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# Introduction to Alpine Tactics

## TACTICS PARADIGM

### Fundamental Definition

The dictionary defines tactics as the "...procedure or set of maneuvers engaged in to achieve an end, an aim, or a goal." Therefore, good tactical choices support the desired goals and poor choices work against them.

At USSA, alpine tactics are defined as the strategy of optimizing speed and line relative to the skier's ability to attain the fastest time. Implicit in this definition is the concept that tactical choices are different for different skiers based upon their respective strengths and weaknesses.

### Specific Definitions

The key elements with respect to this definition are the concepts of skiing abilities and line:

- Skiing ability is broadly defined as those technical, physical, psychological, and equipment elements that contribute to overall racing performance.
- Speed versus line is a conceptual framework used to explain the balance between achieving the highest average speed versus skiing the shortest possible distance.

### *Speed*

Obviously one of the goals for a racer as they negotiate a course is to achieve the highest average speed. Average speed is defined as the distance the skier travels divided by the time it takes to cover that distance. High average speed may be the result of:

- High peak speeds: the skier is very fast through specific sections of the course but is relatively slower in other sections.
- Speed maintenance: the skier may not have the fastest top speed, however they are able to maintain relatively high speeds throughout the entire course.

In racing terms the athlete needs to make a choice as to the manner in which they ski the course in order to maximize their average speed.

- These choices are based upon numerous factors such as the course set, terrain, conditions, ability, etc.

### *Line*

The other major goal for a racer as they negotiate a course is to ski the shortest possible line. Theoretically, the shortest line is the line directly from turning pole to turning pole:

- To maximize performance the athlete needs to make a choice as to the manner in which they ski the course in order to minimize the distance they travel.
- These choices are based upon numerous factors such as the course set, terrain, conditions, ability, etc.

### Speed Vs Line

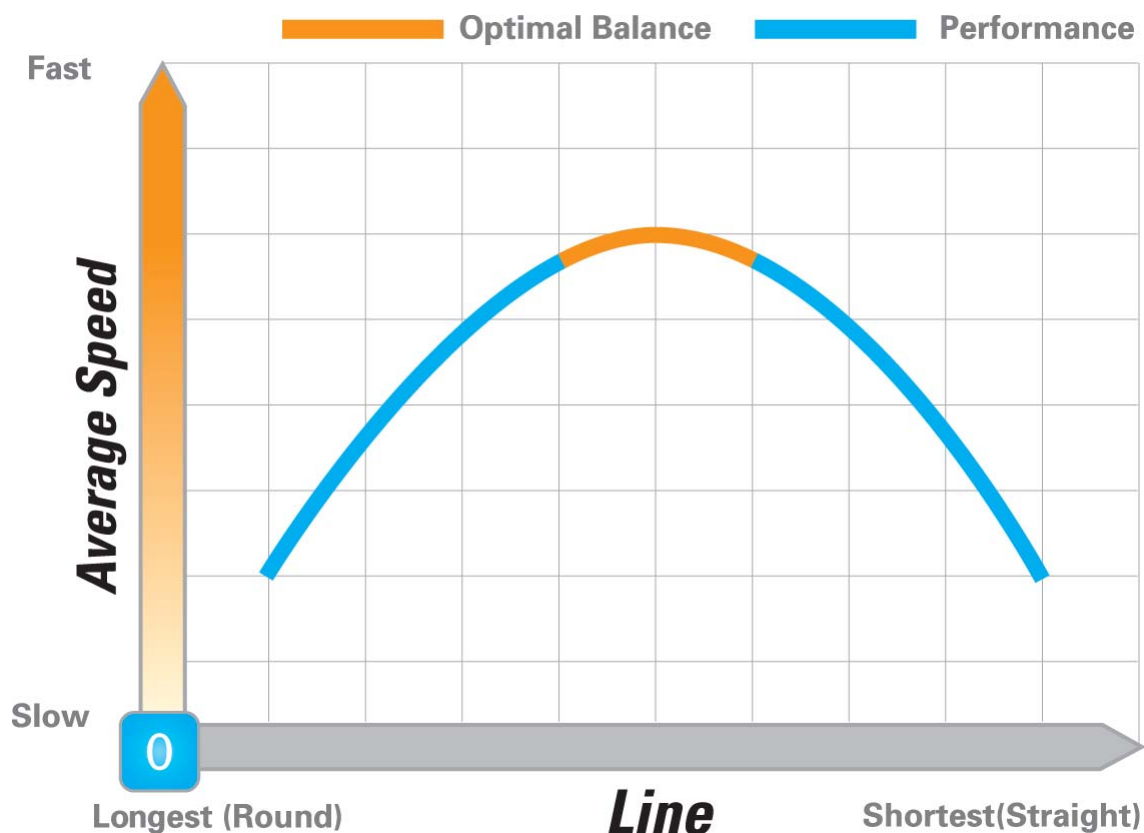
This diagram is a visual representation of the concept of average speed vs. line for any given situation. Please understand that the diagram is not a predictive model. Rather, it is a simple framework that gives the coach a way to explain how average speed and line need to be optimized in order to maximize the performance. There is no single solution to the choices an athlete may make in order to win the race. Based on their individual abilities, each skier will make their own tactical choices regarding the line they ski and ultimately how quickly they finish the course. Some may choose to ski a more direct line but also run the risk of "breaking" or slowing down. Others may ski a more conservative line that covers more distance but choose this option as they are able to maintain a high average speed and make fewer mistakes.



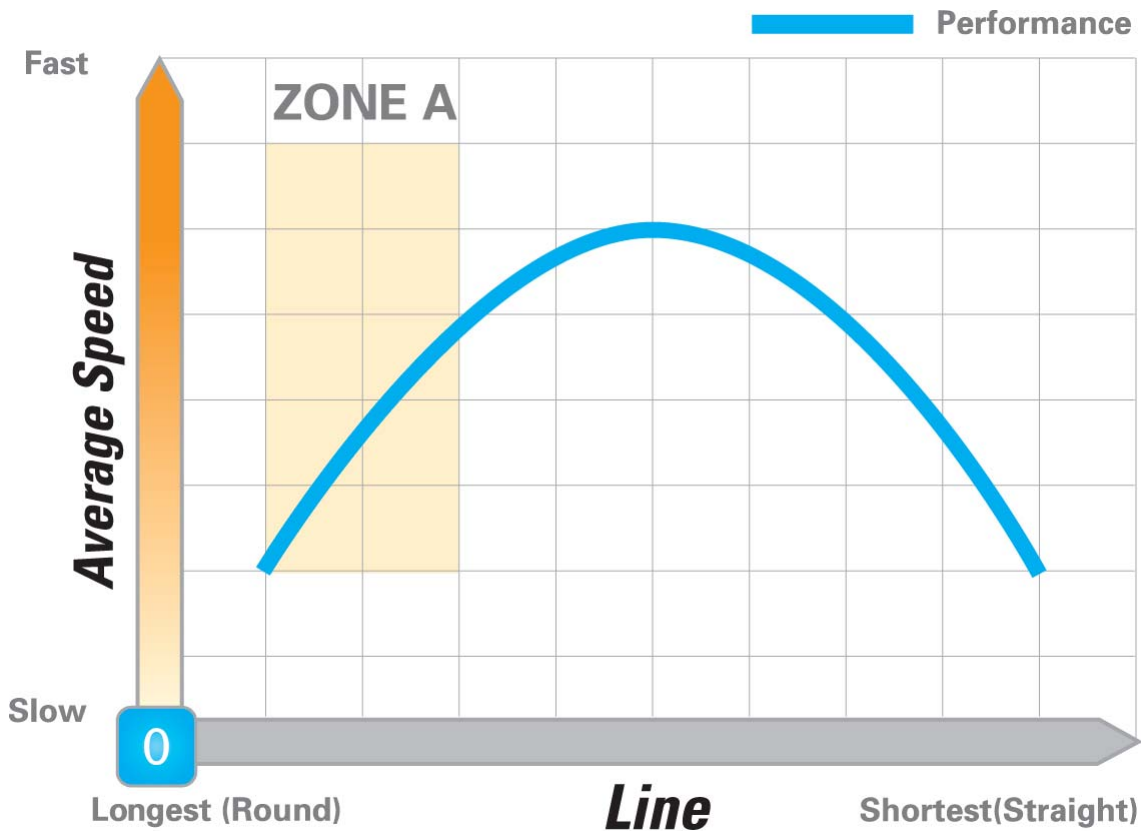
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## Important considerations:

- Performance is thus defined as the ratio of the average speed over the skiing distance.
- The skier's abilities will determine how well they can optimize both line and speed to maximize their performance.
- The performance curve is a continuum-there is a balance between line and speed. This means that the while a straighter line may be faster, for any given course there is a point at which the direct line can no longer be maintained and the skier will be unable to complete the course without breaking or slowing down.
- The "optimal balance" is the range of lines and average speeds that may result in a winning performance for an individual (for a given course and a given set of conditions).
- The best racers continually adjust line and speed to optimize performance. Importantly, they have the skills that give them the choice to ski different lines based upon the need to optimize speed.
- The two elements of speed and line are intrinsically related such that any discussion of line needs to address the idea of speed and vice versa. This is a result of the inter-relationship between fall-line and skiing speed.
- For any given course there may be a shift in the curve from one end of the continuum to the other i.e. one course may be better suited to a straighter line whereas another course may require a rounder approach.



## Practical Interpretations: Zone A



### Definition Zone A:

In terms of line, Zone A is represented as the round, conservative approach (note: the diagrams reflect an exaggerated line for purposes of discussion). Skiing this trajectory means that the c of m travels further than with a more direct approach. Average speed may be relatively high especially as the level of risk is relatively low i.e. speed maintenance. However, skiers who choose this approach are not using the fall-line to their fullest advantage and therefore are unable to maximize their speed.

### Everyday Examples:

The rounder line choice may be suitable for:

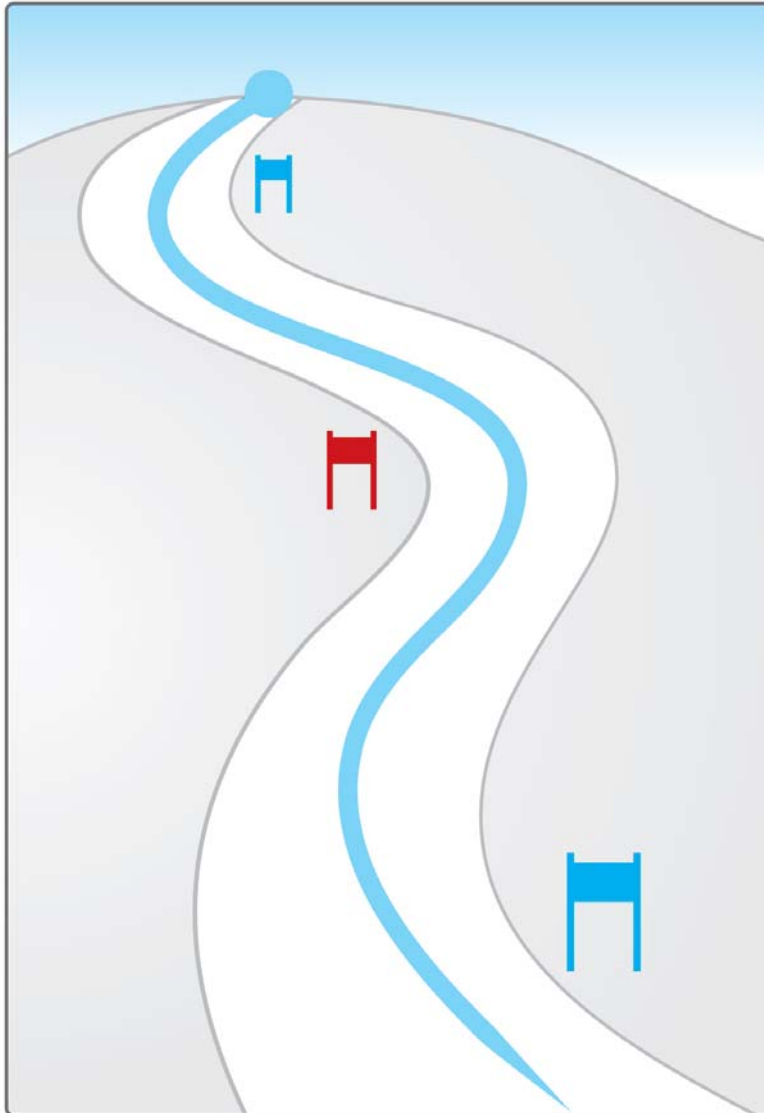
1. The junior racer in order to gain confidence or the racer who lacks the technical skills to ski a more direct line.
2. An athlete who may need to improve their finish rate.
3. When the course set is very difficult or prior to a tough terrain change.
4. If conditions are deteriorating and there is a need to ski the rut.



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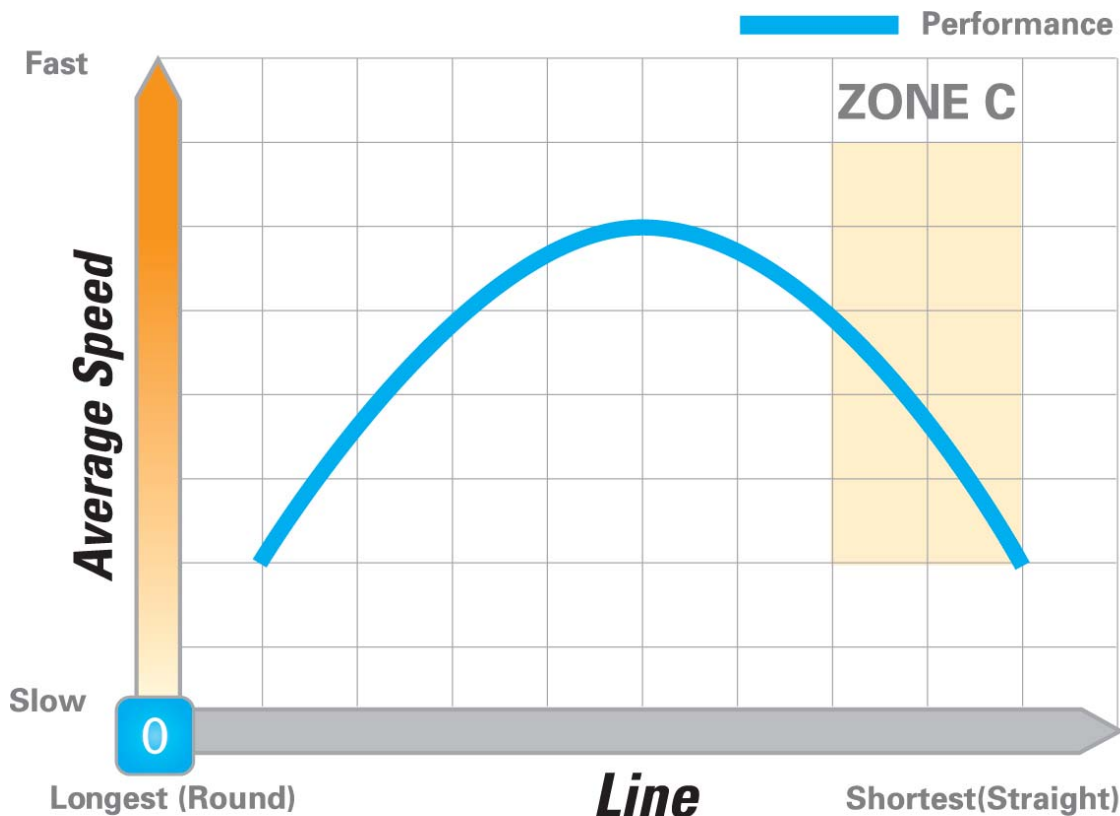
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## Practical Interpretations: Zone A





## Practical Interpretations: Zone C



### Definition Zone C:

In terms of line, Zone C is represented as the most direct approach (note: the diagrams reflect an exaggerated line for purposes of discussion). Skiing a direct trajectory may allow for high peak speeds but is characterized by a high degree of risk. Any mistakes that are made will ultimately hurt the overall performance. It is difficult if not impossible to execute this line repeatedly down a course.

### Everyday Examples:

The straighter line choice may be suitable when:

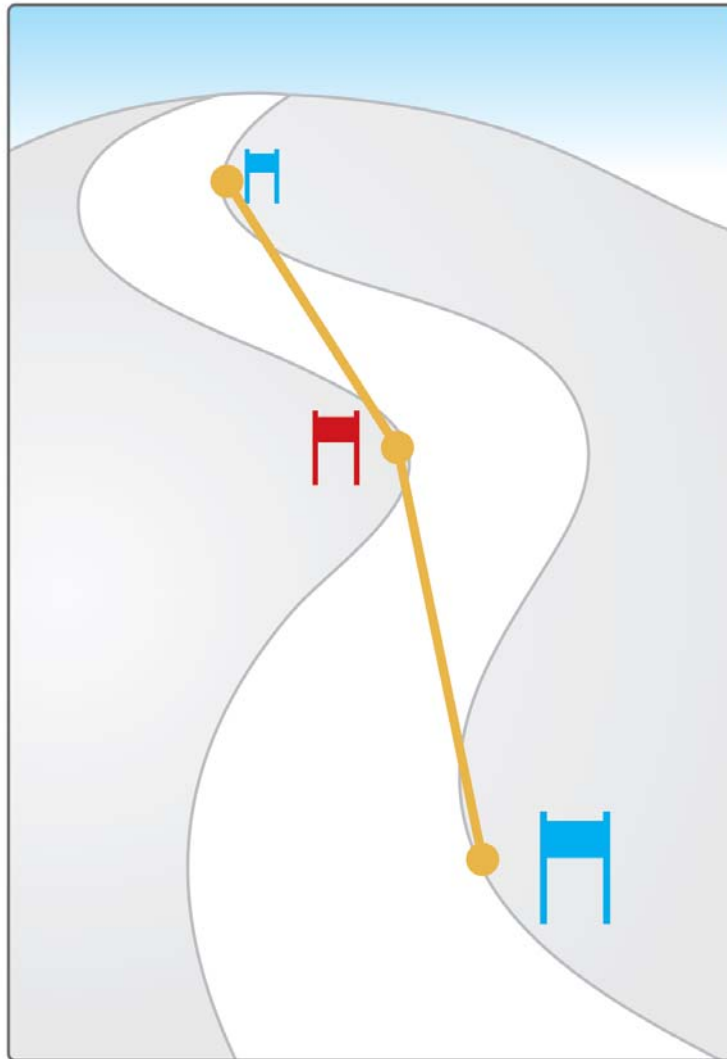
1. A skier needs to re-establish direction after a mistake.
2. When course speeds are slow and the terrain/pitch is easy.
3. The course distances are below the abilities of the athlete with respect to equipment and/or skill.



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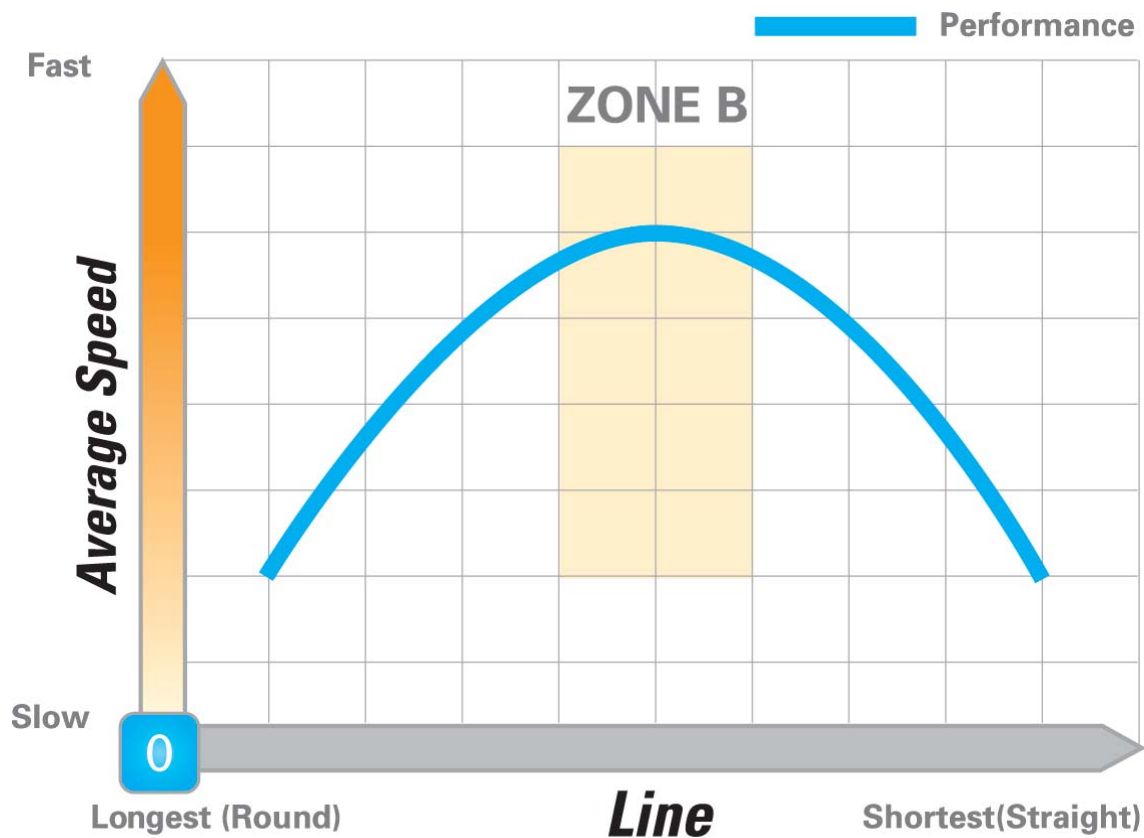
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## Practical Interpretations: Zone C





## Practical Interpretations: Zone B



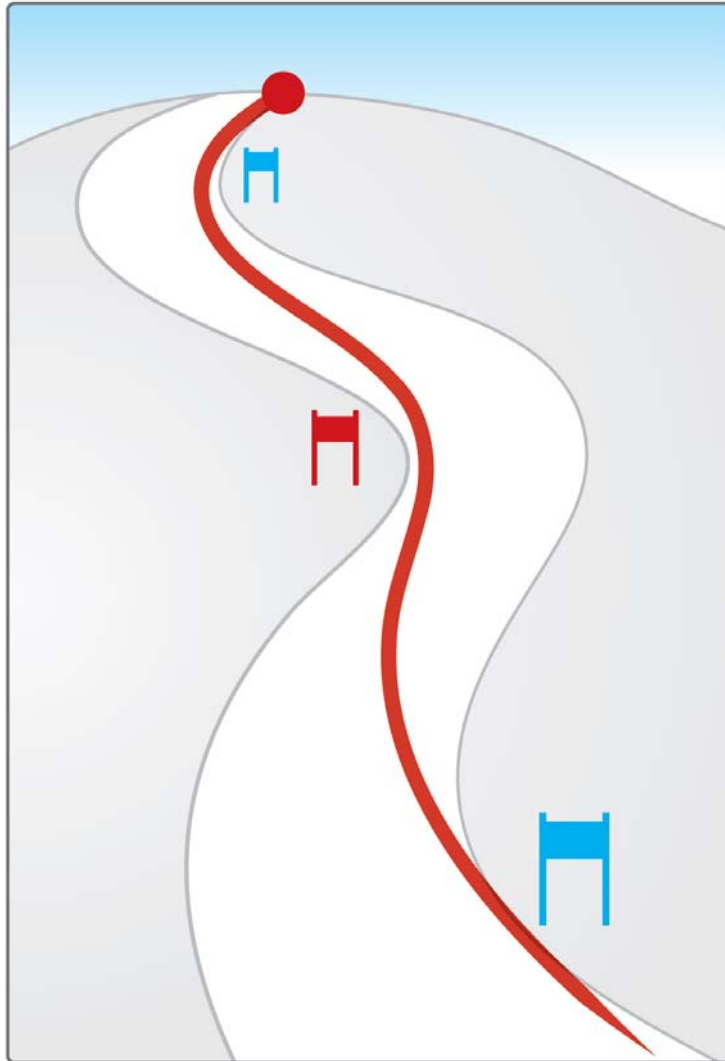
### Definition Zone B:

In terms of line, Zone B is represented as a more favorable balance between line and speed (an optimal balance achieved from good tactical choices). In this area the skier is able to minimize the distance traveled by skiing with more direction and has the ability to use the fall-line to maximize speed while still making few mistakes.

### Everyday Examples:

1. This is typically the choice of elite racers when course set, conditions etc allow.
2. This type of approach requires a high degree of technical ability as well as a strong mental, physical and equipment platform.

## Practical Interpretations: Zone B



### Tactical Choices

In an effort to give his/her maximal performance a skier must make tactical choices that are not only suitable for the conditions, but are supported by their level of skill. WC racers have the necessary abilities to ski a wide range of line choices as well as the experience to understand their own limitations when it comes to the faster line options.

Junior racers tend to have a narrower skill set because of a shortfall in one or more of their abilities. Also they have less experience to know when or where a particular choice of line may be most effective. As a result it is a very common mistake to see the young racer attempt to ski a line that exceeds their abilities or chose a line that is inappropriate for the situation.



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# *Introduction to Alpine Tactics*

## ***Know your Abilities***

The drills in this CD are about making athletes aware of shortfalls in their skiing with respect to their abilities. Each exercise places the skier in a situation where they can test their choices and the outcome of the choice on their performance.

## ***Know the Course***

The course section of the CD is about giving the athletes and coaches tips and drills to improve their skills with regard to inspecting the course. It is very important to make sure that the inspection gives the racer a good orientation as to possible tactical choices with respect to their individual abilities. The goal is to develop a strategy for the athlete that finds the fine line between the amount of risk and the chance of winning the race.