

CONTROL SPEED AND SPACE THE ART OF RACING



GERMAN AXIOM

1. All turns begin and end from neutral
2. Maintain ski snow contact
3. Edges are engaged with adduction and abduction
4. Tails should follow the path of the tips of the ski
5. There should be no raising or lowering of the hips that radical effect the bend of the ski Bend is managed with dorsal flexion of the ankle and hip flexion of the inside leg
6. There is a pole plant or swing if speed allows
7. Line is proper if all the axioms are achieved

Note: All movements should begin in the feet. Toe awareness foot, tension and balance points on the feet should be presented daily

KEEP IT SIMPLE, MAKING SKIING EASY



TURN PHASE

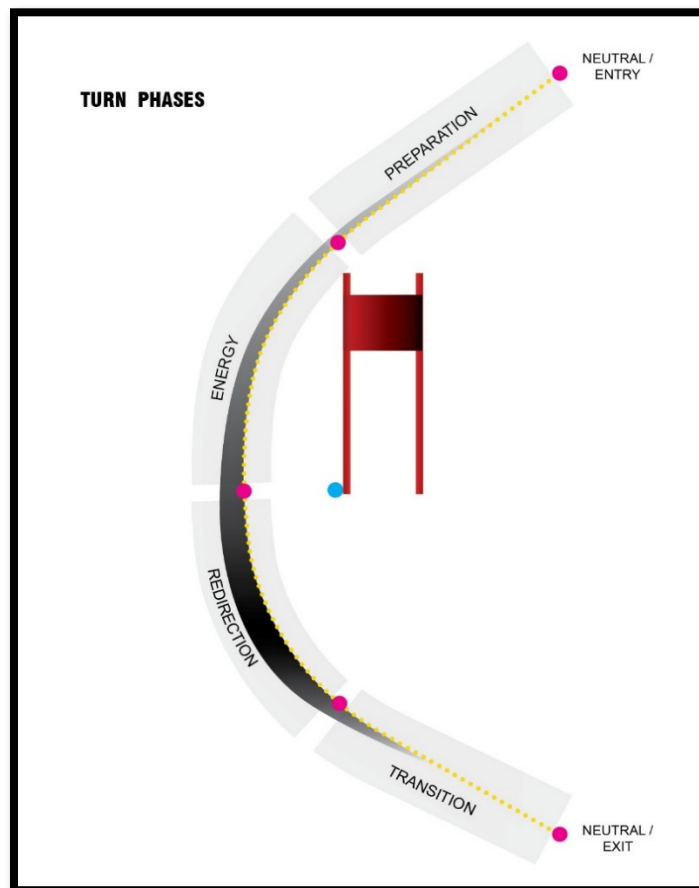
Centered/ Neutral: The skis are flat, and weight is on both feet. The body is aligned and in a stacked position. There may be some upper body movement toward the new fall line.

Preparation: The edges are engaged with inclination and angulation, and if necessary, rotary movements. 100% percent to 90% of the skier's weight is on the outside ski. The skis tips are pointed to the apex of the turn. (Upside down)

Energy: The skis are pressured and bending in the fall line, everything is working with gravity. (The athlete is controlling edge angle and pressure to control turn shape)

Redirection: The skis begin to deflect out of the fall line.

Transition: The center of mass moves toward the outside ski.
Edge angle is decreased



TRANSITION TO NEUTRAL



QUANTUM SKI MECHANICS

QSMC

QSMC All rights reserved/Quantum Sports

Report Card

Analyze 10 representative turns on video.
Terrain and/or gate appropriate jeopardy.
Rate each axiom on a 0-10 scale.
Transfer to percentage.
Total is 1-5 (6) x 2. Optimum score: 100 (120).

Name	Level	Jeopardy	Event
Axiom	1 2 3 4 5 6		Total
Date	/		

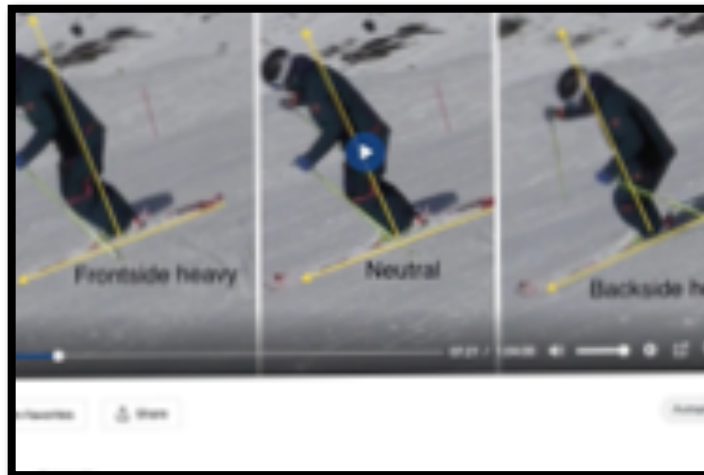


Axiom scoring is done using video. An axiom is analyzed on ten turns. They score a point each time they do an axiom correctly and zero if they do not. Each axiom is scored on a discrete phase of the turn. See score card above.

HIPS: THE CONTROLLING FACTOR

The hips must remain stacked. The hips twisting off the femur can lead to injury and inefficient skiing. Rotational movement must start in the feet and move up to the hip socket not past that the center of mass should stack up over the bindings. We will call this the box. The front of the box is the toe piece neutral would be center and the back would be the heel piece. see photo below

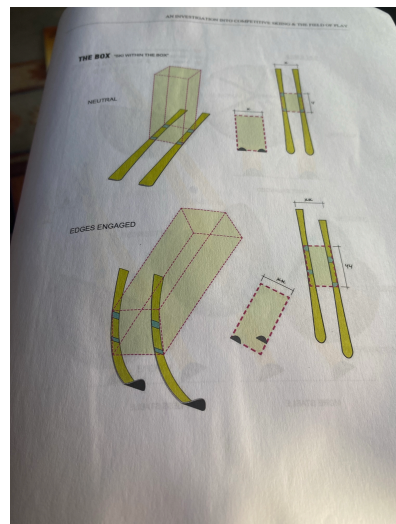
Start in balance center of box. Get the ski tip to engage front of the box Use the tail to control the arc back of the box This is efficient use of fore aft balance. The upper body sternum specifically the center of mass must move forward in harmony with ankle flexion to keep alignment and proper leverage to the ski



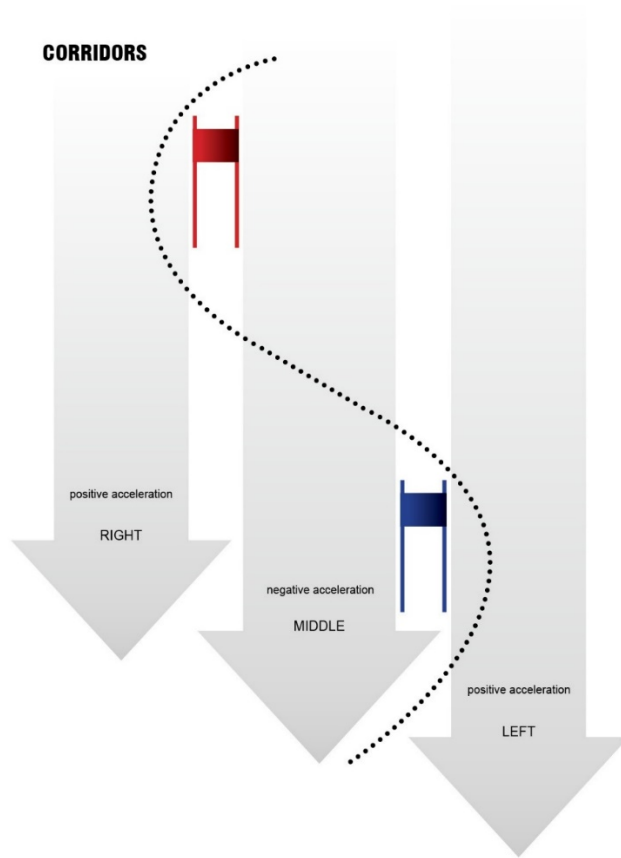
The hips can extend open hike/ chamber

To extend the hips - think about moving them forward

Opening is achieved by pulling the inside foot back at the top of the turn. This creates some lead which creates space for the inside hip to hike or chamber Chambering is the relaxation of the inside leg letting the angle of the hill hike it up. This helps increase pressure on the outside ski and enables the skier to have a longer outside leg without countering the hips or upper body



CORRIDORS



FACTORS THAT EFFECT TACTICS

ATHLETES ABILITY: How is their skill set is going to affect their tactics

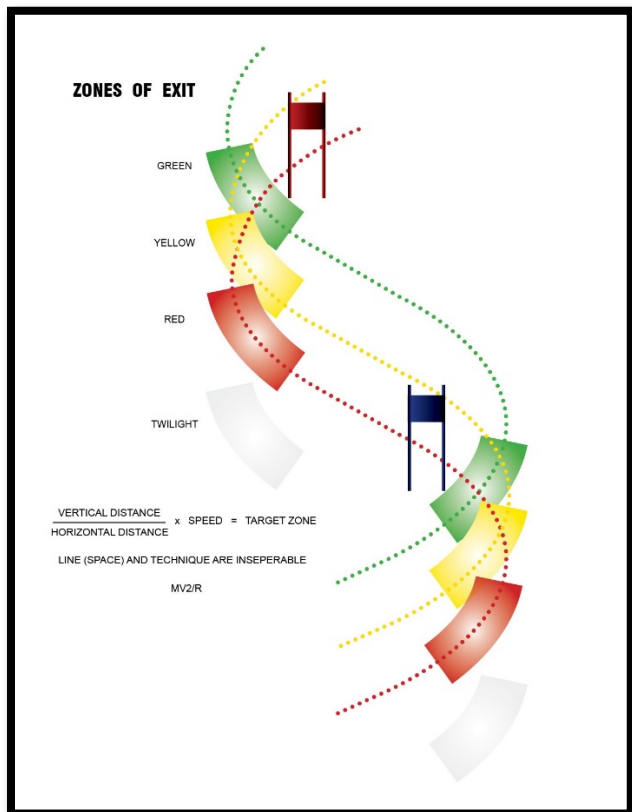
SNOW CONDITIONS: ice slick grippy peels soft rutted

SPEED: fast slow difference in speed

TERRAIN: Flat to steep, steep to flat, rolls. fall away

TURN SHAPE: vertical and lateral spacing

TEACH ATHLETES ABOUT ZONES TO ENHANCE TACTIS



THE TRAINING ENVIRONMENT FOR SUCCESS

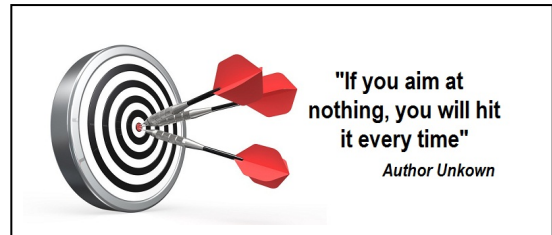
SAFETY FIRST AND FOREMOST

The key to successful training/ Practice

- ✓GOAL SETTING
- ✓PLANNING
- ✓EXECUTING
- ✓EVALUATING
- ✓MODIFYING

Goal setting

- ✓SEASONAL
- ✓MONTHLY
- ✓DAILY



Planning

- ✓COORDINATING WITH SKI AREA MANAGEMENT FOR HILL SPACE, GROOMING, SAFETY NEEDS
- ✓SKING LESSON PLANS, PROGRESSIONS (SKILLS, SKILLS WITH GATES GAME.)
- ✓EQUIPMENT, DRILLS, GATES, BRUSHES, DYE, VIDEO, TIMING
- ✓STAFFING AND DUTIES

Executing

- ✓COURSE SETTING
- ✓TECHNIQUES/TACTICS
- ✓DRILLS
- ✓SNOW CONDITIONS

Evaluation

- ✓IS THE TRAINING ENVIRONMENT AND ATHLETES PERFORMANCE
- ✓MEETING THE LESSON PLANS AND ATHLETES GOALS AS WELL AS THE COACHES.

Be willing to adapt for all situations to create success

Terms

Abduction	-outer thigh muscles
Adduction	-inner thigh muscles
Extension	-when joint moves further away from another joint
Framing	-the arms align with the ski tips
Centerline	-center of the body-line belly button to nose
Center of mass	-pelvic region just below the belly button
Corresponding edge	-equal edge angle on the inside and outside ski
Corridor	-the three fall lines in a course right middle left
Deflection zones	-the entry angle to the rise line, during the preparation phase. The rise line is divided in to thirds green, yellow, and red
DOT	-direction of travel of the center of mass
Dynamic leg length	-skeletal length which allows dynamic muscular activity
Flexion	-when joint moves closer to another joint
H line	-horizontal line between the turning pole and outside gate
Hip Positive	-feet are behind the hips
Hip Negative	-feet are ahead of the hips
Hip Neutral	-feet are under the hips
Inside shaft	-skeletal alignment and muscular efficiency on the inside of arc
Centered	-balanced position- joints are flexed and aligned over each other
Package	-aerodynamic position when jumping. The skis match the contour of the slope. The hands move down by the bindings
Parallel stance	-skis are parallel to each other
Open Parallel stance	-skies are parallel with some inside foot lead
Outside shaft	-skeletal alignment and muscular efficiency on the outside of the arc
Rotary	-guiding the skis into the turn with rotational movements
Redirection Phase	-the ski tips begin to deflect out of the fall line
Retraction- flexion	-occurs from an external force
Stacked	-all the joints are stacked over each other with some flexion
Rise line	-the fall line running above the turning pole
Tactics	- where you ski on the course
Technique	- how you ski
Transition phase	-decrease the edge angle at the end of the turn
Upside-down traverse	-commitment to the new turning ski and establishing edge angle while traversing the middle corridor
Toppling/ Tipping	-letting the center of mass fall over top sheets down the hill

SOME REFLECTIVE THOUGHTS

1. *Be willing to go where you do not want to go, and you will not find yourself there.*
2. *Balance is the building block for all the skills*
3. *Good posture, movements, and good decisions make a good skier*
4. *An athlete must control turn shape and speed on the racecourse.*
5. *The skis can arc or skid to control turn shape and speed when and where to do these skills separates the field*
6. *If turn shape is not controlled from the rise line to the H line, the line and speed will be lost.*
7. *Sudden radical edge angle or pressure will produce radical ski movements.*
8. *Be athletic, no matter what zone you ski in.*
9. *There should never be a commitment to the gate but to the skis and the fall line.*
10. *Technique and line coincide as one. Failure to execute one or the other properly has a great effect on each.*
11. *Practice must be deliberate.*
12. *Ski racing takes courage and skill to go fast promote them in training.*
13. *The middle corridor must be traversed on the uphill ski.*
14. *An edge platform must be created with the feet, then the movement should be through the skis not toward the direction of the turn*

GOOD SITES AND READS

www.alpine.usskiteam.com

www.youcanski.com

www.ronlemaster.com

[You Tube](#) Race videos, Reilly McGlashan has some good stuff Jam session ski academy network

Bigpictureskiing.com

- Ultimate Skiing author Ron LeMaster
- Talent Code author Daniel Coyle
- Little Book of Talent author Daniel Coyle
- Bounce author Matthew Syed
- Quantum Ski Mechanics John Leffler
- Far West Fundamental Guide

Helpful Apps

- Sprongo

Acknowledgments

- Thanks John Leffler images from Quantum Mechanics
- Thanks Ron LeMaster ski pictures