

Skiing Simplified: The L Shaped Tool

The L Shaped Tool

The purpose of this document is to define a very important “L” shaped skiing tool. It is the ski boot, but I want to focus on its shape; and the use of that shape as a tool where turning power is important, right at the beginning of the turn. Because of the irregular curves found in [terrain](#), it can't be too stiff, too heavy or too powerful. But, with subtle movements of the body right at the beginning of a turn you want the boot to powerfully influence the ski. In other words, at that point you want the boot to leverage or multiply your effort. Plus, here at this point we twist this “L” shaped lever one way to go faster and another way to go slower. The twist point is important, and most skiers need to improve its definition.

Examples of visible levers

If you look at this tool, the leverage can be seen. In other words, leverage is understood by looking at the tool's shape and imagining how it can be used. A screw is an example of a common lever. Twist it one way and it goes up, the other way it goes down, but it multiplies or leverages power both ways. Another example is a crowbar. Lean it on a point for power and move that point to adjust that power. Like a ski boot, if you look at these two tools then you can see how they work.

Seeing the lever

By closely looking at its shape, we can see how the ski boot is used. In the abstract there are simply two connected lines in the shape of an “L”. We can twist either leg of the “L” like a screwdriver. When we twist the bottom line of the “L” we use the inside or front part of our foot rotating around the big toe. When we twist the top line of the “L” we use the outside and back part of our foot rotating around the heel. Because operating two types of levers at once causes balance problems, on that “L” connection we learn to only use one at a time. Just like we can twist it from both lines, we can lean that connection from both lines. In other words, except at the beginning of a turn we can use the leaning power of the boots at the center point of the ski to ride and balance on the skis. The rest of this document describes when to apply each type of leverage.

Use only one lever at a time

Whether racing or skiing for the first time, the trick is to use only one lever at a time. When we focus on that point at the beginning of the turn (even though I have listed four levers), it is not that complicated. At that point it is all twisting leverage and after that point it is all leaning leverage. Leaning is what you do when you balance. Twisting is what you do when you change the focus of your balance. So, twisting is a quick move. So quick you may not see it unless you look closely.

Skiing for the first time

Before you will want to go fast, you need confidence you can slow down. The problem with learning skiing: you cannot see someone else putting on the brakes properly.

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Plus, to put on the brakes properly one has to point the skis more down the hill. That is counter intuitive. In other words, it is unnatural to point your skis down the hill to slow down. It has to be learned from the first day forward and sometimes even relearned or perfected in racing.

Racing

Like brakes on a racecar, sometimes going fast means slowing down in a turn. I like the example of [drift racers](#) in Japan. With drifting (a decelerating inside out “L” shaped turn) they can go up and down their narrow mountain roads much faster than cars using an arcing (carving) technique. Arching works best to a point, but to take advantage of terrain at times we need to decelerate. If we do, we want an efficient deceleration using (stacking up on) only one lever. Drift racers slow down the same way skiers slow down, using terrain to help and twisting the rear of the car into that terrain and away from the corner of the turn. On the flat without terrain, drift racers twist the rear of the car to cross the momentum. Skiers do the same thing. Skiers slow down by twisting around the heel into the terrain or to cross the momentum, and from the same twist point they accelerate by twisting on the line in line with the big toe [and away from the terrain, into the gravity and with the momentum](#).

Finishing the turn

Finishing is balancing. After slowing down or speeding up at the beginning of a turn, the end of the turn is the same for both. Because we do not want to fight gravity while we are slowing down, we do it up into the terrain instead of down and away from the terrain. Plus, if we want to go slow, the quicker we get to a place where we can again twist heels into the terrain the slower we will go. So, in both types of turns we finish fast. In other words, we do not want to fight gravity to slow down we want to use it. So, finishing the turn is just balancing and preparing for the next turn. Some people like to ski back up the hill to slow down, but to me that is way too much work and boring. It also should not be called finishing the turn, because the turn is finished as soon as you begin moving back across the hill. By the way, as soon as we begin going back across the hill we can twist our heels into the terrain again and slow down. Whether the next turn will be accelerating or decelerating, the finish of a turn is the same, right on the right foot and left on the left.

Transitions

At all times we are either going [right, left or down](#). Down is the turn, left and right are the transitions. Like a drift racer, transitions for decelerating turns go straight at the gate and decelerate inside-out. Transitions before arching turns arc around the gate from the outside of the transition path in to the gate. We transition right on the right foot and left on the left.

The twist point

The twist is critical to the efficiency of a turn. We slow down by twisting into the terrain, and we speed up by twisting away from the terrain. We twist away from the terrain on

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the lower line of the L and into the terrain on the upper line. Either way, while we twist we rotate our hips all the way while extending the short leg and shortening the long leg. The twisting and rotating happens fast and sets you up for leaning to finish the turn.

Leaning

Finishing is leaning. Since as mentioned before we want to use only one boot lever at a time, after we get the turn started (with either of the two types of rotations) we get out of the rotation and lean. In other words, we get the ski up on edge with the rotations; then we counter-rotate to ride on the center of the skis while they are up on edge. If we rotate with one boot line we counter-rotate with the other. For example: if we rotate on the heel line, then we counter rotate on the toe line and vice-versa. But, how far do we rotate? Modern skis are designed to carve (work well) at a high edge angle. They will carve. If they are not carving we need a higher edge angle. The problem could be our feet are too close together. For clearance angle and outrigger type balance, the higher the angle the wider (farther apart) the skis have to be. To see that leaning tool, we have to see the boot's attachment to the radius of the side-cut of the ski. As the skis bend that radius changes. So, we adjust our lean as the skis bend. We do not want to bend the skis. We want get around the corner. When the skis bend, terrain pressure builds in the front and backs of the skis. In this balancing part of the turn, the boot's leaning tool centered on the ski manages that terrain pressure.

Summary: The L Shaped Tool

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