

Teaching Steeps Level 2

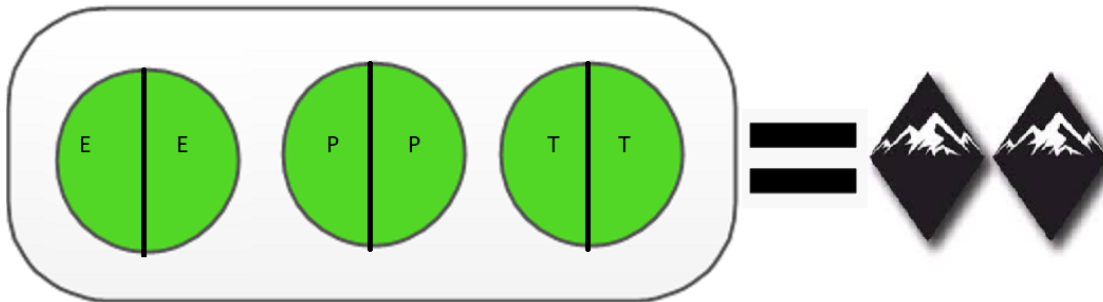
The goal for this session is to train instructors to teach and manage a group safely in steep complex terrain. In order to be 'signed off' to teach in any double black terrain on mountain**

**With a few exceptions, where the risk is unacceptable. (See run Steeps 2 run list)

Sign off Criteria

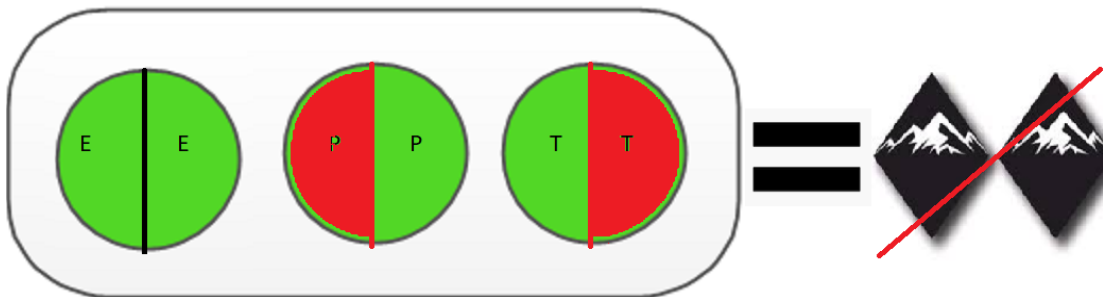
1. Demonstrate Minimum skiing standards.
2. Demonstrate decision making standard and understand risk matrix
3. Demonstrate safe class management in challenging entrances.
4. Demonstrate safe class management principles in steep terrain.

Decision making lights: Think about your personal safety first! Use these lights for yourself first and for your students. As a coach you need to be in the green!



All greens = New Terrain

	Student Condition	Skills
1.Equipment + Environment	2.Psychological + Physical	3.Tactical + Technical



If any portion of the lights are in red no new steep terrain advised, practice skills, build confidence on less difficult terrain, and re-assess.

1. Equipment/Environment: terrain, weather, snow conditions, visibility, wind, run features and layout, knowledge of the run.
 - a. Ensure students have appropriate equipment before skiing steep. Wider skis preferred 90+mm under foot, well-adjusted bindings DIN Setting and well-tuned.
 - b. Weather, how will it affect the snow conditions? Winds and temperature.
 - c. Have I inspected this or skied it before?
 - d. Viewed from the bottom? Felt the conditions?
 - e. What is the chance of fall and the consequence if they do?
 - f. What is the worst-case scenario if you go down this run?
 - g. Have I talked to a colleague who been there recently? Conditions report.

2. Student Condition: physical and psychological state of students.
 - a. Energy level, activation level, fatigue?
 - b. How physically fit are my students? What did you do before?
 - c. How will my student react in a new situation/challenge?
 - d. How confident are my students/group?
 - e. Group dynamics, do I have a split, is it manageable? Will it still be manageable in the steps when they are challenged?
 - f. Is this the best time of day to try this? Nothing new after 2.....

3. Skills: Tactics and Technical Development. Refer to minimum skiing standard.
 - a. Can my student control their speed on steeper terrain?
 - b. Strong steering ability. (i.e Balance, Pivoting, Edging)
 - c. These skills must be acquired before entering steep terrain where there can be consequences.
 - d. Manoeuvres, e.g hop turns and side slip.
 - e. Timing, i.e turn the skis in the right place at the right time.

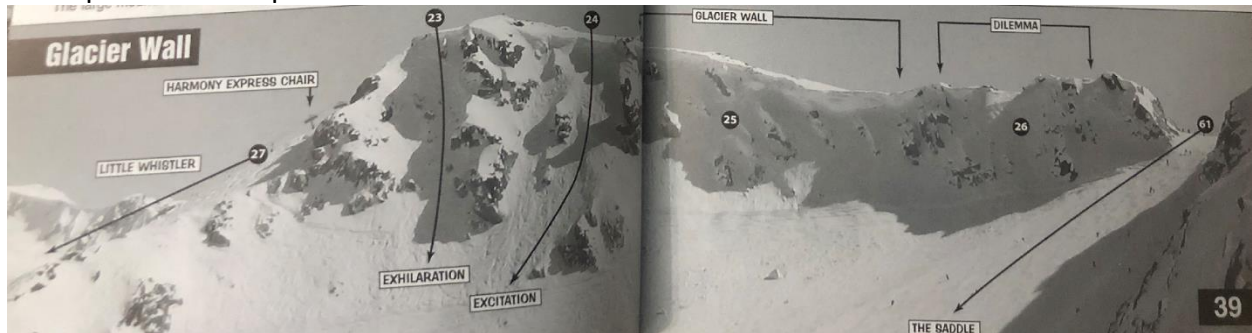
Considerations to classify terrain.

1. Exposure and Fall line – Rocks and cliff hazard
2. Steepness – How far will they fall?
3. Conditions – Powder vs slide for life
4. Type of fall – speed, slide, hitting obstacles, compressions.

The environment or second E of the “EE PP TT” decision-making lights relates to the terrain. In order to give more depth to our decision-making ability we must use a secondary filter using the matrix below. This will enable us to classify the terrain more effectively.

Example of decision-making process on *Excitation* on Whistler.

Let's use *Excitation* #24 on the picture below and put it through our decision making filter. *Excitation* is big run with a challenging entrance, mainly influenced by the size of the cornice at the top and the steepness of the run.



The Environment:

On this particular day, the snow conditions are good but quite firm, no ice, and well-formed cornice at entrance, good visibility, no wind, some avalanche debris in the lower part of the chute and some rocks on the right hand side of the chute.

With firm snow combined with the steepness of the run, we can agree that, in case of a fall, a skier or rider would slide for a long way with a considerable amount of speed. The possibility of hitting avalanche debris/rocks on the right hand side and causing an injury exists.

Using the first column (y axis) in the matrix below, for our analysis, we have come to the conclusion that the consequences of a fall on *Excitation* are in the SERIOUS category or 3 on the scale.



**CONSEQUENCES of a fall on a specific double black run.

**PROBABILITY OF OCCURENCE in our context means the probability of a fall.

CONSEQUENCES	PROBABILITY OF OCCURENCE			
	1 VERY UNLIKELY	2 UNLIKELY	3 LIKELY	4 VERY LIKELY
4 FATAL	5 HIGH RISK	6 HIGH RISK	7 HIGH RISK	8 HIGH RISK
3 SERIOUS	4 MEDIUM RISK	5 HIGH RISK	6 HIGH RISK	7 HIGH RISK
2 MODERATE	3 LOW RISK	4 MEDIUM RISK	5 HIGH RISK	6 HIGH RISK
1 MINOR	2 VERY LOW RISK	3 LOW RISK	4 MEDIUM RISK	5 HIGH RISK

Risk Level=Consequence+ Probability		
VERY HIGH RISK	6+	unacceptable risk
HIGH RISK	5	
MEDIUM RISK	4	
LOW RISK	3	
VERY LOW RISK	2	

The other areas of the decision making lights, **E, PP and TT** relate to the student and will help us determine the probability of occurrence of a fall.

Equipment: Din should be set at appropriate level for an expert skier. Well-tuned sharp skis are needed for skiing steep firm snow. Poorly setup bindings and/or dull skis would increase the probability of a fall.

Psychological, Physical: Are they ready for this? Excitation is a run where the psychological aspect plays a more important factor; it is an intimidating run to drop into. A fearful person will most often perform at a lower level, which will increase the possibility of a fall. Physical: What did you do before, is fatigue a factor?

Tactical, Technical: How proficient are my students at the tactics needed to safely drop in and ski that terrain? Technical, can my student control their speed and do a shorter turn in the narrow portion of the chute? Or are they going to sideslip the whole thing and ruin the skiing for the rest of us!! The tactical and technical skills of the student are very important factors to consider in determining the probability of occurrence of a fall.

Let us assume for the purpose of this example that the student:

1. has well-tuned equipment
2. is physically and psychologically in good condition.
3. is technically strong but still lacks some refinement in some of the tactics in steep narrower chutes.
4. has dropped in to entrances with similar cornice size and shape consistently.

Based on this assessment lets rate the probability of occurrence of a fall as **UNLIKELY** or 2 on the scale. We determined earlier that the consequence is **SERIOUS** or 3 on the scale.

If we look at the matrix and add the 2 numbers, we get this:

Consequence + Probability = Risk Level

$$3 + 2 = 5 \text{ or HIGH RISK (refer to matrix above)}$$

Although 5 is in the HIGH RISK category we would still consider it an acceptable level of risk to take, therefore we could justify skiing this run on that day with this student.

Risk levels:

Anything above 6 on the scale is in the unacceptable risk category and should be considered a no go. In this situation, it is important to keep the big picture in mind:

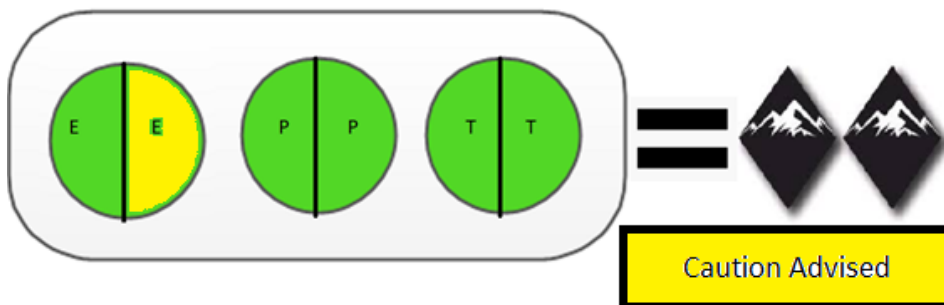
- What is the goal of the day?
- Is there another terrain where I can work on the same skills and tactics where I can develop my student and still have fun?

Our job as coaches or instructors is to manage risk. Even though we would ski this run with this student on that day. You would not want to ski in this zone of high risk for extended periods. If you constantly ski in the high-risk zone, it's not a matter of if you are going to have an injury but when. Good coaches and guides manage risk carefully and push their students when all the "stars align" and everything is in their favor.

Decision Making 1 Yellow light

For the example of *Excitation* we are at 5 or **High Risk** in the matrix. ***This means that we are moving in to a higher level of risk and more nuanced decision making. At this level its not just Green or Red, there is a yellow.

In this example we are at a yellow light for the Environment because of the terrain and conditions on that day. We have hard snow, very steep terrain and a large cornice. Yellow means you can still go, but caution is advised.



In this yellow zone, there are a few important coaching considerations:

1. Be very focused on the task at hand
2. Management of the entrance and guiding principles on steep terrain must be at a high standard
3. The coach should also be comfortable on the terrain and not place himself in danger.



keep your eyes on the ball!

Decision Making 2 yellow lights

In this example, let us assume for a moment that our student is now very tired. This would cause the Physical(P) light to go yellow. We now have 2 yellow lights which means that the probability of occurrence or fall would increase. Based on the matrix this would put at 6 or **Very High Risk = No go!**



Good rule of thumb 👍 : **1 yellow take it slow, 2 yellow don't go!**

At this point, the coach needs pull back on the terrain in order to get back into an acceptable risk level. With moderate or minor consequence terrain, it would be a go.




Sign off Criteria

1. Demonstrate Minimum skiing standards.
2. Demonstrate decision making standard and understand risk matrix
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4. Demonstrate safe class management principles in steep terrain.

General Skiing objective

- High comfort level on  terrain.
- Ski steep  in control using refined pivoting and edging skills.
- Ski at a level where you can help the class out if needed.

Minimum ski standards

1. Diagonal side slips both sides on  (pressure control)
2. Strait side slip both sides on  (pressure control)
3. Bumps Traverse moderate to high speed with transition into a turn.
4. Entrance into corniced area with small air or transition in control. Land in control both in the fall line and across it.
5. Jump/Hop turn on 

So.... Can we send it now?

