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# Advanced Turns

**DOWN UNWEIGHTED TURNS** ◆**RETRACTION TURNS** ◆**TERRAIN UNWEIGHTED TURNS** ◆

## IN THIS CHAPTER WE WILL EXPLORE...

*Progressions and methods for teaching a variety of advanced turn types (see Chapter 6), used within advanced freeriding, carving and freestyle. We will also look at where and when to use these types of turns on the varying terrain that advanced riders will encounter as they begin or continue to challenge themselves.*



## DOWN UNWEIGHTED TURNS



### WHAT, WHY, HOW

This type of turn is when the body moves down towards the snowboard to release pressure at the initiation of the turn (opposite timing to an up unweighted turn) and flatten the board for the edge change.

This movement allows the rider to be at their most flexed during the edge change. This can help balance in rough terrain, provide a faster edge change and build edge pressure earlier in the turn.

- ▶ Begin by replicating the down unweighted movements with the back foot unstrapped, stepping across the board while focusing on the timing changes from an up unweighted turn.
- ▶ Use pivot slips to introduce the timing of the vertical movement. This exercise involves moving from toeside to heelside side slip and back again with a skidded down unweighted turn being the link in between. Like side slipping, it is often easier to perform on steeper pitches. Start with the snowboard across the fall line, with the legs extended. Begin to flex, using twist to guide the nose of the snowboard into the fall line. As the snowboard starts to point downhill use rotation to pivot it into and through the fall line, changing edges with the legs flexed. When back in the side slip, with the snowboard completely across the fall line, extend the legs again. Repeat this in the other direction.
- ▶ Adapt this task by replacing the side slip with a shallow traverse. Ensure that flexion movements happen before the turn is initiated to focus on the timing change from up unweighted to down unweighted. Extension movements can begin to blend with rotational movements from the control phase through the completion now.



- ▶ Use two-footed J-turns as a way to develop progressive extension movements to build pressure. Have the student begin a straight run in a fully flexed position and allow momentum to develop. Encourage the student to tilt the snowboard on edge and extend laterally away from the snowboard to build pressure. The snowboard should perform an edged J-turn. Have the student practise this exercise on both edges. Now link down unweighted turns together. Have the student carry speed through the completion of the J-turn, flex the legs and allow the snowboard to pass underneath the COM to change edges. After the edge change, the legs extend to build pressure on the new edge.



## TECHNICAL DESCRIPTION

### VERTICAL

The timing of vertical movement is opposite to that in up unweighted turns. The legs are extended to increase edge grip, and then flexed to allow the body to move down towards the snowboard, to flatten the board and initiate the turn.

### LATERAL

The legs are extended, moving the COM away from the base of support laterally to increase the edge angle. The snowboard is twisted using the lower body to help guide it underneath the COM at the edge change.

### ROTATIONAL

Movement is focused in the ankles, knees and hips. The upper body remains relatively still. A separated relationship between the upper and lower body may develop during down unweighted turns, especially small turns.

### LONGITUDINAL

The rider should initially focus on a centred position throughout the turn. Fore and aft movements can be introduced to adapt turns to variable conditions such as bumps, steeps or powder.



## TERRAIN & CLASS HANDLING

Down unweighted turns should be taught on-piste at first. Blue runs with varying pitches are ideal for this. Ensure riding speed is kept slow enough to focus on early flexion, before the edge change. If speed increases too rapidly, your student is likely to revert to an extension movement at edge change.

Have your student focus on soft legs and a stable upper body when riding through these tasks. Letting the student follow you and mimic the timing of your flexion/extension will help develop their timing. Once the timing is established, look for terrain with gentle bumps or ridges and try to time the edge change over the bump, progressing towards terrain unweighting turns.



## SELF REFLECTION

*“Do my students understand the timing change of vertical movements properly?”*

*“Are my students ready to be learning this movement pattern, e.g. Do they have the ability to soften their ankles and knees when flexing from heel to toe?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Set an imaginary corridor for the pivot slips. Or even better, use a snowmobile track and ensure they every time they come back to the side slip their board is across the track. As soon as they move out of the track, they must flex before the nose steers down the hill.





## DETECT & CORRECT

Student has trouble with timing down unweighted movement patterns:

- ▶ Review and walk through the sequential use of flexion and extension relative to the edge change in a stationary environment.
- ▶ Begin with slow exaggerated movements to show the timing of flexion and extension movements.
- ▶ Ensure that your student uses extension of the legs for turn control and completion phases to allow a larger range of flexion to be available for turn initiation. This is particularly useful when using more exaggerated movements to highlight the pattern.

Student is able to down unweight from toe to heel but not heel to toe:

- ▶ To begin with, ensure your student uses flexion of the ankles and knees to move vertically closer to their board before they change edges.
- ▶ Slow down the movement pattern, have them focus on moving down and rolling over the front foot at the same time.
- ▶ Be creative with lower-level tasks and reversed vertical movement patterns.
- ▶ For example, make use of a down unweighted garland on the heel edge to develop your student's ability to move vertically closer to their board whilst reducing tilt and achieving a flat base.
- ▶ Ensure that your student's extension for heelside completion does not create a large lateral movement of the hips away from the board. This will leave the hips too far over the heel edge making it more challenging to move the hips laterally back on top of the board to initiate the toe turn.

## RETRACTION TURNS



## WHAT, WHY, HOW

This is when the snowboard is retracted back towards the body to aid flattening of the board at the edge change.

Similar to down unweighted turns, retraction turns put the rider in their most flexed position at the edge change. This can help balance in rough terrain and a very quick change of direction.

- ▶ Introduce a slightly more high performance body position, with the hips and shoulders a little more open to the direction of travel. With the board on or off (depending on terrain and abilities), use a stationary retraction exercise. From a taller position, rapidly retract the legs to lift the feet or board off the ground momentarily.
- ▶ Using edge rolls, have the student practise rolling from edge to edge whilst riding in the fall line on a gentle pitch. The focus should be on keeping the upper body still, while changing edges using the hips, knees and ankles. The track in the snow should be created by the natural path of the side-cut, with no pivot or skid.

- ▶ Now with more speed and a progressively lower body position, begin to extend the legs and guide the board further away from the COM to increase edge angle and build pressure. To change edges, rapidly pull the legs back under the body.
- ▶ Apply this turn type to other terrain using varying sizes and shapes. With mileage, encourage agility through the ankle joint when retracting and a regulated extension to avoid loss of edge grip.



## TECHNICAL DESCRIPTION

### LATERAL & VERTICAL

The board is physically drawn back towards the body to unweight at the initiation. This movement is very fast allowing quick unweighting and turn initiation. Laterally, the board is moved away from the COM to build edge angle and then retracted back at edge change. Higher edge angles can be created by extending the snowboard further away from the COM.



## ROTATIONAL

Movement here is focused in the knees and hips. The upper body remains relatively stable. A separated relationship between the upper and lower body is likely to occur, especially in smaller turns.

## LONGITUDINAL

Focus initially on a centred position, but fore and aft movements can be introduced to adapt turns to variable conditions such as bumps or powder.



## TERRAIN & CLASS HANDLING

As these tasks involve performing open, edged/carved turns, use a run with a shallower pitch (green or easy blue, that ideally changes pitch to become flatter down the run) as speed will constantly increase throughout. If the terrain you have chosen doesn't have a flatter run out, make sure that you give them the option to pull out of the task before they risk losing control.



## SELF REFLECTION

*“Can my student already roll from edge to edge within an extended position?”*  
*“Do they have the ability to hold an edge in an open turn, with speed?”*



## EXPERIENTIAL TEACHING EXAMPLE:

In retraction turns (as opposed to down unweighted turns) the height of the rider's COM relative to the snow should stay the same. Have your students imagine they are riding with their heads touching a low ceiling, aiming to keep their head at the same height throughout.



## DETECT & CORRECT

Student's board skids too much when extending, pivoting with back leg:

- ▶ Encourage an even extension with both legs simultaneously.
- ▶ Have them work on extending gently and remaining low, only moving the board slightly away from their COM. Progressively extend the board further and further away until they feel any form of skid, then pull it back in again.

Student's hips/COM move upwards away from the snow during the edge change from heel to toe:

- ▶ Whilst stationary, review how the ankle, knee and hip must soften and flex to allow the hips to remain at the same height from the snow.
- ▶ Encourage your student to start in a vertically more extended stance whilst becoming familiar with allowing the board to pass underneath them from heel to toe edge. As the movement becomes more familiar, have your student start in an increasingly vertically flexed position. This will result in the edge change being in a more stable position.

## TERRAIN UNWEIGHTED TURNS



### WHAT, WHY, HOW

Here the terrain is used to unweight the snowboard. This could be the terrain pushing up against the board, creating a flexed edge change, or the terrain dropping away from the board to create an extended edge change.

Terrain unweighting allows us to perform down unweighted or retraction movements in more undulating and uneven terrain. It also provides us with a new way to use the up unweighted movement pattern over specific terrain.

- ▶ Start by recapping down unweighted and retraction turns. Explain how we can make similar turns but by using the terrain to unweight the snowboard.
- ▶ Have the student lie on their back with the base of their snowboard pointing up. Push down on the base so the rider can feel pressure on their feet as if they were riding. As you push on the bottom of the snowboard ask the student to relax their legs; have them notice how the pressure from your hands makes the legs flex as they relax. This is similar to how we can use rises in terrain or bumps to unweight the snowboard and change edges in a flexed position.
- ▶ Have the student push lightly up into your hands. As you lift your hands up point out that the student will feel less pressure on the bottom of their feet even though the legs are extending. This is how we can use the terrain dropping away to unweight the snowboard and change edges in an extended position.
- ▶ For terrain unweighting with a flexed edge change, take the student into some bumps and have them feel the sensation of unweighting the snowboard while traversing and absorbing the bumps. At the end of each traverse use this movement to unweight the snowboard and make a turn. Slowly shorten the traverse until the student is linking the turns through the bumps, unweighting by flexing over the bump.
- ▶ For terrain unweighting with an extended edge change, take your student to some rollers or terrain that steepens or drops away rapidly, or even use some small tabletops in a beginner park. Have the student ride over the terrain at a speed where they feel the snowboard unweight and maybe even get a little air. Now have the student focus on riding at the same speed but approaching in a flexed position. As they ride over the terrain have them extend their legs so the snowboard remains on the snow but has very little pressure on it. Now change the angle of approach slightly so the student is coming in slightly on their heels but still in a flexed position. This time, as they extend their legs encourage them to extend the snowboard on to the toe edge and think about moving the snowboard laterally under the body. Replicate the same exercise starting on your toes.



## TECHNICAL DESCRIPTION

### VERTICAL

It is important to maintain responsive legs, allowing the snowboard to be physically pushed up or drop away due to the terrain under the board. By allowing the legs to move vertically with the terrain we can unweight the snowboard and change edges.

### LATERAL

These are matched to the snow condition but should be minimised in tricky conditions to keep the body balanced over the base of support. This keeps the rider balanced at all times while riding uneven terrain.

### LONGITUDINAL

The rider should focus initially on a centred position throughout the turn. However, fore and aft movements need to be introduced when applying this to more variable terrain and bumps.

### ROTATIONAL

Movement here is focused in the ankles, knees and hips. The upper body remains relatively stable.



## TERRAIN & CLASS HANDLING

Perform the stationary steps on flat terrain. Easy off-piste with lots of undulations, like a blue bump run, should be used for terrain unweighting with a flexed edge change. Rollers, small cat track drop-offs, easy tabletops in the park, or entry-level boarder-cross tracks can be used for teaching terrain unweighting with an extended edge change.

To progress riders in terrain unweighting with an extended edge change, increase the angle of approach over the features so the rider can begin to come out in a carve. For a challenge in terrain unweighting with a flexed edge change, try pivot slips in the bumps to feel out the timing of the terrain unweighting.

## SELF REFLECTION

*“Do my students have the timing of a down unweighted movement pattern already?”*

*“Are they comfortable enough in the terrain of choice to be able to focus on the changing movement patterns?”*



### EXPERIENTIAL TEACHING EXAMPLE:

You're a monster truck with quick firing adjustable suspension that can be controlled from the driver's seat in a split second. As the front wheels begin to ride over a large bump you, the driver, hit the adjustable suspension button and the wheels pull up. At the same time you rotate the steering wheel into a turn.



## DETECT & CORRECT

Student has excessive upper body movement including use of the arms to combat instability (a common issue with terrain unweighting):

- ▶ Keep the hands low to aid balance.
- ▶ Reinforce a stable upper body and the continual active use of flexion and extension in the lower body to maintain board-to-snow contact. This will result in an increase of stability with a quieter upper body.
- ▶ Ensure that your terrain selection and slope variables are not too challenging for your student. Remember to build up to larger terrain changes as evidence of comfort and stability appear consistently in your student's riding.

Student over-flexes at the hips (breaking at the waist) when initiating the toe turn:

- ▶ Review how to create efficient flexion using more range in the ankles and knees to move vertically closer to the board for edge change.
- ▶ Ensure that when developing terrain unweighted turns, the terrain changes are not sufficiently large enough to encourage too large a range of hip flexion to be used for absorption. Your terrain selection will be key.
- ▶ Focus on starting the movement from the ankles so the knees move laterally across the snowboard first.
- ▶ Have your student focus on how low their hips are, rather than their shoulders or head.

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Advanced  
Freeriding

RIDING STEEPS



RIDING BUMPS



RIDING TREES



RIDING ICE



RIDING CRUD



RIDING POWDER



RIDING SLUSH



RIDING IN FLAT LIGHT

IN THIS CHAPTER WE  
WILL EXPLORE...

*Freeride situations for advanced snowboarders, considering both snow condition and terrain variables. This chapter outlines specific turn sizes, shapes and types that are appropriate to the situation, with movement options quantified through range, timing and power. It is by no means every consideration but merely a guide to get you started. A more in-depth use of SCOPE is necessary to develop decision making abilities for each situation.*

*Most advanced freeride lessons will be corrective-based. Included are some example detect and corrects for each situation. There are many more not covered here, but it is expected that a Level Three instructor will have the ability to create corrective lesson plans based on knowledge and experience.*

## RIDING STEEPS



### WHAT, WHY, HOW

Build confidence when riding on steeps.

As a rider explores more of the mountain they will encounter steeper, off-trail terrain. Having confidence to ride it will open up new terrain and experiences.

- ▶ Review small, closed, skidded, down unweighted turns on a steep blue or black groomer to assess and prepare for the terrain you intend to ride. Focus on an earlier edge change and a good range of vertical movement. Well-timed vertical movements will help with blending the edging and steering movements.
- ▶ Make the timing of the edge change progressive but earlier to help avoid too much acceleration at initiation. An early edge change gives the rider more time on the new edge, from which to pressure and steer the board later in the turn. It is important to make sure that the COM moves across the board at the edge change.
- ▶ Edging should be smooth and progressive and lateral movement is somewhat restricted (depending on snow conditions) avoiding leaning into the turn too much, even though higher edge angles will occur at some point in the turn.
- ▶ Progressive extension through the legs will help to regulate the pressure that builds in the board.
- ▶ Use strong rotational movements in the front knee, hip and shoulder to steer the board. Looking across the hill through the completion of the turn to keep forward momentum.





## TECHNICAL DESCRIPTION

### ROTATIONAL

Powerful and continuous steering movement focused in the front knee, hip and shoulder are needed to guide the board through the turn. Using an anticipation movement through the upper body can be a good tactic for timing and power, allowing a quicker initiation and strong steering.

### LATERAL

A progressive edge angle will be required, along with a strong degree of tilt in the completion of the turn, achieved with lateral movement through the lower body. The edge angle is relative to the pitch of the slope and snow conditions. The COM should try to remain close to the base of support and movements should be focused in the ankles, knees and hips.

### VERTICAL

Vertical movements should be smooth and continuous and come from a lower, centred position. A down unweighted movement with a quick flexion will allow the rider to make an earlier edge change. A progressive yet strong extension will help to regulate pressure and is essential in the blending of movements for effective edging and steering.

### LONGITUDINAL

Fore-aft alignment should be maintained to start with. As confidence grows a small aft movement through the completion can be added to increase edge grip through the completion of the turn. A slight fore movement can be added to help at the initiation.

*Rider: Chris Hazeldine  
Photo: Keith Stubbs*





## TERRAIN & CLASS HANDLING

Prior assessment of snow conditions and hazards is important before riding steep, off-trail terrain. Careful consideration of students' confidence and appropriate skills is also needed. Identify safe entry and exit points. Look out for potential hazards, rocks, drops and snow conditions. Line choice and decision making should be discussed before dropping in. Let students know that it is okay to sideslip or traverse if the terrain proves too challenging. Encourage safe stopping points and spacing of students. Make the first turn the best turn. In short... use SCOPE!



## SELF REFLECTION

*"Did my students sideslip or floating leaf down the whole run?"*

*"Did my students look nervous going into steep terrain? If so, what could I have done differently to help make them feel more comfortable?"*



## ENVIRONMENTAL TEACHING EXAMPLE:

Look for terrain that offers different line choices with short steep pitches that transition into easier terrain. Areas like this will be less intimidating and allow students' skills and confidence to build. Picking the right slope is only part of the equation when riding steep terrain. Add any of the above condition variables and it will make it easier, harder, potentially unsafe or simply impossible for students to ride.



## DETECT & CORRECT

Student struggles to initiate their turns:

- ▶ Move on to easier terrain and develop your student's ability to twist the board through a faster flexing movement at the initiation. This may involve a review of, or an introduction to, independent lateral movements with the lower body and their effect on the snowboard.
- ▶ Remind your student that things happen quickly on steeper terrain and so the speed of your movements should reflect this.
- ▶ Introduce anticipation to help with lateral commitment across the board.

Student struggles with pressure management in the completion of the turn:

- ▶ Consider what movements are happening earlier in the turn to result in this issue and where the rider's COM is placed.
- ▶ Encourage a more progressive extension of the legs in the down unweighted movement pattern.
- ▶ Ensure that this extension movement is blended well with lateral movement, and that the board is not edging too rapidly.
- ▶ Focus on the sequence of edge-pressure-steer to give your student more time on the new edge, and avoid sudden pressure increases.

## RIDING BUMPS



### WHAT, WHY, HOW

Introduce an efficient way to ride on bumps.

Bumps are often encountered on and off trail. The ability to ride them will create a more versatile snowboarder whilst providing access to more terrain.

- ▶ Review small, closed, skidded, down unweighted and retraction turns on a similar pitch groomer to the bumpy terrain you intend to ride. Focus on a lower centred position restricting the amount that you edge the board. Introduce terrain unweighted turns.
- ▶ Try timing the edge change to the bump. Allow the ankles and knees to passively absorb the bump to aid in unweighting the board as it changes edges on top of the bump.
- ▶ Gentle movement of the hips across the board will help to keep the edge angle lower.
- ▶ Focus on having soft, supple ankles and knees that move independently to keep the board in contact with the snow.
- ▶ Strong and progressive steering movements in the front knee and hip are needed to guide the board through the turn.



### TECHNICAL DESCRIPTION

#### VERTICAL

Vertical movements should be smooth and continuous, and from a lower position. A combination of turn types is often needed, though the focus should be on terrain unweighted turns. There will need to be a strong focus on independent absorption as the board moves over the bumps.

#### LONGITUDINAL

Fore-aft movements will increase in the bumps and will need to be timed with the vertical movement. Movements should not be excessive but rather be used to help balance and strengthen other movements.

#### ROTATIONAL

Progressive rotational movement focused in the lower body is needed to steer. This should be timed with vertical and lateral movements. Anticipation can be added to aid power when steering in larger and steeper bumps.

#### LATERAL

Smooth movements through the ankles, knees and hips are required to stay in balance. More independent lateral movement through the front ankle and knee will be required to twist the board through the initiation. A lower edge angle will help to reduce speed and allow for more effective steering.



## TERRAIN & CLASS HANDLING

A good assessment of the snow conditions and the size and shape of the bumps is needed before taking students into this situation. Consideration should also be given to the pitch of the slope and exit points. Focus your students on their line choice and point out the options of riding the troughs and the peaks or the shoulders of each bump. Make sure that students are warmed up and avoid bumpy terrain if students are fatigued. Space students out and spend time discussing line choice and tactics of where to turn.





## SELF REFLECTION

*“Was the snow condition helping or hindering my students’ ability to develop skills in the bumps?”*

*“Did I give a demonstration of terrain unweighted turns whilst riding towards the students to allow for a different perspective?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Find a similar pitch to the bumps that you are intending to take your students. Introduce a dolphin turn encouraging the movements needed to change edges on the top of the bump. Then make a series of snowballs spaced approximately where you think the students should be initiating turns over the bumps. Now have the students time their dolphin turns over the snowballs.



## DETECT & CORRECT

Student is being bucked by the terrain changes and loses balance:

- ▶ Review your terrain selection to ensure that your student is able to develop their riding skills and build their confidence.
- ▶ Encourage your student to focus on reducing muscle and joint tension so that their legs flex and extend freely when required. A simple analogy can help such as “jelly legs”.
- ▶ Use mileage with traverses in bumpy terrain to develop the sequential use of flexion and extension (independent absorption). Focus on keeping the snowboard in contact with the snow. On the toe edge, purely focusing on soft ankles and feeling pressure under the balls of the feet will promote stability.
- ▶ On the heel edge, focus more on a balanced blend of flexion in the knees and hips to keep the upper body more on top of the snowboard to promote stability.

Student struggles with line choice and loses their way in the bumps:

- ▶ Spend more time at the top and bottom of bumpy sections considering line choice, and avoiding the biggest troughs and bumps on the face.
- ▶ Give the option to traverse more at the start, so they can feel out the shape of each bump and become accustomed to the transitions.
- ▶ Work on rhythmical riding and predicting the terrain changes before they happen.

## RIDING TREES



### WHAT, WHY, HOW

Tactics for riding in trees (when teaching in the Northern Hemisphere).

Understanding line choice and timing of turns will make riding trees exhilarating and more achievable.

- ▶ Review turn size and shape, down unweighted, retraction and terrain unweighted turns on a similar pitch groomer to the trees you intend to ride.
- ▶ Focus on a lower centred position and practise making rapid changes and adjustments to direction and timing of movements.
- ▶ Introduce an anticipation movement through the preparation to aid in timing of initiation.
- ▶ On an easy blue pitch, with well-spaced trees, discuss the line choice, looking at the gaps and planning two or three turns ahead.
- ▶ Precise movements of the ankles and knees are needed when timing the edge change to make it through the gaps in the trees. Supple ankles and knees will help absorb unpredictable conditions found in the trees.
- ▶ Strong and constantly adjusting steering movements in the front knee and hip are needed to guide the board around the trees.



### TECHNICAL DESCRIPTION

#### ROTATIONAL

Steering movement is focused in the front knee and hip. Range, timing and power need to be constantly adjusted to create flow through the trees. Anticipation through the head and shoulders will allow for power to be released in the lower body to aid initiation and steering movements.

#### LATERAL

Smooth movements through the ankles, knees and hips are required to stay in balance. More independent lateral movement through the front ankle and knee will be required to twist the board through the initiation. A lower edge angle will help to reduce speed and allow for more effective steering.

#### VERTICAL

Vertical movements should be smooth, constantly adapting to the terrain through adjusting the turn type, size and shape. Movement should be focused in the lower body and stem from a lower centred position. All absorption methods may be needed, so independence in the legs is necessary.

#### LONGITUDINAL

Fore-aft alignment should remain stable but active longitudinal movements will be needed to adjust to any bumps, branches or fallen trees.



## TERRAIN & CLASS HANDLING

Vision will often be restricted over greater distances in the trees. Set meeting points and discuss the line you are taking. Visual contact with your students is often restricted. Try to stay within verbal contact distance. Knowing the tree runs and the terrain will help with deciding the line choice, entry and exit points, and areas to avoid with your students. Careful assessment of snow conditions is needed. Early season there tends to be more hazards in the form of branches, undergrowth, stumps and fallen trees lurking just beneath the surface.



## SELF REFLECTION

*“Did my students spend time using a floating leaf because the trees were too tight to turn?”*

*“Did I maintain visual or verbal contact with my students?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Have you ever walked quickly through a crowded shopping mall or public place. You are subconsciously looking for the gaps and predicting the movements of others, trying to avoid walking into anyone. You can use a very similar tactic in the trees, though it is a lot easier as trees are not going to move and make random direction changes like people do. Trees are a little harder when you run into them and it is unlikely you will get an apology.



## DETECT & CORRECT

Student is nervous of riding in the trees:

- ▶ Terrain selection is the key to encouraging a nervous student in a gladed environment. Find areas of the run with options to make one or two turns in the trees with an option to return to an area with more space to turn.
- ▶ In more spacious areas of the mountain develop your student's confidence to make a turn not only when they choose to, but when they have to.
- ▶ Remember that trees do not have a uniform size or spacing between them so being adaptable with the timing of your movements is key. For example, have your student follow you for a few turns with symmetry and rhythm, then change the turn size and shape to a more unpredictable path.

Student loses momentum in the trees due to poor line choice:

- ▶ Focus on staying low and action-ready, rather than taller and stiff.
- ▶ Spend more time discussing their line choice before they drop in, ensuring that they are planning two or three turns ahead.
- ▶ Encourage them to change their field of vision regularly, from right in front of them to gaps further ahead.

## RIDING ICE



### WHAT, WHY, HOW

Introduce an efficient way to ride in icy conditions.

To create skills and awareness to keep stable and avoid falls on this challenging situation.

- ▶ Review medium, closed, skidded, down unweighted turns on non icy terrain if possible. Focus on a lower, centred position and restrict the amount that you edge the board.
- ▶ Make the timing of the edge change before the fall line to help minimise the increase in speed down the slope. Awareness of the gentle weight shift across the sole of the front foot will help in making gentle movements.
- ▶ During the second half of the turn use minimal but progressive lateral movement through the lower body with a focus on low, progressive edging. Feel for even pressure under both feet throughout the end of the turn.
- ▶ Focus steering movements in the front knee while subtly moving the hip and shoulder to help steer the board. Setting focal points will help to keep momentum across the hill.



### TECHNICAL DESCRIPTION

#### LATERAL

Smooth, subtle lateral movement through the ankles, knees and hips is required to stay in balance. A lower edge angle will be the result of the restricted lateral movement to stay in balance. The rider will experience a lot less edge grip than they would normally gain on the same terrain; however, the edge is still relevant to the pitch of slope in turn completion.

#### ROTATIONAL

Gentle and progressive steering movement focused in the front knee with a small complementary movement through the hip and shoulder. These movements need to be well-timed and power should be restricted to avoid over steering and pivoting of the board.

#### VERTICAL

Vertical movements should be smooth and continuous, but minimised, and come from a lower, centred position. A down unweighted movement pattern is preferable as the rider is lower and more stable during the edge change.

#### LONGITUDINAL

Fore-aft alignment and a centred position should be maintained.



## TERRAIN & CLASS HANDLING

Stopping points should be on areas that students can safely stop without sliding or being slid into. Understanding of the individual's skill and confidence level must be carefully assessed. Identify the patches of snow that have been scraped and avoid turning on these areas. Look to turn on areas where snow has been pushed into piles or spread across the ice to help get some edge grip. Avoid icy terrain where possible, especially steeper aspects. Falls can be painful due to the hard nature of the snow. Avoid shady spots and leave riding until later in the day if possible. Make sure edges have been recently tuned to help grip better on the ice.



## SELF REFLECTION

*“Did I try to minimise riding on the icy terrain?”*

*“Did I consider the time of day and how this may have had an effect on snow conditions?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

When riding icy terrain look for the areas where the snow has been pushed and scraped into patches on top of the ice. These will often be more concentrated at the sides of the runs. Now try to plan your route down the slope moving from patch to patch, making the turn on these patches of snow.



## DETECT & CORRECT

Student creates a high edge angle in an attempt to slow down:

- ▶ Encourage your student to remain flexed and relaxed in their lower-legs to bring their COM closer to their snowboard.
- ▶ Remind your student that more grip might not be achievable due to the nature of ice. A lower edge angle will allow more of the base to contact the snow and help you to maintain balance until you find some softer snow in which to grip more with the edge.
- ▶ Encourage your student to keep their COM laterally more on top of the snowboard to help keep a flatter snowboard.

## RIDING CRUD



### WHAT, WHY, HOW

Efficient ways to ride in cruddy snow conditions.

This is a common condition and being able to ride it will often allow us to access better snow on different aspects that have not been affected.

- ▶ Review medium, closed, skidded, down unweighted turns on a similar pitch groomer to the cruddy terrain you intend to ride. Focus on a lower centred position restricting the amount that you edge the board. Well-timed vertical movements will help with blending of steering movements.
- ▶ Make the timing of the edge change progressive to help avoid catching edges at initiation.
- ▶ Create gentle and progressive edging throughout the turn trying to keep the hips just over the effective edge.
- ▶ Allow the ankles and knees to passively absorb the choppy terrain, maintaining a stable upper body.
- ▶ Use strong gradual steering movements in the front knee, hip and shoulder to help steer the board.



### TECHNICAL DESCRIPTION

#### LATERAL

Subtle lateral movements through the ankles, knees and hips are usually required to stay in balance. If the crud is softer, a little higher edge angle can be used to help cut through the crud.

#### ROTATIONAL

Strong progressive steering movement focused in the front knee and hip with the shoulder aligning to hip movement. Smooth timing and blending these movements with vertical and lateral is needed to effectively steer. Be ready to adjust the timing and power to suit the changing conditions.

#### VERTICAL

Smooth progressive flexion and extension movements through the ankles and knees are needed to manage pressure and independently absorb the crud. Leg muscles should be strong and active, yet with supple and soft joints.

#### LONGITUDINAL

Good fore-aft alignment is crucial, though there will be subtle longitudinal movements happening as the board travels across the crud.



## TERRAIN & CLASS HANDLING

Entry and exit points should be identified. Snow conditions should be checked before taking students into this situation. Spread students out so they avoid collisions. If the students are new to riding crud, check they have the relevant skills and understanding before committing to the run. Create understanding of how crud is formed through snow, wind, sun, rain and tracks left in the snow. Talk about how much edging and steering will be required to suit the pitch and type of crud you are about to ride. Point out line choices and where to turn.



## SELF REFLECTION

*“Do my students understand what crud is and how it is formed?”*

*“What type of turn are my students making and do they have the skills to ride crud?”*



## EXPERIENTIAL TEACHING EXAMPLE:

If you have ever driven up a mountain road in New Zealand, you will have encountered the rutted bumps that form from a lot of traffic. If you drive too fast, it feels like your teeth will be rattled out of your head and the car will start to lose control. The same will happen if you try to ride crud too fast.



## DETECT & CORRECT

Student struggles to initiate turns on wind-affected crud:

- ▶ Check that your student can make a down unweighted turn and that the edge change is timed correctly. Focus on a smooth progressive edge change. If this is a new movement for your student, find some suitable terrain to allow practice of this new sequence.
- ▶ Have your student focus on stronger muscles but loose joints, to allow finer movements of the ankle and knee.

Student is unable to adjust their edge angle to suit the changing snow conditions:

- ▶ Encourage the student to be light on their feet and avoid any aggressive movements.
- ▶ Ensure that the student has a strong active or high performance stance and is able to adjust quickly with their ankles.
- ▶ Tasks that develop edge awareness like hops up the hill without side slipping will work well here.

## RIDING POWDER



### WHAT, WHY, HOW

Effective powder riding tactics and techniques.

Understand how to ride powder well and it can be the most fun snowboarding you will ever have.

- ▶ Review medium, open and closed, skidded, down unweighted and retraction turns on trail. Using small aft movements throughout the turn can help to create float in powder.
- ▶ Make the timing of the edge change with a progressive retraction of the legs to bring the nose of the board to the surface. This will help avoid burying the nose at initiation.
- ▶ Avoid leaning too heavily on the edge until you get used to the powder as the board may get bogged in the snow.
- ▶ Use a smooth movement with the hips towards the tail of the board from control through to completion of the turn. Ideally, the front leg should remain flexed when this happens.
- ▶ Strong, progressive steering movements in the front knee, hip and shoulder will be needed at times. Keep the turns a little more open to maintain enough speed.



### TECHNICAL DESCRIPTION

#### LONGITUDINAL

Active fore, centre-to-aft movement should be encouraged. Working the COM a little towards the tail during the control and completion will aid in floating the nose and regulating pressure under the back foot. This should be achieved by sliding the hips towards the back foot and keeping the front knee flexed, rather than leaning back with the shoulders.



Rider: Claire Dooney  
Photo: Keith Stubbs

**VERTICAL**

Vertical movements should be smooth and continuous. Rapid and powerful extension movement through the completion phase will create spray and bend the board so that rebound can be utilised in the initiation phase by more experienced riders. The initiation works best by retracting the board to the surface of the snow.

**LATERAL**

Smooth lateral movements through the ankles, knees and hips are typically required. Edge angle and movements of the COM away from the base of support will need to be adjusted to suit the type and depth of powder.

**ROTATIONAL**

Progressive steering movement focused in the front knee and hip. The power and range of these movements will need to be adjusted depending on the depth and density of the powder.



*Rider: Alex Tyrwhitt*

*Photo: Keith Stubbs*

**TERRAIN & CLASS HANDLING**

The amount of snow that has fallen and what is beneath the surface both need careful assessment as there are often hidden hazards. Identify flat spots as speed will need to be carried through these sections. Use other riders' and skiers' tracks to keep speed through flat run outs. Snow being sprayed, although fun, can create total blindness for brief periods of time. Space students out to avoid collisions. Be aware of wind loading and terrain traps. Check avalanche reports. Be aware that people, yourself included, will usually be very excited about fresh snow and decision making is often clouded. Take the time to SCOPE!



## SELF REFLECTION

*“What were the conditions like before the powder came and could there be hazards underneath?”*

*“Did I take my students into terrain that was appropriate for their physical ability and experience riding off-trail?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Have you ever held a large cork under the water? You can feel it pushing back. When you relax your arm and release it, the cork floats up to the surface. We can use a similar idea when riding powder. We extend our legs pushing the board under the snow, then let the board float to the surface as we release pressure and retract our legs to begin each turn.



## DETECT & CORRECT

Student loses balance towards the nose of snowboard:

- ▶ Encourage your student to maintain sufficient speed to keep the snowboard afloat.
- ▶ Review more efficient ways to keep the nose of the snowboard afloat to avoid fatigue and back leg burn. Begin with subtle pressure changes under the soles of the feet, focusing on a slight increase of pressure under the rear foot. This will avoid large movements of the COM over the back foot which creates extra strain on the working muscles.

Student leans back with the shoulders and straightens their front leg in the process, limiting their ability to absorb and steer the snowboard:

- ▶ Spend some time stationary working through different ways to move aft on the board. Encourage the sliding of the hips over the back foot, rather than leaning with the shoulders.
- ▶ Encourage longitudinal alignment of the shoulders and hips, keeping them parallel with each other.

Student struggles to initiate the toeside turn when the terrain becomes steeper and the snow is deep:

- ▶ Focus on increasing range of movement vertically with the down unweighted movement pattern.
- ▶ Ensure that the extension through the heelside turn happens late to help create a more compact platform of snow underneath the board, before moving down and across the board into the new turn.
- ▶ Encourage a larger lateral movement with the shoulders and hips earlier in the turn.

## RIDING SLUSH



### WHAT, WHY, HOW

Develop efficiency when riding slushy conditions.

Spring is a super-fun time of the season. Being able to ride slush well will make it even better.

- ▶ Review medium, closed and open, skidded, retraction or down unweighted turns. Focus on a centred and slightly lower position, restricting the amount that you edge the board to help avoid booting out in the slush.
- ▶ Make the timing of the edge change progressive but generally early in the turn. Be prepared to brace yourself against sticky snow through maintaining a strong core and subtle aft movements.
- ▶ Create progressive, but limited, edging with smooth extension movements and avoid leaning too heavily on the edge until you have a feel for how soft the slush is.
- ▶ Strength will be needed in the legs to allow the board to shift fore and aft to maintain balance if the snow is sticky.
- ▶ Use strong steering movements in the knee, hip and shoulder.



### TECHNICAL DESCRIPTION

#### LONGITUDINAL

Very active, stable and strong fore and aft movement is needed to maintain balance and stability in sticky snow.

#### VERTICAL

Flexion and extension movements should be smooth and continuous. A degree of independence is needed as slush will often have a variable snow surface. Down unweighted and retraction turn movements are the most effective in slush.

#### LATERAL

Subtle lateral movement through the ankles, knees and hips is used to balance and edge the board. Edging can be increased depending on the depth of the slush.



## ROTATIONAL

Strong progressive steering movement focused in the front knee and hip are often needed. Steering needs to be well-timed with vertical.



## TERRAIN & CLASS HANDLING

Slush can be a very variable condition and will change rapidly due to temperature fluctuations. Identify sunny and shady aspects. Warmer slush is deeper and often sticky (especially if it is new snow transitioning to slush). Cold slush is firmer and faster. Check weather reports for freezing levels. Prepare the board with a warm snow wax in spring. Encourage students to look out for hazards like rocks and tussock that will start to become more present as snow warms and melts. Adjust turn shape to suit the type of slush.



## SELF REFLECTION

*“Did I talk about the importance of waxing your board when riding slush?”*  
*“Were my students getting bogged down or falling over in the slush, if so why?”*



## EXPERIENTIAL TEACHING EXAMPLE:

You're at the beach early morning and it is still a bit cool as you are in the shade. You spot the sun coming over the hill behind you and walk for a minute to get into the sun and feel the warmth. Later in the day it's hot and you find it cooler under the shade of a tree. Using the same tactic we can find the softer slush by following the sun, or if it's too hot we look for the shaded aspects.



## DETECT & CORRECT

Student loses balance towards the nose of the snowboard:

- ▶ Generate awareness in your student that snow with higher water content will create more of a suction effect with the snowboard. With this knowledge your student can choose a line that avoids areas of water collection.
- ▶ Ensure that your student is able to make quick adjustments longitudinally with smaller levers in the lower body. This will allow them to be more agile over their snowboard and bring their COM back within balance as quickly as possible. Often, this movement can be described as shuffling the snowboard underneath the body.

Student gets toe or heel drag in the slushy snow:

- ▶ Check their equipment for boot/binding overhang, ensuring that the bindings are well placed laterally on the board.
- ▶ Check that the board they are riding is wide enough for their feet.
- ▶ Encourage less edge angle when the snow is wetter.

## RIDING IN FLAT LIGHT



### WHAT, WHY, HOW

Create confidence to ride on in low visibility.

Flat light can be one of the most difficult situations to ride. Having an effective tactic to deal with it will make it safer.

- ▶ Review medium, closed, skidded, retraction or down unweighted turns. Focus on a lower centred position.
- ▶ Time the edge change smoothly and progressively. Kinesthetic awareness will need to increase. Feel the subtle sensation and pressure changes in the feet. This will help in making gentle movements.
- ▶ Use minimal but progressive lateral movement through the lower body.
- ▶ Feel for even pressure under both feet through the bottom part of the turn. Steer the board smoothly using the front knee, hip and shoulder.
- ▶ Try to use any visual references to help gauge speed and direction, and spend time riding the same terrain so familiarity increases.



### TECHNICAL DESCRIPTION

#### ROTATIONAL

Steering movements should come from the front knee with a small complementary movement through the hip and shoulder. The power should be restricted to avoid over-steering.

#### LATERAL

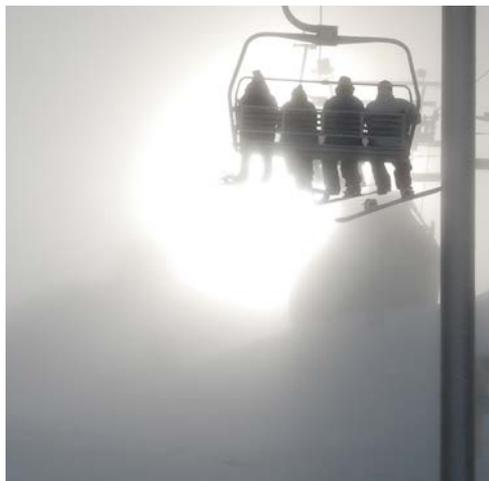
Subtle lateral movements through the ankles, knees and hips are required to stay in balance. Edging should be progressive to help balance. Ankles and knees should remain relaxed to adjust to unseen changes in terrain.

#### VERTICAL

A lower centred position with minimal flex and extension movements through the lower body. Adjustments will need to be made to suit the terrain being ridden. A retraction or down unweighted movement is preferable as the rider is lower and more stable during the edge change.

#### LONGITUDINAL

Fore-aft movement should be minimised.





## TERRAIN & CLASS HANDLING

Riding familiar groomed terrain is recommended. Stay on trail where possible to avoid having to deal with too many variables. In white-out conditions look for anything that will give awareness of location, slope pitch and speed. Use darker terrain features like trees, lift towers or large rocks to bring more definition to the surroundings. Listen for other voices, their equipment on the snow and lifts. If disorientated, stop and sit so that your senses can readjust. Ride your students closer together to help keep a visual and verbal contact. Use a reciprocal approach and pair students up. Highlight kinesthetic feelings to ride the terrain you are on.



## SELF REFLECTION

*“Did I lose any of my students at any point in the lesson?”*

*“Did I choose easy familiar terrain for my students to ride?”*



## EXPERIENTIAL TEACHING EXAMPLE:

You are in your own home, you get up in the middle of the night to go to the toilet and find there is a power cut. You still easily navigate your way to the bathroom. If the same scenario happened in an unfamiliar house you could end up getting quite lost and disoriented. Flat light is the same, familiar places are easier to navigate.



## DETECT & CORRECT

Student struggles to keep their balance and falls inconsistently throughout their turns:

- ▶ Visual reference points are key in flat light. Utilise trees, rock features, wind fences, lift towers etc. If nothing is available then ride in front of your student to provide a visual reference so they can judge the speed of their riding.
- ▶ Encourage your student to remain in an action-ready stance, with a lower COM whilst having relaxed ankles. This will allow them to make quick adjustments from a more stable position to aid stability.
- ▶ Focus your student’s kinesthetic awareness on the sensations they are receiving through the soles of the feet. This will help them adjust to undulations and pitch changes more easily.

## 20

Advanced  
Carving

ADVANCED ANGULATION

ALL-TERRAIN &  
CREATIVE CARVINGHIGH PERFORMANCE  
CARVINGIN THIS CHAPTER WE  
WILL EXPLORE...

*The technical aspects required for more advanced carving techniques and some tasks that can be used to progress riders to a higher level of performance.*

*Once students are comfortable carving on a variety of blue terrain we can start to advance and adapt their skills for steeper pitches, more varied terrain, higher speeds, increased board performance and to become more creative. Riders should already be exploring use of a high performance stance and a variety of turn types.*



## ADVANCED ANGLULATION



### WHAT, WHY, HOW

Adapting and developing angulation techniques to cater for increased speed, pressure and performance.

When carving at higher speeds and with increased performance, the snowboard will bend more and the radius of the side-cut becomes tighter. As this happens the snowboard is able to make tighter turns that change the rider's direction very quickly across the fall line.

- ▶ With the introduction of advanced turn types (Chapter 19), you have begun the groundwork for a high performance stance already.
- ▶ Spend some time carving on familiar terrain exploring a more rotationally open body position. Focus your students attention on how this rotationally open position can affect the other three directions of movement, both positively and negatively.
- ▶ In between each run, pause on flatter terrain to address each movement whilst stationary. Holding the back hand of the rider, have them flex down over their heel edge and progressively create angulation with a more open body position. Draw attention to how the front knee must remain flexed, how the hips need to slide over the back foot slightly, how the chest begins to move over the front quad muscles as you flex and the front hand lowers behind the highback of the front binding, and how the trailing ankle must be actively flexed (pulling the toes up).
- ▶ Now begin to explore how this high performance stance can increase the range of movement in all directions. Exercises like dragging the back knee on the snow or moving towards a melon grab on the toeside, and lowering the lead hip towards the snow on the heelside, are suitable for this purpose.



### TECHNICAL DESCRIPTION

#### LATERAL & VERTICAL

A high performance stance with advanced angulation allows a greater range of vertical movement, which helps to maintain a higher edge angle, whilst keeping the COM closer to the board. This allows the rider to remain low and balanced throughout the turn, rather than extending excessively for the edge change. This position also allows the hips to be used more effectively when flexing on both edges. It is possible to adjust the shoulders slightly laterally to match the pitch of the terrain, increasing the ability to regulate pressure. On the toeside the hips no longer align completely over the toe edge, although the core should still remain perpendicular. On the heelside, the hips and core can align laterally with the edge, even though they should be open to the direction of travel. Maintaining flex in the trailing ankle is important.

### LONGITUDINAL

Moving the hips slightly over the rear foot is necessary to allow for the open body position. Adjustments can be made through the hips to allow for recentering of the COM (and more range vertically) when needed, bringing the chest towards the front quad muscles. This position provides more time to be proactive with movements when anticipating changes in terrain. It is imperative that the front knee and ankle remains flexed to allow for steering and absorption.

### ROTATIONAL

The rotationally open body position is used on both edges, yet steering is created through manipulating the sidecut and use of whole body rotation. Powerful rotational movements are needed here, so the shoulder must work with the hips and knees.



## TERRAIN & CLASS HANDLING

Use terrain that is familiar to the student, as they will be exploring a new position on the board, focusing more on their movements than on the terrain around them. Early-morning blue groomers are ideal for this. Keep the carving tasks relatively slow at first and only increase the pitch or speed as they become comfortable with the new position - this may take some time. Be aware that they will need to feel the increase in forces for the new position to become completely relevant. Like all carving tasks, ensure that everyone remains aware of uphill traffic and blind spots, particularly on the heelside. Use long stretches of runs or even the whole trail to allow lots of practice and exploration of movements. Regular stationary steps to review each movement will be useful.



## SELF REFLECTION

*“Do my students have the physical ability to begin opening up their stance without it negatively affecting other movements?”*

*“Am I encouraging too much movement in a particular direction, that could be creating an inefficiency in their riding?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Have your students follow your track or each other's on a fresh groomer, whilst continually playing with their turn shape on easy, familiar terrain. You can have the follower try to match your carve in the snow but perform it a few metres higher on the run, instead of following the leader's track. Or have the follower try to mirror image the leader's track to create figure of eight shapes in the snow.



Rider: Ollie Midgley  
Photo: Keith Stubbs



## DETECT & CORRECT

Student struggles to create a high performance stance on their heelside and pushes their lead hip too far inside the turn:

- ▶ Spend more time working on the position while stationary, focusing on blending vertical, lateral and longitudinal movements and sinking the hips back over the rear highback.
- ▶ Reduce the range of vertical movement being used if necessary and focus on keeping the leading hip directly under the lead shoulder.
- ▶ Take the focus off adjusting the shoulders to match terrain and put emphasis on the hips, knees and ankles.
- ▶ Ensure that their leading knee remains flexed throughout and have them pull the toes up through the completion of the heel turn.

Student inclines the shoulders on the toeside too far:

- ▶ Focus them on driving the trailing hip over the toe edge early in the turn, rather than the shoulders.
- ▶ Continue to build edge angle with the lower body first and foremost.
- ▶ Change their mindset so the upper body becomes a powerful extra that can be added when desired, rather than a habitual movement pattern.
- ▶ Discourage the dragging of hands in the snow.

## ALL-TERRAIN & CREATIVE CARVING



### WHAT, WHY, HOW

Taking advanced angulation techniques into gullies/banks and varying snow conditions, and becoming more creative with carving.

The surge in carving popularity has riders looking for ways to be more creative on groomed terrain, and explore varied terrain like banked slalom courses.

- ▶ Begin with mellow gullies or bowls that have suitable snow conditions. Experiment with the timing of edge changes, application of edge angle, pressuring movements and use of side-cut. Carving tasks that include the use of flat basing across the fall line can be useful here. Explore the use of larger inclination movements to add power laterally.
- ▶ Begin to challenge your students with varying snow conditions, bringing awareness to the different turn types. Turn types will vary regularly to help manage different terrain. Encourage terrain unweighting as the undulations in the snow increase.
- ▶ Encourage small movements in the ankles and lower legs to help students adjust their edge angle at a moment's notice. Use follow-the-leader tasks on easier groomed runs, where the leader uses edge wiggles in their turns randomly to throw off the follower, without skidding the board.
- ▶ Experiment with different ways to create rebound in the board. Pump turns can be used to experiment with rebound on flatter terrain. On more challenging terrain, powerful extensions followed by quick retractions at the edge change will create rebound without raising the COM too much. Small but quick movements towards the tail can achieve a similar result.
- ▶ Explore the euro carve to help create more lateral power from the upper body whilst remaining flexed in the ankles. Consider using a progression to develop this skill. Focus on building the skill from the board upwards, starting with the ankles and finishing with the shoulders/arms. Contact between the upper body and the snow should be the final addition here and should come from the trailing elbow or shoulder.
- ▶ Try including freestyle elements to bring more creativity to their riding. Revert carves, where the rider pivots the board 180 degrees underneath the body before re-engaging the same edge into a carve but travelling switch (or vice versa if starting switch), are a great introduction to this.





## TECHNICAL DESCRIPTION

### VERTICAL

Range of vertical movement plays a bigger part in all-terrain and creative carving; however, the timing is just as important, if not more. A combination of the different turn types will be necessary to develop these skills. Retraction and terrain unweighted turns will be used regularly, as both focus on the regulation of pressure relevant to the terrain. Down unweighted turns allow the rider to quickly lower their COM early in the turn, but require an extension in the control and completion where the pressure is generally greater. Up unweighted turns help the rider to balance through the control and completion of the turn yet can lead to vulnerability at the edge change. Note that your student will require a good down unweighted movement pattern to be able to ride out from euro carves.

### LATERAL

Quick lateral adjustments in the lower body are essential to carving in variable snow conditions. Larger lateral inclination with the upper body can be utilised to create power but is only effective with strong lower body angulation. The ability to reduce edge angle is just as important here as the skill of creating it. This can help to avoid toe and/or heel drag during euro carves.

### LONGITUDINAL

Quick but strong movements longitudinally are useful for creating rebound, absorbing bumps and adjusting to changes in snow conditions. The COM generally moves between the centre of the board and the back foot, and should rarely come fore.

### ROTATIONAL

Rotational movements are much the same as high performance carving; however, the ability to quickly separate rotationally in the body and pivot the board is necessary for creative carving.



## TERRAIN & CLASS HANDLING

Exploring the whole mountain is important here. Terrain should be used to challenge your students, not hold them back. Almost every type of terrain can be utilised in all-terrain carving, snow conditions dependent. Increasing performance to this level can be taxing, so be sure that energy levels are high and look for signs of tiring. When teaching euro carves or any other creative carving skill, snow conditions become much more important. The ability to hold an edge with the COM moving far away from the board is crucial.



## SELF REFLECTION

*“Do my students already have some experience riding in the terrain and/or snow condition before turning up the level of performance?”*

*“Do I have suitable terrain and conditions to begin exploring creative carving?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Strong muscles and loose joints are the key to carving in variable snow conditions. To help develop awareness of this, use a stationary reciprocal learning task where you pair people up. Have them stand facing each other (boards off generally) and touch hands, palm to palm. Take it in turns for one person to lead by changing how much pressure is created between their palms whilst the other has to regulate the pressure without losing contact. The leader in the pair can choose to push or pull their hands away, but is only allowed to use a small range of movement.



## DETECT & CORRECT

Student extends too quickly through the control or completion of the turn and begins to chatter:

- ▶ Begin by reducing the vertical range of movement, then reintroducing it to match the turn size/shape and snow condition.
- ▶ On the heel edge, ensure that extension movements are blended through the knees and hips. Remind your students that the pressure between the calf and highback should remain constant, and that the ankles can be used to create more edge angle, when needed, by pulling the toes up.
- ▶ On the toe edge, ensure that extension movements are used smoothly, predominantly from the knees, keeping the ankles soft to absorb small bumps and undulations. Remind your students that stability on the toe edge is achieved over the balls of the feet, with flexed ankles. If they extend their ankles they are more likely to create lower leg muscle tension which will not absorb any sudden pressure changes efficiently, resulting in quick loss of balance.

Student struggles to maintain pressure when carving through the bottom of a transition, like a narrow gully:

- ▶ Review the turn type they are using and decide if it's appropriate for the terrain.
- ▶ Check that their body positioning is suitable, with the COM positioned over the edge.
- ▶ Ensure that the edge change is as early as possible to give more time on the new edge, allowing for effective pressuring.
- ▶ Focus on building pressure before the quick transition comes and using longitudinal movements where necessary.

Student struggles to make quick adjustments to the variable terrain or snow conditions:

- ▶ Spend more time riding the same terrain with a detuned performance.
- ▶ Use tasks to develop their reaction time and quick movements in the ankles and knees.

Student over-flexes through the hips during an attempted euro carve to drag their back hand in the snow:

- ▶ Don't allow them to drag their hand in the snow until they can get the trailing knee and/or hip on the snow. Then add the upper body to create more power laterally.
- ▶ Encourage lots of flex in the ankles and the feeling of stretching the calves. Focus your student on balancing with their elbow in the snow instead of dragging the hand.

## HIGH PERFORMANCE CARVING



### WHAT, WHY, HOW

Large, high-speed carved turns with increasing performance.

Aside from being incredibly fun, this type of riding is required in racing scenarios like boarder cross and banked slaloms.

- ▶ Begin reviewing/introducing advanced angulation techniques and the high performance stance required. Show how an increased edge angle can manipulate the side-cut of the board to tighten our carve.
- ▶ Try some stationary edging tasks like hopping up the hill on the heel edge and down the hill on the toe edge (whilst facing downhill), focusing on a strong and blended movement through the lower body. Ensure that a strong edge in the snow is maintained, not allowing the board to skid or slip out, as well as adjusting balance over the contact edge.
- ▶ Spend time carving on familiar terrain with consistent pitches and fall lines, using a larger range of vertical movement at first, along with an up unweighted movement pattern. Slowly begin to reduce this vertical range, focusing on using the position of the body to regulate pressure (i.e. advanced angulation) instead of vertical movement. The aim here is to maintain and regulate edge pressure throughout the turn, rather than having big increases and decreases.
- ▶ Work through the same concepts with a down unweighted or retraction movement pattern to provide options and prepare for terrain changes. When ready, begin to challenge their timing and ability to regulate pressure with changes in pitch and fall line. Focus on manipulating the side-cut to adjust turn size and shape, rather than skidding the board.





## TECHNICAL DESCRIPTION

### LATERAL & VERTICAL

The same lateral and vertical positioning required for advanced angulation should be utilised here. The COM should remain fairly low and laterally close to the snowboard throughout the turn; however, it will need to move across the board at the edge change. A retraction or “cross-through” movement can be used here to allow the COM to move quickly across the board without a significant decrease of pressure. Up unweighted and down unweighted movement patterns can both be used, depending on what is required during the control and completion phases of the turn, i.e. flexing down to manage pressure or extending to build pressure.

### LONGITUDINAL

The high performance stance and advanced angulation techniques help to create a slight aft position on the board without compromising the flex or absorption in the leading knee and hip. This can be utilised to the rider’s advantage when completing turns by making small, yet powerful aft adjustments to help increase edge grip at the tail of the board.

### ROTATIONAL

Powerful rotation through the whole body is required here. This is only used as a complementary movement to the vertical and lateral movements, as the manipulation of the side-cut should create most of the steering.



## TERRAIN & CLASS HANDLING

As with all carving, morning corduroy with minimal traffic is ideal. Begin on the widest trails you can find, but ensure there is enough pitch for your students to gain speed. Without this, the high performance stance is not needed. Progress to trails with changing fall lines and undulations, but encourage scope and tactics when you do. Look out for points on the side of trails where the groomed corduroy suddenly changes to off-trail conditions and make your students aware of this. Reinforce the checking of blind spots in heelside turns.

Ensure you take the time to review your students’ equipment here. Blunt edges will make carving at this level very challenging. Highback forward lean will help maintain edge angle through the heelside. Be particularly aware of binding angles. A more neutral back foot will certainly achieve the necessary high performance stance, whereas an even duck stance is likely to put unnecessary pressure on the back knee.



## SELF REFLECTION

*“Are the snow conditions suitable for the increasing level of performance?”*

*“Are my students aware of how the side-cut can be manipulated to tighten the turn radius?”*



## EXPERIENTIAL TEACHING EXAMPLE:

In high performance carving, the focus should be on regulating and maintaining pressure, avoiding sudden increases or decreases. The analogy of pressure sensors under the feet works well here. Each sensor has a metering arm that flick and bounce when pressure is suddenly increased or decreased. The aim is to keep the metering arm in the middle and reduce flicking or bouncing as much as possible.





## DETECT & CORRECT

Student looks off-balance when speed is increased:

- ▶ Check that the equipment used is adequate and appropriately set up.
- ▶ Check for heel/toe drag as the edge angles increase.
- ▶ Remind your student that the purpose of the high performance position is to help with the increasing forces. If the speed of the riding is not sufficient enough to increase the forces acting on the rider, then there is no real need for a high performance position or advanced angulation.
- ▶ Focus on progressive edging movements using lower limbs, helping the upper body remain calm and balanced as it moves through the turn. Progressive edging will help your student to blend pressuring movements.

Student has difficulty maintaining a higher edge angle at speed:

- ▶ Focus on keeping the COM low and inside the turn.
- ▶ Reintroduce advanced angulation whilst stationary. Ensure that any use of the upper body does not move the upper body's mass over the opposing edge. This will decrease tilt and be detrimental to performance.
- ▶ Use drills that will isolate that phase of the turn where the issue is occurring and allow your student to work on a progressive blending of vertical and lateral movements to increase edge angle. As the snowboard begins to grip the snow, increase the speed used in the drills to help your student balance and explore a greater range of movement and tilt.

Student skids during the transition from the control to completion phase of the turn:

- ▶ If your student is down unweighting, introduce an up unweighted turn as an option. This promotes movement down into a low stable position moving through the student's problem area.
- ▶ In a closed turn, redirect your student's line of sight through the turn and across the hill to help them direct their mass in that direction.
- ▶ Ensure that any adapted stance positions (e.g. advanced angulation) do not have an inefficient effect of excessive pivot or twist on the board.
- ▶ Remember that every student has an individual level of flexibility and it is possible that an adapted stance in one student with no inefficiencies arising can still create inefficiencies in another less flexible students.

Student struggles to create a more closed turn shape at higher speeds:

- ▶ Encourage progressive flexion/extension movements, blended with progressive edging to continually manipulate the side-cut. The vertical range is not the important thing here, it is timing that counts.
- ▶ Try increasing the edge angle of the board at the tail through the completion phase, by pulling the toes on the back foot up slightly on the heelside and driving the back knee towards the snow more on the toeside. The hips will need to be slightly aft to achieve this.
- ▶ No matter what turn type your student uses, encourage them to look across the slope in the direction they intend to travel.

## 21

Advanced  
FreestyleIN THIS CHAPTER WE  
WILL EXPLORE...

A wider look at freestyle both in and out of the park, with a view to develop versatility and creative riding. This chapter shows a selection of tricks that are commonly performed at an advanced level and can be categorised into all-mountain, jumps, boxes/rails and halfpipe riding.

## ALL-MOUNTAIN FREESTYLE

BUTTERS



FRONTSIDE &amp; BACKSIDE 360S



HARDWAYS SPINS



DROPS



## PARK JUMPS

ADVANCED AERIAL AWARENESS



EDGED TAKEOFFS



180S (ALL DIRECTIONS)



360S (ALL DIRECTIONS)



## BOXES &amp; RAILS

PRESSES



BOARDSLIDES



FRONTBOARDS



FRONTSIDE &amp; BACKSIDE ENTRIES



50-50S WITH SPINS IN &amp; OUT



## HALFPIPE

INTRO TO PIPE



DROPPING IN



FRONTSIDE &amp; BACKSIDE AIRS



360S &amp; ALLYOOPS



## ALL-MOUNTAIN: BUTTERS



### WHAT, WHY, HOW

A playful style of riding involving a combination of pressing and spinning on, often in the absence of terrain park features.

To have as much fun as possible on flatter, groomed terrain.

360 tail butter:

- ▶ With a mellow approach speed either down or across the slope on the heel edge, pressure the tail and turn whole body in a frontside direction.
- ▶ Allow the upper body to continue to spin frontside and pull the leading heel uphill.
- ▶ Keep looking uphill over the leading shoulder as the tail begins to point downhill.
- ▶ Keep the board in a tail press and subtly change edges in the fall line to the toe edge.
- ▶ Continue to turn the shoulders in a frontside direction and look downhill over the lead shoulder.
- ▶ Allow the hips and leading heel to complete the spin and catch up with the upper body.
- ▶ Release the press to complete the trick or build by adding more rotation, a transfer to a new press or even pop out.
- ▶ Try this butter in a backside variation or even switch to increase versatility.



### Frontside nose roll 180-out:

- ▶ Ensure that the nose roll and switch backside 180 (See Exploring Freestyle, Chapter 17) are solid as a baseline to building this new progression. A quick refresh of each may be needed.
- ▶ Bring the two tricks together with a forwards nose roll, riding away switch moving the hips aft into a switch tail press. Allow the upper body to continue to turn and pop off the back foot into a switch backside 180.
- ▶ For the complete trick, as the nose roll is released use this rotational momentum to spin the switch backside 180 when popping out of the press. Explain where to look throughout the trick to aid balance.
- ▶ This trick can be done in backside variations, when riding switch and even with hardways takeoffs.

### Backside 180 to press 180-out:

- ▶ Ensure the the backside 180, switch tail press and switch frontside 180 (See Exploring Freestyle, Chapter 17) are solid as a baseline to building this new progression. A quick refresh of each may be needed.
- ▶ Bring the three tricks together in a single traverse by doing a backside 180, ride away switch and move the hips aft into a switch tail press. Allow the upper body to continue to turn in the switch frontside direction and pop off the back foot to release the switch frontside 180.
- ▶ For the complete trick, as the backside 180 roll is released use this rotational momentum to spin the switch frontside 180 when popping out of the press. Explain where to look throughout the trick to aid balance.
- ▶ This trick can be done in frontside variations, when riding switch and in hardways variations.



## TECHNICAL DESCRIPTION

### VERTICAL & LONGITUDINAL

During butter tricks, it's key to be able to blend vertical and longitudinal movements. The COM will move fore and aft and up and down as a result of precise flexion and extension movements in the ankles, knees and hips. This can be developed through mileage and often range of these movements needs to be explored to flex the board, create/hold/release presses and utilise rebound when required.

### LATERAL

Edge awareness is key throughout butters and requires constant fine tuning movements with the ankles, knees and hips. This will allow the rider to keep the COM over the uphill edge when required and also transition over a flat base through parts of the tricks to allow free flowing tricks.

### ROTATIONAL

Rotational movements will involve the whole body. Depending on the trick the upper body can be used to generate power and can be separated from the lower body to help create and maintain rotational momentum.



## TERRAIN & CLASS HANDLING

Choose terrain that will help keep the riding speed relatively slow and also provides enough width for the space to use traversing tasks. If using traverses to build butters, ensure that students are spotting for each other and checking their blind spots frequently. With a range of abilities and stances, be sure to offer options for regulars and goofyfs as well as adequately challenging butter tricks to keep interest up without taking away from the ability to achieve the butter.



## SELF REFLECTION

*“Did I choose an easy enough butter to build from as the lesson progresses?”*

*“Are my students capable of performing all the ingredient tricks separately before trying to perform the complete trick?”*

*“Are the tasks I’m using to build my progression relevant to the butter trick?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Your students like to dance and you liken buttering to dancing on your snowboard. Dance moves involve balancing over one leg, spinning around, transferring weight to the other and also balancing over both feet when desired. This can help students not only move in a way beneficial to the trick but also to visualise the moves they need to make to perform the right dance combo / butter trick.



## DETECT & CORRECT

Student is unable to maintain flex in the board in butters:

- ▶ Ride slower to begin with to ensure that fear does not become an issue.
- ▶ Review how to move the COM longitudinally while maintaining flexion in both legs.
- ▶ Encourage students to move their hips further vertically downwards and fore/aft towards the nose/tail as desired.
- ▶ Spend time learning about the board’s flex and rebound properties to understand how far the COM needs to move to maintain flex.

Student struggles to keep rotational momentum over a flexed board:

- ▶ Review how to use pre-wind to store and release rotational energy into a trick.
- ▶ Focus on leading rotational butters with the head and eyeline to avoid the spin stalling mid-trick.
- ▶ Encourage the use of a larger range of rotational movement and also more powerful application of those movements.
- ▶ Keep the snowboard as flat as possible to ensure that tilt or twist does not create too much grip which will slow rotational momentum.

## ALL-MOUNTAIN: FRONTSIDE & BACKSIDE 360S



### WHAT, WHY, HOW

A full 360 degree rotation in the air, taking off and landing in the same riding direction.

A natural progression from 180s and often at the top of people's trick list.

- ▶ On flat ground with the board off, explain the timing of rotational movements. Allow the upper body to lead the first 270 and the lower body to complete the spin.
- ▶ Use a bank hit on the side of the run or similar suitable slope. Approach in a flexed, pre-wound position so the student can ride up, extend to create pop at takeoff and do an allyoop frontside 180, riding in on the heel edge and out forwards on the toe edge for frontside 360s and riding in on the toe edge and out forwards on the heel edge for backside 360s.
- ▶ Then, by increasing the power and range of the upper and lower body separation, lessen the angle turned up the hill and spin more of the trick in the air. During the trick, tighten the core and suck the knees towards the chest. Absorb the landing on the opposite edge to takeoff, and slide the board around if under-rotated.
- ▶ When the student can spin close to a full frontside/backside 360, they can take it to a feature that is more across fall line, like a cut-out where you land pointing in a similar direction to the takeoff.
- ▶ Once the movements for either frontside or backside 360s are blending well, develop the trick by trying it off cat tracks and land on a down slope or even a hit down the fall line.



### TECHNICAL DESCRIPTION

#### ROTATIONAL

The spin is led with the head and shoulders for the first 270, then the lower body follows and rotates past the upper body finishing off the last 90 degrees to land. A greater amount of separation and rotational power is needed than in a 180.

#### LATERAL

For frontside 360s, slight pressure to lock-in the heel edge during takeoff to help avoid pre-spin (skidding the snowboard on takeoff). Landing on the toe edge will help to stop over-rotation and edge catches. For backside 360s, slight pressure on the toe edge during takeoff will help the spin. Landing flat base or with slight pressure on the heel edge will help stop over-rotation and edge catches.

## VERTICAL

Work on retracting the legs towards the COM to give the snowboard time to rotate. Focus on flexing and extending the ankles, knees, hips and lower spine. The rider must hold their knees retracted while rotating past the point where they would extend to land in a 180.

## LONGITUDINAL

A centred stance is the key to landing on both feet. Some riders may find pressuring the tail slightly during takeoff will help.



## TERRAIN & CLASS HANDLING

Begin on trails that have natural banks on the side, then progress onto bank cut-outs before going into the park. Ensure that all students know which spin direction is best for particular cut-outs, then focus on finding features that cater to their individual preferences, be it frontside or backside spins.



## SELF REFLECTION

*“Can my students perform all four 180s cleanly before progressing to 360s?”*  
*“Am I building on my students’ strongest and preferred direction of spin?”*





## ENVIRONMENTAL TEACHING EXAMPLE:

Use visual markers to help students know where to look, or where the nose of their board needs to point towards. This helps with the range of rotation needed for 360s and is particularly useful when leading the first 270 degrees of rotation with the upper body, but rotating the lower body for the last 90.



## DETECT & CORRECT

Student lacks rotation when spinning:

- ▶ Ensure the rotation is released as your student leaves the lip and not before. A skidded takeoff creates friction, reducing the rider's travelling speed and the power of their initial rotation.
- ▶ Focus on tightening of the core muscles to aid spin.
- ▶ Hold the knees retracted for longer when in the air.
- ▶ In backside 360s, focus on looking for the landing early during the spin.
- ▶ In frontside 360s, focus on a clean edge takeoff (i.e. not skidding) so they have a stable platform from which to release the rotation.

Student over-rotates on landing:

- ▶ Reinforce using a slight amount of edge to aid a stable landing.
- ▶ In backside 360s, have your students begin to open up as soon as they can see the landing. They can do this by gently extending their legs and spreading out their arms to slow down the rotation of the upper body. This will allow more time to rotate the lower body and complete the spin.
- ▶ In frontside 360s, after leaving the lip and viewing the landing, encourage your student to turn their head and look back towards the takeoff. As they see the landing beneath them, have them open up by gently extending their legs and spreading out their arms to slow down the rotation. This will provide more time to rotate the lower body and complete the spin.
- ▶ When your student develops more air and edge awareness, encourage them to land on a slight edge, to help stop their rotation.



## ALL-MOUNTAIN: HARDWAYS SPINS



### WHAT, WHY, HOW

Spinning frontside off the toe edge and backside off the heel edge.

To increase your bag of tricks and options at takeoff, and works towards spinning in the pipe.

- ▶ Use frontside and backside 180 progressions (Chapter 17) for progression ideas. For hardways frontside 180s, ensure that the toe edge is used on approach and takeoff. For hardways backside 180s, ensure that the heel edge is used on approach and takeoff.
- ▶ To begin with, it will help to utilise a larger range of pre-wind, focus on pop from both legs together and retraction of the legs in the air.
- ▶ Once comfortable performing hardways 180s in traverses, progress into toe-to-toe and heel-to-heel turns, where the rider takes off and lands on the same edge.
- ▶ When comfortable with 180s and when students can time a smooth release of pop and spin from takeoff, progress onto hardways 360s by adding more power for the release of the trick at takeoff.



### TECHNICAL DESCRIPTION

#### VERTICAL

Flexion and extension movements should be kept as equal as possible to ensure that stability is kept at takeoff and the board is kept level when moving into the trick zone. To create an appropriate amount of pop on the heel edge, focus on the amount of power that can be used through the knees and hips when extending.

#### LATERAL

Use of the ankles in hardways spins is key for efficient takeoffs to ensure a platform can be maintained to pop from. Over time, edge awareness will develop and the ankles will continue to be used to make adjustments to the edge angle when needed.

#### LONGITUDINAL

A centred stance is beneficial for stability throughout the trick. When spinning backside off the heels, using a nollie may help with pop initially but it can lead to negative riding habits later on.

#### ROTATIONAL

Rotational movements with the upper body should be used for pre-wind and to generate momentum for the spin. The lower body will often rotate past the upper body when committing to a full toe-to-toe or heel-to-heel spin.



## TERRAIN & CLASS HANDLING

Take advantage of terrain that is comfortable for your students when introducing the hardways rotations. The same side hits, cut-outs and natural features can be used to develop hardways rotations. Consistent snow conditions should be utilised when first attempting this. Particularly soft snow will make it challenging to pop and icy snow will make landings much harder.



## SELF REFLECTION

*“Is my student creating enough of a platform with the side-cut to jump from?”*

*“Does my student understand clearly which way to spin from each edge?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

When linking toe-to-toes or heel-to-heels together, draw an obvious line in the snow, directly down the fall line in the middle of the trail. Try timing the pop and retraction to jump over the line and avoid touching it with the board. Repeat this, but turn the line into a small ridge of snow to build on the retraction in the air.





## DETECT & CORRECT

Student loses edge grip and slips at takeoff (common in a hardways backside spin):

- ▶ Review use of the side-cut to create grip and practise hips if required to build kinesthetic awareness of edge grip in the feet and lower legs.
- ▶ Practise a hardways pre-wound body position in a traverse to ensure grip can be maintained.
- ▶ Focus on maintaining tilt when releasing rotational pre-wind so the board does not flatten and slip.

Student under-rotates the spin:

- ▶ Remain longitudinally centred and focus on even use of flexion and extension in both legs throughout the complete trick.
- ▶ Focus on the timing of the release of vertical and rotational movements together.
- ▶ Use a larger range of pre-wind with a more powerful release to create more rotational momentum.

## ALL-MOUNTAIN: DROPS



## WHAT, WHY, HOW

Hitting natural lips and riding off drops, cat tracks, rocks, logs and anything else you can send it off.

To get air without man-made or park features.

- ▶ Check for comfort in the air with ollies off rollers at speed, straight airs on small jumps or even cut-outs.
- ▶ Discuss how to scope drops, how to judge the approach speed and how to recognise if a landing is too flat having the potential to cause injury.
- ▶ Explain the characteristics of a drop. Depending on the drop, approach speed can be slow or fast but speed will always increase after landing.
- ▶ Use suitable terrain changes, e.g. cat tracks with steeper down slopes off the side to ride off. Practise compact body positions in the air after takeoff, absorbing the landing and riding away looking in the direction of travel.
- ▶ Develop this by choosing terrain that has ungroomed or variable runouts. As confidence builds, increase riding speed to get more air and to gain mileage riding ungroomed/variable terrain after landing.
- ▶ Develop further by explaining where to look and how to identify areas to slow down and control speed after landing, based on personal riding preferences and which edge they would prefer to make their first turn.
- ▶ Find a drop with options to progressively go bigger, scope it, identify the runout, commit and send it. Develop by adding a grab, tweak or trying a larger line on the same drop.



## TECHNICAL DESCRIPTION

### VERTICAL & LONGITUDINAL

When riding drops, a slightly aft position can be beneficial. The hips will be slightly aft of centre, maintaining flexion in the leading leg. Extension movements will be subtle from the ankles, knees and hips depending on the drop and approach speed. Using an ollie on takeoff will help the rider to tuck their knees up in the air. Flexion movements will be used in the ankles, knees, hips and curvature of the spine to cope with absorbing the landing of a drop. If needed, extension of the back leg to prepare for landing can help absorb pressure on flatter or powdery landings.



### LATERAL

Small adjustments will be made in the ankles to control the amount of tilt during approach and takeoff, often dictated by the natural slope. Ideally, a laterally neutral position will be maintained at takeoff to provide as much stability as possible.

### ROTATIONAL

Rotational movements should be kept to a minimum to promote stability. Stance adjustments can be made rotationally (i.e. high performance stance) to allow for a larger range of other movements.



## TERRAIN & CLASS HANDLING

Fear management is a big part of riding drops so ensure that students are choosing to take on drops within their ability levels. Intervene when necessary to suggest more appropriate drops or better yet, additional tasks to ride that can prepare them for that drop they have been eyeing up from the lift.

When riding drops, it's essential to scope the terrain to assess the landing for any rocks or debris that may cause injury. This is especially important with fresh snow that may have hidden natural hazards. A visual assessment of the landing can provide further insight into line choice, expectations of landing and the approach speed needed to clear any hidden surprises.



## SELF REFLECTION

*“Are my students capable of riding away from the drop that we are scoping?”*  
*“Is fear blocking their ability to commit and, if so, what other suitable terrain could I build confidence on first?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Most people have at some point in their life, jumped from a fence/wall/ledge. Draw from this simple experience relating the drop on a snowboard by highlighting how to absorb a landing and why line of sight is so important to spot the landing and look forwards to where you're moving next.



## DETECT & CORRECT

Student lands and falls over the nose:

- ▶ Focus on allowing the back leg to flex more than the front leg when landing to help the COM move slightly towards the tail.
- ▶ Encourage students to look where they want to ride out towards as opposed to the ground near the nose of the board.

Student lands on the heel edge with the board across the slope:

- ▶ Choose a smaller drop, or build confidence on other suitable terrain changes to build confidence in the ability to land.
- ▶ Practise straight running at increasing speeds over ungroomed/variable terrain to build confidence in the run out.

Student nose dives off the drop:

- ▶ Focus on subtle, smooth extension movements from the legs at takeoff.
- ▶ Assess the approach speed being used to ensure that there is sufficient speed for the board to leave the drop cleanly and level.

Student becomes very extended in the air:

- ▶ Ensure that there is a small pop or ollie during takeoff. This will help them to become more compact in the air.
- ▶ Reduce the size of the drop and increase the size of their ollie.
- ▶ Bring the board up towards the COM, rather than raising the hands.



Rider: Juliãne Bray  
Photo: Keith Stubbs

## PARK JUMPS: ADVANCED AERIAL AWARENESS



### WHAT, WHY, HOW

Getting comfortable being able to move the body whilst in the air.

To develop the basis of grabs and be able to move in the air by choice.

- ▶ Warm up with a straight air to feel how much airtime there is in the air.
- ▶ Try pumping both legs in the air to build towards grabs.
- ▶ Extend the back/front leg and flex the other leg to prepare for a nose/tail grab.
- ▶ During a frontside shifty, retract the legs to prepare for a stalefish.
- ▶ During a backside shifty, flex the back leg and extend the front to prepare for an indy nosebone.
- ▶ Explore any combination or variation of the above, plus the many more positions available to prepare for any grab desired.
- ▶ Take the same movements to bigger jumps, ensuring that speed is adjusted to suit.



### TECHNICAL DESCRIPTION

#### VERTICAL & LONGITUDINAL

All flexion, extension and combinations to create independent movements should be focused in the ankles, knees and hips underneath a stable upper body. Larger range of movement should be encouraged.

#### LATERAL

Focus on neutral lateral alignment to allow the base of the board to remain flat throughout the trick.

#### ROTATIONAL

Focus on rotational alignment associated with a more high performance stance for maneuvers where the board remains aligned with the fall line. Allow the upper and lower body to separate when counter-rotation is used in maneuvers such as shifties.





## TERRAIN & CLASS HANDLING

Ensure everyone is clear on smart style and how to call their drop for your chosen jump. It's important that students feel comfortable with the feature being ridden to progress. Focus on creating a group culture that looks out for each other in the park by ensuring that the rider who has just dropped is clear of the landing before the next rider calls their drop.



## SELF REFLECTION

*"Are my students stable and consistent performing a straight air to be able to move in the air?"*

*"Does the task I'm using benefit the trick that they are working towards?"*



## EXPERIENTIAL TEACHING EXAMPLE:

For those that have used a trampoline before, moving in the air can be quite similar; it's important to take off the trampoline first before moving into a position in the air and keep the eyes up for stability while bouncing. It's also easy to recognise that a little more airtime can provide a little more time to make movements in the air.



## DETECT & CORRECT

Student catches tail on the lip of the jump performing a shifty (common for frontside shifty):

- ▶ Encourage patience and focus separating the takeoff and trick zones to ensure the board pivots after it has left the lip.
- ▶ Focus on a small range of rotational separation in the air to begin with to create the trick.

Student waves their hands around and loses balance when attempting awareness movements on bigger jumps:

- ▶ Use a "follow me" approach to ensure the rider is comfortable with the speed needed.
- ▶ Focus on keeping the hands low and smoothly retracting the legs in the air before moving out of this position.
- ▶ Ensure all awareness-based movements are done through the lower body, keeping the upper body quiet and relaxed.

## PARK JUMPS: GRABS



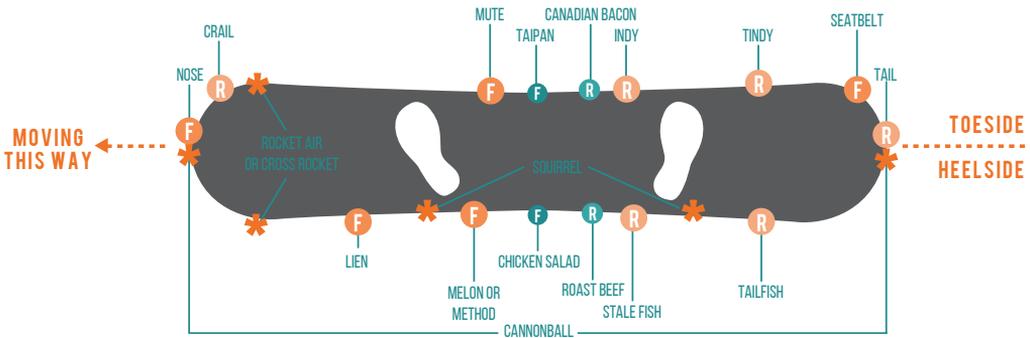
### WHAT, WHY, HOW

Grabbing the board in the air.

Grabbing the board can add balance in the air, show control and is a way to express individual style through different variations.

- ▶ Build from advanced aerial awareness with students' natural preference.
- ▶ Focus on the movements from aerial awareness maneuvers to get the body position in the easiest position to then grab the board.
- ▶ Explain where to look and where to place the arms/hands to meet the board for the grab.
- ▶ Consider explanations that help to bring parts of the lower body towards parts of the upper body, for example lifting the front knee towards the back shoulder for a melon grab.
- ▶ Develop by changing jump size or learning more grabs to increase the bag of tricks available to the student.

- R** REAR HAND
- F** FRONT HAND
- \*** BOTH HANDS
- R** REAR HAND THROUGH LEGS
- F** FRONT HAND THROUGH LEGS



### TECHNICAL DESCRIPTION

#### VERTICAL

Depending on the grab, vertical movements will be used in the form of flexion and extension of both legs together, or if necessary, independently.

#### LATERAL, LONGITUDINAL & ROTATIONAL

Use an appropriate range of movement in each direction to achieve the desired grab, focusing on where to look throughout the trick from approach to landing.



## TERRAIN & CLASS HANDLING

Use features that are familiar and comfortable with the student. Park Smart should be adhered to at all times - make a plan so that students begin to think about what they are doing instead of just hoping for the best. If there is no suitable jump then get creative with looking for terrain changes such as cut-outs and natural hips/banks that can still provide enough airtime to hold their grab, not just touch the board.



## SELF REFLECTION

*“Does my student have an injury or physical block in their movement that would prevent them from performing a specific grab?”*

*“Is my student able to get enough air to even attempt their grab safely?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Games such as SKATE or SHRED, where riders take it in turn to call a different grab for others to try are a great way to experience new grabs that students haven't tried before, instead of always trying their standard safety grabs.



## DETECT & CORRECT

Student leans over or reaches down for the grab, losing balance in the air:

- ▶ Review aerial awareness and movements that build towards the grab.
- ▶ Reduce the size of the feature to increase comfort levels.
- ▶ Encourage more pop as they take off to help retract the legs in the air.

Student tries to grab too early, losing balance at takeoff:

- ▶ Focus on separating the takeoff and trick zones so the movement for a grab is not rushed.
- ▶ Reduce the size of the feature to increase comfort levels.

## PARK JUMPS: EDGED TAKEOFFS



### WHAT, WHY, HOW

Using the edges of the board during the approach and takeoff zone.

To prepare for spinning from takeoff on park features.

- ▶ Outside the park, use edging tasks in the fall line focusing on efficient angulation and mellow direction change. Develop if needed by adding hops to prepare for takeoffs and landings.
- ▶ Inside the park, establish how long the approach and takeoff transition is for the feature being ridden.
- ▶ Explain the path of an edged takeoff for heelside and toeside. Start with a mellow edge set for takeoff, retract the legs in the air and encourage a flat base landing to begin with, moving to the opposite edge after landing.
- ▶ Build on this with an explanation of a set-up turn for spinning off park jumps. Focus on leaving the lip of the jump directly down the fall line.
- ▶ Develop edge awareness by landing on the opposite edge to takeoff.



### TECHNICAL DESCRIPTION

#### LATERAL & VERTICAL

Efficient blending of these two movements is required for stability, primarily at takeoff. Balance over the edge for approach and takeoff is regulated through angulation, starting at board level with the ankles and knees on the toe edge and knees and hips on the heel edge. The edge angle of the board should be kept to a minimum. Flexion and extension should be used smoothly and evenly through both legs together at takeoff and landing to promote stability.

#### LONGITUDINAL & ROTATIONAL

Neutral alignment within these two movements will promote stability at takeoff and into the trick zone.



### TERRAIN & CLASS HANDLING

With tasks outside of the park, use mellow terrain or natural features to practise taking off on an edge. Preferably, these natural features will have a flat camber to them, similar to that of a park jump. Inside the park, continue to use jumps well within your students' comfort levels. With edged takeoffs, focus on starting small to ensure that students can build confidence with this new skill set before choosing a larger feature.



### SELF REFLECTION

- “Does my student have the edge awareness to be learning this?”*
- “Is my student losing grip or pivoting too much off the lip?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

With the key focus of these tasks involving the use of edges, it's obvious that tracks in the snow are a valuable tool to learn from. Tracks can be observed in the approach, takeoff and landing zones to help generate awareness.



## DETECT & CORRECT

Student's snowboard turns 90 degrees in the air:

- ▶ Review the use of the side-cut to create a direction change in the fall line focusing on a rotationally neutral upper body.
- ▶ Practise releasing the hop with a rotationally quiet and stable upper body.

Student loses edge and slips at takeoff (typically happens on heelside):

- ▶ Practise hopping off the heel edge in traverse if necessary to build muscle memory in the ankles to maintain an edge platform. Develop this by hopping off the heel edge when riding down the fall line.
- ▶ Focus on keeping a stable and quiet upper body whilst using extension movements in the ankles, knees and hips (toe edge) and knees and hips with active dorsi flexion of the ankle (heel edge).

## PARK JUMPS: 180S



## WHAT, WHY, HOW

Spinning frontside and backside 180s on a park jump.

To bring 180s from outside to inside the park.

- ▶ Outside the park, ride edged takeoffs in the fall line and practise 180s based on preference (forwards frontside, forwards backside, switch frontside and switch backside), depending on the preferred spin direction and whether they would like to takeoff or land switch.
- ▶ Use timing tasks to practise the approach and takeoff relative to an imaginary lip of a jump. Use drawings/lines or obstacles/snowballs/gloves as tools to create the imaginary lip.
- ▶ Inside the park, ensure that appropriate speed is taken to make the sweet spot in the landing. Refresh the concept of a safety edge in the event of under-rotation. Warm up with a few straight airs before spinning.
- ▶ Switch straight airs (or just rolling over the jump switch) could be used to develop the takeoff or landing, depending which 180s will be attempted.
- ▶ Explain what to expect for the first attempt of the trick, including where to look and commit.
- ▶ Add versatility by doing 180s in the four different directions or by adding grabs to 180 spins that are already comfortable.



## TECHNICAL DESCRIPTION

### VERTICAL & ROTATIONAL

Timing of vertical extension and rotational release relative to the lip of the jump is key. Pre-wind will be minimal in a 180 but can be used to help with timing. When releasing the pre-wound position (the legs should be smoothly extending as the upper body is rotating into the spin), the board will ideally leave the lip of the jump as the upper body passes into an aligned position with the board.

### LATERAL

Focus on smooth movements in the ankles and knees for a backside 180 and knees and hips for a frontside 180 to replicate an edged takeoff. Ensure that the upper body is kept stacked over the hips and over the board to minimise excessive directional drift off the lip of the jump.

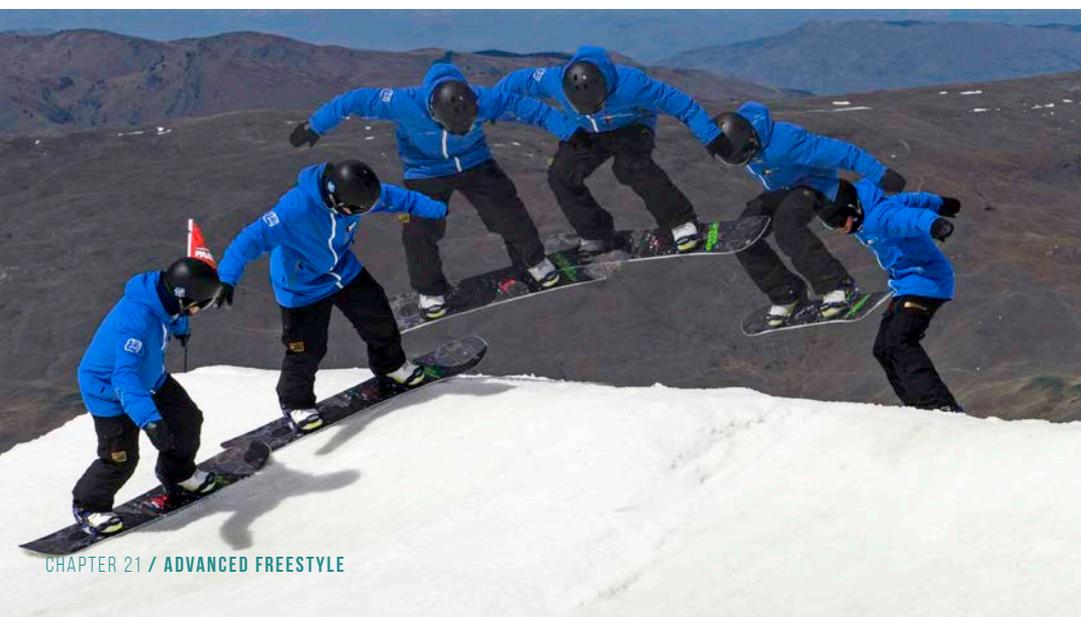
### LONGITUDINAL

A longitudinally centred position is key to promote stability at takeoff and into the trick zone.



## TERRAIN & CLASS HANDLING

For tasks outside the park, use mellow terrain that is consistent and preferably with low traffic. Inside the park, monitor emotional changes in students when transitioning into the park environment. Take it easy to ensure that a calm approach is taken to all aspects of the first attempt, especially the pace at which you deliver information. Set the tone for a lesson that feeds progression and the desire to try new tricks.





## SELF REFLECTION

*“Do my students understand the benefits of improving their switch riding and are they prepared to practise?”*

*“Is my student able to perform 180s outside the park, down the fall line with a clean edge?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Mark out where the approach zone changes to the takeoff zone and place something level with this to the side of the jump. Have your students adjust their approach line so that they are riding onto their takeoff edge as they enter the takeoff zone. Then have them focus on timing their pop as the nose of the board leaves the lip of the jump.



## DETECT & CORRECT

Student's snowboard turns early/too much on the lip of the jump (common in frontside 180s):

- ▶ Focus on the timing of the release of the trick to make sure that rotation is not used too early.
- ▶ Ensure the setup turn is a mellow, edged/carved, open turn to make sure that more pivot is not used in a deeper, skidded, more closed turn.

Student under rotates the spin, landing with the board at 90 degrees across the landing:

- ▶ Review the use of pre-wind to help with rotational momentum into the trick.
- ▶ Encourage use of more power in the rotational movement direction when releasing the trick.
- ▶ Focus on tightening the core muscles to keep the upper and lower body turning more as a single unit.
- ▶ Review where to look to promote smooth, continued rotation from take off through the trick zone.

Student has trouble riding into or out of a trick switch:

- ▶ Review elements of the linked turns progression in switch to increase confidence riding switch.
- ▶ Reinforce movements fore and aft to aid initiation with the new front foot. Challenge your student with switch flat base tasks including hops to develop the movements required to take off and land in their switch direction. Develop if needed with switch straight airs.
- ▶ Ensure the size of the feature is suitable for their comfort and skill level.

## PARK JUMPS: 360S



### WHAT, WHY, HOW

Spinning frontside and backside 360s on a park jump.

A natural progression from spinning 180s and an essential trick for advanced park riding.

- ▶ Outside the park, ride frontside or backside 360s based on preference and desire to take to a park jump. Develop this by riding the trick on features with a flatter takeoff, such as hits down the fall line or off cat tracks.
- ▶ Hopped 270-slide-arounds or full 360s can be practised in the fall line from an edged takeoff, if confidence and athleticism allows. Remind students that the upper body will lead the first 270 of the spin and the lower body will complete the spin.
- ▶ Refresh the concept of a safety edge in the event of under-rotation. Inside the park, ensure that appropriate speed is taken to make the sweet spot in the landing. Warm up with 180s if necessary to help dial the speed in and gain consistency with the set-up turn. Use the same or a similar set-up turn to the 180 and add more rotational power when releasing the trick to perform the 360.
- ▶ Explain what to expect for the first attempt of the trick, including where to look and commit.
- ▶ Add versatility and develop by doing 360s in the four different directions (forwards frontside, forwards backside, switch frontside and switch backside) or by adding grabs to 360 spins that are already comfortable.



### TECHNICAL DESCRIPTION

#### VERTICAL & ROTATIONAL

Similarly to a 180 on a park jump, timing of vertical extension and rotational release relative to the lip of the jump is key. Pre-wind can be similar in range of movement to a 180 (slightly more if needed) but will be released with more power. When releasing the pre-wind (the legs should be smoothly extending as the upper body is rotating into the spin), the board will ideally leave the lip of the jump as the upper body passes into a rotationally aligned position with the board. The upper body and head will lead rotationally into the spin for the first 270 and the lower body will then continue to spin to complete the trick.

#### LATERAL

Focus on smooth movements in the ankles and knees for a backside 360 and knees and hips for a frontside 360 to replicate a similar edge angle to that of an edged take off and backside/frontside 180. Ensure that the upper body is kept stacked over the hips and over the board to minimise excessive directional drift off the lip of the jump.

## LONGITUDINAL

A longitudinally centred position is key to promote stability at takeoff and into the trick zone.



## TERRAIN & CLASS HANDLING

For tasks outside the park, use mellow terrain that is consistent and preferably with low traffic. Inside the park, begin on a similar feature in size and shape to that used for 180s. Hiking the feature will allow more opportunities to practise the spin; however, it can tire students out more quickly. Continue to build on how to be Park Smart. Take opportunities to place ownership on students with their choices, intervene when necessary and provide feedback on those choices when possible.



## SELF REFLECTION

*“Can my student perform a relatively level/flat spin on cut-outs and natural hits before heading to a park jump?”*

*“Can my student keep a mellow, edged/carved, open setup turn to leave the lip straight at takeoff for a 360?”*





## EXPERIENTIAL TEACHING EXAMPLE:

Spending time with the board off is extremely useful when learning 360s off park jumps. Have students visualise riding through transition between the approach and takeoff, rolling onto their edge and timing the pop and pre-wind release to suit. Use markers to identify where their upper body rotation should stop at 270 and the lower body should continue for the last 90 degrees.



## DETECT & CORRECT

Student's snowboard turns early/too much on the lip of the jump (common in frontside 360s):

- ▶ Focus on the timing of the release of the trick to make sure that rotation is not used too early.
- ▶ Ensure the setup turn is a mellow, edged/carved, open turn to make sure that more pivot is not used in a deeper, skidded, more closed turn.
- ▶ Practise frontside 180s to develop a cleaner edge at takeoff.

Student lacks rotation when spinning:

- ▶ Ensure the rotation is released as your student leaves the lip and not before. A skidded takeoff creates friction, reducing the rider's travelling speed and the power of their initial rotation.
- ▶ Focus on tightening of the core muscles to aid spin.
- ▶ Hold the knees retracted for longer when in the air.
- ▶ In backside 360s, focus on looking for the landing right from takeoff.
- ▶ In frontside 360s, focus on a clean edge takeoff (i.e. not skidding) so they have a stable platform from which to release the rotation.

Student over-rotates on landing:

- ▶ Reinforce using a slight amount of edge to aid a stable landing.
- ▶ In backside 360s, have your students begin to open up as soon as they can see the landing. They can do this by gently extending their legs and spreading out their arms to slow down the rotation of their upperbody. This will allow more time to rotate the lowerbody and complete the spin.
- ▶ In frontside 360s, after leaving the lip and viewing the landing, encourage your student to turn their head and look back towards the takeoff. As they see the landing beneath them, have them open up by gently extending their legs and spreading out their arms to slow down the rotation. This will provide more time to rotate the lowerbody and complete the spin. When your student develops more air and edge awareness, encourage them to land on a slight edge, to help stop their rotation.

## BOXES & RAILS: PRESSES

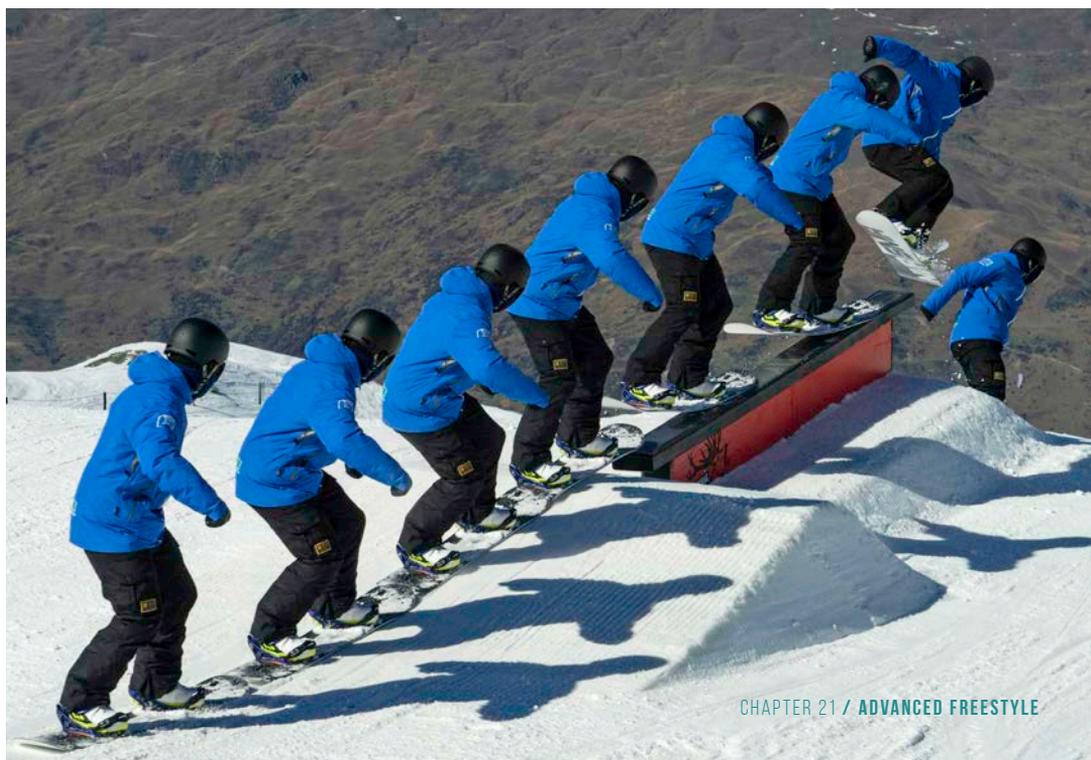


### WHAT, WHY, HOW

Rider lands in and holds a nose or tail press for the duration of a feature.

Presses add style to box and rail riding, and are a natural trick to develop from a 50-50.

- ▶ Outside the park, practise moving from a strong, centred stance to the nose and tail of the snowboard. Explore the natural flex of the board, highlight the differences between just lifting up the tail and efficiently pressuring the nose. Develop by hopping off both feet into a nose/tail press, moving the board underneath the belly button or zipper line of the jacket.
- ▶ Inside the park, on a suitable feature gradually work towards hopping into a nose or tail press. Within the trick phase of a 50-50, create the nose press earlier and earlier. Commit to hopping into the press at the beginning of the feature.
- ▶ To develop, try to ollie in and nollie out, nollie in and nollie out, or even spin in/spin out of the trick.
- ▶ To tail press, use the above tasks with the COM pressuring the tail of the snowboard.





## TECHNICAL DESCRIPTION

### VERTICAL & LONGITUDINAL

To flex the snowboard, the rider must shift the COM over the rear or leading foot. Apply pressure to the outside of the leading binding by moving the hips fore and pushing the knee towards the nose for a nose press. A soft ankle and knee in the leading leg will help with landing in the press and avoid tail tapping unintentionally. Flexing these joints along with the hip joint should also be used to help maintain the press. Apply pressure to the outside of the rear binding by moving the hips aft and down towards to tail. A soft ankle and knee in the rear leg will help with landing in the press and avoid nose tapping unintentionally. Hip flexion will likely be used also to further move the COM down and over the rear foot.

### LATERAL

Should only be used in the lower body to maintain a flat base. It's important to keep the upper body stacked over a flat board to avoid unwanted tilt.

### ROTATIONAL

Remain rotationally neutral and avoid excessive movements which may create unwanted pivot.



## TERRAIN & CLASS HANDLING

Teach presses on easy flat box features to start with, progressing as appropriate to challenge stronger students. Ensure that your group does not conflict with traffic flow within the park, focusing on appropriate timing to call a drop. Hiking features can be very useful for building kinesthetic awareness in students and should be used when possible.



## SELF REFLECTION

*“Are my students able to maintain flex over the nose/tail outside of the park?”*

*“Are my students comfortable with the feature to start moving their COM further from the middle of the board?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Sounds created by the contact of the board and the feature will help students establish the efficiency of their press. Upon landing if there are two noises: The initial landing in the press position, followed by another tap, it indicates that the board has rebounded from its pressed position into a 50-50.



## DETECT & CORRECT

Student can't land in and hold the press:

- ▶ Review how to move the COM along the board to create and hold flex in the board.
- ▶ Focus on shuffling the board fore or aft (depending on the trick) and put the foot under the COM when landing. This will promote stability over a relaxed leg, ensuring that the COM is not rebounded back to centre.

## BOXES & RAILS: BOARDSLIDES



## WHAT, WHY, HOW

The rider slides a box or rail sideways, body facing the end of the feature (technically known as a backside boardslide).

To slide a feature sideways and add to the trick bag.

Landing forwards:

- ▶ Use the movements in exploring boardslides as a baseline to build from. Outside the park, work on adjusting edge angle while in a heel edge sideslip but keeping the upper body perpendicular to the fall line. Focus students on the sensations received when the board is flatter.
- ▶ Practise the takeoff and landing in the trick zone by riding down the fall line and hopping into the heel edge speed check position. Gradually work on flattening the board to avoid unnecessary edge catches. Develop awareness of lateral balance by using small hops whilst sliding downhill in a backside boardslide body position, maintaining tension in the core.
- ▶ Practise transition from trick zone to landing by using counter-rotation to “unwind” and point the board down the fall line.
- ▶ Inside the park, review expectations for the trick and begin by entering the feature in a 50-50 before pivoting the board across the feature. Focus on using counter-rotation movements earlier in the trick zone to increase the duration of the backside boardslide.
- ▶ With confidence, develop by hopping from takeoff, counter-rotating in the air and landing in the backside boardslide on the feature. Coast off the feature in the boardslide position and “unwind” using stored core tension, in the air to prepare for the landing. Absorb the landing and ride away.

Landing switch:

- ▶ The focus shifts from use of counter-rotation to whole body rotation during the trick zone.
- ▶ Similar tasks as above can be used for a backside boardslide-out-switch. Simply, change the use of counter-rotation to instead using the whole body rotating together, with the back hand pointing at the landing as they exit the feature. This will allow the board to continue to pivot smoothly so it exits the feature in the switch direction.



## TECHNICAL DESCRIPTION

### VERTICAL & LATERAL

For many riders, learning to boardslide is a very unnatural movement. Until this point in their snowboard progression, whenever the snowboard is across the fall line it has to be on an edge. To boardslide a box or rail the snowboard must be flat. Learning to boardslide can often be harder for those with more riding experience as the edging movements are so ingrained. For this reason, lateral movements (or lack of) are the key to success in this trick. Slightly leaning forward through bending at the waist, flexing the ankles and having the rider's hands out will help the rider to stay balanced over the centre of the feet while sliding with the board sideways. This trick requires the board to pivot in the air so vertical movements are required to generate the airtime from takeoff through a quick extension of the legs. Flexing down while on the box lowers the rider's COM and helps with staying balanced over a flat base. Instructors should recognise that boardslide positions vary greatly from rider to rider, even within the instructing world. To work with this and encourage individual style it's important to understand the relationship between vertical and lateral movements. We need to know how to efficiently blend joint flexion to create a neutral lateral effect. Knowledge of this will allow us to be more specific with which joints need to flex or extend to achieve a flat base in a student with a naturally taller boardslide stance, versus a student with a naturally shorter boardslide stance. Consider this in all boardslide variations.



## LONGITUDINAL

Longitudinal movements can be used during a boardslide to adjust balance over the feature, especially when the approach did not set the student up for the most efficient entry line. This is done by moving the board fore/aft under the COM in the air before landing on the feature, or even during the trick zone to maintain stability on the feature.



## ROTATIONAL

To ride away forwards, the lower body rotates to face down the hill in order to have the snowboard slide sideways, then comes back to original position to land. The upper body counter-rotates to store the energy to bring the lower body straight again. To ride away switch, the upper and lower body rotate together throughout the trick zone to pivot the board through 180 degrees.



## TERRAIN & CLASS HANDLING

When a rider can 50-50 a variety of features with comfort and ease, teach boardslides on a smooth flat box. Ensure that your students are comfortable with the feature before attempting boardslides. Gap-on boxes help to unweight the board at takeoff, allowing it to pivot easily through the air before landing in the boardslide. Promote independent decision making within Park Smart as students gain more mileage within the park environment. As with the previous box and rail tricks, hiking features can be useful to gain quick mileage without having to spend lots of time lapping chairlifts.



## SELF REFLECTION

*“Is my student making unnecessary adjustments in their approach line and speed without realising?”*

*“Is my student able to create rotational separation over a flat base without edging?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Your student’s board is an iron and the box has a big crease down the middle of it. After the first 50-50 the crease has spread in multiple directions and the iron needs to turn sideways to smooth it out. Keep the iron (i.e. their snowboard) completely flat, yet moving steadily along smoothly.



## DETECT & CORRECT

Student slips back over the heel edge in boardslides:

- ▶ Encourage your student to feel pressure under the entire soles of their feet to ensure the base of the board is flat. Other sensations might include pressure from the boot evenly around the lower leg.
- ▶ Encourage your student to use a larger range of flexion in the hips to bring the upper body and COM laterally more on top of the board to keep it flat.
- ▶ If the park features and traffic allow, have the student stand on top of the box in a boardslide without forward momentum and focus on the sensations they are aware of when doing so.

Student rides off the feature in the boardslide and lands in a side slip:

- ▶ Encourage either the front hand or back hand (depending whether they are planning to come out forwards or switch) to remain pointing down the landing during the trick.
- ▶ Focus on a tightening of the core muscles during the trick to help create the rotation necessary when exiting the feature.

## BOXES & RAILS: FRONT BOARDS



## WHAT, WHY, HOW

Sliding a box/rail sideways, with the heel edge towards the end of the feature.

To learn a new variation and to add a timeless classic to the trick bag.

Landing forwards:

- ▶ Use the movements in exploring boardslides as a baseline to build from. Outside the park, work on adjusting edge angle while in a toe edge sideslip but keeping the upper body perpendicular to the fall line. Focus students on the sensations received when the board is flatter.
- ▶ Practise the takeoff and landing in the trick zone by riding down the fall line and hopping into the toe edge speed check position. Gradually work on flattening the board to avoid unnecessary edge catches. Develop awareness of lateral balance by using small hops whilst sliding downhill in a frontside boardslide body position, maintaining tension in the core.
- ▶ Practise transition from trick zone to landing by using counter-rotation to unwind and point the board down the fall line.
- ▶ Inside the park, review expectations for the trick and begin by entering the feature in a 50-50 before pivoting the board across the feature.
- ▶ Focus on using counter-rotation movements earlier in the trick zone to increase the duration of the backside boardslide.
- ▶ With confidence, develop by hopping from takeoff, counter-rotating in the air and landing in the frontside boardslide on the feature. Coast off the feature in the boardslide position and unwind using stored core tension, in the air to prepare for the landing. Absorb the landing and ride away.



Landing switch:

- ▶ The focus shifts from use of counter-rotation to whole body rotation during the trick zone.
- ▶ Similar tasks as above can be used for a frontside boardslide out switch. Simply, change the use of counter-rotation to instead using the whole body rotating together. This will allow the board to continue to pivot smoothly so it exits the feature in the switch direction.
- ▶ Explain the differences in where to look with this variation of boardslide compared to a backside boardslide-out-switch.



## TECHNICAL DESCRIPTION

### VERTICAL & LATERAL

Keeping a flat snowboard is key here. Feeling weight throughout the flat of the foot while on the box, plus a soft and flexed front ankle, will help this. This trick requires the board to pivot in the air so vertical movements are required to generate the airtime from takeoff through a quick extension of the legs. Flexing down while on the box lowers the rider's COM and helps with staying balanced over a flat base.

### ROTATIONAL

To ride away forwards, the lower body rotates to face down the hill in order to have the snowboard slide sideways, then comes back to original position to land. The upper body counter-rotates to store the energy to bring the lower body straight again. To ride away switch, the upper and lower body rotate together throughout the trick zone to pivot the board through 180 degrees.

## LONGITUDINAL

Aiming to have the box slide between the bindings is recommended so students can keep balance over the entire board on the feature. You may find some students naturally favour the front foot, so in this case the COM will be mostly over the front foot.



## TERRAIN & CLASS HANDLING

Generally speaking, most people will learn a standard boardslide first, then progress onto front boards. That being said, if your student is more comfortable with the idea of a front board, do not hold them back. Either way, use a box that they are familiar with already and promote independent decision making within Park Smart as students gain more mileage within the park environment.

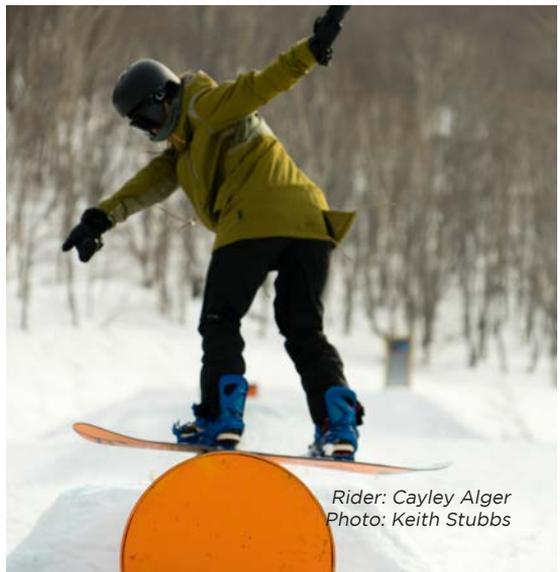


## SELF REFLECTION

*“Is my student approaching in a stance that will allow for the necessary range of movement to create the trick?”*

*“Are nerves holding my student back from performing or making them stiff in the body?”*

*“Do we need more time getting mobile on the feature before committing to a front board?”*



Rider: Cayley Alger  
Photo: Keith Stubbs



## EXPERIENTIAL TEACHING EXAMPLE:

The body position of this trick can be likened to the follow through made when throwing a Ten Pin bowling ball. The rear leg sweeps behind the front leg, the arms and shoulders open towards the direction of the bowling alley and the hips naturally flex with a low, stable COM.



## DETECT & CORRECT

Student slips out over the toe edge in frontside boardslides:

- ▶ Encourage weight centred laterally over a flat base with relaxed ankle joints as the main focus.
- ▶ If the park features and traffic allow, have the student stand on top of the box in a front board position, without forward momentum, and focus on the sensations they are aware of when doing so.
- ▶ Focus their attention on the sensation of keeping the heels down and the soles of the feet remaining flat. Increasing flexion through the hips slightly can help to balance as long as the COM remains over the board.

Student catches the heel edge in frontside boardslides:

- ▶ Encourage your student to feel pressure under the entire soles of their feet to ensure the base of the board is flat.
- ▶ Encourage your student to look for the end of the feature around the side of their body and over the nose of their board. This will promote a more laterally aligned position whilst spotting the end of the feature. Often students will become overly extended and look for the end of the feature over the lead shoulder, creating a slight lateral movement of the whole body (a large lever) towards the heel edge.

Student freezes up, unable to use their full range of counter-rotation to create the trick:

- ▶ On flat ground, explain how the vertical height of the rider can influence the range of rotational movements and counter-rotational range that can be used.
- ▶ Focus on an optimal vertical height during approach and takeoff as not to block any movements.
- ▶ Use verbal cues to encourage students to stand taller as they approach the feature.

## BOXES & RAILS: FRONTSIDE & BACKSIDE ENTRIES



### WHAT, WHY, HOW

Learning to ride side-entry features.

To be able to ride a wider variety of features in the park with side-entries.

- ▶ Outside the park, explain the difference between backside and frontside entries.
- ▶ Practise riding over a slight edge down the fall line and hopping laterally towards either the toe or heel edge, depending on the entry you are working on. To do this, lead with the shoulders and upper body, bringing the legs back under the upper body from takeoff to trick zone. Absorb the landing over a flat base and continue to ride away on a flat base. To build edge awareness and the ability to lock onto a box/rail, develop this task by using appropriate ankle dorsi or plantar flexion to create a little tilt so that the base of the board is laterally facing slightly towards the landing/feature.
- ▶ Develop timing of this edge set and hop using tracks in the snow, drawings or even bamboo poles if available. Vary the task with ollies too to develop for a wider selection of features.
- ▶ Inside the park, start small and warm up with 50-50s on a variety of box/rail features that are flat and down in pitch. Identify the easiest, or a suitable side-entry feature (box or rail) that can be used for the first attempt. Usually this will be a medium flat bar, medium tube/round bar or similar features with a down pitch and a minimal height to jump onto.
- ▶ Spend time watching others hit the feature to observe approach line and movements used to lock into the frontside 50-50 on the feature.



- ▶ Ride next to the feature to get a full visual of the approach, the lip and height of the feature. This can help provide comfort with the feature and realistic expectations of the feature itself. Further build comfort and overcome fear of landing on the feature by first hopping over the entire feature. This allows full visual of the feature passing underneath the student when in the air.
- ▶ With comfort, explain where to look throughout the entire trick and offer expectations for what it sounds like and feels like to land on metal as this can often cause surprise. Explain how to safely spill from the feature early to either side.
- ▶ Monitor student emotion and level of fear before first attempt, address Park Smart if needed and commit to the frontside 50-50.
- ▶ Develop with a variety of features, spinning out, presses and boardslides.



## TECHNICAL DESCRIPTION

### VERTICAL & LATERAL

For frontside entries, soft ankles play a key role in a balanced takeoff and being able to adjust whether dorsi or plantar flexion of the ankles are needed to lock onto the feature. Flexion is needed in the ankles, knees and hips together to move the COM lower to prepare for takeoff and also to keep the COM laterally stable over the toe edge. When extending for takeoff, the knees will provide the most range to help move the upper body laterally towards the feature so that the shoulders can lead the rest of the body onto the feature. On the feature in the trick zone, the COM is kept stable by using small adjustments to amounts of flexion/extension required in the ankles, knees and hips to help keep the board flat (on a tangent) to the feature. For backside entries, focus and effort is required to use dorsi flexion in the ankles during approach and takeoff to ensure that a stable, consistent platform is kept to push away from. Flexion is used in the knees and hips, (dorsi flexion in the ankles too) to lower the COM to prepare for takeoff and to keep the COM laterally stable over the heel edge. When extending at takeoff, use the hips and knees evenly together and allow the dorsi flexed ankles to provide the platform to push against to keep the COM moving laterally towards the heel edge. On the feature in the trick zone, the COM is kept stable by using small adjustments to amounts of flexion/extension required in the ankles, knees and hips to help keep the board flat (on a tangent) to the feature.

### LONGITUDINAL

Begin in a longitudinally centred position during approach and depending on the entry speed and height of the feature, the COM can be shifted slightly aft to allow for more of an ollie onto the feature if required.

### ROTATIONAL

Rotational movements should be kept to a minimum to avoid unwanted pivot during any zone of the complete trick.



## TERRAIN & CLASS HANDLING

Outside the park, at this level, be creative with terrain available and possible features that can be used to prepare students for a side-entry feature. A fun example is a cat track with ledges at the sides. Inside the park, choose a suitable side-entry feature (box or rail) that is either flat or has a slight down pitch. Focus attention on student emotion and levels of fear to make sensible decisions for the timing of a first attempt.



## SELF REFLECTION

*“Are my students able to ride a variety of features consistently and when they drift off a feature do they remain calm and balanced in order to ride way safely into a spill zone?”*

*“Does my student have the patience to wait for the peak of their confidence for their first attempt?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Keen cricketers will understand how to catch a cricket ball to soften the impact. In the same way the arms quickly soften to cushion the catch, the student softens the ankles, knees (and hips if necessary) to catch the feature.



## DETECT & CORRECT

Student bangs the nose or edge of their board on the feature just after takeoff:

- ▶ Build awareness in the approach line and watch others if necessary to develop a clear picture of a safe entry line.
- ▶ Review the amount that the student is travelling laterally towards the feature from takeoff and adjust accordingly.

Student drifts off the feature as soon as they jump on to it:

- ▶ Review the size of feature relative to student capabilities.
- ▶ Focus on setting the approach line nearly parallel with the feature.
- ▶ Encourage the student to keep the shoulders stacked over the feature.
- ▶ Review where to look throughout the complete trick.

Student loses grip when taking off (common for backside entries):

- ▶ Review the use of dorsi flexion to create a stable platform to push away from on the heel edge.
- ▶ Gain mileage with heel edge tasks involving hops and encourage use of dorsi flexion.
- ▶ Focus on alignment associated with an active or high performance stance to ensure that rotation of the upper body does not create unwanted pivot at takeoff.

## BOXES & RAILS: 50-50 WITH SPINS IN & OUT



### WHAT, WHY, HOW

50-50s with a spin before landing on the feature or when leaving it.

To add more technical variety to your box/rail trick bag.

50-50 with 180-out:

- ▶ Outside the park on flat ground, explain how to create separation between the upper and lower body. Develop by explaining how to activate the muscles from this separated position to utilise counter-rotation to create a spin out. Try in flat base tasks from an on-snow 50-50 focusing on feeling the entire soles of both feet when extending at takeoff.
- ▶ Inside the park, choose a suitable feature and focus on creating separation during the trick zone of the 50-50. The timing of this is dependent on feature size and this position can be held into the landing.
- ▶ Commit to the full trick by utilising counter-rotation when transitioning from trick zone to landing to spin the board 180 out.
- ▶ Develop this trick by trying it from a switch 50-50, taking to a new feature, spinning out from a press or spinning a same-ways or pretzel 270 out.



180 into a 50-50:

- ▶ Outside the park, at a comfortable speed, practise the desired 180 (frontside or backside) in the fall line focusing on landing flat base (50-50). Try to keep the body as still as possible upon landing with the flat base. From takeoff to trick zone, lead into the 180 more with the upper body and slightly delay the 180 with the board. This is beneficial for unwanted over-rotation of the body or board.
- ▶ Develop the approach line by using drawings of features in the snow and ensure that flat base tracks are left on the snow upon landing.
- ▶ Inside the park, choose a suitable ride-on feature and focus on the approach to ensure that students slide the length of the feature without drifting off the side. Explain where to look and then commit to the trick.
- ▶ Develop by trying switch, adding a spin-out, taking to a new feature, landing in a press on the feature or spinning a frontside or backside 270 in.



## TECHNICAL DESCRIPTION

### VERTICAL & LATERAL

For 180s-in, flexion is used in the ankles, knees and hips to prepare for takeoff. Extension should be used evenly from the ankles, knees and hips to avoid too much lateral movement of the COM at takeoff. For 180s-out, flexion used in the ankles, knees and hips to prepare for the transition from trick zone to landing zone must be done so in a proportion that keeps the board flat. Extension from this position should be used evenly from the ankles, knees and hips to avoid any lateral movement of the COM at takeoff. With appropriate speed and the right feature, minimal extension will be needed as the student can coast off the feature into the landing with enough time to spin in the air.

### ROTATIONAL

When spinning on to a feature, a slight upper body rotational lead can be useful to help with spotting the transition into the trick zone. By leading into the spin with the upper body, a slightly separated position is created from which counter-rotation can be applied to help control the amount the board rotates in the air before landing on the feature. When spinning off a feature, the use of rotational separation and counter-rotation to create rotational momentum is key to success for any spin out. The head and upper body will always separate from the lower body in the direction of the spin out. The core muscles used to create counter-rotation will largely dictate the speed of the spin. The amount that the upper body can separate and lead into the spin will largely dictate the amount the lower body and board can spin out of the trick.

### LONGITUDINAL

A longitudinally centred stance will promote a stable takeoff and allow an optimal range of other movements to be used when needed throughout the complete trick.



## TERRAIN & CLASS HANDLING

Ensure that students can 50-50 a variety of features, switch 50-50 the feature being used and spin frontside and/or backside 180s depending on trick preference. It is beneficial if a student can boardslide (frontside or backside) out switch. Starting small is key with feature selection to build confidence in the movement patterns and where to look for spinning onto a feature. With any spin-out trick, ensure that taking it easy is the focus as it's common to think that power is a key component to spin out. This can promote explosive movements over a flat base from a flat surface which when timed poorly can result in slip outs and unwanted edge catches. Instead, focus on efficient range of rotational movement explained with adjectives that promote smooth, predictable and calm movements.



## SELF REFLECTION

*"Can my student show discipline by landing on a flat base on-snow?"*

*"Can my student perform backside/frontside 180s with minimal edge set?"*



## EXPERIENTIAL TEACHING EXAMPLE:

Just like playing with bar magnets in physics at school, the snowboard can repel, spin and lock onto or repel and spin away from the takeoff or feature, based on polarity. To spin on, the snowboard is one bar magnet that is repelled from the takeoff (the other bar magnet), to spin 180 so it's polarity matches the feature and is attracted to it to lock in. To spin off, the feature repels the snowboard to spin 180 off and be attracted to the landing.



## DETECT & CORRECT

Student drifts left/right too much at takeoff causing them to miss the feature:

- ▶ Develop the use of minimal edge set for approach and takeoff to avoid travelling left/right from takeoff.
- ▶ Review the approach line relative to the length of the feature.

Student edges on the feature as they transition from trick zone to landing:

- ▶ Review how to create rotational separation over a flat base.
- ▶ Focus on feelings under the entire soles of the feet to promote a flat base.
- ▶ Lower the COM to reduce the effect of any unwanted lateral movements.

Student under-rotates the spin out:

- ▶ Explore individual natural range of rotational separation on flat ground or simple tasks.
- ▶ Establish individual fitness levels and develop awareness of core strength.
- ▶ Focus on using a larger range of rotational separation during the trick zone and review where to look.

## PIPE: INTRO TO HALFPIPE



### WHAT, WHY, HOW

Introducing the basic skills necessary to ride halfpipe.

Halfpipe is a fun but technical discipline within snowboarding. Halfpipe riding helps to create strong and versatile riders.

- ▶ Spend time outside of the pipe riding banks and gullies, focusing on maintaining a strong stance and keeping the body perpendicular to the snowboard.
- ▶ Introduce hop turns on banks, purely as an option, should it be needed. With a large carved back-up turn, introduce the timing of the movements necessary for ascent up the pipe's wall. Start each back-up turn with a strong edge and progressively flattening while travelling uphill. Focus on the feeling of the flat base as momentum decreases.
- ▶ Take this into large carved turns with timing changes, using the flat base across the fall line, then directly down the fall line, then a combination of both. This can be adjusted into patience turns, bringing in the use of upper body rotation to re-direct the board.
- ▶ Look at the halfpipe from different viewpoints, e.g. the drop-in, the bottom of the pipe looking up, or the top of one wall. Explain the different parts, e.g. flat bottom, frontside and backside walls, transition, vert and lip. Watch a few riders go through if possible.
- ▶ Have your student follow you through the halfpipe making turns in the lower part of the transition, focusing on stance. Ensure that the line ridden is shallow, using the time travelling across the pipe's flat bottom to control speed and check stance/alignment.
- ▶ Take more laps in the pipe to get mileage. The front arm can be used as a way to lead body movements through the transition and take a smooth line. Use the hop turn if necessary to change edges, but focus on flattening the board through the transition and carrying momentum further up the pipe's wall as confidence grows.



### TECHNICAL DESCRIPTION

#### VERTICAL

A gentle vertical movement will help the rider to maintain speed and blend other movements, extending slowly when travelling up the wall and flexing when travelling down. The timing and power applied here can be increased as confidence grows, turning it into a pumping movement through the transitions. Subtle vertical movement is also required when making hop turns to maintain balance in the air and absorb landings.

## LATERAL

Holding an edge across the flat bottom using angulation in the lower body will help to maintain speed. Reducing the edge angle of the board as the rider moves through the transition will help them to take a good line in the pipe and encourage the rider to keep their body away from the pipe's wall. The edge change should happen at the pinnacle of the rider's trajectory on the wall, out of the pipe's lip, or during a hop-turn, and the down transition will be ridden on the uphill edge.

## ROTATIONAL

Rotational movements of the shoulders and hips will allow the rider to make turns on the pipe's walls or when making hop turns.

## LONGITUDINAL

A centred stance is important to maintain throughout all transitions initially.



## TERRAIN & CLASS HANDLING

Before introducing halfpipe riding, make sure your student has strong awareness of their edges and a well-balanced, active stance. Without this, your student is likely to struggle in the pipe, which could create a feeling of intimidation and may lead to them becoming afraid of it.

Ensure that the pipe is in appropriate condition before taking ANY students there. Try to time your students' first visit with softer snow conditions and less people. Encourage students to enter the pipe without dropping in on the wall at first. Use the hop turn as an option but not as the main turning mechanism if possible. This will be useful for those who struggle to flatten their board on the wall and change edges. When working on line through the pipe, remember that speed can increase very quickly. Encourage speed control across the flat bottom of the pipe with speed checks or bigger pivot movements if needed.





## SELF REFLECTION

*“Do my students have the edge and flat base awareness to go into the pipe?”*  
*“Have we spent enough time riding natural features with similar transitions before going in the pipe for the first time?”*



## ENVIRONMENTAL TEACHING EXAMPLE:

Experimenting with edging and flat basing on banks and in gullies is an ideal way to prepare someone for the halfpipe. Find a suitable bank/gully transition with appropriate snow conditions, and have your student try to ride up it on an edge, do a hop 180 and come back down again. Now have them try to progressively change their trajectory on the bank to a longer arc, drawing out the shape more and more each time, and removing the hop. Draw attention to the edge angle of the board when doing this.



## DETECT & CORRECT

Student struggles to control speed when first riding the pipe:

- ▶ Begin your run by entering the pipe in the flat bottom, rather than dropping in from the wall. This will reduce the initial riding speed.
- ▶ Encourage your student to take a shallower line across the pipe and make their traverse across a little skidded.
- ▶ Use speed checks in the flat bottom if necessary.

Student struggles to keep their body perpendicular to the snowboard (i.e. not maintaining a centred stance):

- ▶ Have the rider perform a floating leaf through the pipe focusing on maintaining an upside-down T-shape between their body and snowboard.
- ▶ A sliding 180 can be added in the flat bottom of the pipe to allow the rider to stay in the normal stance when approaching the wall.

Student leans laterally over their heel edge when riding up the backside wall:

- ▶ Focus your student on flattening their base as they ride through the transition towards the vert, keeping their body away from the pipe’s wall. This will allow your student to maintain momentum and rotate the nose back into the pipe. This should only be used if your student is comfortable moving through the transition already.
- ▶ Reduce the riding speed and focus more on the timing of lateral movements lower down the transition. Once the movement is becoming more natural, slowly increase the riding speed to increase amplitude.
- ▶ Remind your students that we are riding down the pipe. Often the perception of amplitude is seen as riding up the walls. By re-directing the line down the pipe you are encouraging lateral movements more on top of the board as your student climbs higher on the wall.

## PIPE: DROPPING IN



### WHAT, WHY, HOW

Learning to drop-in to the pipe from the highest point on the wall, when approaching the entrance from above.

Dropping in from a higher point allows more time on the wall from which to generate speed.

- ▶ Begin with an explanation of how to drop in on the backside wall. With the board running completely parallel to the lip, slightly roll onto the toe edge and retract the board over the lip, turning the nose into the pipe and balancing on the uphill edge with even weight on both feet. Using the front arm as a guide for this will help.
- ▶ Set points at which to drop in on the backside wall, starting fairly low and progressively moving higher up the pipe as confidence grows. This can be done with a follow-me approach or by making marks on the entry wall.
- ▶ As speed increases add a gentle pop at the drop-in with a more active retraction of the legs over the lip. The aim is to keep the board in contact with the wall and use as much of the transition as possible. Riding the top part of the wall with a flat base before balancing actively on the uphill edge will help to generate speed. Focusing on a line that enters the wall at 45 degrees will help to achieve this.
- ▶ Take the same set of skills to the frontside wall, focusing on rolling in from (and landing on) the heel edge.
- ▶ Eventually, these skills can be progressed to flat-deck drop-ins further down the pipe, where the rider can practise “one-hit airs/tricks”. Note that dropping in from the flat deck (as opposed to the pipe entrance) takes much more commitment and riders should already have the capability to air out of both walls before trying this.



### TECHNICAL DESCRIPTION

#### VERTICAL & LATERAL

The timing of lateral and vertical movements is the key to a successful drop-in. Gently rolling or popping (depending on the speed) from the edge that is closest the lip and retracting the legs over the lip takes time to perfect. Movements here should be through the ankles and knees predominantly. Landing high on the transition in a compact position but balancing effectively on the uphill edge is important.

#### LONGITUDINAL

The ability to maintain even weight on both feet is essential here. Encouraging slight pressure on the front foot as they enter the transition of the pipe wall may help students to achieve a centred position.

## ROTATIONAL

Rotation should be through the hips and shoulders. Initially, a 90 degree angle will be needed when retracting over the lip. As confidence increases, a shallower angle can be taken over the lip, i.e. less rotation is needed.



## TERRAIN & CLASS HANDLING

A quieter pipe is best but not always possible. Make sure that your students understand the etiquette around dropping in. Riders typically take it in turns to drop from either side, calling their drop and ensuring they give the person in front of them enough room, being conscious of the speed at which they're travelling. Most people find it easier to drop-in from their backside wall, allowing the frontside to be the first hit. This is not the same for everyone, so be flexible for those that wish to drop in from their frontside wall. As with all freestyle, start small and work your way up. The higher the drop-in occurs, the more speed they will generate through the transition. If your student isn't riding at, or close to, the lip of the pipe yet, a higher drop-in is not necessary. The drop-in should complement their abilities in the pipe, not hinder them.



## SELF REFLECTION

*"Can my students adjust longitudinally as they retract over the lip, ensuring they can maintain even weight on both feet?"*

*"Are they dropping in too high on the wall for their abilities to maintain balance and manage pressure through the transition?"*





## ENVIRONMENTAL TEACHING EXAMPLE:

Begin working on this skill outside of the pipe using cat track drop-offs. Have your students follow your track whilst running parallel with the cat track edge. Choose a suitable point to pop gently and retract the legs, lifting the board over the edge and pointing the nose into the fall line. Each time you do it, move the takeoff slightly further back from the edge or look for steeper drop-offs. Hip features can be used in a similar way.



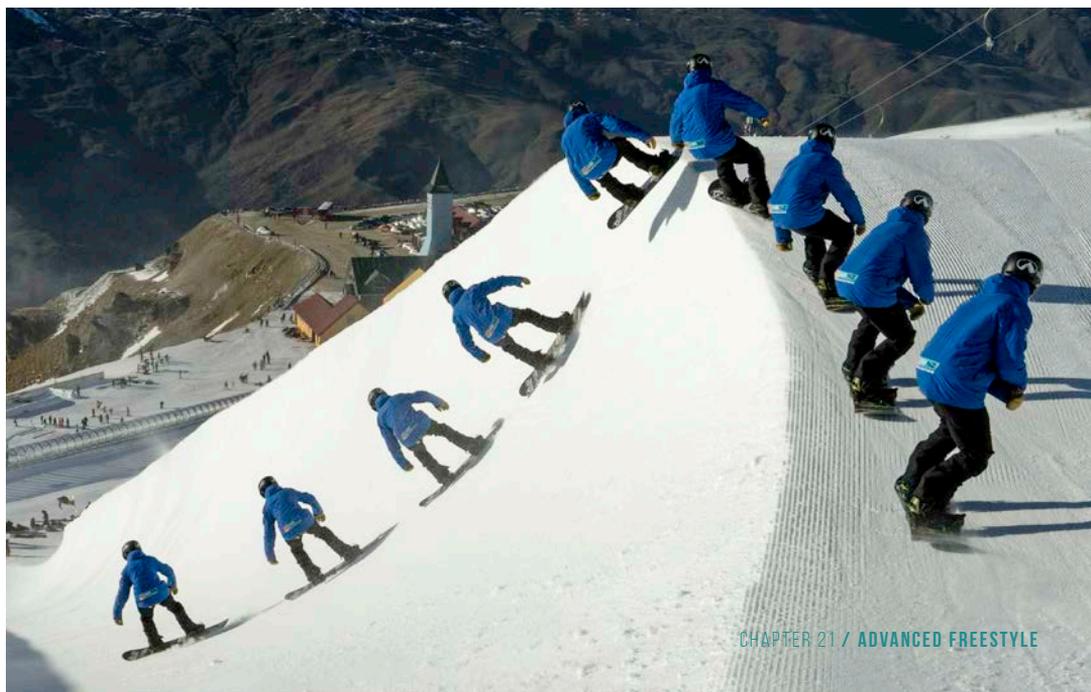
## DETECT & CORRECT

Student turns the board into the pipe before the lip, instead of running parallel with it:

- ▶ Ensure that the speed they are taking at the drop-in is manageable.
- ▶ Encourage patience and focus them on the track they leave in the snow compared to yourself or other riders.
- ▶ Draw an imaginary line directly down the lip of the pipe from the drop-in waiting area. Side slip down to ensure speed is minimal and point the board on this imaginary line, roll over the lip into the transition without pivoting or skidding the board.

Student gets too much air and lands halfway down the transition:

- ▶ Encourage more retraction of the legs over the lip with a very gentle pop.
- ▶ Focus on the timing of movements and being light footed.



## PIPE: FRONTSIDE & BACKSIDE AIRS



### WHAT, WHY, HOW

Airing out of the frontside and backside wall in the pipe.

To get air out of the halfpipe for the first time.

- ▶ Once the student has an appropriate line in the pipe, start encouraging them to look further up the pipe's wall and pump the transition gently.
- ▶ Have the student aim to reach a certain point on the wall each run, e.g. top third or nose at the lip.
- ▶ Focus the rider's attention on leaving the wall with a flat base. This will help them to maintain their line and hold speed up and out of the pipe. To do this, encourage them to take a 45 degree angle up the wall and move the front hand over the downhill edge.
- ▶ Use the eyes to draw a smooth arc in the air ahead of the board. Putting more emphasis on using the back eye will encourage a smoother rotation.
- ▶ Encourage retraction of the legs in the air (rather than popping off the lip) to help maintain balance and allow the rider to adjust the direction of the snowboard back into the pipe on landing.
- ▶ Landing on the uphill edge should be encouraged as riders progress. This will provide more stability and help to maintain speed.
- ▶ Once riding consistently above the lip, work on including a variety of grabs.
- ▶ Traditionally, a backside air is with a melon grab and a frontside air is with an indy grab. Other grabs that can easily be learned in the pipe include mute, lean air, nose, tail and stalefish (see the Tricktionary in Chapter 23 for definitions). Encourage patience with any grabs to ensure the rider doesn't begin to pop off the wall.



### TECHNICAL DESCRIPTION

#### VERTICAL & LATERAL

Pumping through the transition will help the rider to maintain and generate speed. Reducing the edge angle of the board as the rider moves through the transition into the vert section of the wall will help to maintain momentum up and out of the pipe. Extending slightly when riding through the transition will help achieve this; however, it's important to maintain a fairly constant pressure throughout the transition. Leaving the pipe wall with a flat base is ideal. Use a slightly open body position (on both frontside and backside) and focus on flattening the back foot as the nose reaches the lip. Vertical movement is required in the air to aid balance, help the rider to grab and prepare for landing, which will ideally happen on the uphill edge.

#### LONGITUDINAL

A slight centre-to-aft movement can be introduced to help pumping, ensuring that the COM remains relatively centred on the board.

## ROTATIONAL

Rotational movement in the air should be generated through the shoulders and hips. Frontside airs happen quite naturally as the rider turns to look back down into the pipe for a landing. Backside airs are less natural and a stronger rotation of the shoulders and hips is necessary. To help with this, focus on the front arm leading the rotation and pointing back into the pipe for the landing.



## TERRAIN & CLASS HANDLING

Learning to flatten the base of the snowboard on the pipe wall can be tricky. Use edging and flat base tactics/drills out of the pipe to increase awareness of this. Drills inside the pipe that focus on line and edge angle, rather than speed, will help to increase awareness here. Speed should only be added when everything else is flowing well. Using quarter pipes is often a less intimidating way to introduce frontside or backside airs, but keep in mind that any feature that has an under-vert transition will require more pop from the rider, which can create movements that aren't ideal when riding a pipe with lots of vert.



## SELF REFLECTION

*“Do my students understand the best line to take in the pipe?”*

*“Are they able to flatten their board progressively through the transition, before adding more speed?”*





## EXPERIENTIAL TEACHING EXAMPLE:

The analogy of a rainbow works well for taking a good line in the pipe and learning to get out of the lip. Imagine a rainbow on the pipe wall that begins in the bottom of the transition and continues two thirds up the wall before coming down again. Ride the imaginary rainbow on each wall, then progressively move the rainbow higher up the wall as confidence grows, eventually taking it out of the lip.



## DETECT & CORRECT

Student turns on the wall too early before their momentum has run out:

- ▶ Encourage your student to be patient and let the snowboard travel up the pipe's wall, looking progressively up towards the lip, rather than looking directly at the wall or back into the pipe too early.
- ▶ Encourage smooth vertical movements and focus on the sensation of forward momentum increasing and decreasing. Remind your student to rotate when their speed has decreased substantially and they have reached their peak on the wall or their whole board has left the lip of the pipe.

Student pushes away from the wall towards the centre of the pipe to get air:

- ▶ Review the timing of their extension to get air in the pipe. This should be smooth and timed to match the length of transition, resulting in a trajectory that flows out of the lip. Often, a late, powerful extension is made to get a sensation of jumping out of the pipe, which results in a trajectory that moves away from the wall. This can become quite dangerous when riding pipe, especially when speed and pipe size are both increased.
- ▶ Focus on the feeling of the tail leaving the lip of the pipe before retracting the legs for a compact position in the air. This will help to avoid pop off the wall yet still allow for a stable position in the air.

Rider: Kakie Tsuyuki  
Photo: Keith Stubbs



## PIPE: 360S & ALLYOOPS



### WHAT, WHY, HOW

Frontside 360s and allyoop spins (see Tricktionary in Chapter 23 for definitions).

Because variety is the spice of life!

- ▶ Spending time with similar spins away from the pipe is a good way to begin. Toe-to-toe turns (earlier in this chapter) and 360s on banks, are an easy starting point.
- ▶ Back in the halfpipe, let your student choose the spin that is least daunting, out of frontside 360, switch frontside 360 or allyoops on either wall. Try to include this trick in their run on the last or second to last hit, keeping it below the lip initially.
- ▶ For frontside (or switch frontside) 360s, focus timing the rotation to match their forward momentum. Wind-up should be encouraged, followed by a rotation that is perpendicular to the transition. Using a slight two-footed pop, with even weight on both feet, will be necessary if below the lip, but put more focus on the retraction of the legs during the spin, than on popping off the wall. This will be important as confidence grows and spins start happening above the lip. To help get the full rotation, focus on the back hand coming all the way around and pointing back across the pipe, whilst landing on the toe edge.
- ▶ In allyoops, the rotation is fairly easy at first. As the trick moves above the lip however, more patience will be necessary. Using the front hand as a guide for this will help. With all allyoops, try to maintain a flatter board through the transition as the tendency here is to edge harder. With allyoops on the backside wall, encourage a scissoring of the legs to rotate the board past the upper body in the air and maintain a toe edge landing.
- ▶ Once any of the above spins are comfortable, perform them earlier in the run and consider how you can link them up. Air-to-fakies and switch air-to-fakies are a great way to tie these tricks together with frontside and backside airs. Eventually, backside 3s and frontside 5s can be introduced.



### TECHNICAL DESCRIPTION

#### VERTICAL

A slight pop will be required when performing spins below the lip. This pop then needs to become a slower extension as the tricks are taken above the lip, ensuring that pressure is maintained constantly through the transition, until leaving the lip, when a retraction of the board can be used.

#### LATERAL

As with frontside and backside airs, a board that flattens through the transition is necessary to aid amplitude.

### ROTATIONAL

Upper body rotation is important for 360s in the pipe. Separation between the upper and lower body will be needed for allyoops on the backside wall. All rotational movement should be perpendicular to the transition.

### LONGITUDINAL

A centred stance is important to maintain throughout these tricks.



## TERRAIN & CLASS HANDLING

Using the last few hits in the pipe will allow your student to keep practising their pipe riding techniques without sacrificing speed. Consider which is the sunny wall (i.e. the softer one), as the ideal time to learn new tricks is on a wall that is just starting to soften in the sun.



## ? SELF REFLECTION

*“Will teaching spins in the pipe to my students at this stage negatively impact their ability to take a good line in the pipe, i.e. increased edging on the walls?”*  
*“Are they popping too hard off the wall, rather than retracting their legs?”*



## EXPERIENTIAL TEACHING EXAMPLE:

Spend time on natural transition features experiencing different spin variations, using a more exploratory approach. Try spinning all directions, from different edges, using a stronger edge and a flatter board. See which ones work best for the student, then take that to the pipe.



## DETECT & CORRECT

Student under-rotates the frontside or switch frontside 360 and lands on the heel edge:

- ▶ Make your student aware that landing on the heel edge initially is okay to build confidence, but it will limit their ability to maintain speed and that landing on the toe edge is ideal.
- ▶ Focus on the wind-up and timing of the release to match the peak of their arc on the wall, then add the feeling of a tightening core to help bring the rotation around. Retracting the legs during the spin will help with this.
- ▶ Make sure the back hand is pointing down the transition and across the pipe upon landing.

Student lands nose/tail heavy, or catches the tail on the wall during their 360:

- ▶ Ensure that all rotations are happening perpendicular to the point in the transition where the rider is spinning.
- ▶ Focus on an even two-footed takeoff and an even retraction of both legs when in the air.

Student edges too hard through the transition of an allyoop:

- ▶ Have your student consider the angle they are taking up the wall. Is it a steeper angle than they would normally take for a frontside or backside air?
- ▶ Draw attention to the feeling of flattening the back foot through the transition.
- ▶ Ensure that the rotation is applied at the top of their trajectory and not before.

## 22

# Snowboard Equipment

**SNOWBOARD LENGTH & WIDTH****SNOWBOARD SHAPE & FLEX****BOOTS & BINDINGS**

## IN THIS CHAPTER WE WILL EXPLORE...

*The design of snowboard equipment, the makeup of a snowboard, plus binding and boot considerations.*

*Snowboards first began appearing in the 1960s. Since then they have progressed through many eras and had many influences. The basic makeup of a snowboard includes the nose and tail, base and top-sheet, waist and side-cut, edges, and the inserts where the bindings go.*

*There are many different measurements that apply to snowboards, helping to give each snowboard different riding characteristics. It should be noted that new technology and concepts are continually coming into the marketplace, some will be around for ever, while others are fads or become outdated and will disappear.*



## SNOWBOARD LENGTH & WIDTH

Snowboards come in many different shapes and sizes, catering to a variety of body types and riding styles.

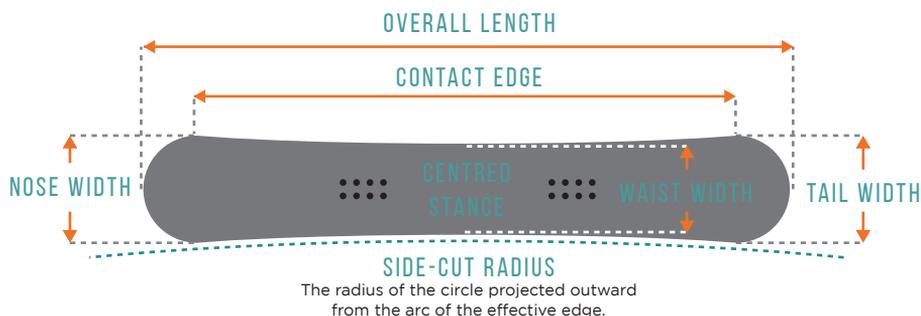
### SNOWBOARD LENGTH

Most people ride snowboards in the 140 to 165cm range; however, snowboards for children can be as short as 90cm. It is a myth that the height of the rider solely dictates the length of the snowboard. The length of a snowboard also corresponds to the style of riding, weight and preference of the rider. A good rule of thumb is to stay within the recommended manufacturer weight range. The longer the snowboard, the more stable it is at high speed, but it is also a bit tougher to manoeuvre. Shorter snowboards are obviously more maneuverable, but less stable. Another factor riders consider when selecting a snowboard is the type of riding it will be used for, freestyle snowboards generally being shorter than all-mountain, racing and freeride-specific snowboards.

### SNOWBOARD WIDTH

The width of a snowboard is measured at the waist, directly in the centre of the board at the narrowest point. A standard men's snowboard will have a waist width between 250 and 255mm. A mid-wide will be from 255 to 260mm, and wide boards are generally 260mm plus, catering to those with larger feet. Women's boards are typically narrower, usually between 235 and 245mm. Board width is typically in proportion to the length of the snowboard. Wider boards can be a little slower from edge to edge, but provide more surface area underneath the rider and less chance of toe/heel drag. In recent years, snowboard width has become more relevant in the style of design too. A number of specific powder boards are being designed with shorter running lengths but much wider underfoot, giving it the same surface area.

There are many other measurements that makeup different styles and designs of boards, from running length to side-cut depth.



## SNOWBOARD SHAPE & FLEX

Most snowboards are designed with a purpose in mind. That purpose might be to ride the whole mountain, go fast, jib rails, ride powder or help beginners learn more easily.



The shape and flex of a snowboard is crucial to its purpose. On one extreme we have alpine race snowboards, with flat tails, short noses, long effective edges and a very stiff flex pattern. At the other end of the spectrum we have “jib-sticks”, which are much shorter in length, have an identical shape in the nose and tail, and are much softer in flex. In between, there are many variations, from tapered powder-specific models to standard all-mountain snowboards. The

flex of a snowboard is dictated by the core materials used in its design and manufacturing. Most snowboards have a directional flex pattern, meaning the tail is usually slightly stiffer than the nose. Snowboards described as “twin” are typically twin in shape but still directional in flex. That said, there are “true twin” snowboards out there that have an even flex in the nose and tail as well as a twin shape. These snowboards are specifically designed for park riding.

### TORSIONAL FLEX

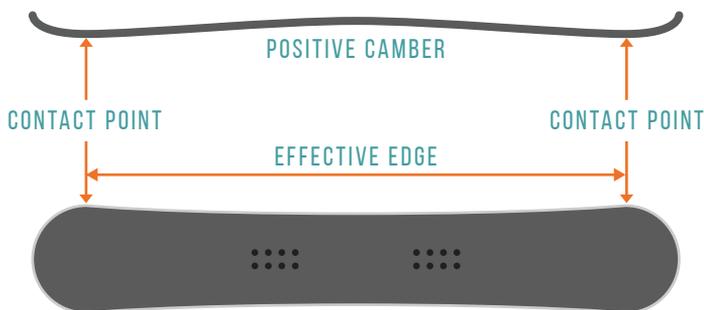
Snowboards have another form of flex known as torsional flex or torsional stiffness. This is the amount a snowboard can twist. Torsionally softer models, such as beginners’ snowboards, are easier to ride at slower speeds, but they provide less edge grip when riding at higher speeds. Higher-end models and freeride, pipe or race-specific snowboards are torsionally stiffer.

### VARIATIONS OF CAMBER

Camber refers to the bend of the snowboard from nose to tail.

#### POSITIVE CAMBER SNOWBOARDS

Traditionally, snowboards have a positive camber, meaning that if you were to lay it flat the snowboard comes off the ground in the middle between the contact points. This camber provides resistance when flexed and tilted onto an edge, and rebound when unweighted aggressively. Cambered boards generally feel very responsive and stable when riding and are the predominant choice for most advanced riders.



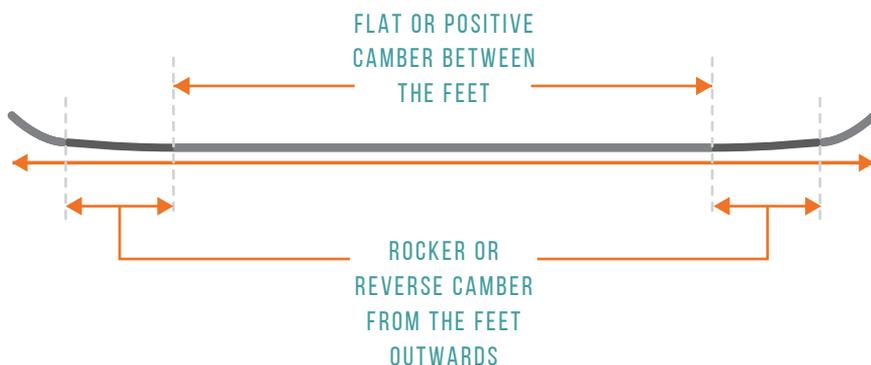
### REVERSE CAMBER SNOWBOARDS

Reverse camber snowboards, also known as “rocker”, start by lying flush in the middle, and elevate as they progress towards the nose and tail. Designers state that this reverse arch is in the same shape as a turn. Therefore, when the snowboard is put on edge, it naturally falls into the correct position for a turn. Reverse camber snowboards are known to provide a more buttery/surfy feeling, but are typically less responsive.

### MULTI-CAMBER AND ZERO CAMBER SNOWBOARDS

Multi-cambered snowboards offer combinations of cambered and reverse cambered areas. The placement of these areas depends on the outcome the manufacturers are trying to achieve. Some common multi-camber profiles include.

- ▶ Reverse camber between the feet, with regular camber from the feet out towards the nose and tail.
- ▶ Camber between the feet, with a slight spoon-shaped reverse camber under the nose and tail.
- ▶ Zero camber, which is completely flat throughout, with no camber at all.
- ▶ Flat or camber between the feet, with reverse camber from the feet outwards (as shown below).

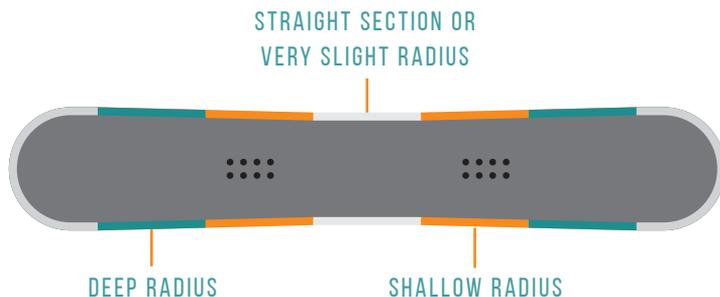


## SIDE-CUT & EDGES

The edges of the snowboard are curved concavely, so that the width at the nose and tail is greater than the centre. This curve aids turning and affects the snowboard's handling. The curve has a radius that might be as short as five metres on a child's snowboard or as large as 17 metres on a racer's snowboard. Most snowboards use a side-cut radius between eight and nine metres. Smaller side-cuts (for tighter turns) are generally used for all-mountain riding while longer side-cut radii (for wider turns) are used for racing. Freestyle-specific boards are typically somewhere in between; however, some halfpipe boards have recently been designed with longer side-cuts too.

### TRI-RADIAL SIDE-CUT

The tri-radial side-cut makes use of three different side-cuts. Not all tri-radial sidecuts work in the same exact manner, but the basic concept is this: A moderate centre radius helps to stabilise the snowboard at higher speeds, whereas a more aggressive radius helps to initiate or complete turns faster.



### ASYMMETRICAL OR OFF-AXIS SIDECUT

These boards have two separate side-cut radius. The heelside edge will have a smaller radius than the toeside edge. The side-cuts may also be offset. This is to help make it easier to create a heel turn that is a similar size to the toe turn.

### MAGNE-TRACTION

This incorporates several bumps on each side of the snowboard which are designed to improve edge-hold by having more contact points with the snow. The idea is similar to a serrated knife. Magne-Traction was designed by Mervin Manufacturing, who manufacture Lib Tech, GNU and Roxy snowboards. Several other manufacturers have created their own variations of this concept.

## BOOTS & BINDINGS

There are a few different things to think about when it comes to snowboard boots and bindings. The most important thing is to get a proper fit, both with the boots themselves and the boot-to-binding fit.

### SNOWBOARD BOOTS

For boots to fit well, toes must feel snug against the front of the boot and the heel should fit snug in the back of the boot. The foot should have little movement within the boot. That said, your toes should not be curling up inside the boot.

After boot fit, comes support. This is dependant on the individual's riding style. Someone who rides a lot of park will generally have a softer boot for forgiveness, compared to someone who rides a lot of off-piste who may want a stiffer boot for better response. Stiffer boots will also be useful for those riders who carry a little more body weight with them.

Remember the boots are the first contact of the body to the gear; well-fitting boots make a massive difference in how effectively and efficiently we ride.



### LACING SYSTEMS

These days there are a number of different lacing systems available, such as BOA, zone lacing, or just standard laces. This is a personal choice and relative to comfort and longevity more than anything. Riders and instructors who spend 100 plus days a year on snow, should consider how strong a lacing system is before purchasing. It is also important to make sure there is very little room between your shin and the tongue and the boot. This can be adjusted by tightening the laces of the inner liner.

## SNOWBOARD BINDINGS

Think of bindings as being the interface between the boots and the snowboard. Much like boots, well-fitting bindings are key to a good setup.



### STRAP BINDINGS

The foot is held onto the snowboard with two buckle straps; one strapped across the top of the toe area and one across the ankle area. They can be ratcheted closed for a tight fit and good rider control of the snowboard. Straps are typically padded to evenly distribute pressure across the foot. Cap straps are the industry standard for most bindings nowadays, providing a snug and tight fit to the toe of the boot. Numerous companies have adopted various versions of the cap strap.

### REAR-ENTRY BINDINGS

With rear-entry bindings (e.g. Flows), the highback folds back and the ankle strap lifts up, allowing the system to open so you can place your foot in the binding. This is a binding that seeks to combine the convenience of the old step-in systems with the control levels attainable with strap-ins.

## BINDING PLACEMENT & STANCE SETUP

Where you place the bindings on the board is important to the overall performance. There are a number of factors to consider here...

### STANCE WIDTH

This is the distance between your feet or, more specifically, it's the width between the centre point of each binding. Most snowboards have a recommended binding placement marked on the top sheet that can be used as a guide. The size of the rider, their natural flexibility and their style of riding is important when determining a proper stance width.

A common measurement used for new riders is to position the bindings so that the feet are placed on the outer edge of shoulder width. This generally gives a good natural measurement for how wide a base your body uses to properly balance itself when the knees are bent. Another way is to measure from the middle of your kneecap to the sole of your snowboard boot, keeping the tape measure vertical and your leg straight. Experienced riders will adjust the stance width to suit personal preference and comfort.

## BINDING ANGLES

On the centre disc for each binding there are angle measurements. On most bindings, but not all, each notch represents three degrees, with numbers showing at 15 degree increments. The binding angles should be adjusted to suit riding style and to help learn new skills. For example, a duck stance can help switch riding, whereas forward angles will aid a rider's ability to carve. Generally speaking, we shouldn't have more than about 30 degrees between our two feet (e.g. +21 on the front foot, -9 on the rear). More than 30 degrees between your feet can lead to serious knee problems in the long term.

## LONGITUDINAL POSITION OF THE BINDINGS

Ideally we want to place our bindings equal distance from the centre of the snowboard's side-cut (this is not always in the centre of the snowboard's length). Take a look at the inserts (the holes in which the screws go); the centre four holes in each insert will usually be sitting in this position. Note that Burton Snowboards make a few different versions of insert systems, with the EST channel and the 3-hole system. To check the longitudinal placement of your bindings, place your snowboard upright against a wall but at 90 degrees so one edge of the snowboard's nose and tail is touching the wall. Slide your fingers or a piece of paper along the side-cut, and spot where the waist is narrowest (i.e. where the gap is biggest). Now mark this point and place the bindings equal distance from this middle point, using your previously established stance width.

## LATERAL POSITION OF THE BINDINGS

The binding's centre discs usually have different holes in which to place the screws, helping us to finely tune our stances. We can move the binding more towards either the toe or the heel edges allowing for a suitable amount of boot overhang or more performance to a specific edge.

## HIGHBACK FORWARD LEAN

The highbacks provide stability and response to our riding, particularly on the heel edge, and are crucial to the overall setup. Adjusted through a mechanism on the back, this is the amount of forward angle the highback creates. The greater the forward lean, the more our highback tilts forward pushing our ankles and knees into a flexed position and therefore a strong riding stance. Forward lean gives us quicker response when turning to our heel edge but it can reduce our range of movement vertically and tire our legs out quicker when used in excess. A lower degree of forward lean will allow a larger range of vertical movement and will be easier on the quadricep muscles.



### HIGHBACK ROTATED POSITION

This is the sideways position our highbacks can be rotated into in relation to the bindings and snowboard. We can create more response when turning on to our heels by rotating the highbacks in-line with our heel edge. Using the necessary adjustments, either the holes at the bottom corners of the highbacks or the sliding adjustment on the base plate, move the highback on the front binding until it sits in-line with the heel edge. It is not necessary to do this with the rear binding unless you ride with particularly high stance angles.

### BOOT TO BINDING FIT

A good boot-to-binding fit is also important. Bindings that are too large for the boot give the rider less response. Bindings that are too small will cause discomfort. A small amount of overhang of the boot over the edge helps to provide leverage laterally. However, too much overhang can create drag in the snow compromising our edge hold and consequently make us fall.



### ADJUSTING THE HEEL CUP

Some bindings have a heel cup that is adjustable back and forth, helping achieve the necessary boot position in the bindings. If there's more overhang on the toeside than the heelside of the binding, loosen the screws attaching the heel cup to the base plate and move it backwards slightly.

### TOE AND HEEL RISERS

Many bindings have risers or ramps that sit under the boots. These are designed to lift the boot up above the edges and help avoid 'booting out'. Some bindings have adjustable risers allowing them to be fitted to the boot. If necessary, move them out so the curve on the sole of the boot sits flush in the base of the binding and on the risers themselves. Make sure there is no gap between the boots and the risers, and that they come just past the end of the risers.

### STRAP ADJUSTMENT

The fit of a boot can also be compromised by poorly fitting straps. Every heel strap should have the capability to lengthen or shorten. Heel straps are shaped to fit across boots. The centre of the strap's shape should be sitting in the middle of the boot when fully tightened. Toe straps should be sitting snug across the boot and may also need adjustment in a similar way.

## SECTION 6 - EQUIPMENT &amp; GLOSSARY

## 23

*Glossary &  
Appendix*

SNOWBOARD JARGON

PARK &amp; PIPE APPENDIX

TRICKTIONARY

IN THIS CHAPTER WE  
WILL EXPLORE...

*Definitions for all the snowboard instructing jargon used on the mountain between instructors and inside this manual. It also has a Park and Pipe appendix explaining the ATTL model and a variety of features found in parks. Finally, there is a Tricktionary that describes the majority of snowboard tricks in the industry today.*



## SNOWBOARD JARGON

### ABSORPTION

Flexion or extension of the joints (e.g. ankles, knees and hips) to aid pressure management.

### AFT

Movement towards the tail of the snowboard.

### ALIGNMENT

The basic upright position of the body aligned in relation to the rest of the body, the equipment and terrain.

### ALL-MOUNTAIN RIDING

Meaning to ride the entire mountain, on and off-trail.

### AMPLITUDE

The amount of air a rider achieves out of a vertical feature (e.g. pipe).

### ANGULATION

Forming on angles between bones through flexing and extending joints.

### ANTICIPATION

Preparation of the body for an upcoming turn.

### ALPINE

A racing style with hard boots, high binding angles, narrow snowboards and generally high speeds.

### AUDIO (LEARNING STYLE)

Taking information in by listening.

### BACKCOUNTRY

Away from resorts, out of bounds or out of the ski area boundary.

### BACKSIDE SPINS

Your back rotates towards the downhill first.

### BACKSIDE ENTRY INTO RAILS/BOXES

The rail is toward your heel edge or behind you.

### BACKSIDE IN THE HALFPIPE

The wall behind you if you point your nose down the middle.

### BALANCE

The body making adjustments to keep in equilibrium with the forces acting upon it.

### BALL AND SOCKET JOINT

The joints in your body that flex and rotate, e.g. the hip joint.

### BANKED SLALOM

A race event through a gully or banked course, where snowboarders ride one at a time.

### BASE PLATE

The base of the binding that your foot sits on.

### BERMS

A banked feature with a curve to it, often found in Banked Slalom and SBX events.

### BIG MOUNTAIN

Used to describe the competitive discipline of freeriding or just riding huge backcountry lines.

### BIOMECHANICS

The principles of the mechanical movements of the human body.

**BOARD PERFORMANCE**

How the board performs. This can be explained using the concepts edge, pressure and steer.

**BOOTING-OUT OR BINDING-OUT**

Boots/bindings hitting the snow when riding on edge or in variable snow conditions, due to overhang.

**BOX**

A feature found in terrain parks that riders slide along, similar to rails.

**BUMPS (MOGULS)**

Specific areas of resort terrain with formed mounds of snow to ride around or over.

**CAP CONSTRUCTION**

An older style snowboard construction type where the top sheet folds over to connect to the metal edges.

**CAMBER**

The convex rise in a snowboard. The snowboard rises up from the contact points near the tip and tail and reaches an apex in the middle.

**CARVING**

To turn leaving clean arcs and a thin line in the snow. This comes from higher edge angles, using the snowboard's side-cut.

**CAUSE**

A position or movement we make that has a resulting effect on our snowboard.

**CENTRE DISC**

The round disc that screws to your snowboard, holding your binding in place at the specified angles.

**CENTRE OF MASS (COM)**

The 3-dimensional balance point of a body.

**CENTRIFUGAL FORCE**

The force you feel as a result of acceleration and turning across the fall line. Similar to riding a bike, this is the force that pulls you outside the turn. We counter it by leaning (inclining) inside the turn.

**CENTRIPETAL FORCE**

The force you create by pushing against the centrifugal force that is pulling you outwards. This is how strongly you move inside the turn (science debates the actual presence of this force currently).

**CHATTER**

The result of the snowboard's edge releasing from the snow's surface and vibrating, usually near the end of a turn. Often caused by inadequate vertical movements to manage pressure. Also caused by high edge angle.

**CHUTE**

A narrow snow covered path found in steep terrain navigating between cliffs.

**CLIFF DROP**

To launch from a cliff, dropping onto the snow below.

**CORN SNOW**

Spring-like snow conditions after freeze-thaw.

**CORDUROY**

Freshly groomed trails with a ridged surface usually found early morning and great for carving.

**CORNICE**

An overhanging ledge made from a buildup of snow, often found on top of cliffs or on exposed ridgelines.

**COUNTER**

When the body is in a rotated position in opposition to itself. A countered position could be caused from just the upper body rotating and the lower body not, and therefore you end in a countered position.

**COUNTER-ROTATION**

When the upper body physically rotates in the opposite direction to the lower body and the snowboard at the same time.

**CRUD**

Typical in New Zealand off-trail snow conditions.

**DEMO (DEMONSTRATION)**

Short for demonstration, to give information visually.

**DETUNE**

To blunten or round-off the sharp edge near the nose or tail of the snowboard, helping prevent edge catches.

**DIRECTIONAL**

A snowboard designed to ride better in one direction, due to its shape and/or flex pattern.

**DORSI FLEXION**

Flexing of the ankle joint, i.e. toes towards the shinbone or knee.

**DROP-IN**

Start a run in the pipe or park.

**DUCK STANCE**

Where the binding setup consists of the front foot being a positive angle and the back foot being a negative angle.

**EDGE**

The steel that wraps the perimeter on the base of a snowboard.

**EDGE ANGLE**

The measurement of the angle of the board in relation to the slope.

**EFFECT**

The result on our snowboard from a movement we make.

**EFFECTIVE EDGE**

The longest part of the edge that can be applied to the snow at any one time.

**EURO CARVE**

To carve whilst leaning the whole body into the turn, near to the snow's surface.

**EVERSION**

Rolling of the leg inward making the sole of the foot face outward. You would then be standing on the inside of your foot.

**EXTEND**

To straighten the joints or to stand up. The opposite to flex.

**EXTRUDED BASE**

A type of low-cost base construction that is very easy to repair, but equally easy to damage.

**FAKIE**

To ride the snowboard backward.

**FALL LINE**

The path in which a ball will roll with gravity down the slope.

**FIBULA**

One of the two main bones in the lower-leg.

**FEMUR**

The largest bone in the body, found in the upper-leg.

**FLEX**

To bend or close the joints (opposite to extend). Can also be used to describe the flex of the snowboard.

**FLOATING LEAF**

An exercise where the snowboard is directed left and right alternately, across the hill on the same edge.

**FORE**

Movement towards the nose of the snowboard.

**FORWARD LEAN**

The measurement of angle on your binding's highback.

**FREERIDE**

A style of riding based around exploring the mountain off-trail, but involving a variety of terrain features and snow conditions. (Can also be used to describe the competitive discipline of Big Mountain events.)

**FREESTYLE**

Riding based around jumping, spinning, buttering, etc. on-trail or off-trail, or in the park/pipe.

**FRONTSIDE ENTRY TO RAILS/BOXES**

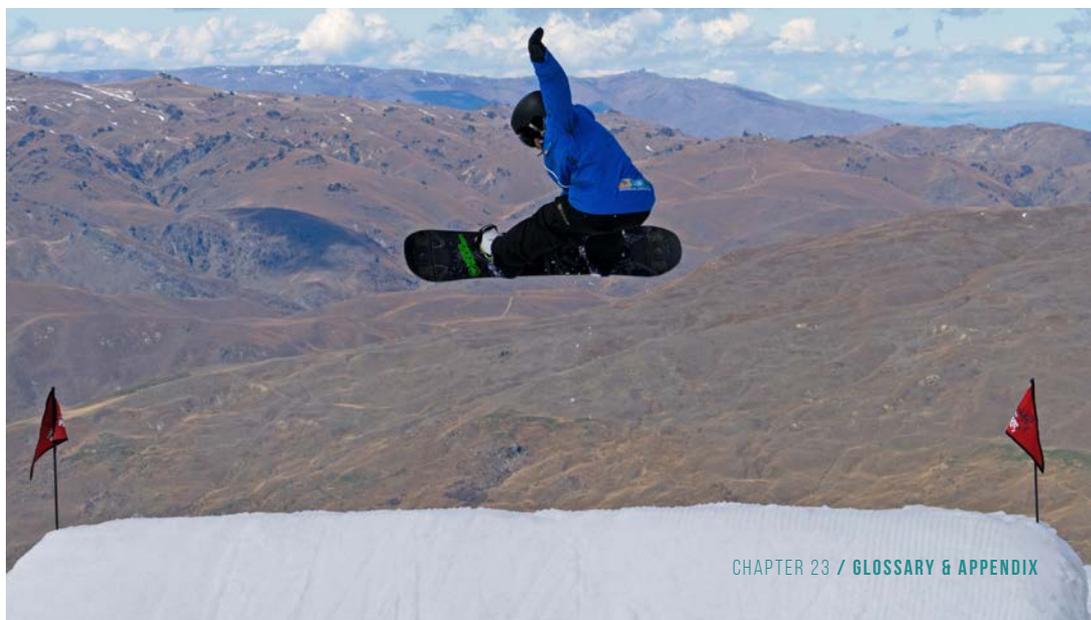
Feature is on your front (or toe edge) when approaching.

**FRONTSIDE IN THE HALFPIPE**

The wall on the front of you if you point your nose down the middle.

**FRONTSIDE SPINS**

Your front rotates towards downhill first.



**GATES**

Tall poles used to mark out courses in any race discipline.

**GAP**

A part of a freestyle feature that you must jump over.

**GARLAND**

An exercise used to practise the initiation and completion phases of a turn but without having to make an edge change.

**GOOFY FOOT**

The stance in which the right foot is the preferred front foot.

**HALFPIPE**

A machine-made feature, in the form of a half a pipe, in which riders travel from one wall to the other getting airtime from the lips.

**HAMSTRING**

The muscle group on the back of the upper-leg, that pairs with the quadricep.

**HARD PACK**

Firm, icy snow conditions.

**HARD BOOTS**

Hard-shell boots, similar to ski boots, designed for alpine boards and hard-plate bindings.

**HEEL EDGE**

The edge under the heels of the rider.

**HEELSIDE TURN**

A turn that is completed on the heel edge.

**HIGHBACK**

Plastic or carbon supportive part of the binding that is hinged near the heel and raises up towards your calf.

**HOP TURNS**

To jump up and rotate the snowboard and body as one unit, changing edges while suspended in the air.

**ICE**

Hard, fast snow conditions.

**INCLINATION**

To lean and shift the COM toward the toe or heel edge.

**INSERTS**

The threaded metal holes in a snowboard, used for attaching your bindings.

**INTENSITY**

The amount of effort we physically apply.

**INVERSION**

Rolling of the foot inward. Rolling of the leg outward making the sole of the foot face inward. You would then be standing on the outside of your foot.

**INVERT**

To go upside down (head below snowboard level).

**JIBBING**

Performing tricks on man-made features such as rails.

**KICKER**

Jump, booter or hit that creates airtime.

**KINESTHETIC (LEARNING STYLE)**

Learning through feelings and sensations.

**LATERAL MOVEMENT**

To move across the width of the snowboard, i.e. from heel edge to toe edge.

**LONGITUDINAL MOVEMENT**

To move along the length of the snowboard, i.e. from nose to tail.

**MOUNTAIN RESPONSIBILITY CODE**

The code outlining the safety and responsibility conduct required on all mountains.

**OFF-PISTE / OFF-TRAIL**

The ungroomed slopes.

**PELVIS**

The large bone in your hips, connecting the femur to the spine.

**PIVOT**

The way the snowboard responds to rotational movements with no edging.

**PLANTARFLEXION**

Ankle extension; to move the toes away from the shin, knee or the leg.

**POP**

Spring obtained from flexing the snowboard.

**POWDER**

Cold, dry and fluffy snow, Mother Nature's gift.

**PRESSURE**

An aspect of board performance managed and created using vertical, longitudinal movements and/or lateral movements.

**PROGRESSION**

A series of exercises that increase in difficulty, to gradually improve the student's ability.

**P-TEX**

The most commonly used base material, made from thermoplastic.

**QUADRICEPS**

The muscle group on the drop of the upper-leg, above the knee, that pairs with the hamstring.

**QUARTER PIPE**

A large machine-shaped wall with a transition, in the form of quarter of a pipe.

**QUESTION-BASED LEARNING**

A style of learning and teaching which revolves around a process of questioning from the instructor to encourage self awareness and thought in the student. (Also known as Coach Approach.)

**RAIL**

Feature found in terrain parks which riders slide along, similar to a box.

**RECIPROCAL**

Acting in return, mutual, giving and receiving. E.g. pairing up students during a task so they can help and learn from each other.

**REGULAR FOOT**

Left foot forward in the rider's stance.

**REVERSE CAMBER (ALSO CALLED ROCKER)**

The concave shape of a snowboard that rises up from the middle.

**RIDER ANALYSIS**

The process of observing the student and assessing their needs.

**ROTATIONAL MOVEMENT**

Movement of the body around a vertical axis to make the board pivot and help it steer.

**SBX**

Standing for snowboarder-cross, this is a race discipline involving four to six riders at one time through a course of tight turns, berms, whoops, bumps and jumps.

**SEPARATION**

When the upper and lower body have a different rotational alignment.

**SIDE-CUT**

The convex shape of the snowboard edges, used to help us carve.

**SIDE SLIPPING**

Edge awareness exercise, where the snowboard is perpendicular to, or across, the fall line and slides down the slope.

**SIDEWALL CONSTRUCTION**

A snowboard construction type where a strip of material, the sidewall, connects the top sheet with the metal edges.

**SINTERED BASE**

A type of base construction that is very strong and durable.

**SKATING**

Pushing oneself around using the rear foot, on flat areas with the front foot strapped in to the snowboard.

**SKETCHY**

When something looks a bit suspect.

**SLUSH**

A soft and wet snow condition created by warm weather, usually in spring.

**SLOPESTYLE**

A competitive discipline of snowboarding in terrain parks, involving jumps and rails.

**STANCE**

The general term indicating the way we stand on the snowboard. This includes body position, orientation (regular/goofy) and binding width/angles.

**STEEPS**

Snow covered terrain with a particularly high pitch.

**STEP-INS / STEP-ONS**

A boot and binding system where the boots click in, to attach to the bindings.

**STRAIGHT RUN**

To glide on the snowboard down the fall line (normally a one footed exercise).

**STUBBY**

A small, flexible race gate commonly used in SBX.

**SUPERPIPE**

A super-sized halfpipe, with walls between 18 and 22 feet (6-7 metres).

**SWITCH**

Riding in the opposite direction to normal. E.g. a goofy riding with their left foot leading, or a regular riding with their right foot leading.

**TABLETOP**

A machine-made jump feature in terrain parks, which riders use to get air.

**TERRAIN PARK**

A controlled environment consisting of man-made freestyle features.

**TIBIA**

One of the two main bones in the lower-leg.

**TILT**

A word used to describe how the snowboard responds to lateral movements of the body. Also called edging or edge angle.

**TIMING**

The duration or sequence of a movement or movements.

**TOE EDGE**

The edge under your toes.

**TOESIDE TURN**

A turn that is completed on the toe edge.

**TORSIONAL FLEX (TWIST)**

The way a snowboard will twist along its length from nose to tail. This will result in a difference in edge angle along the length of the snowboard.

**TRAIL (PISTE)**

A groomed, marked run on a mountain.

**TRANSITION**

The curve found on jumps and halfpipes taking a rider from the flat to the lip or vertical.

**TRAVERSE**

To move across a slope.

**TWIN TIP**

A symmetrical snowboard designed to ride the same in both directions (normal and switch), due to its shape and/or flex pattern.

**TWIST (TORSIONAL FLEX)**

The torsional twist of the board generated through lateral movements (generally in the leading half of the body rather than the whole body as with tilt).

**UNWEIGHT**

To release pressure on part or all of the snowboard.

**VERT**

The vertical or wall part of a halfpipe, quarter pipe or superpipe.

**VERTICAL MOVEMENT**

Movement of the body up and down, raising and lowering the COM.

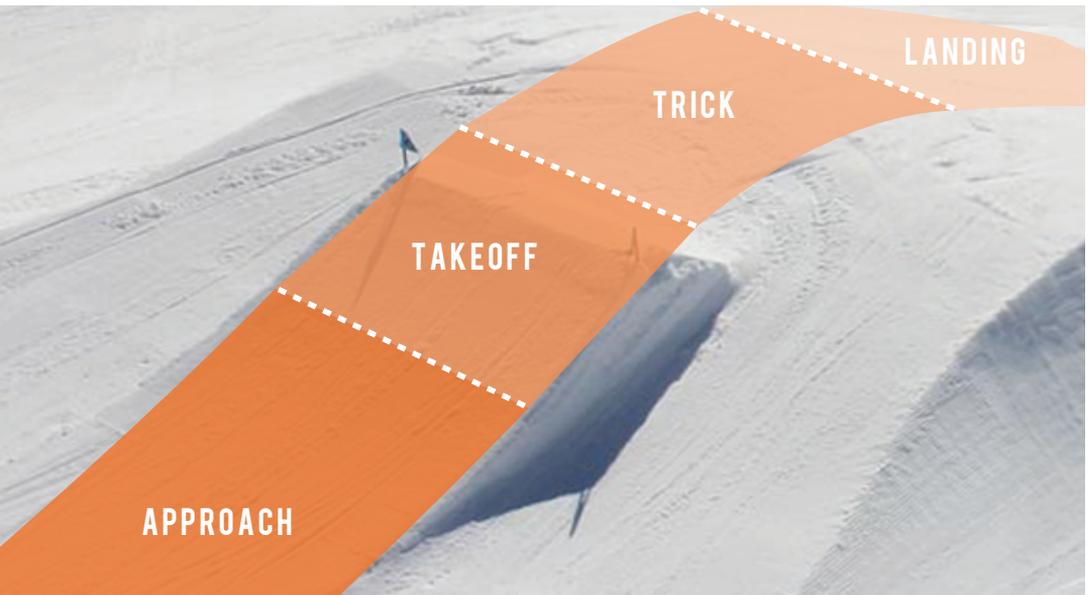
**VISUAL (LEARNING STYLE)**

Learning through watching demonstrations / other riders and seeing pictures.

## PARK & PIPE APPENDIX

### ATTL

The ATTL model is a tool for park riding to breakdown any feature into four clear zones: approach, takeoff, trick and landing. The movements students must make in each stage can be described in detail for each trick. Instructors teaching in the park can use ATTL to break down a trick and create a plan for learning or teaching a new trick on any feature. Students can also watch other park riders move through these zones to watch their riding speed.



#### APPROACH

This is where you choose the correct speed and adjust stance suitably for the feature. There may be tactics involved here such as edging the snowboard or adjusting your line onto the feature. Always call your drop (“dropping”) so you are not competing with someone else on the approach. Keep clear of the approach area unless you are using the feature.

#### TAKEOFF

This is where you make the necessary body movements to start your trick. This could be a controlled extension of the legs to match the forces you can feel when riding up the wall of a pipe or to takeoff a jump. It is usually the point where the rider leaves the ground, e.g. the lip of the jump.

### TRICK

This is the actual trick or manoeuvre you attempt between takeoff and landing, controlling your body in the air or on the feature. Compact body positions are more balanced and grabbing is a great way to stabilise in the air. Spotting the landing throughout your trick will help you prepare for it.

### LANDING

This is the down slope after the knuckle or feature, and before the run-out beyond. Absorbing vertically is almost always necessary here. If the speed was correct during approach, the takeoff was clean and well-timed, and the trick was balanced, then the landing should be smooth and in the correct part of the feature. Remember, this is not a safe place to stand. Always stay clear at all times.

## PARK FEATURES

There is an increasing variety of park features available and they can be categorised into jump features, box/rail features and pipe/transition features. All of these features can be sized S, M, L, XL to represent the skill set and experience required, the inherent risks associated and equally important the level of confidence and ability to commit to the feature.

### JUMP FEATURES

Jumps are all similar in that they have a takeoff transition ending in a lip and a required trajectory distance to the landing. The style and build of a jump will dictate the speed required to make the landing, the airtime and forces that students will experience. Common jumps types include tabletop, step-up, step-down, step-over, hip (left and right), whale tail and gaps.



## BOX/RAIL FEATURES

There are too many variations of box/rail features to list in this manual and the rate that park riding is evolving the list would keep on growing. Detailed here are some common variations of what to expect in your resort terrain park. Box/rail features can broadly be defined by their shape and change in pitch or kink angle. From the rider's view down the fall line they can be straight, curved (C) left and right, S and elbow kink left/right. From the rider's view from the side the box/rail can be flat, rainbow, banana, up, down, roller coaster (variation of rainbow and banana), flat-down, down-flat-down, flat-down-flat, up-down, up-flat, down-flat kick (or down donkey) and waterfall (flat-drop-flat). The width of the box/rail can vary. A wide "dance floor" box can be as wide as two metres. A typical beginner's box is typically 30 to 50 centimetres wide, and a narrow rail can be as skinny as five centimetres. The surfaces to slide on can be flat (box or bar), round (handrail, tube or "tubby") or multiple round features side-by-side (two are known as a shotgun rail).



## HALFPIPE & TRANSITION FEATURES

Most transition features including halfpipes, quarterpipes, berms and bowls all share commonalities. Each will have a flat bottom (ridden through on approach to transition), transition (the curvature of the feature that is ridden), a deck (at top of the feature) and a coping or lip (to mark the change from transition to decking). Resorts are shaping transition parks to focus on providing versatile lines within terrain parks for riders to enjoy.



## TRICKTIONARY

### 180/360/540 (ETC)

A rotation/spin consisting of the appropriate amount of degrees.

### 50-50

Sliding a rail or box straight-on with the board pointing along the feature.

### ALLY-OOP

Any rotation performed spinning up the pitch of the halfpipe towards the top.

### BACKSIDE RODEO

An inverted trick with a backside spin of 540 or more, performed when the rider flips backwards over their heel edge in the direction of travel.

### BARREL ROLL

A flip/roll over the toe or heel edge of the snowboard whilst in the air.

### BOARDSLIDE

A rail slide with the snowboard across and the rail/box between the feet.

### BUTTER

To spin around on one end of the snowboard.

### CAB SPIN

To rotate frontside when taking off switch.

### CHANGE-UP

Performed on boxes and rails, where a rider changes their trick part way through a feature.

### CORKED SPIN

To perform an off-axis spin.

### CRAIL

Rider grabs the toe edge or nose with their rear hand in front of their leading foot, with an extended rear leg.

### CRIPPLER

A backflip over the heel edge with a 180, performed on the frontside wall in the halfpipe.

### DOUBLE CORK

A spin usually of 1080 or more degrees where the rider goes off-axis twice.

### FRONTBOARD

A boardslide with the heel edge travelling towards the end of the feature.

### FRONT FLIP (TAMEDOG)

A full, forwards flip over the nose of the snowboard.

### FRONTSIDE RODEO

An inverted trick with a frontside spin of 540 or more, performed when the rider flips forwards over their toe edge in the direction of travel.

### HALF-CAB

When the rider spins a frontside 180 from switch to normal.

**HAAKON FLIP**

A switch rodeo out of a halfpipe feature, named after the snowboarding legend Terje Haakonsen.

**HAND PLANT**

An invert out of a pipe feature where the rider places a hand on the lip.

**INDY GRAB**

Rider grabs the toe edge between the feet using the trailing hand.

**INDY NOSE BONE / POKE**

An indy grab whilst extending the front leg.

**JAPAN AIR**

Rider grabs the toe edge on the inside of the front foot with the leading hand, bending the front leg in order to tweak the snowboard up similar to a method.

**LIEN AIR**

A frontside air in the pipe where the rider grabs the heel edge with the leading hand, similar to a method.

**LIP SLIDE**

A boardslide or frontboard where the tail passes over the feature on entry.

**LIP TRICK**

Any trick that is performed at the lip in a halfpipe.

**MCTWIST**

A front flip over the toe edge with a 180, performed on the backside wall in a pipe.

**MISTY FLIP**

An inverted trick with a backside spin of 540 or more, performed when the rider flips forwards over their toe edge.

**MELON GRAB**

Rider uses the front hand to reach behind the front leg and grab the heel edge in between the bindings.

**METHOD**

Rider grabs the heel edge between the feet with the leading hand, whilst tweaking the snowboard up when in the air.



**MUTE GRAB**

Rider grabs the toe edge between the feet with the leading hand, whilst in the air.

**NOLLIE**

To jump springing off the nose, helping the rider get more air.

**NOSE PRESS**

To ride or slide a rail/box straight on, whilst balancing solely on the snowboard's nose.

**NOSE SLIDE**

To slide a rail or box on the nose of the snowboard with the tail out at an angle.

**NOSE ROLL**

A 180 degree spin whilst balancing on the nose.

**NOSE GRAB**

Rider grabs the snowboard's nose whilst in the air.

**OLLIE**

Moving aft on the snowboard to build pressure in the tail which is then quickly released to provide pop, lifting the rider into the air.

**QUAD CORK**

A spin usually of 1440 or more degrees where the rider goes off-axis four times.

**SHIFTY**

Using counter rotation the rider rotates the board up to 90 degrees in the air and then returns to the original position for the landing.

**STALEFISH GRAB**

Rider grabs the heel edge inside of the rear foot, using the trailing hand, whilst in the air.

**TAIL GRAB**

Rider grabs the snowboard's tail.

**TAIL SLIDE**

To slide a rail or box whilst leaning towards the tail of the snowboard with the nose out at an angle.

**TAIL PRESS**

To slide a rail or box in a straight line while balancing on the tail.

**TAMEDOG (FRONT FLIP)**

A full invert flip towards the nose of the snowboard.

**TRIPLE CORK**

A spin usually of 1260 or more degrees where the rider goes off-axis three times.

**TWEAK**

To extend an end of the snowboard out whilst grabbing.

**UNDER FLIP**

An invert where rider flips backwards underneath themselves with at least a 540 degree rotation.

**WILDCAT (BACK FLIP)**

A full inverted flip towards the tail of the snowboard.

**WHEELIE**

To ride whilst balancing solely on the snowboard's tail.

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## Maori Translations

IN THIS CHAPTER WE  
WILL EXPLORE...

*Basic terms and phrases in Maori that can be used to teach snowboarding.*

## INTRODUCTION &amp; GREETINGS

Hello: kia ora

Welcome to the mountains: nau mai haere mai ki maunga

Welcome to the snow: nau mai haere mai ki hukapapa (snow on the ground)

Snow falling/in the air: hukarere

Hello my name is... and I'll be your instructor: kia ora ko.... taku ingoa, ko au to kaiako

I am from... : no ... ahau

Good bye: ka kite ano

## QUESTIONS

Are you beginner, intermediate or advanced?

- he kai timata? he ahua pai, he tino pai aua?

Are you from the north?

- no te huauru koe

Are you from the south?

- note tai tonga koe

Can you make turns?

- ka taea koe ki te huri

Do you/would you like help?

- kei te pirangi koe he awhi?

Do you understand?

- kei te marama koe?

## USEFUL TERMS

Go faster: kia tere  
 Stop: kia tau  
 Start/begin: timata  
 Up: ki runga  
 Down: ki raro  
 Left: mauī  
 Right: matau  
 Spin: e huri  
 Flex/bend: tuturu  
 Thank you, come for another lesson:  
 kia ora, hoki mai ano  
 Stand up: e tu  
 Stand up taller: tu kia tika  
 Watch me: matakītaki mai, matakita-  
 ki ahau (same thing)  
 Follow me: whia mai ki au  
 Have a go: tou huri inaeanei  
 Keep going: heare tonu  
 Well done / good job: ka pai  
 Keep trying / don't give up: kia kaha

## NUMBERS

One: tahi  
 Two: rua  
 Three: toru  
 Four: whā  
 Five: rima  
 Six: ono  
 Seven: whitu  
 Eight: waru  
 Nine: iwa  
 Ten: tekau

## SNOWBOARD PARTS

Nose: ihu  
 Tail: whiore  
 Edges: mata  
 Toeside: taha mua  
 Heelside: taha muri  
 Bindings/straps: tuinga  
 Boots: putu

## BODY PARTS

Body: tinana  
 Hips: hope  
 Feet: waewae  
 Stomach: puku  
 Head: mahunga  
 Shoulders: pokowhiwhi

## NOTES





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