



CARVING TURNS AND TRANSITIONS

Goal

The goal of this fundamental area is to teach the athlete how to perform linked carved parallel turns while maintaining dynamic balance at the appropriate place and time relative to the fall-line.

Definitions

Carving- the tails of the skis are on a forward path that follows the ski tips. Turns in which the skis travel on an edge with minimal slipping or skidding (PSIA).

Arcing- a pure carved turn. No observable lateral movement of the ski (could be the theoretical turning radius of the ski).

Pivoting- turning the skis about an axis perpendicular to the running surface which results in the skis being displaced at an angle to the skier's direction of travel.

Edge Engagement- the edge angle and pressure required for the ski to hold.

Linking Carved parallel turns

The area of carving turns and transitions differs from the basic skiing area in that the focus is on carving from the crossover point throughout the turn. (i.e. carved turns that are linked arc to arc). The assumption is that it can be faster to link completely carved turns in the fall-line. Therefore, the goal is to achieve movements that support this outcome when appropriate.

Transition

The transition is defined as the blend of the completion phase, crossover point, and initiation phase. The method of using the ankles and knees through the transition is emphasized to achieve subtle decreases and increases in edge angles while changing edges. An engaged edge(s) in the initiation phase allows the athlete to develop the new edge angles for carving the skis, as opposed to pivoting/sliding and or skidding, before the ski/skis are engaged.

Initiation Phase

Athlete must emphasize the use of ankles, and knees at the initiation phase of the turn to establish edge angle and pressure to begin a carved turn. To achieve this the athlete must use flexion in the



ankles and knees while moving the knees forward and inside. In addition, the athlete must also shift the center of mass (C of M) in a corresponding manner to establish dynamic balance in the parallel position. In order to engage the new edges from the crossover point and carve the top of the turn, the skier must aggressively move forward to engage the tip(s) of the skis.

Turning Phase

Athlete maintains dynamic balance by continuing to move the C of M forward and inside the path of the ski. To achieve this the athlete needs to coordinate the use of the ankles, knees, hips and upper body to react to the increased forces in order to maintain a balanced parallel position on carving skis. In all situations, the athlete needs to adjust edge angles and forward movement of the C of M based on the speed and desired turn shape. At a high edge angle, flexion of the inside leg is necessary for the athlete to manage dynamic balance. Often this gives the appearance of a wide stance.

Completion Phase

At the end of the direction change, the athlete finishes the turn by releasing the edges. To release the edges, the athlete must move the C of M forward and across the base of support. In most cases, the ankles and knees extend to accompany the hips' movement towards an athletic stance at the crossover point. In some cases an athlete may choose to release the edges and decrease the pressure by retracting the legs as he or she moves the C of M forward and across the skis toward the initiation of the new turn.

Crossover point

There are 2 distinct ways to move through the transition to achieve linked carved parallel turns.

- 1) Athlete has flexed legs at the crossover point—Athlete is moving through the crossover point and engaging the edge in a flexed position and then extending.
- 2) Athlete has extended legs at the crossover point—Athlete is moving through the crossover point in an extended position and then engaging the edge.

Conclusion

The skier will not always be able to completely carve a turn based on the given situation (i.e. radius of turn is too tight for the ski; racer's skill level is too low). However, the ski equipment has evolved to make the carving and transitions area important when it comes to making fast turns. Ultimately,



tactics will determine whether or not it is appropriate to use a completely carved turn, but the skilled racer must be able to link carved turns when appropriate.