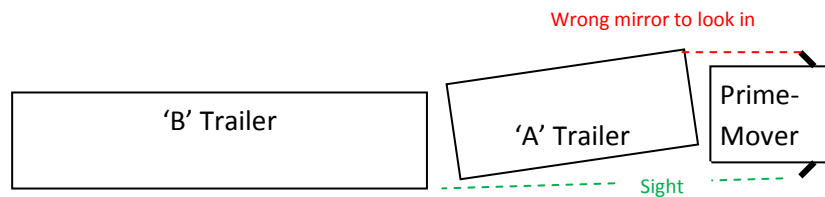
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4:1 When Correcting or Changing Angles: **Key Point**

Spend 90% of your time looking in the **flat mirror that shows** the side of the **'A' trailer** and focus on the pivoting point between 'A' and 'B' trailers.

If you can't see down the side of the 'A' trailer in the mirror, you're looking in the wrong mirror



P4:2 **CORRECTING** [What to Look For]

Straight and Angle Detection:

Insight:

Reference points are the key for identifying what straight looks like and when any angle is starting to occur between the pivoting points of the combination. The earlier you can make adjustments, the smaller amounts of steering needed to maintain accurate control. Being sensitive to small angles between vehicle components will increase your judgment of steering corrections.

P4:3 Reference Points: **Key Point** **"HABIT"** [Get in the habit]

Choose two reference points at each vehicle pivot point (one reference point on each vehicle component as shown in the diagram) so that you can make several important judgments:

1. Identifying straight accurately (when everything is inline)
2. Early detection of any angle changes and general direction.
3. The speed at which any angles are changing.
4. How sharp angles are.

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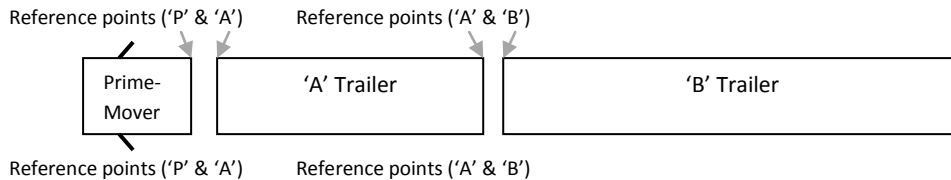
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P5:1 Reference point example:

[use it & use it & use it]

1. The **rear corner of the 'A' trailer** in relation to the **front corner** or combing rail on the **'B' trailer** (This reveals one angle changing point)
2. The **wing / corner on the prime-mover** in relation to the **front corner** or combing rail on the **'A' trailer** (This reveals another angle changing point)



Focus on one set of reference points at a time

Time: Secondary focus %10

Time: Primary focus % 80

Controlling 'P' and 'A' Reference Points

When focusing on these two reference points, it is the prime-mover that you can move about at will, therefore you focus on the prime-mover to control these two reference points.

Controlling 'A' and 'B' Reference Points

When focusing on these two reference points, it is the 'A' trailer that you can control and move about, therefore you focus on the 'A' reference point to control these two reference points

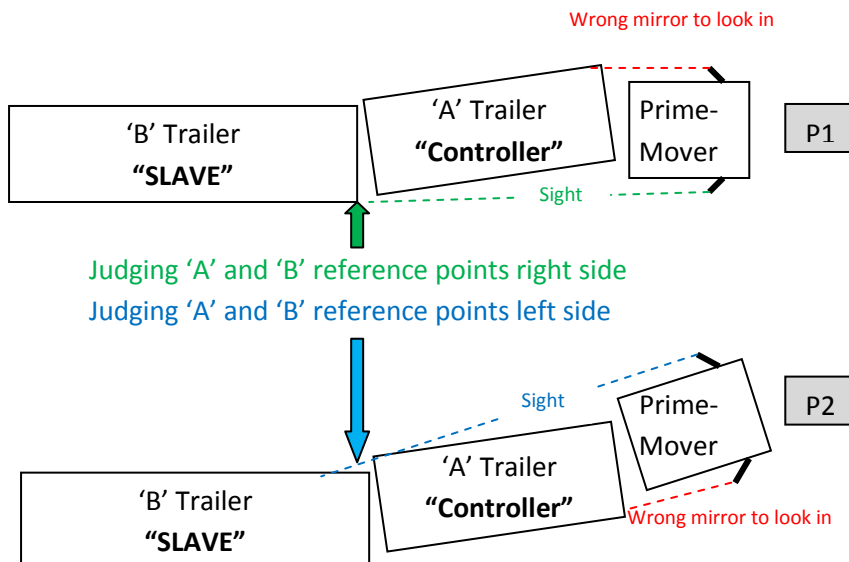
With these reference points in the site, plan your path to locate the vehicle.

P5:2 **Controlling 'A' and 'B' Reference Points**

Primary Focus

A couple of key point to remember:

- Focus on one set of reference points at a time.
- Look mostly in the mirror that you can see down the side of the 'A' trailer.
- Focus on 'A' and 'B' reference points



Notice that in both P1 & P2, the side you focus on is the side you can see down the side of the 'A' trailer

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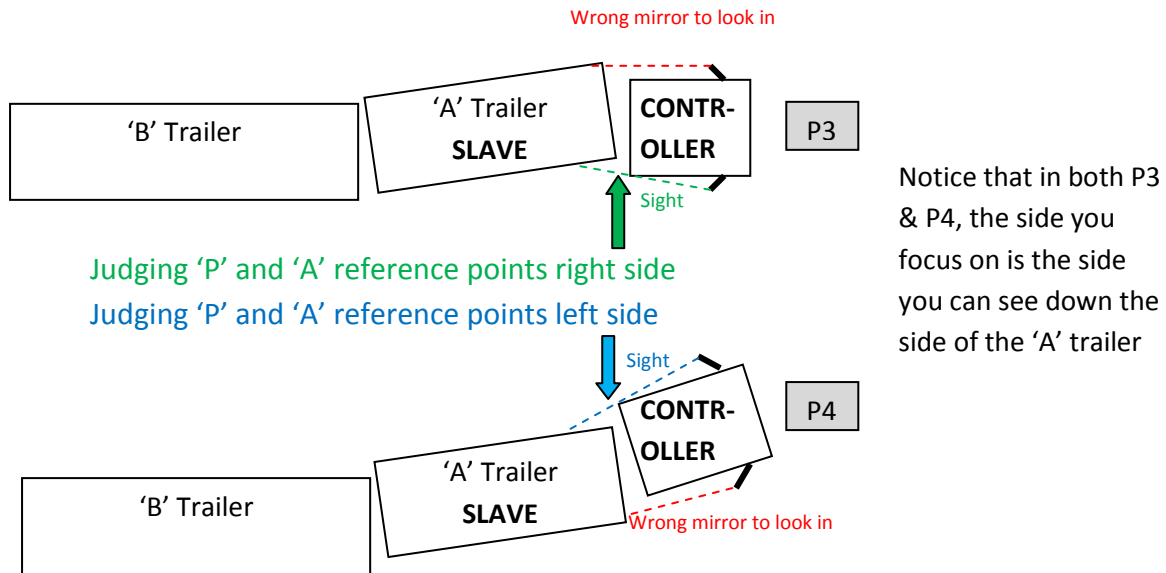
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If you can't see down the side of the trailer, **'you're looking in the wrong mirror!'**

You can't judge or control what you can't see

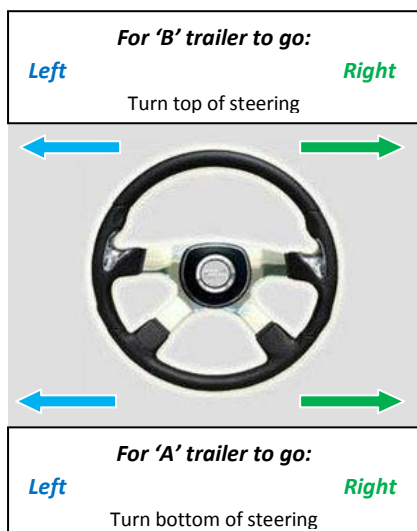
P6:2 Controlling 'P' and 'A' Reference Points



P6:3 Insights:

- Move reference points **slowly** in the desired direction.
- Make corrections **over a long distance**
- Spend 90% of your time looking in the mirror that shows the side of the 'A' trailer. When prime-mover lines up with 'A' trailer, use both mirrors or change to the mirror that is starting to show more 'A' trailer.

P6:4 Steering Direction:



Steer in the direction that you want the 'B' trailer to go. It is better to not think about which way to turn the steering, just rely on what you're seeing in the mirrors. Don't trust your feelings; turn the steering looking for the desired change without thinking too hard.

The picture on the left should help (or try this saying).

The 'B' trailer is further from you, so is the top of the steering wheel

Likewise the 'A' trailer is the closest to you, so is the bottom of the steering wheel

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P 7:1 PRACTICAL

Preparation:

- Where possible pull up in a straight line
(Trailers and prime mover in line and the steering wheel straight)
- Look in left and right mirrors
(Take note of what straight looks like and choose your reference points)
- Select reverse and move backward taking your foot completely **off the clutch** and **don't move the steering wheel**

P7:2 'B' Double Angle Control:

Key Point Steps

Step 1. "FIRST"!

"HABIT" 1

Spend 90% of your **time** looking at, and **controlling** the **angle between the 'A' and 'B' trailers** (by using the reference points you have chosen)

When thinking about 'A' and 'B' reference points, your main focus is controlling the 'A' reference point to line up with the 'B'.

"Don't try to control the 'B' trailer"!

Step 2. "ONLY WHEN STEP 1 IS UNDER CONTROL"!

"HABIT" 2

Spend 90% of your time getting the **prime-mover aligned with the 'A' trailer** (by using the other reference points you have chosen)

When thinking about prime-mover ('P') and 'A' trailer reference points, your main focus is on controlling the 'P' reference point to line up with the 'A' trailer reference point.

Step 3. "ONLY WHEN STEP 1 and 2 ARE UNDER CONTROL"!

"HABIT" 3

Spend 5% of your time with a **GLANCE** from the **back of the 'B' trailer to the desired destination** for location (by looking at the 'B' trailer wheels and running your eyes along the ground to the desired location)

Insight:

Only focus on one thing at a time!

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P8:1 POSITIONING

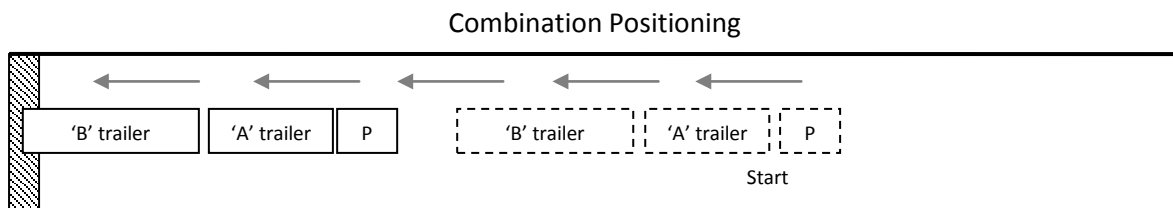
Insight:

Building confidence in using reference points is the key to developing good control and positioning ability.

To accurately judge the distance of the 'B' trailer to an object, or to your desired position, do the following:

1. **Look** at where the **last tyre** on the 'B' trailer **touches the ground**. Run your eyes across the ground to your **desired location** and **look at a reference point** that you have chosen. e.g. Line markings / Stone / Stick / etc
2. If it is necessary to be very accurate with where the back of the trailer is located, apply the park brake, walk down to the back and **count how many paces from the back of the trailer to the desired spot**. Then walk back to the prime-mover, **choose a reference point** you can see from the driver's seat **e.g. tank step**, then pace the same number of paces you did at the back and look for another **reference point on the ground** or nearby you can use to line up, e.g. place a stick or stone on the ground. Then **reverse till your 2 reference points line up**.
3. Where possible ask others for assistance.

P8:2



CHALLENGE

'Straight' Reverse

P9:1 The objective of a 'CHALLENGE' is to identify the skills that are needed to achieve an outcome, and put them in a learning environment that is ideal for their development.

Objective:-

To build the skills and confidence of being able to reverse in a straight line using mirrors.

Making correct and controlled movements

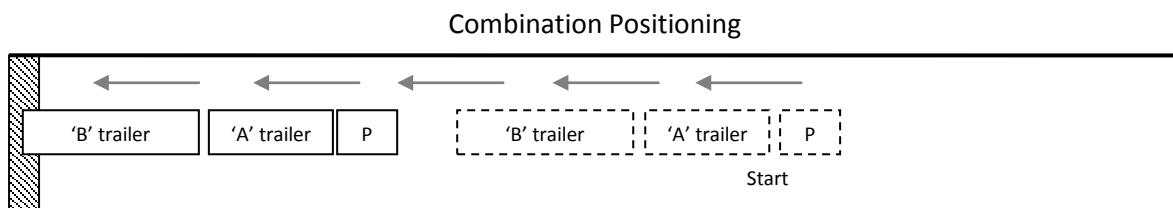
Positioning the combination in a desired location, parallel to the surroundings and having the rear of the 'B' trailer in a designated spot.

Benefits:-

- ✓ Confidence and ability to use both left and right mirrors (including dome mirrors)
- ✓ Confidence in knowing what, when and where to look to control combination
- ✓ Confidence in your ability to position accurately as desired

P9:2 **What You Will Need:**

1. Quite street or off-road area approximately 70 – 150 metres long
(If off road; you could use ropes to mark your boundaries)
2. Approximately 10 metres wide



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P10:1 Instruction / Practice:

1. Practice reversing as shown in the diagram on P 9:2
The **support** you need is **on Page 7:1 to 8:2**
2. The greater the distance you can reverse without a correctional move the better. To be able to reverse straight for 200 metres is excellent.
(Test requirements are only 26 metres)
3. End up straight and parallel to the boundaries with the rear of the 'B' trailer in a 1 metre designated space.
4. **Read the practical steps** thoroughly making sure you understand them
5. **Have someone read** out the highlighted text in **each step** e.g. Step 1.....
Step 2..... etc, if you can **as you reverse**
6. **Check the self analysis chart for areas to improve on.** P12:1

Checking the 'Skills' list, will also help identify areas to improve on. P11:1
Concentrate on one improvement at a time!

P10:2 TRAINERS DEMONSTRATION

Student follows the written 'Practical Steps' on P7:1 to 8:1 as the trainer demonstrates

Once an explanatory demonstration is done, do another at normal pace without explanation so the student can see what the end result looks like.

When reading quickly to get the main points, **only read the highlighted script**

P10:3 STUDENT RECEIVES DEMINISHING SUPPORT FROM TRAINER

It is important that the last practice before assessment is done unaided.
(It needs to be clear to the student they can do it without any help)

P10:4 STUDENT PERFORMS UNAIDED

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P11:1 SKILLS

<p>1. Lining up parallel to the boundary with trailers, prime-mover and steering inline and straight. (P7:1 and P8:2)</p> <p>2. Identifying what straight looks like in the mirrors by choosing your reference points and note where they are in relation to each other. (P5:1 & P7:1)</p> <p>3. Manoeuvre with your foot off the clutch and the engine at idle speed. (P7:1)</p>	<p>4. Knowing which mirror to use at the right time (P3:3) and what to look for (5:1 to6:3)</p> <p>5. Using and Controlling your reference points for angle control (P7:2)</p> <p>6. Making corrections over a long distance, keeping angles to a minimum (P6:3)</p> <p>7. Position the combination to a desired location, having it parallel to the boundaries, straight and the back of the 'B' trailer accurately placed in a designated spot. (P8:1)</p>
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Problem Analyse

Problem	Cause	Outcome	Solution	Insight / Suggestions
(A) Wrong steering	<ol style="list-style-type: none"> Thinking which way to turn the steering Looking in the wrong mirror and or place at the wrong time Not using your reference points correctly 	<ol style="list-style-type: none"> Confusion as to which way to turn the steering wheel and most often turning it the wrong way Confusion as to where to look, what to look for & which way to turn the steering Angles becoming too big & Hard to regain control 	<ol style="list-style-type: none"> Just turn the steering & look for the desired change in the mirror by watching your reference points 90% of your time and efforts should be looking in the mirror that you can see down the side of the 'A' trailer & controlling 'A' & 'B' reference points Get reference points to move slowly & make corrections over a long distance 	<ol style="list-style-type: none"> Don't trust your feelings. Thinking which way to turn the steering hinders your brain from letting the steering become sub-conscious
(B) Big angles / Lots of steering (chasing)	<ol style="list-style-type: none"> Trying to fix angles to quickly & in too short a distance Turning the steering the wrong way see problem 'A' Not responding to reference points early enough 	<ol style="list-style-type: none"> undesirable angles between trailers & or prime-mover All over the place 	<ol style="list-style-type: none"> Focus on once thing at a time Move reference points slowly Make corrections over a distance When trying to realign reference points, get them to move slowly over a long distance 	<ol style="list-style-type: none"> Slow your thinking & actions down Try reversing down a road for 200 metres (It works magic)
(C) Angles magically become big	<ol style="list-style-type: none"> Looking in the wrong place for too long & or at the wrong time 	<ol style="list-style-type: none"> Having to pull forward 	<p>Prioritise what you're looking at (focus on one thing at a time)</p> <ol style="list-style-type: none"> 90% on reference points between trailers Then 90% on prime – mover & trailer 	<ol style="list-style-type: none"> About 70% of your time is spent on trailer angles 25% of your time on prime-mover & trailer 5% on anything else

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STEERING TOWARD A PROFESSIONAL DRIVE
Reverse Straight "ANALYSES CHART" 'B' Double

P13:1 ASSESSMENT

COMPETENCY CRITERIA

- Positioning (Preparation)
- Foot off clutch (While reversing)
- Controlled and correct steering adjustments
- Looking in the right location and mirror at the right time
- Reverse 'B' Double straight for 25 metres
- Parallel to curb line and within a 1 metre shaded area
- Completed reverse in 5min

CODE: / = Yes, X = No, leave blank = Not applicable
80% 'yes' marks to be deemed Competent

Competency Standards – Reverse Straight												
Preparation	1	2	3	4	5	6	7	8	9	10	11	12
Starting Position (straight)												
Reverse / Clutch up & foot on the floor												
Execution												
Appropriate mirror use and observation												
Control												
Appropriate / Angle & corrections												
Location												
Time frame												

Date ____/____/____

Driver / Print _____ Sign _____

Assessor / Print _____ Sign _____

P13:2 FEED BACK / DISCUSSION

Do you feel that you achieved the outcome?
Can you think of some examples of how you will use these skills?